Government of India
Central Electricity Authority
System Planning & Project Appraisal Division
Sewa Bhawan R K Puram,
New Delhi -110066

No.1/9/06-SP&PA/ Dated: 09.03.2010

-As per List enclosed-

Sub: Minutes of the 28th meeting of the Standing Committee on Transmission System Planning of Northern Region held on 23rd February, 2010 at NRPC, New Delhi

Sir,

It is intimated that the minutes of the 28th meeting of the Standing Committee on Transmission System Planning of Northern Region held on 23rd February, 2010 at NRPC, New Delhi have been uploaded on **CEA website (under www.cea.nic.in/ PS wing/ standing committee meeting/NR)**

This is for your kind information and further necessary action at your end please.

Yours faithfully

(B. K. Sharma)
Director (SP&PA)

List of Addresses-

1. Member Secretary NREB, 18-A Shajeed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi - 110016	7. Director (Transmission) UPPCL, Shakti Bhawan Extn, 3rd floor, 14, Ashok Marg, Lucknow - 226 001	13. Development Commissioner (Power), J&K, Exhibition Ground, Near New Secretariat, Srinagar - 190 001
2. Director (Projects) NTPC, NTPC Bhawan, Core 7, Scope complex– 6, Institutional Area, Lodhi Road, New Delhi - 110003	8. Director (Transmission) Urja Bhawan, Kawali Road, Dehradun, Uttaranchal - 248 001	14. Member (Power) BBMB, Sectot-19 B Madya Marg, Chandigarh-160019
3. Director (Technical) NHPC Office Complex, Sector – 33, NHPC, Faridabad - 121 003	9. Director (Projects) DTL, Shakti Sadan. Kotla Road, New Delhi - 110 002	15. Chief Engineer (Transmission) NPCIL, 9- S-30 Vikram Sarabhai Bhawan, Anushakti Nagar, Mumbai - 400 094
4. Director (Projects) POWERGRID, Saudamini, Plot no. 2, Sector - 29, Gurgaon-122 001	10. Member(Transmission) PSEB, Mall road, Patiala - 147 001	16. Chief Engineer (Operation) Ministry of Power, UT Secretariat,Sector-9 D Chandigarh - 161 009
5. Sr. Vice President, PTC Ltd, 2nd floor, 15 NBCC Tower, Bhikaji Cama Place, New Delhi - 110066	11. Director (Projects) HVPNL Shakti Bhawan, Sector -6 Panchkula - 134 109	17. Managing Director, HP PowerTransmission Corporation Ltd. Himfed Bhawan, Panjari, old MLA Quarters, SHIMLA-171004
6. Member (Transmission) HPSEB, Vidyut Bhawan, Shimla - 171 004	12. Director (Transmission) RVPNL, Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur, Rajasthan	

Minutes of 28th Standing Committee Meeting on power system planning of Northern Region held on 23rd February 2010 at NRPC, New Delhi

List of participants is enclosed at Annexure.

Member (PS), CEA welcomed participants of the 28th Standing Committee meeting of the Northern Region of power system planning.

In the opening remarks Member (PS), CEA mentioned that as per the present scenario, it is expected that additional generation capacity was likely to be added in the next year and this would help in bridging the gap between demand and supply of power in Northern Region. Further, the generation projects related with CommonWealth Games viz. Dadri, Jhajjar, DVC and Bawana would also be coming up during this plan. Balia - Bhiwadi HVDC line was also expected to be commissioned soon which would address the problem of congestion in Northern Region and low voltage problem particularly in Haryana and Punjab. He also mentioned that though the issue of capacitor installation by Northern Region State constituents is flagged in various Standing Committee/ NRPC meetings, the pace of capacitor installation was very slow resulting in congestion in the transmission network resulting in the constituents paying higher price for the energy in the western part of NR. He urged the constituents to install adequate capacitors at their load centres on priority to reduce their MVAR drawl from the grid. He emphasised that the price of capacitor installation at load centres would be much cheaper as compared to paying of congestion charges or installation of dynamic compensation at higher voltage i.e. 400/220 kV levels which will result in higher regional transmission charges.

The agenda item were thereafter taken up for discussion.

1. Confirmation of minutes of 27th Standing Committee Meeting held on 30.05.2009

1.1 LILO of 400 kV Dehar-Bhiwani line at Rajpura and LILO of 400 kV Dehar-Panipat line at Panchkula:

This issue was mentioned in the minutes of 27th Standing Committee Meeting of Northern Region**.** PSEB informed that they have obtained the investment approval for Rajpura sub-station and now, PSEB is ready to take up the work of LILO of 400 kV Dehar-Bhiwani line at their Rajpura sub-station at their cost.

Regarding LILO of 400 kV Dehar-Panipat line at Panchkula, HVPN mentioned to cover this work under regional scheme. Member (PS), CEA stated that the proposed LILO at Panchkula station will help in controlling the over voltages being experienced on this line which is resulting in frequent opening of the line. In view of this, it is in the interest of the HVPN to take up the work of LILO on this line at Panchkula sub-station for better availability of power in Panchkula especially in winter off-peak conditions. He advised HVPN to agree for taking up the proposed work of LILO of Dehar-Panipat line at Panchkula S/S at their cost. HVPN agreed to revert back on the issue.

1.2 After above deliberations, the Minutes of 27th meeting vide letter dated 11.06.09 were confirmed.

2 Follow up issues of 27th Standing Committee Meeting

2.1 System strengthening scheme in Punjab:-

Regarding additional requirement of 220 kV bays, PSEB informed that at present they require 2 nos., 200 kV bays at Patiala sub-station only. The issue of 220 kV bays at Patiala was discussed afterwards.

2.2 Provision of spare ICT in NR:-

POWERGRID informed that as per the 14th NRPC meeting held on 19th September 2009, the proposal of procuring 2 nos. of spare 400/220 kV, 315 MVA ICTs (one for Delhi, UP, Uttrakhand & Rajasthan and other for rest of the states of the Northern region) was agreed. It was also informed that one spare transformer will be kept at Mandola sub-station and the other at Ludhiana sub-station of POWERGRID. These transformers will be commissioned but will not be kept in charged condition and shall be transferred as per requirement.

Members noted the same.

2.3 Enhancing Reliability of Generation at Narora Atomic Power Station:-

It is informed to members that UPPCL has not submitted their detailed plan alongwith time frame of implementation for overcoming transmission network constraints in western UP. Member (PS), CEA asked UPPCL representative to furnish the above proposal to CEA on priority.

2.4 Overloading of 2x315 MVA, 400/220 kV ICTs at Bhiwadi:-

POWERGRID informed that installation of additional 315 MVA,400/220 kV ICT at Bhiwadi S/s is a part of NRTSS Scheme which was agreed in 26th meeting of Standing Committee on Power System Planning of Northern Region held on 13/10/2008. The

tendering process for procuring this ICT had been completed and the same was under procurement. POWERGRID agreed to install this ICT on priority.

RVPN intimated that PGCIL is yet to provide additional 220 kV bay at Bhiwadi sub-station as requested by them. PGCIL informed that the above bays will be completed by 15th March 2010.

3.0 Status of Projects approved in the SCM/RPC:-

POWERGRID circulated the status of various transmission projects under implementation by them in the meeting. Member (PS) observed that in the last meeting also he had pointed out that this information should be furnished by POWERGRID within a week's time after issue of Agenda for the meeting so that the constituents could go through and in case any modification in target dates is required the same could be discussed. POWERGRID assured to circulate the status of various transmission projects under implementation by them well in advance to the scheduled date of meeting, in future.

4. Dehradun-Abdullapur 400 kV D/c line:-

POWERGRID stated that 400 kV Dehradun-Abdullapur D/C quad line was approved as regional scheme for evacuation of Kotli-Behl HEP stage 1-A, 1-B & 2. POWERGRID proposed to take up this line as Northern Region System Strengthening Scheme-XXIV as this line will provide an additional transmission corridor from eastern part of Northern Regional Grid towards western part of the Grid to facilitate transfer of power from U.P. via Meerut - Bagpat – Saharanpur corridor towards Haryana. Member (PS) observed that it would improve system reliability of NR during foggy conditions. Member (PS) advised POWERGRID to look into the requirement of transformation capacity at Abdullapur sub-station in view of this line. POWERGRID agreed for the same.

Members agreed for the above proposal.

5. Augmentation of transformation of Raibareilly:-

POWERGRID informed that for evacuation of Unchahar-III transmission system, a 220/132kV S/s was established at Raibareilly. Raibareilly substation was connected to Unchahar generation complex by three nos of 220kV lines and Lucknow by two (2) nos of 220kV lines. The substation presently had a transformation capacity of 2x100 MVA and caters to loads of Raibareilly and nearby areas. The loading on the transformers is greater than 85% of rating about 67% of the time. There is no redundancy to meet contingency of transformer outage. In view of the high loading of existing transformers**,** POWERGRID proposed the augmentation of existing transformers by another 100 MVA transformer under the Northern Regional System Strengthening-XXIV. Member (PS) stated that the assets of 220/132 kV Raibareilly sub-station lie with POWERGRID and therefore the above augmentation needs to be done under regional scheme.

Members agreed for the above proposal.

6. Provision of Bus reactors in Northern Region:-

POWERGRID intimated that the proposal to provide bus reactors at 9 nos., 400 kV sub-stations and 6 nos generating stations as detailed below had been agreed in 15th NRPC meeting held on 24.12.2009.

S.No.	Name of Substation	Proposed Bus Reactor (MVAR)
1	Gorakhpur	1X125
2	Allahabad	1X125
3	Mainpuri	1x125
4	Hissar	1x125
5	Jullandhar	1x125
6	Amritsar	1x80
7	Kankroli	1x125
8	Nalagarh	1x125
9	Vindhyachal (NR bus)	2x125
10	N' Jhakri	1x125
11	Dehar	1x125 (subject to availability of space)
12	Chamera-I	1x125 (subject to availability of space)
13	Parbati-II	1x125 (subject to availability of space)
14	Parbati-III	1x80 (subject to availability of space)
15	Rihand	1x125 (subject to availability of space)

It was further stated that bus reactors at generating stations would be provided by generating companies as per the discussions in 15th NRPC. BBMB stated that no space is available to install proposed bus reactors in Dehar generating switchyard. Member Secretary, NRPC suggested that a team of CEA, PGCIL may visit Dehar generating switchyard to ascertain their feasibility of providing bus reactor at Dehar.

Member (PS) desired to know from PGCIL whether availability of Balia-Bhiwadi HVDC link had been considered while working out the requirement of bus reactors. POWERGRID informed that the same has been considered while carrying out the studies and the proposed bus reactors were still required to contain the over voltage in Northern region. Member (PS) advised that the work of providing bus reactors could be taken up by POWERGRID as a deposit work of generating company in case they faced problem in implementation/execution of the bus reactors at generating switchyard.

POWERGRID also informed that due to change in length of Barh-Balia 400 kV line from 190 km. to 250 km. as per detailed survey, there was a need of providing 2x63

MVAR line reactors at Balia end where no line reactor was envisaged earlier. They have proposed to cover the same in their ongoing/new transmission scheme.

Members agreed for the proposal.

7. Provision of 2 nos. of 220 kV line bays at Allahabad (PG) sub-station:-

Regarding request of Railway for providing 2 nos. of 220 kV bays at Allahabad sub-station of POWERGRID to draw 100 MW power allocated to them from the unallocated quota of NTPC, Member (PS) stated that 220 kV lines from Dadri and Auraiya have already been provided to Railway to draw their share of allocated power. He observed that railways were not willing to sign the TSA for common ISTS elements of NR to be built through private sector participation. Railways are obliged to share the transmission charges for all regional transmission schemes as a long term beneficiary as per CERC regulations on sharing of transmission charges. As such unless Railway gives commitment for sharing the regional transmission charges, their request for access to regional transmission system cannot be considered.

Members agreed for the same.

8. Dulhasti-Samba 400 kV D/C:-

Presently Dulhasti (390MW) generation of NHPC was being evacuated over Dulhasti-Kishenpur-400kV S/c line. The issue of reliable power evacuation from Dulhasti HEP was discussed during the 14th NRPC meeting held on 19/09/2009 wherein it was agreed to provide a 400 kV D/c quad conductor line from Dulhasti to Samba in order to provide reliability as well as for optimal utilization of RoW, keeping in view the future generation potential.

POWERGRID stated that for evacuation of 390 MW of Dulhasti, the provision of 3 circuits (one Twin & two Quad) would result in overvoltage & excessive MVAR incidental on the generation machines during the period of light loading on the lines. Since the time frame of future generation in the nearby area was still very uncertain, POWERGRID proposed to string only one circuit of Dulhasti – Samba 400 kV D/c (Quad) line and stringing of second circuit can be taken up later with the coming up of more generation in the vicinity. This would optimize the investment as well as conserve the Right of way.

NHPC stated that they can accommodate only one additional bay at Dulhasti and as such two ckts cannot be terminated at Dulhasti end.

Member (PS) mentioned that hot-line stringing of second circuit later on, will not be possible and POWERGRID would have to take shut down for the same which may cause evacuation constraints from Dulhasti. POWERGRID stated that the required shut down for stringing second circuit would be taken up in off-peak generation period to avoid any evacuation constraint.

Member (PS) further stated that instead of terminating this line at Samba, it should be terminated at Kishenpur itself as this would reduce the line length by about 40 km and also there would be better dispersal of power from Kishenpur as 765 kV system would also be available at Kishenpur. This would also avoid the constraint of evacuation of power from Samba onwards. POWERGRID submitted that there was space for accommodating only one number of 400 kV bay at Kishenpur. Member (PS), advised POWERGRID to revisit Kishanpur switchyard to accommodate one more 400 kV bay for terminating proposed Dulhasti-Kishanpur D/C line and also look for acquisition of additional land if required. POWERGRID agreed for the same.

Advisor, PDD, J&K stated that Ratle HEP(690 MW) was planned to be developed in the down stream of Dulhasti HEP and they propose to LILO both ckts of the above Dulhasti – Kishenpur 400 kV D/c (Quad), proposed, at their generation project. Member (PS), CEA enquired about the commissioning schedule of Ratle project. PDD, J&K informed that the project was scheduled to be commissioned by mid 2016.

Summarising the discussions, Member (PS), CEA informed that initially, POWERGRID might take up the implementation of Dulhasti – Kishenpur 400 kV D/c Quad line and initially string only one ckt. from Dulhasti to Kishenpur. Meanwhile, for Ratle HEP, J&K may apply for Connectivity and Long Term Access to the CTU, after which, stringing of 2nd ckt can be planned. The 2nd ckt may be strung from Kishenpur and terminated at Ratle. This 2nd ckt. will be extended to the project coming up in the upstream of Dulhasti project bypassing Dulhasti HEP.

Subsequent to the meeting, POWERGRID examined the issue of availability of space at Kishenpur and it has been informed by POWERGRID that two bays at Kishenpur can be accommodated for which some land filling would be required.

Accordingly, it is proposed to take up the scheme as summarized by Member (PS), CEA in the above para. This scheme may also be taken up as part of NRSS-XXIV.

Members agreed for the same.

9. Transmission System associated with Tilaiya UMPP (4000 MW) in Jharkhand:

In 27th Standing Committee Meeting of Northern Region, following transmission system was agreed:-

1. Tilaiya UMPP – Balia 765kV 2xS/C line
2. Tilaiya UMPP – Gaya, 765kV S/C line

Subsequently, in Eastern Region Standing Committee Meeting held on 14th September 2009, it was agreed to provide 765kV Tilaiya UMPP-Balia D/C line in stead of 2xS/C 765kV lines Tilaiya UMPP – Balia line, as this would save RoW and the cost of the D/C line would be lesser compared to 2XS/C lines. In view of the above, following revised transmission system was proposed:-

- Tilaiya UMPP – Balia **765kV D/C line**
- Tilaiya UMPP – Gaya 765kV S/C line

Members agreed for the above proposal.

10. Transmission system associated with IPPs located in Chhatisgarh, Orissa, Jharkhand,West Bengal, Madhya Pradesh, and Southern Region:

Member (PS) explained that many new generation projects were coming up under Central sector and in Private Sector and a large quantum of power was targeted to be sold in Northern region. Even though firm beneficiaries has not been finalised, based on target beneficiaries, expected power flow have been captured while evolving the system in association with POWERGRID. As the beneficiaries have not been finalised for these projects, it was felt prudent to get the regulatory approval. CERC has advised to ascertain the status of various generation schemes and to pre-prioritize the development of transmission schemes matching with the generation programme of IPPs. A meeting in this regard was held at CEA on 01/02/2010 wherein all the IPPs were requested to immediately inform about any change in unit size, plant capacity, quantum of open access sought in MW and change in target beneficiaries. Phasing of the project while evolving the transmission system has been done based on their progress.

ED (POWERGRID) explained that total targeted transfer to Northern region was of the order of 55,000 MW. Of this about 29,000 MW was targeted in initial phase.

System for transfer for about 16900 MW has already granted and the system being proposed is for about 12000 MW. Different transmission corridors have been identified for transfer of power from various generation complexes. The transmission system proposed was as follows:

10.1 Transmission system associated with IPP projects in Chattisgarh

POWEGRID informed that a large number of IPPs have proposed coal based generation projects in Chhattisgarh and applied for long-term open access in inter state transmission system proposing target beneficiaries to sell their power in WR/NR. The total generation capacity addition program is of the order of 58,000MW with LTOA sought for about 48,000MW. Most of the IPPs have indicated their commissioning schedule in XI plan/early XII plan.

Based on the review of progress of IPPs in Chhattisgarh was done in various review meetings held on 01/02/2010 wherein it emerged that only the following 12 IPPs with capacity of about 15000MW have shown progress for commissioning of their projects in the XI plan/ early XII plan. The details are listed below:

S.No	Applicant	Capacity (MW)	Time frame (unit wise)	LTOA (MW)	LTOA Granted(MW)			
					WR	NR	SR	TOTAL
	RAIGARH COMPLEX							
1	RKM Powergen Ltd.(4x360)	1440	Jun'11,Sep'11, Dec'11, Mar'12	819	419	200	200	819
2	Athena Chhattisgarh Power Ltd.(2x600)	1200	Jun'13, Nov'13	755	378	377		755
3	Jindal Power Ltd.(4x600)	2400	Mar'12,Jul'12, Nov'12,Mar'13	1400	700	700		1400
4	Jindal Power Ltd.(225+175)	400	Feb'10	400	400	0		400
5	SKS Ispat & Power (4x300)	1200	Mar'12,Jun'12, Sep'12,Nov'12	750	500	250		750
6	Korba West Power (1x600)	600	Nov'12	240	140	100		240
7	DB Power Ltd.(2x600)	1200	Jul'13,Dec'13	780	532	248		780
	Sub-total	**8440**		**5144**	**3069**	**1875**	**200**	**5144**

JANJGIR-CHAMPA COMPLEX

8	KSK Mahanadi Power Co. Ltd (6x600)	3600	Feb'12, Jun'12, Oct'12,Feb'13, Jun'13,Oct'13	2340	2340	0		2340
9	BALCO(4x300)	1200	Oct'10, Jan'11, May'11, Aug'11	200	100	100		200
10	Vandana Vidyut(2x135+1x270)	540	Oct'11,Feb'12,Mar'14	265	165	100		265
11	Lanco Amarkantak Power (2x660)	1320	Jan'12,Mar'12	858	858	0		858
12	Chhattisgarh Steel & Power Ltd.(1x35+1x250)	285	Jun'13	185	130	55		185
	Sub-total	**6945**		**3848**	**3593**	**255**	**0**	**3848**
13	Chhattisgarh State Power Trading Co.			**4832**	**2898**	**1934**		**4832**
	Total	**15385**		**13824**	**9560**	**4064**	**200**	**13824**

ED (POWERGRID) explained that for transfer of power from above 12 nos of IPP projects in Chhattisgarh to target beneficiaries in NR and WR, it has been proposed to pool power at 3 nos, 765/400 kV pooling stations at Raigarh(Kotra), Raigarh(Tanmar) and Champa. These three pooling stations would be interconnected through Raigarh (Kotra)- Champa 765 kV S/c and Raigarh (Kotra)- Raigarh(Tamnar) 765kV D/c line. For onward transfer of power, it was proposed to further pool power at another intermediate Raipur pooling station. Raigarh Pooling station (Kotra) would be connected to Raipur pooling station through 765kV D/c line. Similarly Champa would be connected to Raipur through 765kV D/c lines. To provide an alternate path for reliability, Champa pooling station would also be connected to Dharamjaygarh where power from other IPP projects in Orrisa, Jharkhand and West Bengal would also be coming.

For bulk transfer of power to NR, a $\pm$ 800kV, 6000MW HVDC bipole between Champa pooling station and Kurushetra(NR) was proposed, with initial capacity at 3000MW and a provision to upgrade to 6000MW level based on the progress of generation addition in the complex. For evacuation of power from Kurushetra,

Kurushetra-Jullandhar 400kV D/c (Quad), LILO of Abdullpaur-Sonepat 400kV D/c at Kurushetra and establishment of 2x500 MVA 400/220kV S/s at Kurushetra was proposed

For transfer of power beyond Raipur within WR, Raipur-Wardha-Aurangabad 765kV 2xD/c lines are proposed. Beyond Aurangabad, power is proposed to be transferred through 765 kV Aurangabad-Padghe 765kV D/C and Aurangabad- Dhule-Vadodra 765 kV S/C line.

Accordingly following transmission system was agreed:

Pooling stations along with interconnections for new IPP projects in Chattisgarh

(i) Raigarh Pooling Station (Kotra)- Raipur Pooling station 765 kV D/C (initially to be operated at 400 kV)

(ii) Raigarh Pooling Station (Kotra)- Champa Pooling station 765 kV S/C

(iii) Champa Pooling station- Raipur Pooling station 765 kV D/C (initially to be operated at 400 kV

(iv) Raigarh Pooling station (Kotra)- Raigarh Pooling station (Tamnar) 765 kV D/C (initially to be operated at 400 kV)

(v) Champa Pooling station – Dharamjaygarh 765 kV S/C

(vi) Raigarh Pooling Station (Kotra) - Raigarh existing 400 kV D/C (to be kept open at a later date).

(vii) Raipur Pooling Stn.–Raipur existing 400kV D/C(to be kept open at a later date)

(viii) Establishment of 765/400kV 4x1500MVA Raigarh Pooling Station(near Kotra) (the Pooling station shall be initially at 400kV and later upgraded to 765kV with indicated transformation capacity)

(ix) Establishment of 765/400kV, 3x1500 MVA Raigarh Pooling Station(near Tamnar) (the Pooling station shall be initially at 400kV and later upgraded to 765kV level)

(x) Establishment of 765/400kV 3x1500MVA Champa Pooling Station(the Pooling station shall be initially at 400kV and later upgraded to 765kV with indicated transformation capacity)

(xi) Establishment of 765/400kV 1x1500MVA Raipur Pooling Station(the Pooling station shall be initially at 400kV and later upgraded to 765kV with indicated transformation capacity)

Transmission System proposed in NR for new IPP projects in Chattisgarh

(i) ± 800 kV 6000 MW HVDC bipole between Champa Pooling Station – Around Kurushetra (NR)(initially to be operated at 3000 MW)

(ii) 3000 MW , ±800 kV HVDC bipole terminal at Champa pooling station and Around Kurushetra (with a provision to upgrade to 6000MW level based on the progress of generation addition in the complex)

(iii) Kurushetra- Jallandhar 400 kV D/C (Quad) (one ckt via Nakodar S/S)

(iv) LILO of Abdullapur- Sonepat 400 kV D/C (triple) at Kurushetra

(v) Establishment of 400/220 kV , 2x500 MVA substation at Kurushetra

Transmission System within WR for new IPP projects in Chattisgarh

(i) Raipur Pooling station- Wardha 765 kV 2x D/C (initially 1st D/c line to be operated at 400 kV)

(ii) Wardha- Aurangabad(PG) 765 kV 2X D/C (initially 1st D/c to be operated at 400 kV)

(iii) Aurangabad- Padge(PG) 765 kV D/C

(iv) Aurangabad- Dhule (New) (PG) 765 kV S/C (private sector)

(v) Dhule (New) – Vadodara (PG) 765 kV S/C (private sector)

(vi) Dhule (New) – Dhule (MSETCL) 400 kV D/C (quad) (private sector)

(vii) Establishment of 765/400kV 2x1500MVA substations at Dhule (New) (private sector)

(viii) Establishment of 765/400 kV 2x1500 MVA substations at Aurangabad and Padghe (GIS)

(ix) Aurangabad(PG)-Khargar 400 kV D/C (quad)

(x) Padghe(PG)- Padghe 400 kV D/C (Quad)

(xi) Vadodra-Asoj (GETCO) 400 kV D/C (Quad)

(xii) Dhule(PG) – Dhule(new) 400kV D/c(Quad)

(xiii) Dhule(PG) – Nashik 400kV D/c (Quad)

(xiv) Dhule(PG) – Malegaon 400kV D/c (Quad)

(xv) ±600 kV 4000 MW HVDC bipole between Raigarh pooling station (Kotra) – Dhule

(xvi) 4000 MW , 600 kV HVDC bipole terminal each at Raigarh pooling station (Kotra) and Dhule

Chief Engineer(SP&PA),(CEA) informed that during the discussions in previous Standing committee meeting the interconnections with NR /WR regional grids were not proposed which are included now.

Dedicated transmission System up to pooling point under the scope of Project Developer for generation projects in Raigarh Complex

Projects	Transmission Line
RKM Powergen Ltd.(4x360MW)	RKM Powergen – Raigarh Pooling Station (near Kotra) 400kV D/c (Quad)
Athena Chhattisgarh Power Ltd.(2x600MW)	Athena Chhattisgarh – Raigarh Pooling Station (near Kotra) 400kV D/c (Triple/Quad)
Jindal Power Ltd. (4x600MW + 400MW))	Jindal Power – Raigarh Pooling Station(near Tamnar) 400kV 2xD/c(Quad) along with 765/400kV 3x1500MVA transformers at Raigarh Pooling Station(Near Tamnar)
SKS Ispat & Power Ltd.(4x300MW)	SKS Ispat - Raigarh Pooling Station (near Kotra) 400kV D/c(Triple/Quad)
Korba (West) Power Ltd.(1x600MW)	Korba(W) – Raigarh Pooling Station 400kV D/c (Near. Kotra)
DB Power Ltd. (2x600MW)	DB Power – Raigarh Pooling Station (near Kotra) 400kV D/c (Quad/Triple)

Dedicated transmission System up to pooling point under the scope of Project Developer for generation projects in Champa Complex

Projects	Transmission Line
KSK Mahanadi Power Ltd. (6x600 MW))	Wardha Power-Champa Pool 400kV 2xD/c line (Quad) along with 765/400kV 3x1500 MVA transformers at Champa Pooling Stations
BALCO Ltd (4x300 MW)	BALCO–Champa Pooling Station 400kV D/c (Quad/Triple)
Vandana Vidyut Ltd (2x135+1x270 MW)	Vandana Vidyut – Champa Pooling Station 400kV D/c
Lanco Amarkantak Power (2x660 MW)	Lanco - Champa Pooling Station 400kV D/c (Quad)
Chhattisgarh steel & Power (1x35+1x250 MW)	LILO of Vandana Vidyut – Champa Pooling Station 400kV D/c at CSPL

Interim arrangement for connectivity of projects coming prior to availability of transmission

Projects	Transmission Line
BALCO Ltd (4x300 MW)	LILO of both circuits of Korba - Birsinghpur 400kV D/c at Balco
RKM Powergen [4x360 MW]	LILO of Rourkela- Raigarh 400kV D/c at RKM Powergen
Vandana Vidyut Ltd (2x135+1x270 MW)	LILO of one ckt of Korba – Birsingpur 400kV D/c at Vandana Vidyut

The cost of implementation, operation and maintenance of dedicated transmission system shall remain with respective IPP's. .

ED (POWERGRID) explained that the transmission system is to be developed in a phased manner with four stages. The stage wise development would be as follows :

Phasing : Stage – I: 36 months from date of Regulator's approval

(i) Raigarh Pooling Station (Near Kotra) – Raigarh (existing) 400kV D/C (temporary arrangement)

(ii) Raipur Pooling Station – Raipur (existing) 400kV D/C (temporary arrangement)

(iii) Raigarh Pooling Stn.(Kotra)–Raipur Pooling Stn. 765kV D/C (initially at 400kV)

(iv) Champa Pooling Station – Raipur Pooling Station 765kV D/C (initially at 400kV)

(v) Raigarh Pooling stn.(Kotra)–Raigarh pooling stn.(Tamnar) 765kV D/C(initially at 400kV)

(vi) Raipur Pooling Station – Wardha 765kV D/C (initially to be operated at 400kV)

(vii) Wardha – Aurangabad (PG) 765kV D/C (initially to be operated at 400kV)

(viii) Aurangabad(PG) – Khargar 400kV D/C(Quad)

(ix) Establishment of 400kV Raigarh Pooling Station (Kotra) [provision to upgrade at 765kV level]

(x) Establishment of 400kV Raipur Pooling Station (provision to upgrade at 765kV level)

(xi) Establishment of 400kV Champa Pooling Station (provision to upgrade at 765kV level)

(xii) Establishment of 400kV Raigarh Pooling Station (Tamnar) [provision to upgrade at 765kV]

Stage–II: 42 months from from date of Regulator's approval

(i) Raipur Pooling Station – Wardha 765kV D/C (2nd).

(ii) Wardha – Aurangabad (PG) 765kV D/C (2nd).

(iii) Padghe – Padghe(PG) 400kV D/C (Quad).

(iv) Aurangabad (PG) – Padghe(PG) 765kV D/C.

(v) Raigarh Pooling Station (near Kotra) – Champa Pooling Station 765kV S/C.

(vi) Champa Pooling Station – Dharamjaygarh 765kV S/C.

(vii) Upgradation of 400kV Raigarh Pooling stn.(Kotra) to 765/400kV,4x1500MVA capacity, Raipur pooling stn. to 765/400kV 1x1500MVA capacity, Champa pooling stn. to 765/400kV 3x1500MVA capacity, Raigarh pooling stn.(Tamnar) to 765kV for charging of terminating 765kV lines at 765kV level

(viii) Establishment of 765/400kV 2x1500MVA Aurangabad (PG) S/S for charging of 765kV lines at 765kV.

(ix) Establishment of 765/400kV 2x1500MVA Padghe (PG) S/S

(x) Aurangabad- Dhule (New) (PG) 765 kV S/C (Pvt sector).

(xi) Dhule (New) – Vadodara (PG) 765 kV S/C (Pvt sector)

(xii) Vadodra-Asoj (GETCO) 400 kV D/C (Quad).

(xiii) Establishment of 765/400 kV 2x1500 MVA substations at Dhule (New) (Pvt sector)

(xiv) Dhule (New) – Dhule (MSETCL) 400 kV D/C (quad) (Pvt sector)

Stage – III: 52 months from date of Regulator's approval

(i) 600kV, 4000MW HVDC bipole between Raigarh Pooling Stn(Kotra)– Dhule

(ii) Dhule(PG)–Dhule (New) 400kV D/C (Quad)

(iii) Dhule(PG)–Nasik (MSETCL) 400kV D/C (Quad)

(iv) Dhule(PG)–Malegaon (MSETCL) 400kV D/C (Quad)

(v) Establishment of 4000MW 600KV HVDC bipole terminal each at Raigarh Pooling stn. (near Kotra) and Dhule respectively

Stage - IV: 55 months from date of Regulator's approval

(i) 800kV, 6000 MW HVDC bipole between Champa Pooling stn–Kurukshehtra (initially to be operated at 3000 MW).

(ii) Estblishment of 3000MW, 800KV HVDC bipole terminal at Champa Pooling Stn. And Kurukshetra (with a provision to upgrade to 6000MW level based on the progress of generation addition in the complex).

(iii) Kurukshetra(NR) - Jallandhar 400kV D/C(Quad) one ckt. via Nakodar S/S.

(iv) LILO of Abdullapur – Sonepat 400kV D/C (triple) at Kurukshetra.

(v) Establishment of 400/220kV 2x500 MVA S/s at Kurukshetra

ED(POWERGRID) explained that the IPPs have no firm beneficiaries and transmission system has been evolved based on target beneficiaries. In view of the above IPPs/applicants were informed to sign BPTA and furnish Bank Gurantee to take up the implementation of the system strengthening scheme as per CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009 and share the transmission charges in proportion to the capacity for which LTOA had been granted.

In addition to above transmission charges, regional transmission charges for ER, WR, NR and associated inter regional transmission charges would be borne by the respective open access applicant, as applicable (as per CERC norms)

He also informed that IPPs were advised to firm up beneficiaries at the earliest and intimate to POWERGRID. The applicable transmission and other charges would be payable by the beneficiaries after firming up of the same.

Members agreed for the above.

10.2 Transmission system associated with IPP projects in MP, Chattisgarh (Bilaspur), Gujarat

ED (POWERGRID) explained that there are many projects in Madhya Pradesh, Gujarat & Bilaspur in Chattisgarh in Western region being considered for Long Term Open Access. Based on the review of progress of IPPs in various review meetings wherein it emerged that only the following 9 IPPs with capacity of about 5950MW have shown progress for commissioning of their projects in the XI plan/ early XII plan. The details are listed below. The total allocation to Northern region from above projects is about 2400 MW.

	Applicant	**Capacity**	**Time Frame**	**LTOA (MW)**	**Allocation (MW)**		
					WR	**NR**	**TOTAL**
	IPP in Chhattisgarh(Bilaspur)						
1	Maruti Clean Coal(1X300 MW)	300	Dec'12	204	151	53	204
2	PTC (Dheeru) (3x350 MW)	1050	Sep'13, Dec'13, Mar'14	409	204.5	204.5	409
3	Dheeru Power Gen (3x350 MW)			307	251	56	307
4	Chhattisgarh State Power Trading			430	259	171	430
	Sub-total	**1350**		**1350**	**865.5**	**484.5**	**1350**
	IPP in Madhya Pradesh						
1	Jaiprakash Power Ventures Ltd.(2x660 MW)	1320	Apr'13, Oct'13	1241	854	387	1241

2	Aryan MP Power generation Pvt. Ltd(2x600 MW)	1200	Mar'14, Sep'14	1200	900	300	1200
3	Bina Power Supply Company Ltd.(2x250 MW)	500	Sep'11, Dec'11	265	132.5	132.5	265
4	Moser Baer (2x600MW)	1200	Dec'12 Jun13	784	285	499	784
	Sub total			**3490**	**2171.5**	**1318.5**	**3490**
	IPP in Gujarat						
1	Pipavav Energy (2x600MW)	1200	Mar'13 & Sep'13	1110	555	555	1110
	Total			**5950**	**3592**	**2358**	**5950**

ED(POWERGRID) explained that the following comprehensive transmission for transfer of power to NR from IPP's has been evolved in an integrated manner looking into power transfer network requirement in Northern Region from above IPP's in Western region & Orissa. The proposed transmission system would ensure transfer of power from the generation projects upto NR grid.

System proposed for transfer of power to NR

i. Bina – Gwalior 765 kV S/c (3rd)
ii. Gwalior – Jaipur 765kV S/c(2nd)
iii. Jaipur – Bhiwani 765kV S/c

The Common Transmission system is to be shared by Maruti Clean Coal, PTC India, Dheeru Powergen, Jaiprakash Power, Aryan Coal, Bina Power, Moser Baer along with IPPs in Orissa(6080MW) .

For power transfer from Pipavav to Northern region the applicant shall share the system identified for WR-NR corridor with IPP's in SR.

For immediate evacuation of power from the projects and also for transfer of power within Western region following transmission system has been proposed.

System strengthening in WR associated with above generation projects

- Indore - Vadodara 765kV S/C

- Vadodara – Pirana 400kV D/C (Quad)
- Establishment of 765/400kV 2x1500MVA Vadodara substation

Immediate Evacuation system - under the scope of Project Developer for generation projects

Projects	Transmission Line
Maruti Clean Coal (300 MW)	➢ Maruti – WR Pooling Station(Bilaspur) 400 kV D/C ➢ Two nos of 400kV bays at WR Pooling Station (Bilaspur)
Dheeru Power (1050MW)	➢ Dheeru Power–WR Pooling Stn. (Bilaspur) 400 kV D/C (high capacity) ➢ Two nos of 400kV bays each at WR Pooling (Bilaspur)
Jaiprakash Power(1320MW)	➢ Jaiprakash – Satna 400kV D/C (high capacity) ➢ Two nos of 400kV bays at Satna(POWERGRID)
Aryan Coal Beneficiary	➢ Aryan Coal – Vindhyachal Pooling Stn. 400kV D/c (high capacity) ➢ Two nos of 400kV bays at Vindhyachal Pooling Station ➢ 1X1500 MVA, 765/400KV trf. at Vindhyachal Pooling Stn.(to be reviewed in light of 400 kV D/C interconnection between Vindhyachal pool and Sasan)
Bina Power Supply	➢ Bina TPS-Suitable location(along BIna (PG to Bina (MP 400kV) 400kV D/c ➢ Terminate one circuit out of above D/c from suitable loaction to BIna(PG) and other to BIna(MP)
Pipavav Energy Ltd	➢ Pipavav TPS – Ambreli (GETCO) 400kV D/c - Quad

The cost of implementation, operation and maintenance of dedicated transmission system shall remain with respective IPP's.

ED(POWERGRID) explained that the IPPs have no firm beneficiaries and transmission system has been evolved based on target beneficiaries. In view of the above IPPs/applicants were informed to sign BPTA and share the transmission charges in proportion to the capacity for which LTOA had been granted.

In addition to above transmission charges, regional transmission charges for ER, WR, NR and associated inter regional transmission charges would be borne by the respective open access applicant, as applicable (as per CERC norms)

He also informed that IPPs were advised to firm up beneficiaries at the earliest and intimate to POWERGRID. The applicable transmission and other charges would be payable by the beneficiaries after firming up of the same. The transmission charges for all the common transmission systems would be shared by the IPP's who have applied for LTOA in proportion to the capacity for which LTOA had been applied/ granted. In addition to above, regional transmission charges for WR, NR and associated inter regional transmission charges proportional to its utilization would be borne by the respective open access applicant as applicable.

Members agreed for the above.

10.3 Transmission system for IPP's in Orissa

ED(POWERGRID) explained that total expected IPP's in Orissa is about 20,000MW of which about 10000 MW is expected in phase-I. The allocation to Northern region from IPP's in Orissa, based on the review meetings is 3315 MW. The generation alongwith allocation is tabulated below:

Sl. No	Projects	IC (MW)	LTOA (MW)	Time frame	NR	WR	ER	SR
1	Sterlite	2400	400	Jun-09	200	200	-	-
2	GMR	1050	800	Sept -11	600	-	-	200
3	Navbharat	1050	720	Jul - 11	465	255	-	-
4	Monnet	1050	900	June-12	300	225	225	150
5	Jindal	1200	1044	Mar-11	834	210	-	-

6	Lanco Babandh	2640	1600	Dec-13	650	950	-	-
7	Ind Barath	700	616	Sept-11	266	350	-	-
	Subtotal	**10090**	**6080**		**3315**	**2190**	**225**	**350**

For evacuation of power from IPP projects in Orissa, it was agreed to pool power from various IPPs located in Orissa at two number 765/400 kV pooling stations at Jharsuguda and Angul. The proposed pooling stations would be interconnected through 765 kV 2xS/C ring network and for onward transfer of power to NR and WR it was proposed to inject power at new pooling station at Dharamjaygarh in Chhattisgarh through Jharsuguda pooling- Dharamjaygarh 765 kV D/c lines. From Dhramjaygarh power will be transferred to Bina via Dharamjaygarh- Jabalpur-Bina 765kV D/c . From Bina, power would be transferred to NR via Bina-Gwalior-Jaipur-Bhiwani 765kV S/c.. For transfer within WR Jabalpur-Bhopal-Indore 765 kV S/C line has been proposed. Accordingly the scheme would be as follows :

I. Transmission System for Phase-I Generation Projects in Orissa - Part-A

- Angul Pooling Station – Jharsuguda Pooling Station 765 kV 2xS/c line
- LILO of Rourkela – Raigarh 400 kV D/c at Jharsuguda Pooling station
- LILO of Meramundali – Jeypore 400 kV S/c line at Angul pooling station**
- LILO of one ckt of Talcher – Meramundali 400 kV D/c line at Angul pooling station**
- Establishment of 2x1500MVA, 765/400 kV Pooling Station at Jharsuguda
- Establishment of 4x1500MVA,765/400 kV Pooling Station at Angul

**Interim arrangement. LILO to be removed after establishment of 765 kV pooling station at Angul.

II. Transmission System for Phase-I Generation Projects in Orissa - Part-B

- Jharsuguda Pooling Station – Dharamjaygarh / near Korba (WR) 765 kV D/c line
- LILO of Ranchi – Sipat Pooling station (Bilaspur) 765 kV S/c line at Dharamjaygarh / near Korba
- Dharamjaygarh / near Korba – Jabalpur Pool 765 kV D/c line
- Jabalpur Pooling Station – Jabalpur 400 kV D/c (high capacity) line

- Establishment of 765 kV sub-station at suitable location near Dharamjaygarh / Korba

- Establishment of 2x1500MVA 765/400 kV Pooling Station at Jabalpur

III. Transmission System for Phase-I Generation Projects in Orissa - Part-C

- Jabalpur Pooling Station – Bina 765 kV D/c line
- Bina – Gwalior 765 kV S/c (3rd circuit) line
- Gwalior – Jaipur 765 kV S/c line (2nd circuit)
- Jaipur – Bhiwani 765 kV S/c line

System strengthening in WR

(i) Establishment of 2x1500MVA, 765/400kV Bhopal Pooling Stn. (private sector)

(ii) Jabalpur Pooling station – Bhopal 765kV S/C (private sector)

(iii) Bhopal – Indore 765kV S/C (private sector)

(iv) Bhopal New S/s– Bhopal (M.P.) 400kV D/C (high capacity) (private sector)

Dedicated transmission system upto pooling point under the scope of Project developers of Orissa IPPs

Projects	Transmission Line
Sterlite (2400 MW)	• Sterlite-Jharsuguda Pooling station 400kV DC line
IND-Barath (700 MW)	• IND-Barath- Jharsuguda Pooling station 400 kV D/C line
Jindal Thermal (1200MW)	• Jindal Thermal- Angul Pooling station 400 kV D/C line
Monnet(1050 MW)	• Monnet- Angul Pooling stn. 400kV D/C line
GMR (1050 MW)	• GMR- Angul Pooling station 400 kV D/C line

Lanco Babandh (2640MW)	• Lanco Babandh- Angul Pooling station 400 kV 2xD/Cline • 3x1500 MVA, 765/400 kV transformers at Angul
Navbharat Phase-I (1050 MW)	• Navbharat - Angul Pooling station 400 kV D/C line

The cost of implementation, operation and maintenance of dedicated transmission system shall remain with respective IPP's. .

ED(POWERGRID) explained that the IPPs have no firm beneficiaries and transmission system has been evolved based on target beneficiaries. In view of the above IPPs/applicants were informed to sign BPTA and furnish Bank Gurantee to take up the implementation of the system strengthening scheme as per CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009 and share the transmission charges in proportion to the capacity for which LTOA had been granted.

In addition to above transmission charges, regional transmission charges for ER, WR, NR and associated inter regional transmission charges would be borne by the respective open access applicant, as applicable (as per CERC norms)

He also informed that IPP s were advised to firm up beneficiaries at the earliest and intimate to POWERGRID. The applicable transmission and other charges would be payable by the beneficiaries after firming up of the same.

Members agreed for the above.

10.4 Transmission system for evacuation of power from IPP projects in Jharkhand & West Bengal:

ED(POWERGRID) explained that based on the review meeting, about 3300 MW IPP generation coming up in phase-I in Jharkhand & West Bengal. Power of the order of about 1470 MW would be allocated to Northern region. The generation wise allocation is tabulated below:

Sl. No	Projects	IC (MW)	LTOA (MW)	Commn.	Allocation (MW)		
					NR	WR	ER
1	Adhunik	540	450	Mar,12	200	50	200
2	Corporate	540	270	Mar-12	270	-	-
3	Essar	1200	1100	Dec-11	400	400	300
4	West Bengal Phase-I	1000	1000	Jun-12	600	400	0
	Total	**3280**	**2820**		**1470**	**850**	**500**

For evacuation of power from the project following transmission system has been proposed. The transfer of power from the above projects to NR would be through 765kV Gaya-Varnasi S/c line. Within Northern region, for transfer of power, Varnasi-Kanpur-Jhatikara 765kV Corridor has been proposed. For evacuation of power to Western region a 765 kV corridor, Ranchi - Dharamjayagarh-Jabalpur pool has been proposed. Accordingly system proposed includes :

System strengthening in NR

- New 2x1500MVA 765/400 kV substation at Varanasi and Kanpur
- Gaya – Varanasi 765 kV S/c
- LILO of one ckt of Tillaiya – Balia 765 kV D/c at Varanasi
- Varanasi – Kanpur 765 kV D/c
- Kanpur – Jhatikra 765 kV S/c
- 400kV connectivity for new 765/400kV S/s at Varanasi & Kanpur
    - Varanasi-Sarnath(UPPCL) 400kV D/c (Quad)
    - LILO of Sasaram-Allahabad 400kV line at Varanasi
    - Kanpur (765/400kV) – Kanpur Existing 400kV D/c (Quad)

System strengthening in WR &NR

- Ranchi - Dharamjayagarh 765kV S/c (instead of Ranchi-Sipat 765kV 2nd S/C line)

- Dharamjaygarh – Jabalpur 765kV D/c (2nd line) –proposed to be under Pvt. Sector

Pooling Stations along with their interconnections

- Establishment of 400kV Pooling Station (Jharkhand Pool) near Essar and Corporate generation projects.
- Ranchi – Jharkhand Pool – Gaya 400 kV D/c line (Quad Moose)

Dedicated transmission system to pooling point: under the scope of Project Developer

For Jharkhand Projects

Projects	Transmission Line
CorporateTPS (660MW)	• CorporateTPS– Jharkhand Pooling Station (NewS/s) 400kV D/c
Essar TPS (1200MW)	• EssarTPS–Jharkhand Pooling Station 400kV D/c (quad moose)
Adhunik TPS (540 MW)	• Adhunik – Jamshedpur 400kV D/c line (on availability of land at Jamshedpur S/s)- Or • LILO of Maithon-Jamshedpur 400kV D/c line at Adhunik

For West Bengal Projects

Projects	Transmission Line
Katwa (1000 MW)	• Katwa – Gokarna 400kV D/c line • Katwa – Jagatballabhpur 400kV D/c line
Bakreshwar(1050MW)	• Bakreshwar – Jeerat 400kV S/c line (Existing) • Bakreshwar – Arambag 400kV S/c line (Existing) • Bakreshwar – Jagatballabhpur 400kV D/c line
Purulia PSS (900 MW)	• Purulia – Arambag 400kV D/c line (Existing) • Purulia – Bidhannagar 400kV D/c line

Sagardighi (1100 MW)	• LILO of Farakka – Subhashgram 400kV S/c at Sagardighi (Existing) • Sagardighi – Durgapur 400kV D/c line • Sagardighi – Gokarna 400kV D/c line

Strengthening System (Under the scope of WBSEDCL/WBSETCL)

- Jagatballabhpur – Subhashgram 400kV D/c line
- Kolaghat – Guptamani 400kV D/c line (to be bunched if there is a space constraint at Guptamani)
- Jagatballabhpur-Guptamani 400kV D/c line
- Jagatballabhpur-Gokarna 400kV D/c line
- LILO of Baripada – Kolaghat 400kV S/c at Guptamani

Inter-State Lines in ER

- Guptamani – Jamshedpur 400kV D/c line
- Purulia PSS – Ranchi 400kV D/c line

The cost of implementation, operation and maintenance of dedicated transmission system shall remain with respective IPPs.

ED (POWERGRID) explained that the IPPs have no firm beneficiaries and transmission system has been evolved based on target beneficiaries. In view of the above IPPs/applicants were informed to sign BPTA and furnish Bank Gurantee to take up the implementation of the system strengthening scheme as per CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009 and share the transmission charges in proportion to the capacity for which LTOA had been granted.

In addition to above transmission charges, regional transmission charges for ER, WR, NR and associated inter regional transmission charges would be borne by the respective open access applicant, as applicable (as per CERC norms)

He also informed that IPP s were advised to firm up beneficiaries at the earliest and intimate to POWERGRID. The applicable transmission and other charges would be payable by the beneficiaries after firming up of the same.

Members agreed for the above.

10.5 Transmission system for IPPs in Southern region:

ED(POWERGRID) explained that based on the review meeting held on 01/20/2010 it emerged that the following three(3) projects are progressive projects and have target beneficiary as Northern region .. The allocation to NR would be 738 MW.:

Sl. No	Projects	IC (MW)	LTOA (MW)	Commn.	NR	WR	SR
1	Meenakshi Energy Pvt.	600	546	Apr'11	183	177	186
2	Lanco Kondapalli	366	350	Commn.	150	200	
3	Ind – Barath Power	1320	900	Mar'12	405	270	225
	Subtotal	2286	1796		738	647	411

For evacuation of power from the project following transmission system has been proposed:

Transmission System for transfer of power from SR to NR & WR

(i) Sholapur – Pune 765 kV 2nd S/c (1st circuit already covered under transmission associated with Krishnapatnam UMPP).

(ii) Jabalpur Pooling station – Orai 765 kV S/c line.

(iii) Establishment of 2x1000MVA 765/400kV sub-station at Orai by LILO of one circuit of Satna–Gwalior 765kV line.

(iv) Establishment of 2x1500MVA 765/400kV sub-station at Bulandshahar by LILO of Agra – Meerut 765 kV line

(v) Establishment of 2x1500MVA 765/400kV kV sub-station at Sonipat by LILO of Bhiwani – Meerut 765 kV line

(vi) Orai – Bulandshahar – Sonipat 765 kV S/c line.

(vii) Orai-Orai (UPPCL) 400kV D/c (Quad)

(viii) Sonipat-Kurushetra 400 kV D/c (Quad)

(ix) Sonipat (new) – Sonipat (Under Construction) 400 kV D/c (Quad)

(x) Bulandshahr – Hapur (UPPCL) 400kV D/c (Quad)

Transmission charges of item (i) would be shared by IPPs in SR in Tuticorin, Krishnapatnam & Srikakulam area for exporting to WR & NR and remaining items shall be shared by IPPs exporting to NR. Charges would be transferred to beneficiaries as and when confirmed

Transmission System within SR- Krishnapattinam area

Dedicated transmission system -under the scope of Project Developer

(i) Simhapuri switchyard – Meenakshi switchyard 400 kV D/c line or bus extension which ever is feasible

Note** – Power from Meenakshi generation project shall be evacuated through Simhapuri – Nellore 400kV D/c quad line therefore its transmission charges shall be shared equally by the Meenakshi and Simhapuri generation developer

Common Transmission system to shared by IPP developer in Krishnapatnam area , incl. Meenakshi.

(i) Establishment of 765/400kV , 2x1500 MVA Pooling station at Nellore by LILO of Simhapuri – Nellore 400kV D/c Quad line

(ii) Nellore Pooling station – Kurnool 765 kV 2x S/c

(iii) Kurnool – Raichur 2nd 765 kV S/c line

(iv) Associated 765kV & 400kV bays at Nellore Pooling station, Kurnool and Raichur substations

Transmission System within SR- Tuticorin

Dedicated transmission system -under the scope of Project Developer

(i) Ind-Barath gen.- Tuticorin pooling station 400 kV D/c quad/high capacity line

(ii) Coastal Energen gen.- Tuticorin pooling station 400 kV D/c quad/high capacity line

Common transmission system for Coastal Energen and Ind-Barath

(i) Establishment of 765 kV pooling station in Tuticorin and Salem (initially charged at 400 kV)

(ii) LILO of both circuit of Tuticorin JV- Madurai 400kV D/c (Quad) at Tuticorin Pooling station

(iii) Tuticorin Pooling station–Salem Pooling station 765 kV D/c line initially charged at 400 kV.

(iv) Interconnection of Salem pooling station with existing Salem 400/230kV S/s through 400kV D/c (Quad) line

(v) Salem pooling station – Madhugiri pooling station 765 kV S/c initially charged at 400 kV

The cost of implementation, operation and maintenance of dedicated transmission system shall remain with respective IPP's. .

ED (POWERGRID) explained that the IPPs have no firm beneficiaries and transmission system has been evolved based on target beneficiaries. In view of the above IPPs/applicants were informed to sign BPTA and furnish Bank Gurantee to take up the implementation of the system strengthening scheme as per CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009 and share the transmission charges in proportion to the capacity for which LTOA had been granted.

In addition to above transmission charges, regional transmission charges for SR, WR, NR and associated inter regional transmission charges would be borne by the respective open access applicant, as applicable (as per CERC norms)

He also informed that IPP s were advised to firm up beneficiaries at the earliest and intimate to POWERGRID. The applicable transmission and other charges would be payable by the beneficiaries after firming up of the same.

Members agreed for the above.

11. Grant of Membership for HPPTCL:-

Member (PS) stated that master plan of Himachal Pradesh has been developed and finalized in consultation with Govt. of Himachal Pradesh and any arbitrary change in the plan should not be done by HPSEB/ HPPTCL. He further stated that due to overlapping of responsibility of HPSEB and HPPTCL the development of transmission

system in Himachal Pradesh State is not taking place and this is creating hurdles in evacuation of power from IPP projects. He also intimated that CEA is taking up the matter with Govt. of Himachal Pradesh regarding status of HPSEB or HPPTCL as STU. Till the same is decided by Govt. of HP it was proposed to defer the issue.

Member agreed for the same.

12. Evacuation of Bagliar-II (3x150 MW) and Ratle (690 MW) HEPs in J&K:-

J&K has proposed following power evacuation system for Bagliar HEP:

Bagliar-II HEP (3x150 MW)

- Step up of generation at 400 kV
- LILO of one circuit of existing 400 kV Kishenpur-Wagoora D/c line at Bagliar-II HEP.
- Interconnection of Bagliar-I &II HEPs through 400 kV cables

Member (PS) stated that a specific evacuation system i.e. 400 kV Bagliar-Kishenpur D/C is already available for evacuation of power from Bagliar stage-I&II. However J&K has now proposed for connectivity to 400 kV Kishenpur-Wagoora line for reliability purpose only. He advised that to provide connectivity to Bagliar HEP, LILO of one circuit of either existing 400 kV Kishenpur-Wagoora line or 400 kV Kishepur-New wanpoh line (whichever is nearer to Bagliar HEP) may be taken up.

Members agreed for the above proposal.

Ratle HEP (690 MW)

- Step up of generation at 400 kV
- LILO of both circuits of additional 400 kV Dulhasti-Kishenpur D/c line at Ratle HEP.

Member (PS) stated that the proposal is in order, however J&K needs to apply for Connectivity and Long Term Access to the CTU, after which, stringing of 2nd ckt of above mentioned 400 kV D/C quad line will be taken up. The 2nd ckt may be strung from Kishenpur and terminated at Ratle. This 2nd ckt. will be extended to the project coming up in the upstream of Dulhasti project bypassing Dulhasti HEP.

He further mentioned that POWERGRID may ensure availability of both circuits of the above line matching with the commissioning of Ratle HEP.

Members agreed for the above proposal.

13. MEJA 1320 MW PROJECT – A JV OF NTPC AND UPRVNL

It was informed that NTPC is developing 1320 MW (2x 660MW) power plant in Meja in Uttar Pradesh as a JV project with Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd. The expected commissioning schedule of the power plant is 2014-15 and 231 MW power is allocated for NR constituents other than U.P. The unallocated power is 99 MW.

It was further informed that for evacuation & transfer of power from Meja, Karchana & Bara generation projects, Uttar Pradesh Power Corporation Ltd. (UPPCL) had proposed a composite transmission scheme which was agreed during the 26th meeting of the Standing Committee on Power System Planning of Northern Region held on 13th October 2008. The details of the agreed scheme are given as under:

(i) Step-up of Bara generation to 765kV
(ii) Step-up of Karchana and Meja generation to 400kV
(iii) Bara switchyards to have 765kV and 400kV levels with 2x1500MVA (7x500 MVA, 1 phase units) 765/400 ICTs.
(iv) Establishment of 400kV substation at Reewa Road (Allahabad) with 400/220kV 2x315 MVA ICTs
(v) LILO of 400kV Obra-Panki line at Reewa Road (Allahabad)
(vi) Meja – Bara 400kV quad D/C line
(vii) Meja – Reewa Road (Allahabad) 400kV quad D/C line
(viii) Karchana – Bara 400kV quad D/C line
(ix) Karchana – Reewa Road (Allahabad)400kV quad D/C line
(x) Bara-Mainpuri 765kV 2xS/C lines
(xi) Mainpuri – Agra (PGCIL) 765kV S/C
(xii) LILO of Agra - Meerut 765 kV S/C line of PGCIL at G. NOIDA
(xiii) Hapur – G.Noida 765kV S/C line
(xiv) New 765/400kV substation at Maipuri with 2x1000MVA (7x333 MVA, 1 phase units) ICTs
(xv) Mainpuri 765kV UPPCL – Mainpuri 400kV PGCIL 400kV quad D/C line
(xvi) New 765/400/220kV substation at G.Noida with 2x1500MVA (7x500MVA, 1 phase units) 765/400kV and 2x500MVA 400/220kV ICTs.
(xvii) Reewa Road Allahabad – Banda 400kV quad D/C line
(xviii) Banda – Orai 400kV quad D/C line
(xix) Orai – Mainpuri 765kV UPPCL 400kV quad D/C line
(xx) Establishment of 400kV substation at Banda with 400/220kV 2x315 MVA ICTs
(xxi) Establishment of 400kV substation at Orai with 400/220kV 2x315 MVA ICTs

In order to transfer the allocated power of 231MW to Northern Region beneficiaries other than U.P.and 99 MW unallocated power from the Meja Project, POWERGRID proposed following transmission system:

- Meja- Allahabad (PG) 400kV D/c (Quad) – To be implemented by POWERGRID under regional system
- Allahabad (PG) - Rewa Road (UPPCL) 400kV D/c (Quad) to be constructed by UPPCL in place of earlier approved 400 kV Meja – Rewa Road quad line.

Member (PS) stated that even in the absence of 400 kV Meja-Rewa Road(UPPCL) D/C quad line, adequate transmission system would be available (in the

approved composite scheme of Meja, Karchana & Bara generation projects), for U.P. to draw their share of power from Meja Project and therefore U.P. may agree to delete this line from the scope of composite scheme being executed by them and give their consent to POWERGRID to use this RoW to construct proposed 400 kV Meja-Allahabad (PG) D/c quad line. Further 400 kV Allahabad (PG)- Rewa Road D/C quad line is also proposed to be constructed by UPPCL for their drawl from Allahabad(PG). As such the proposal may be agreed by U.P. Member (PS) sought the comments of UPPCL on the issue. The representative of UPPCL did not confirm the same and desired some time to finalise the issue. It was decided that UPPCL shall intimate their decision within one month from the meeting date. Member (PS) mentioned that the issue will be taken up by CEA with UPPCL.

Further, it was also mentioned by POWERGRID, that there is a requirement of 125 MVAR bus reactor at Meja generation switchyard to control the overvoltages. It was agreed that NTPC shall provide a 125 MVAR bus reactor at Meja generation bus.

14. 400 kV Kishenpur-New Wanpoh D/C line:

POWERGRID stated that the establishment of 400/220kV, New Wanpoh substation alongwith 400 kV, Kishenpur – New Wanpoh D/c line was approved in 23rd Standing Committee Meeting of Northern Region Transmission Planning, as a System Strengthening Scheme(NRSS-XVI). While carrying out the route survey for Kishenpur-New Wanpoh 400kV D/c line, it was observed that there is serious Right of Way Problem for crossing the 7-8km Pir Panjal mountain range. In view of this, POWERGRID proposed to utilize the corridor of existing Pampore – Wanpoh – Ramban – Batote – Udhampur 132 kV D/c line for a stretch of about 7-8 km for crossing Pir Panjal mountain range.

Advisor, PDD, J&K stated that POWERGRID may take up erection of Multicircuit towers in the constrained area so that their line can also be accommodated.

Member (PS), CEA stated that erection of heavy Multicircuit towers in snow-bound area will not be advisable from the point of stability of towers in that terrain. Further the cost of such multicircuit line will be very high compared to conventional 400 kV D/c line. He mentioned that after the establishment of Kishenpur – New Wanpoh 400 kV D/c line, the reliability of power supply to Wanpoh area can be ensured and 132 kV line section (about 7-8 km) of above line of J&K may be dismantled. This will enable POWERGRID to erect proposed 400 kV Kishenpur-New Wanpoh D/c line in Pir Panjal portion.

Member (PS) also advised that, if required the 400 kV Kishenpur-New Wanpoh D/c line could be designed for higher conductor temperature to provide additional capacity in the line. He also mentioned that he will take up the issue with Govt. of J&K.

Summarising the deliberations, Member (PS) stated that PDD, J&K in principle agreed to provide corridor for 400 kV Kishenpur-New Wanpoh D/c line for crossing Pir

Panjal mountain range by dismantling their existing 132 kV line section (about 7-8km), however the decision to construct 400 kV D/c line or Multicircuit line for crossing Pir Panjal, shall be taken as per the outcome of his discussion with Govt. of J&K .

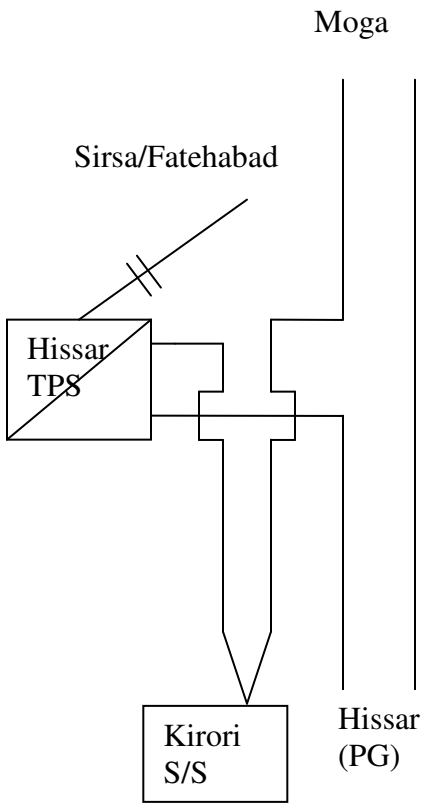
15 Hissar TPS Evacuation system:

HVPN has informed the following evacuation system for Hissar TPS:-

- 400 kV Hissar TPS-Kirori D/c line
- 400 kV Hissar TPS-Sirsa D/c line with LILO of one circuit at Fatehabad (PG) S/S

It was also informed that temporary LILO of one circuit of 400 kV Hissar(PG)-Moga D/c line was approved in 27th SCM of NR for providing testing and commissioning of Hissar TPS.

HVPN now proposed to modify one circuit of 400 kV Hissar TPS-Kirori D/c line & temporary LILO of Hissar-Moga line as Hissar TPS-Hissar (PG) line and Kirori-Moga line. The proposed sytem is shown below:



Member (PS) stated that proposed modification does not have any merit as adequate reliability is available at Kirori S/s which is connected to Hissar TPS generation. He further mentioned that proposed connection of Kirori with Moga with also

increase the short circuit levels in near by HVPN S/s. In view of the above it was decided to drop the proposal of HVPN.

Members agreed with the above decision.

16. HPPTCL's requirement of 220 kV bays at 400 kV Parbati Pooling Sub-station at Banala (PGCIL):

HPPTCL requested to provide 4 nos,220 kV bays for terminating their proposed 220 kV D/c lines from 220 kV Barsain S/s and 220 kV Bajoura S/s at Parbati Pooling S/s (PG). HPPTCL intimated that these bays are required for evacuation of about 600-700 MW hydro generation envisaged in Kullu valley.

Member (PS) stated that Parbati Pooling station is covered as a switching 400 kV station under Regional scheme and therefore 400/220 kV ICTs would need to be provided to create 220 kV level at this pooling station at the cost of HP. Further it is understood that HP proposes to terminate 220 kV Allain Duhangan-Nalagarh D/c line also in future, at Parbati pooling Station which would bring Allain Duhangan & Malana-II generations also to be evacuated fron Parbati pooling point. In view of this, Member (PS) advised HPPTCL to prepare a comprehensive proposal of their requirement of 400/220 kV ICTs and 220 kV bays and firm up quantum of power to be transferred by regional network beyond Parbati pooling point. HPPTCL would also need to apply for LTOA from POWERGRID for transfer of this power.

HPPTCL agreed to furnish the comprehensive proposal to CEA on the above issue.

Meeting ended with a vote of thanks to chair.

Minutes for Long term Open Access Meeting with Northern Region Constituents held on 23//02/2010 at New Delhi

POWERGRID welcomed all the participants to the long term open access meeting of Northern region being held at New Delhi and informed that the following Long Term Open Access Applications need to be discussed for resolution:

1.0 Connectivity Application of M/s Shree Cements Ltd for 300MW generation project at Beawar Town in Rajasthan as per new CERC regulations

2.0 Long Term Open Access Application for transfer of M/s Sun Flag Power Ltd. for transfer of 60 MW power from Hanoli Tiuni (HEP) located in Uttarakhand.

3.0 Long Term Open Access Application of M/s Shri Bajrang Power & Ispat Ltd. for transfer of 45 MW power from the proposed Rupin HEP to be set up in Himachal Pradesh.

4.0 Long Term Open Access Application of Gujarat Fluoro Chemicals Ltd for transfer of 300 MW of power from the proposed Barmer Wind Power to be set up in Rajasthan.

5.0 Long Term Open Access Application of M/s Malana Power Company Ltd. for transfer 240 MW of power from the proposed Bara Bangal HEP to be set up in Himachal.

6.0 Long Term Open Access Application of M/s Malana Power Company Ltd. for transfer of 168 MW of power from the proposed Chango Yangthang HEP to be set up in Himachal.

7.0 Long Term Access Application of M/s Lanco Anpara Power Pvt. Ltd. for transfer of 100 MW from their 1200MW Generation project of Anpara-C in Uttar Pradesh as per new CERC regulations.

List of participants is enclosed at Annexure.

Details of the discussions held are given below:-

1. Connectivity Application of M/s Shree Cements Ltd.

POWERGRID informed that Shree Cements Ltd applied for connectivity of their 300 MW (2x150MW) Generation project at Beawar town, near Ajmer in Rajasthan in accordance with new CERC regulations 2009 for Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission. As per the application, the connectivity for the project is required from January 2011. The commissioning schedules of the units are as below

Unit-I: 31/12/2010

Unit-II: 28/02/2011

The beneficiary of the project as indicated in their letter is inter-state merchant markets. The nearest ISTS system near the generation project is Kota-Merta 400kV D/c line of POWERGRID. It is proposed to Loop in Loop out one circuit of Kota-Merta 400kV D/c line at generation plant. With LILO, generation plant would be connected to Kota (POWERGRID) (approx. 200km) and Merta (RRVPNL) (approx.

100km) by 400kV S/c lines. Considering the length of the lines, an 80 MVAR bus reactor was proposed at the generator bus, which would be provided by the generating company.

The applicant was enquired about the status of the generation project. The applicant informed that they were in possession of the land required for the plant. The fuel to be used is imported coal/petcoke and has executed a sale purchase contract for assured supply of fuel for the plant. They have arrangement for water supply. Regarding environmental clearance, vide letter dated 09/09/09 they had filed its application to MOEF. The meeting is scheduled in March'10.

Member (PS) informed that connectivity didn't allow for access to the grid for power transfer. Representative of M/s Shree Cements informed they would apply separately for Long term Access/Medium term Open access/Short term Open Access to the Grid for transfer of power.

After discussion it was agreed that connectivity could be granted to M/s Shree Cements Ltd for the generation project (2x150MW) subject to:

- Connectivity would be through LILO one circuit of Kota-Merta 400kV D/c line at proposed generation plant. The LILO work would be carried out by the applicant.
- One no. of 80 MVAR bus reactor would be provided at generating station by M/s Shree Cements Ltd at the time of connectivity.
- Modification, if required, at Kota (POWERGRID) & Merta (RVPN) end switchyards would be at the cost of the applicant.
- The applicant shall abide by all provisions of the Electricity Act, 2003, the CERC regulation 2009 (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Central Electricity Authority (Technical Standards for connectivity to the Grid) and Indian Electricity Grid Code as amended from time to time.

- The connectivity shall be as per the detailed procedures of Central Transmission Utility (POWERGRID) for Grant of Connectivity, Long-term Access and Medium-term Open Access to Inter-State Transmission and all provisions regarding connectivity would have to be met.
- The applicant shall furnish additional details for signing Connection Agreement for the same and would sign the Connection Agreement as per the provisions of Connectivity.
- The applicant would be required to apply separately for Long term Access/Medium term Open access/Short term Open Access of the Grid.

2. Long Term Open Access Application for transfer of M/s Sun Flag Power Ltd.

POWERGRID informed that M/s Sunflag Power Ltd. had applied to POWERGRID for Long-Term Open Access, for injection quantum of 52.8 MW power from Hanoli Tiuni HEP (60MW) located at Uttarakhand.

Expected date of commencement of long term open access, as indicated by M/s. Sunflag Power Ltd was 30/06/2013 for 30 years. The commissioning schedule of the units as indicated in the application was 30/03/2013 & 31/06/2013 for unit-I & unit-II respectively. The beneficiary in Northern region had been indicated as any utility in Northern Grid.

It was further informed that as the project was located in Uttarakhand, PTCUL would take up the intra-state transmission system up to the pooling point i.e. power from Hanoli Tiuni was to be transferred to Dehradun 400/220kV substation of POWERGRID, via Mori 220kV S/s of PTCUL, through a 220kV D/c line. Accordingly, the application is being processed for transfer of power beyond Dehradun (POWERGRID) substation to Northern region Utilities. As the power would be injected into the STU network, the ISTS charges for free power would not be applicable.

Member (PS) enquired about the status of the generation. The applicant informed that the generation was now expected by **December'2014**. It was informed to the applicant

that he would have to bear the regional transmission charges from the date of generation commissioning and in case of delay in commissioning of the generation project, he would have to bear the regional transmission charges from the Long Term Open Access date i.e. December 2014 as informed above. The applicant agreed for the same.

After the discussions it was agreed to grant Long-term Open Access to M/s Sunflag Power Ltd for transfer of 52.8 MW of Hanoli Tuini from Dehradun 400/220kV Substation of POWERGRID, subject to following:

- Signing the requisite BPTA for Northern Regional Transmission system charges from Dec'2014 for 30 years.
- The applicant shall enter into Bulk Power Transmission Agreement (BPTA) with POWERGRID within thirty days of confirmed grant of Long Term Open Access.
- PTCUL to take up transmission for connectivity and transfer of power from the generation project to Dehradun POWERGRID substation. For implementation of transmission system upto pooling point, M/s Sunflag Power Ltd shall coordinate with PTCUL and bear all applicable transmission charges for transfer of power upto regional grid point.

3. Long Term Open Access Application of M/s Shri Bajrang Power & Ispat Ltd.

POWERGRID informed that application had been received from M/s Shri Bajrang Power & Ispat Ltd. seeking long-term open access to transfer 45 MW of power from the proposed Rupin HEP (45 MW) to be set up in Himachal Pradesh. The commissioning schedule for generation project as indicated in the application was Unit I II & III – June 2014. The Long Term Open Access is desired from June 2014 for 40 years. As per the application, a quantum of 45MW is targeted to be transferred from the generating station to Punjab/ Rajasthan (22.5 MW) in Northern Grid and to Maharashtra (22.5 MW) in Western Grid.

It was informed during the meeting that as per the information available, power from Rupin generating station would be evacuated to nearby 220/132 kV Hatkoti pooling station of STU. Beyond HatKoti pooling station, the power would be evacuated to Nalagarh 400/220kV substation of POWERGRID via Moginand 220kV

substation. The long term access is being processed for transfer beyond the ISTS injection point, Nalagarh.

It was informed that applicant would have to bear the regional transmission charges from the date of generation commissioning and in case of delay in commissioning of the generation project, he would have to bear the regional transmission charges from the Long Term Open Access date as informed above.

After the discussions it was agreed to grant Long-term Open Access to M/s Shri Bajrang Power & Ispat Ltd, for transfer of 45MW of Rupin HEP beyond Nalagarh 400/220kV Substation of POWERGRID subject to following:

- Signing the requisite BPTA for Northern Regional & Western Regional Transmission system charges from June'2014 for 40 years
- The applicant shall enter into Bulk Power Transmission Agreement (BPTA) with POWERGRID within thirty days of confirmed grant of Long Term Open Access
- Shri Bajrang Power & Ispat Ltd. shall take up the matter with Himachal to ensure for transfer of power upto Nalagarh matching with the generation project and bear all applicable transmission charges for transfer of power upto regional grid point.
- M/s Shri Bajrang Power & Ispat Ltd have informed beneficiary as 22.5 MW for Punjab/ Rajasthan in Northern Grid and 22.5 MW to Maharashtra in Western Grid LTOA to Shri Bajrang Power & Ispat Ltd would be granted with equal proportion of 22.5 MW for Punjab & Rajasthan.
- Transfer of 22.5 MW power to Maharashtra would be through displacement and looking into the quantum of power flow no problem is envisaged in transfer of power. However, the same would be informed to WR constituents.

4. Long Term Open Access Application of Gujarat Fluoro- Chemicals Ltd.

POWERGRID informed that M/s Gujarat Fluoro Chemicals Ltd., has applied for Long-Term Open Access in ISTS for transfer of 300 MW of power from the proposed

Barmer Wind power (3x100 MW) to be set up in Rajasthan. The commissioning schedule for generation project as indicated in the application is as below

Phase-I (100MW) : March 2012
Phase-II (100MW) : September 2012
Phase-I (100MW) : March 2013

The commencement of transmission open Access as indicated in the application was from March 2012 and duration for availing long term Open access is 25 years.

As per the application the beneficiaries of the project is as below.

Punjab – 150 MW
Haryana - 100 MW
PX/IEX - 50 MW

It was informed to the constituents that the selling in power exchange would be on short term basis, hence the application was being processed for only 250 MW.

The generation step up voltage had been indicated as 220kV. The nearest ISTS substation is Bhinmal and it was proposed to inject power from the generation project to Bhinmal 400/220kV substation through 220 kV lines of about 150 km length.

It was suggested to construct 2 nos. of 220 kV D/c lines from Generation project to Bhinmal. Member (PS), CEA informed that outage of 220kV D/c was the basic planning criteria to be met and therefore 2 nos. of D/c lines had been suggested, however as this would be a dedicated line, the applicant might plan for one or two 220kV D/c lines based on his reliability requirement. Further the member enquired about the commissioning schedule of the generation project. The applicant informed that the commissioning schedule would be March, 2012. It was informed to the applicant that he would have to bear the regional transmission charges from the date of generation commissioning and in case of delay in commissioning of the generation project, he would still have to bear the

regional transmission charges from the Long Term Open Access date as informed above. The applicant agreed for the same.

After the discussions, it was agreed that Long-term Open Access could be granted to M/s Gujarat Fluoro- Chemicals Ltd for transfer of 250MW of Barmer Wind farm from Bhinmal 400/22kV Substation of POWERGRID to Punjab (150 MW) & Haryana (100 MW), subject to following:

- Signing the requisite BPTA for Northern Regional Transmission system charges from March'2012 for 25 years
- The applicant shall enter into Bulk Power Transmission Agreement (BPTA) with POWERGRID within thirty days of confirmed grant of Long Term Access.
- The applicant shall construct the required 220kV line from the generation project to the ISTS point, i.e Bhinmal at his own cost. The applicant shall inform whether one or two 220kV D/c is proposed.
- The applicant shall coordinate with POWERGRID for 220 kV bays at Bhinmal substation for termination of the 220kV lines, which would be undertaken as deposit work on behalf of applicant by POWERGRID.

5. Long Term Open Access Application of Malana Power Company for Bara Bangal HEP (200 MW).

POWERGRID informed that M/s Malana Power company, has applied for Long-Term Access in ISTS for transfer of 240 MW of power from the proposed Bara Bangal HEP (3x66.67MW) to be set up in Himachal Pradesh. The commissioning schedule for generation project as indicated in the application is as below

Unit-I (66.67MW+20% OL) : 30/11/2016
Unit-II (66.67MW+20% OL) : 31/12/2016
Unit-III (66.67MW+20% OL) : 31/01/2017

The commencement of transmission open Access as indicated in the application was from 31/11/2016 and duration for availing long term Open access is 40years with possibility of extending further 20 years as per provisional arrangement.

As per the application the power plant is being developed as a merchant power project and sale of power shall be to any state utility in Northern region. Agreement with beneficiary state utility will be submitted as and when ready.

The Power from Bara Bhangahal would be injected at Bajoli Holi HEP at 220kV level. Beyond Bajoli Holi, power would be pooled at Lahal pooling point of Himachal. From Lahal pooling, evacuation to Chamera Pooling station of POWERGRID would be through a 400kV D/c line to be established by Himachal. Beyond Chamera Pooling point power would be evacuated via ISTS regional grid.

Member (PS) stated that laying of 220 kV D/c line with twin moose (0.5) conductor would be required beyond Bajoli Holi to Lahal S/S to carry the combined power of both the projects. In view of this, Project developer might have to provide 220 kV D/c line with Twin Moose conductor in case of the Bara Bhangal Project coming earlier than Bajoli Holi Project. The long term open access is being processed for transfer beyond the ISTS injection point i.e Chamera Pooling point of POWERGRID.

The applicant informed that their open access quantum might be revised to 200MW minus home state share as 240 MW is the peak power. It was explained that open access would be granted for the amount of power to be injected into the grid. It was agreed that within a month the applicant would intimate the revised quantum of power and commissioning schedule of generation and how the home state share would be delivered, after interaction with home state. It was informed to the applicant that he would have to bear the regional transmission charges from the date of generation commissioning and in case of delay in commissioning of the generation project, he would still have to bear the regional transmission charges from scheduled commissioning date i.e. LTOA date as informed by the applicant. The applicant agreed for the above.

After the discussions it was agreed that Long-term Open Access can be granted to M/s Malana Power Company for transfer of Bara Bangal power from Chamera Pooling station of POWERGRID, subject to following:

- The company shall within a month's time indicate the quantum of power, firm commissioning schedule, period of open access and the arrangement for supply of home state power. After receipt of above information the Intimation for Long

Term Open Access shall be issued. Incase of non-receipt of above information the Long Term Open Access Application shall be closed.

- Applicant shall Sign the requisite BPTA for Northern Regional Transmission system charges.
- The applicant shall enter into Bulk Power Transmission Agreement (BPTA) with POWERGRID within thirty days of grant of Long Term Access.
- M/s Malana Power Company shall take up the matter with Himachal to ensure commissioning of system for transfer of power upto Chamera Pooling point matching with the generation project and bear all applicable transmission charges for transfer of power upto regional grid point.

6. Long Term Open Access Application of Malana Power Company for Chango Yangthang HEP (140 MW)

POWERGRID informed that M/s Malana Power company, had applied for Long-Term Access in ISTS for transfer 168 MW of power from the proposed Chango Yangthang HEP (2x70 MW) to be set up in Himachal Pradesh. The commissioning schedule for generation project as indicated in the application was as given below:

Unit-I (70MW + 20% OL) : 01/05/2015
Unit-II (70MW + 20% OL) : 01/06/2015

It was also informed that the commencement of transmission open Access as indicated in the application was from 01/05/2015 and duration for availing long term Open access was 40 years with possibility of extending further 20 years as per provisional arrangement.

The power plant is being developed as a merchant power project and sale of power shall be to any state utility in Northern region. Agreement with beneficiary state utility will be submitted as and when ready.

As per the Master plan of HP, Power from the Yangthang generation project would be evacuated via Jangi and Sherpa 400/220kV pooling station to Northern region grid. The power would be injected into the grid via 400kV lines beyond pooling station at Abdullapur. The nearest gird station would be Abdullapur where the power could be

injected from Sherpa Pooling Station. After discussions it emerged that a dedicated transmission from the generation project to a Grid station would not be feasible from techno-economic point of view. Hence the applicant might coordinate with Himachal for developing system for transfer of power upto a feasible grid station matching with generation station. The long term access can be granted beyond the grid station.

It was agreed that within a month the applicant would intimate the revised quantum of power, commissioning schedule of generation, grid station where the power would be injected and how the home state share would be supplied, after interaction with home state. It was informed to the applicant that he would have to bear the regional transmission charges from the date of generation commissioning and in case of delay in commissioning of the generation project, he would still have to bear the regional transmission charges from scheduled commissioning date as informed by the applicant. The applicant agreed for the above.

After the discussions it was agreed that Long-term Open Access can be granted to M/s Malana Power Company for transfer of Chang Yang Thang power from a feasible ISTS Grid station i.e. Abdullapur, subject to following:

- The applicant shall coordinate with Himachal for developing system for transfer of power upto a feasible ISTS grid station matching with generation station.
- The long term access open is being processed for transfer beyond the ISTS injection point i.e Abdullapur.
- The company shall within a month's time indicate the quantum of power, firm commissioning schedule, period of open access and the arrangement for supply of home state power. After receipt of above information the Intimation for Long Term Open Access shall be issued. Incase of non-receipt of above information the Long Term Open Access Application shall be closed.
- Applicant shall sign the requisite BPTA for Northern Regional Transmission system charges.

- The applicant shall enter into Bulk Power Transmission Agreement (BPTA) with POWERGRID within thirty days of issuance of Long Term Open Access Intimation.
- Applicant shall coordinate with Himachal for availability of required transmission system for transfer of power upto regional injection point and bear all applicable transmission charges for transfer of power upto regional grid point.

7. Long Term Access Application of M/s Lanco Anpara Power Pvt. Ltd.

POWERGRID informed that M/s Lanco Anpara Power Pvt. Ltd. had applied for Long-Term Access in ISTS for transfer of 100 MW of power from their 1200 MW Generation project of Anpara-C in Uttar Pradesh in accordance with new CERC regulations 2009 for Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission. The commencement of transmission open Access as indicated in the application was from 26/3/2011 and duration for availing long term Open access is 25 years.

As per the application the beneficiaries of the project was indicated as Northern Region. Of the generation capacity (1200MW), the applicant had PPA for about 1100MW (83%) of installed capacity and the PPA was required only for 100MW, i.e quantum applied for Long term Access (LTA).

For connectivity and evacuation of power from the Anpara-C & D projects, a composite transmission system has been evolved by UPPCL and had been discussed and agreed to in the 26th standing committee of NR. Further, Anpara 400 kV generation switchyard was connected to ISTS by Singrauli-Anpara 400kV ISTS line, which could be utilised for transfer of 100 MW power to beneficiaries in Northern Region.

Member (PS) enquired about the status of the generation. The applicant informed that the generation schedule is 26/3/2011. It was informed to the applicant that he would have to bear the regional transmission charges from the date of generation commissioning and in case of delay in commissioning of the generation project, he would still have to bear the regional transmission charges from the date as informed above. The applicant agreed for the same.

After the discussions it was agreed that Long-term Open Access could be granted to M/s Lanco Anpara Power Pvt. Ltd for transfer of 100MW from Anpara-C generation subject to following:

- Signing the requisite BPTA for Northern Regional Transmission system charges from 26/3/2011 for 25 years.
- The applicant shall submit concurrence of State Transmission Utility in the prescribed format.
- The applicant shall enter into Bulk Power Transmission Agreement (BPTA) with POWERGRID within thirty days of confirmed grant of Long Term Access
- The Long Term Access granted shall be as per the detailed procedures of Central Transmission Utility (POWERGRID) for Grant of Connectivity, Long-Term Access and Medium Term Open Access to Inter-State Transmission System and all provisions in the procedure would be applicable.
- The applicant shall abide by all provisions of the Electricity Act, 2003, the CERC regulation 2009 (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) and Indian Electricity Grid Code as amended from time to time.

Concluding the discussions, POWERGRID informed that it had received connectivity application for 1000MW and Long term access application for 800 MW as per revised format from M/s Adani power in accordance with new CERC regulations 2009 for Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission. The proposal would be studied in detail and would be taken up for discussion in the next meeting.

Meeting ended with a vote of thanks to chair.

Annexure

List of participants for the 28th meeting of Standing Committee on Power System Planning in Northern Region, held on 23.02.2010 at NRPC, New Delhi

		Designation
CEA		
1.	Sh. V. Ramakrishna	Member (PS) - in chair
2.	Sh. Ravinder	Chief Engineer (SP&PA)
3.	Sh. B. K. Sharma	Director (SP&PA)
4.	Sh. Rajeev Kumar	Deputy Director (SP&PA)
NRPC		
1.	Sh. A.K. Aggarwal	Member Secretary
PGCIL		
1.	Sh. Y. K. Sahgal	ED (Engg.)
2.	Sh. S. C. Singh	GM (NR-II)
3.	Sh. Mukesh Khanna	DGM (Engg)
4.	Sh. Thyagrajan	CDE(Engg.)
NTPC		
1.	Sh. Abhijit Sen	AGM (Project Engg.)
NHPC		
1.	Sh. R. K. Jain	CE
2.	Sh. Y. K. Khanduja	DM
DTL		
1.	Sh. A.K.Kaul	Director (Opn.)
2.	Sh. Raj Bhartiya	GM (Plg.)
RRVPNL		
1.	Sh. L.N. Nimawat	SE (P&P)
HVPNL		
1.	Sh. R.K.Arora	CE (Plg.)
2.	Sh. J.K.Juneja	SE (Planning)

HPSEB

1.	Sh. D.R.Naryal	Director (PH&T)

HPPTCL

1.	Sh. V.K. Kaprate	Director
2.	Sh. A.K.Sharma	DGM

PSEB

1.	Sh. S.k.Jindal	CE (Planning)
2.	Sh. Kamal Krishen	Deputy Director (Plg.)

UPPCL

1.	Smt. A. Guha Roy	SE

BBMB

1.	Sh. Kush Gupta	CE/SO
2.	Sh. R.S.Lambi	Director

J&K

1.	Sh. A.R.Tak	Consultant

NPCIL

1.	Sh. Sandeep Sarwate	Dy. CE

<u>List of IPP's Representatives for LTOA</u>

<u>M/s Shree Cement</u>

1.	Sh. S.S. Khandelwal	Com. Secretary
2.	Sh. Shanti Prasad	Advisor
3.	Sh. Umesh Gupta	Advisor
4.	Sh. Ambarish Gupta	Manager
5.	Sh. Ambrish Khare	

<u>M/s Sunflag</u>

1.	Sh. B.K.Bhutiani	
2.	Sh. Rajiv Pandey	

<u>M/s G.F.L.</u>

1.	Sh. Prateek Rana	Dy. G.M.
2.	Sh. Shashi Kant Verma	Dy.G.M.

<u>M/s M.P.C.L.</u>

1.	Sh. Praveen Kumar Giri	G.M.