

Central Electricity Authority, SP&PA Division
Sewa Bhawan, R.K. Puram, New Delhi-110066

No.66/5/99-SP&PA/

Dated: 30-10-2008

- | | |
|---|---|
| 1. Member (Transmission),
Bihar State Electricity Board
Vidyut Bhavan, Baily Road,
Patna-800021. | 2. Director (System),
Damodar Valley Corporation
DVC Towers, VIP Road,
Kolkata-700054. |
| 3. Member Secretary,
Eastern Regional Power Committee,
14, Golf Club Road, Tollygange,
Kolkata-700033. | 4. Director (Commercial),
Grid Corporation of Orissa Ltd,
Jan path, Bhubaneswar-751022. |
| 5. Director (Transmission),
Orissa Power Transmission
Corporation Ltd,
Jan path, Bhubaneswar-751022. | 6. Director (System Operation),
West Bengal State Electricity Transmission
Company Ltd, Vidyut Bhavan, 5th Floor,
Block-D, Bidhannagar, Sector-II
Kolkata-700091. |
| 7. Principal Chief Engineer cum
Secretary, Power Department
Government of Sikkim, Sikkim. | 8. Director (Projects),
Power Grid Corporation of India
"Saudamini" Plot No. 2, Sector-29
Gurgaon-122001 |
| 9. Director (Technical),
NTPC Limited,
Engineering Office Complex,
A-8, Sector 24, Noida. | 10. Member (Transmission),
Jharkhand State Electricity Board,
In front of Main Secretariat,
Doranda, Ranchi-834002. |
| 11. Executive Director (T&RE),
NHPC Ltd, NHPC Office complex,
Sector 33, Faridabad-121003. | |

Sub: Meeting of the Standing Committee on Power System Planning in Eastern Region.

Sir,

Further to our letter of even no. dated 27-10-2008 on the above subject, it is to intimate that the venue and contact person for the proposed meeting to be held on 8th November, 2008 at 10.00 hrs at Bhubaneswar, Orissa are as under.

Venue of the meeting:

HOTEL SWOSTI PLAZA,
Jaydev Vihar, Bhubaneswar, Orissa-
751013.
Telephone No-0674-2300008/014/ 028/
069, 3253514/515
Fax No.-91-674-2301880/2300108.

Contact Person:

Dr. V. R. Raju, A. M. (PR),
Grid Corporation of Orissa Ltd.,
Bhubaneswar-751022.
Mobile –09438362262

Agenda note for the meeting has been uploaded on CEA **website: www.cea.nic.in.**

You are requested to attend the meeting.

Yours faithfully,

(R. Saha)
Director (SP&PA)

Agenda note for Standing Committee meeting of Eastern Region

1.0 Confirmation of the minutes of the meeting held at Ranchi, Jharkhand on 05.11.2007.

1.1 Minutes of the Standing Committee meeting held on 05.11.2007 at Ranchi, Jharkhand were circulated vide CEA letter No. 66/5/99/SP&PA/206-216 dated 05.12.2007. No comments have been received on the minutes of the meeting. The minutes may be confirmed.

2.0 Transmission System Associated with the Talaiya Ultra Mega Power Project (4000 MW) in Jharkhand, Barh-II (1320 MW) & Nabinagar (JV of Railways and NTPC) (1000MW) in Bihar and IPPs in Jharkhand and Orissa

2.1 Government of India is pursuing the process of setting up of large sized thermal power projects around 4000 MW each at various locations through competitive bidding route with indigenous coal development or imported coal. So far LOA for three such projects have been issued by Government of India. GOI is now planning setting up of a Ultra Mega Power Project (UMPP) of around 4000 MW capacity at Talaiya in Jharkhand through a shell company that would tie-up all necessary inputs needed for development of the project. The project developer would be selected through a tariff based competitive bidding process.

2.2 As per the allocations finalized by Ministry of Power for Talaiya UMPP, Eastern Region would get 1500 MW, Northern Region 1700 MW, and Western Region 800 MW, as detailed below:

Eastern Region (1500 MW)

- | | |
|-------------------|---------|
| 1. Jharkhand (ER) | 1000 MW |
| 2. Bihar (ER) | 500 MW |

Northern Region (1700 MW)

- | | |
|-----------------------|--------|
| 1. Uttar Pradesh (NR) | 650 MW |
| 2. Delhi (NR) | 150 MW |
| 3. Punjab (NR) | 450 MW |
| 4. Haryana (NR) | 200 MW |
| 5. Rajasthan (NR) | 250 MW |

Western Region (800 MW)

- | | |
|------------------------|--------|
| 1. Madhya Pradesh (WR) | 200 MW |
| 2. Gujarat (WR) | 300 MW |
| 3. Maharashtra (WR) | 300 MW |

2.3 Allocations finalized by Ministry of Power for Nabinagar TPS are the following:

Railways	900 MW
Bihar	58 MW
Jharkhand	42 MW

2.4 In respect of Barh-II, MoP is yet to finalize allocation. However, tentative allocations from Barh-II, furnished by NTPC is the following:

Eastern Region

1. WB	77 MW
2. Jharkhand (ER)	23 MW
3. Bihar (ER)	175 MW
4. GRIDCO	69 MW
5. Sikkim	5 MW

Northern Region

1. Uttar Pradesh (NR)	137 MW
2. Delhi (NR)	29 MW
3. Punjab (NR)	28 MW
4. Haryana (NR)	32 MW
5. Rajasthan (NR)	67 MW
6. Himachal	22 MW
7. Uttaranchal	29 MW
8. J&K	41 MW

Western Region

1. Madhya Pradesh (WR)	68 MW
2. Gujarat (WR)	129MW
3. Maharashtra (WR)	133 MW
4. Chattishgarh	28 MW
5. Goa	5 MW
6. Damand Du/Dadra Nagerhali	4MW

2.5 While Jharkhand has been allocated 1000MW from Tilaiya UMPP, it could be expected that JSEB may utilize part of this power for trading to the states of NR/WR as there own consumption may not be high enough to consume this power within the state.

2.6 CEA has carried out system studies for evolving an optimum transmission system for evacuation of power from this project and transmission to various identified beneficiaries. The project is expected to materialise by 2014-15. It is seen that a number of other projects are also coming in Eastern Region. These projects are being developed by NTPC, NHPC, DVC, State Utilities and Private Sector Power Producers, many of whom have also applied for Long Term Open Access to the CTU seeking export of their power from ER to NR/WR. A list of new generation additions quantified to 48670MW in ER is given at [Table-I](#) for

reference. Some other generators have also applied for LTOA. PGCIL may present updated list. Many of these generators are scheduled to commence operation in the same time frame as that of Tilaiya UMPP therefore, assessment of transmission requirement of all the generating stations is necessary for evolving the transmission system. Transmission system requirements of most for the generation projects under construction including already planned/firmed up schemes have been identified. The major inter-regional transmission system comprises of four 765kV lines (three between ER-NR and one between ER-WR), one 400kV quad line between ER-NR and two 400kV D/C lines between ER-WR. Inter-regional transmission requirement of hydro projects in Sikkim has been planned to be met by providing 3000 MW terminal on NR-NR/WR HVDC inter-connector. A majority of thermal generating stations that are being developed by private sector are in southern part of Eastern Region, i.e. around and below Ranchi in Jharkhand and in Orissa. The system studies for evacuation of power from these projects have indicated requirement of a high capacity transmission corridor consisting of 765kV /HVDC/1200kV system from ER to WR/NR.

- 2.7 The studies for identifying transmission system for evacuation of power from the generation projects in ER have been carried out in an integrated manner considering a transmission system for the new generating stations coming up in all the regions so as assess impact of these generating units on the transmission system requirement within ER as well as for export of power outside ER. ER had a demand of 10500 MW in 2006-07 (X Plan end). Considering accelerated annual growth rate of 10%, it is likely to increase to the order of 22500 MW by 2014-15 (target date for Tilaiya UMPP). 17th EPS projections for 2011-12 and 2016-17 are 19180 MW and 28400 MW respectively. With expected installed capacity of about 60000 MW, it would have exportable power of the order of 23500-26500 MW by 2014-15. The studies, carried out based on various transmission configurations and alternatives, indicate that high capacity 765kV transmission system in two corridors viz Tilaiya – Gaya – Balia - Lucknow – Bareilly – Meerut – Moga and Tilaiya – Sasaram – Fatehpur – Agra – Mundka - Moga provides optimum solution meeting requirement of power transfer to the beneficiaries of the UMPP project. The NR-WR and ER-WR links would provide sufficient transmission capacity for transfer of power from Tilaiya to the WR beneficiaries through displacement of power flow in the synchronously integrated ER-NR-WR grid system. The ER-WR inter-regional capacity addition and transmission additions in WR are also being planned with above mentioned private generation projects and the projects coming in WR (mainly in Chhatisgarh and MP). Both 400kV and 765kV step-up voltages were considered with various sub-alternatives. The 765kV alternative was found to provide optimum transmission additions.

2.8 Generation Specific Transmission System

Following generation specific transmission system is proposed. Transmission charges for these generation specific inter-connecting lines is proposed to be shared by beneficiaries of the specific generation project. For the IPPs, the interconnecting lines would be dedicated system of the respective generator:

ATS Specific to Generation Projects

Tilaiya UMPP (4000MW)

1. Tilaiya UMPP – Sasaram, 765kV S/C lines
2. Tilaiya UMPP – Gaya, 765kV S/C line
3. Tilaiya UMPP – Balia 765kV S/C line

Barh-II (1320MW): Barh – Gorakhpur 400kV quad D/C line

Nabinagar(1000MW): Nabinagar – Sasaram 400kV D/C line

Haldia (600MW): Haldia – Subhasgarm 400kV D/C and 500 MVA 400/220kV transformer at Subashgram

Adunik(1000MW): 400kV D/C line to Jamshedpur or LILO of both circuits of Maithon – Jamshedpur 400kV D/C at Adhunik depending upon availability of bays at Jamshedpur

Common System for Essar, Electrosteel and Corporate:

Essar-Ranchi 400kV 2xD/C quad

Essar(1800MW): Provision of eight nos of 400kV line bays

Electrosteel (1200MW): Electrosteel-Essar 400kV D/C

Corporate (800MW): Corporate-Essar 400kV D/C

CESC Dumka(1200MW): LILO of one ckt of Maithon – Jamshedpur 400kV D/C at Dumka and Dumka-Gaya 400k D/C

ORISSA IPPS:

I. Immediate Evacuation System (under the scope of generation developer)

➤ Upto Pooling Station at Dhenkanal

Projects	Transmission Line
1. Navbharat (1040 MW +1200 MW)	• Navbharat – Dhenkenal Pool 400KV 2x D/c line (twin lapwing)
2. Visa (1000 MW)	• Visa – Dhenkenal Pool 400kV D/c line (twin lapwing)
3. CESC (1000 MW)	• CESC – Dhenkenal Pool 400KV D/c line (twin lapwing)
4. Tata (1000 MW)	• Tata – Dhenkenal Pool 400KV D/c line (twin lapwing)
5. Adhunik (1005 MW)	• Adhunik – Dhenkenal Pool 400KV D/c line (twin lapwing)
6. Lanco (2640 MW)	• Lanco Babandh – Dhenkenal Pool 400KV 2xD/c line (twin lapwing)

➤ Upto Pooling Station at Angul

Projects	Transmission Line
1. Jindal Thermal (1200 MW)	• Jindal – Angul Pool 400KV D/c line (Triple Snowbird)
2. Monnet (1005 MW)	• Monnet – Angul Pool 400KV D/c line (twin lapwing)
3. GMR (1050 MW)	• GMR – Dhenkenal Pool 400KV D/c line (twin lapwing)
4. Mahanadi Aban (1030 MW)	• Mahanadi Aban - Angul Pool 400KV D/c line (twin lapwing)
5. Bhushan (2000 MW)	• Bhushan – Angul Pool 400KV 2xD/c line (twin lapwing)
6. Essar (1200 MW)	• Essar - Angul Pool 400KV D/c line (twin lapwing)

➤ Upto Pooling Station at Jharsuguda

Project	Transmission Line
1. Sterlite (2400 MW)	• Sterlite – Jharsuguda Pool 400kV 2xD/c (Triple Snowbird)
2. Ind-bharat (700 MW)	• Ind-bharat - Jharsuguda Pool 400kV D/c line

The above system needs to be optimized to reduce right of way taking into consideration physical location of each project vis-à-vis location of pooling station. The exercise would need to be taken-up by the IPPs who can plan a coordinated execution of the dedicated transmission lines.

2.9 System Strengthening for ER

1. Sasaram – Daltonganj 400kV D/C line
2. Daltonganj 400kV S/S 2x315 MVA
3. 400/132kV 2x200MVA S/S near Lakhisarai/Jamalpur) with LILO of both circuits of one of the Kahalgaon-Biharsharif 400kV D/C line and space provision for 3rd transformer and 4nos. of 132kV line bays.
4. An additional 400/132kV 2x200MVA S/S at suitable location in Bihar and its connectivity with 400kV grid (exact location of the 400/132kV S/S will be intimated by BSEB).
5. Establishment of 400/220 kV sub-station at Bolangir by LILO of both Meramundali- Jeypore 400 kV S/C and Indravati-Rengali 400 kV S/C lines.
6. Establishment of 400/220 kV sub-station at Keonjhar by LILO of both Baripada - Mendhasal 400 kV S/C and Rengali – Kolaghat 400 kV S/C lines.
7. Establishment of 400/220 kV s/s at Sundargarh by LILO of both Rourkela-Raigarh 400 kV S/C and proposed Talcher –Rourkela 400 kV S/C lines.
8. ER regional system for creation of pooling stations for Orissa IPPs
 - Establishment of 765/400kV Pooling Station at Jharsuguda
 - Establishment of 765/400kV Pooling Station at Dhenkanal
 - Establishment of 765/400kV Pooling Station at Angul
 - Dhenkenal Pooling Station – Angul Pooling Station 765kV 2xS/c
 - Angul Pooling Station – Jharsuguda Pooling Station 765kV 2xS/c
 - Jharsuguda Pooling Station – Dhenkenal Pooling Station 765kV 2xS/c

- LILO of Rourkela – Raigarh 400kV 2xD/c at Jharsuguda Pooling station
- * LILO of Meramundali – Jeypore 400kV S/c line at Angul pooling station
- * LILO of one ckt of Talcher - Meramundali 400kV D/c line at Angul pooling station
- * LILO of Meramundali-Chandaka 400kV D/c line at Dhenkanal Pooling station

[* These LILO would be later disconnected when Angul and Dhenkanal pooling stations are developed as 765kV as otherwise it would cause short circuit level problem.]

It is suggested that all the above regional system strengthening work in ER should be pooled with the regional system of ER for the purpose of sharing of transmission charges. Purulia-Jamshedpur-Baripada-Mendhsal 400kV D/C line should also be pooled. Towards MW for sharing the transmission charges, all allocations from multi-state/multi-regional generation projects as well as from IPPs made to states within ER should be added.

2.10 System Strengthening for NR and WR

NR

1. Sasaram – Balia, 765kV S/C line
2. Balia – Lucknow, 765kV (Second)S/C line
3. Lucknow – Bareilly, 765kV (Second)S/C line
4. Bareilly – Meerut, 765kV (Second) S/C line
5. Meerut – Moga, 765kV S/C line (or Moga–Jullandhar with 765kV S/S at Jullandhar as identified by PGCIL studies)
6. Additional Substation and transmission capacity within NR
7. PGCIL in their studies considering full dispatch from all the IPPs have identified the following additional systems
 - Gaya-Balia 765 kV S/C(2nd line)
 - New 765/400kv s/c at Varanasi and Kanpur
 - LILLO of Sasaram –Balia 765kV S/C at Varanasi
 - Varanasi - Kanpur 2xS/C 765kV lines
 - Kanpur - Meerut 765kV S/C line
 - Kanpur – Jhattikalan (Mundka Delhi) 765kV S/C line
 - 400kV connectivity for new 765/400kV S/S at Varanasi and Kanpur.
8. ER-NR HVDC Corridor : The 6000MW, \pm 800kV HVDC bipole has been planned from Angul Pooling Point (ER-Orissa) to Barnala(NR) for transfer of power from ER to NR.
 - Angul Pooling Point– Barnala (NR) 6000MW, \pm 800kV HVDC Bipole
 - Barnala – Ludhiana 400 kV D/c (quad)
 - Barnala – Amritsar 400kV D/c (quad)
 - Barnala – Jullandhar 400kV D/c (quad) (one circuit via Nakodar)
 - Barnala – Moga 400kV D/c (quad)
9. ER-WR-NR AC Corridor : From Jharsuguda Pooling Station in Orissa 1200/765kV high capacity AC corridor is planned upto Moga in NR via Dharamjaygarh(WR), Jabalpur(WR), Bina(WR), Sawai Madhopur(NR) &

Sikar(NR) for export of power from ER generation projects. System for NR only would be

- Sikar – Moga 765 kV 2xS/c or D/c (*Presently design for 765 kV D/c lines are not available and technical feasibility of D/c lines to be established. Incase there are problems in development of 765 kV D/c lines, S/c lines shall be established*)
- Moga – Jullandhar 765kV S/c
- Sawai Modhopur –Jaipur (South) 400 kV D/c (Quad)
- Jaipur (South) – Bassi 400 kV D/c (quad)
- Establishment of 765/400 kV 2x1500MVA substation at Moga & Jallandhar

WR

Ranchi – Sipat 765kV S/C (second 765kV line)

Common for WR and NR

Part of ER-WR-NR AC Corridor which would be common for WR and NR :

- Establishment of 765/400kV substation at Dharamjaygarh
- Jharsuguda Pooling Station – Dharamjaygarh (WR) 765kV 3xS/c or 2xD/c (*Presently design for 765 kV D/c lines are not available and technical feasibility of D/c lines to be established. Incase there are problems in development of 765 kV D/c lines, S/c lines shall be established*)
- LILO of Ranchi – WR Pooling 765kV 2xS/c line at Dharamjaygarh
- Dharamjaygarh – Jabalpur Pool 400kV lines with a provision to upgrade to 1200kV at a later date
- Establishment of Pooling Station near Jabalpur
- Pooling Station near Jabalpur – Jabalpur 400 kV D/c (Quad)
- Jabalpur Pooling Station – Bina 400kV lines with a provision to upgrade to 1200kV lines at a later date
- Bina-Sawai Madhopur –Sikar 400kV lines with a provision to upgrade to 1200kV lines at a later date

2.11 As the application received by PGCIL for open access are much in excess of capacity required to meet the demand as per projected demand growth, tying up of the above additional system could be done only with the IPP generators signing BPTA for committing to pay the transmission charges. The proposal/issues may be further elaborated in agenda for open access cases and discussed accordingly.

2.12 A joint meeting of the beneficiaries of Tiliaya UMPP (4000 MW) to finalize the transmission system required for evacuation and delivery of power to the beneficiaries of the project was held on 17-07-2008 at New Delhi. BSEB vide their letter no.Com/Misc-1010/2005/1570/E.B. Patna dated 8-8-08 had made certain observations on the proposed transmission system. Subsequently, a meeting between BSEB and CEA was held at New Delhi on 29-10-2008 MOM of which are enclosed.

Members may discuss and propose the additional transmission and substation capacities in ER that would be needed in the 2014-15 time-frame for strengthening of Eastern regional grid.

3. ATS for Nabinagar TPP (4x250MW) of JV of NTPC and Railways

For immediate evacuation of power from Nabinagar TPS(1000MW), a JV between NTPC and Indian Railways, construction of Nabinagar TPS – Sasaram 400 kV D/C with Twin Lapwing conductor and related issue for sharing of transmission charges were discussed in the Standing Committee meeting of ER held on 05-11-2007 at Ranchi. On the issue of pooling of the transmission charges for this line in the regional charges WBSETCL and BSEB were not agreeable. However, it was decided that NTPC would take necessary action regarding open access application as well as tying up of the execution of Nabinagr-Sasaram 400 kV D/C line.

Subsequently, MoP vide letter dated 23rd September, 2008 (copy enclosed) has conveyed that it has been decided that the Associated Transmission System (ATS) of Nabinagar Thermal Power Project, a JV between NTPC and Railways, be constructed by the PGCIL as a special case, considering that power will be used mainly by the Indian Railways and that transmission charges as decided by the concerned regulatory commission will be payable by the Indian Railways. It has also been decided that the PGCIL will get charges for use of the evacuation line and that for this purpose; the PGCIL may enter into appropriate agreements with the JV/Indian Railways/NTPC, as may be considered necessary.

Members may please note.

4. 400kV Transmission proposals of GRIDCO, Orissa during XI Plan Period.

4.1 GRIDCO has proposed the following 400kV transmission works under state sector:

- (i) Installation of 2x315 MVA, 400/220 kV transformers at Berhampur
- (ii) Suitable interconnection for providing 2nd feeder to Dubri 400 kV sub-station of OPTCL.

The 400kV Berhampur (Narendrapur) switching station has been planned to be developed by ITP under the scheme "Augmentation of Talcher-II transmission system" in which construction of 400kV Talcher - Gazuwaka via Berhampur Sw. station has been planned as a back arrangement for power supply to SR from Talcher-II. It is proposed to convert this 400kV switching station into full-fledged 400/220kV, 2x315MVA S/S enabling GRIDCO to draw power from this station. As 400kV Talcher-Gazuwaka is long line, proper anchoring of the line through creation of 400 kV sub-station at Berhampur will improve reliability and stability of the grid. Orissa would share the transmission charges for the Talcher-Berhampur-Gazuwaka 400kV D/C line in proportion to the allocation from Talcher.

In respect of the proposal for providing second feeder to 400kV Dubri sub-station of OPTCL, it is proposed to develop a LILO at 400kV sub-station at Dubri on the 400kV Baripada-Mendhasal line. It is to note that Baripada –

Mendhsal 400kV D/C line is being built with transmission charges committed by DVC and WBPDC and not pooled with ER charges and in that case GRIDCO would have to share its transmission charges with DVC and WBPDC.

4.2 Following works are proposed to be taken up by WBSEDCL under state sector:

Katwa (1000 MW)

- Katwa – Gokarna 400kV D/c line
- Katwa – Jagatballabhpur 400kV D/c line

Bakreshwar (1050 MW : Existing-3x210 MW, U/c : 2x210 MW)

- 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
- Purulia – Bidhannagar 400kV D/c line

Sagardighi (1100 MW)

- LILO of Farakka – Subhashgram 400kV S/c at Sagardighi
- Sagardighi – Durgapur 400kV D/c line
- Sagardighi – Gokarna 400kV D/c line

Strengthening Scheme

- Jagatballabhpur – Subhashgram 400kV D/c line
- Kolaghat – Guptamani 400kV D/c line (***This line has been planned as S/c line by WBSEB. This may be constructed as D/c line as high loading is expected in future in this corridor***)
- Jagatballabhpur-Guptamani 400kV D/c line
- Jagatballabhpur-Gokarna 400kV D/c line
- Gokarna – Malda 400kV D/c
- Guptamani – Jamshedpur 400kV D/c
- LILO of Baripada – Kolaghat 400kV S/c at Gaptamani
- Purulia PSS – Ranchi 400kV D/c
- Malda - Purnea 400kV D/c

Members may take note and concur connectivity with regional system.

5. Transmission System for Export of power from different generation projects in Sikkim to NR/WR.

5.1 The time schedule of implementation of various transmission elements of the comprehensive transmission scheme for export of power from different generation projects in Sikkim to NR/WR was discussed during SCM at Ranchi and PGCIL is to prepare a phased time schedule of transmission system matching with the various generation projects in Sikkim and project developer needs to sign BPTA with PGCIL corresponding to their commissioning schedule.

5.2 As a follow-up action, a meeting to discuss the Long Term Open access issue and finalize a time-frame for signing of the BPTA was held with the generation developers/Open access applicants of various hydro projects in Sikkim on 11-02-2008 at POWERGRID's Gurgaon office.

5.3 The list of generation projects and its latest status, as informed by different generation developers, are placed below. Based on this generation development programme, phasing of transmission system matching with the generation schedule has been finalized, the details of which are the following:

A. Transmission System for development of pooling stations in Sikkim and transfer of power to a new pooling station on NER - NR/WR HVDC interconnector.

Pooling Station

- (i) 220/132 kV at Rangpo
- (ii) 400/220 kV at New Melli
- (iii) 400/132 kV at Mangan
- (iv) 400/220 kV near Teesta-II

Transmission Line

- i) Teesta-II Pooling Point – Mangan 400 kV D/C (Twin Lapwing)
- ii) Mangan – New Pooling Station in Northern part of West Bengal/Bihar (Kishanganj) 400 kV D/C line with quad conductor.
- iii) Mangan – New Melli 400 kV D/C (Quad Moose)

- iv) Dikchu - Gangtok 132 kV D/C
- v) New Melli – New Pooling Station in northern part of West Bengal/Bihar (Kishanganj) 400 kV D/C (Quad Moose).
- vi) Rangpo – New Melli 220 kV D/C line (Twin moose).
- vii) LILO of Gangtok - Melli and Gangtok – Rangit 132 kV lines at Rangpo.
- viii) LILO of Teesta-V - Siliguri 400 kV line at New Melli with quad Moose conductor. [This LILO would be withdrawn at a later date and the 4 nos. of 400 kV bays at New Melli used for LILO would be utilized for New Melli – Kishanganj and New Melli – Mangan 400 kV D/C lines].

Substation

- ix) New 400/220 kV GIS Pooling Station near Teesta-II HEP with 7x105 MVA, single phase transformers and 2x80 MVAR bus reactors at 400 kV bus.
- x) New 400/132 kV GIS Pooling Station at Mangan with 7x105 MVA, single phase transformers and 2x80 MVAR bus reactor at 400 kV bus.
- xi) New 400/220 kV GIS Pooling Station near New Melli with 13x167 MVA, single phase transformers and 2x80 MVAR bus reactors at 400 kV bus.
- xii) New 220/132 kV Gas Insulated Pooling Station near Rangpo with 3x100 MVA, transformers.

- xiii) Extension of 400 kV Kishanganj new pooling substation with 2 nos.63 MVAR switchable line reactors each on Kishanganj new pooling station end of Mangan and Kishanganj pooling station

5.4 Scope of works at Sl.no (ii) viz Mangan-Kishanganj 400 kV D/C quad line along with Teesta-III –Magan 400 kV D/C quad line is proposed to be executed through Joint Venture route between PGCIL and Generator.

B. Transmission System for development of pooling stations on NER-NR/WR HVDC interconnector.

- i) LILO of Siliguri(Existing) – Purnea 400 kV D/C Quad line at the new pooling station.
- ii) LILO of Siliguri(Existing) – Dalkhola 220 kV D/C line at new pooling station.
- iii) LILO of Biswanath Chariali – Agra +/- 800 kV, HVDC line at new pooling station for parallel operation of HVDC station.
- iv) Establishment of New 2x315 MVA, 400/200 kV and +/- 800 kV, 3000 MW HVDC sub-station at new pooling station
- iv) Earth Electrode line for the new pooling station.
- v) Addition of +/- 800 kV, 3000 MW HVDC Module at Agra.
- vi) Earth Electrode line at Agra HVDC terminal.

The above is for information to the members.

List of Generation Projects in Sikkim

Sl. No	Name of the Developer/Open Access Applicant	Name of the Generation Plant	Capacity/ Power to be transferred	Tentative Beneficiaries In MW	Expected Comm. Schedule*
A	Upper Part of Sikkim				
1.	Teesta Urja Ltd./ PTC	Teesta-III	1200 MW	PSEB-40, HPGCL-200 UPPCL-200 Rajasthan Discom-100	Sept., 2011
2.	Himurja Infra Pvt. Ltd.	Teesta -II	480 MW	NR/WR	Dec., 2012 (uncertain)
3.	Himagiri Hydro Energy Pvt. Ltd.	Panan	300 MW	NR	Jan.,2013
4.	Himalayan Green Energy Pvt. Ltd.	Teesta-I	300 MW	NR	Dec., 2013 (uncertain)
5.	BSC(P)L -SCL JV Engineers & Contractors	Rongyong	60 MW	NR	Dec., 2012
6.	Sneha Kinetic Power Projects Ltd.	Dickchu	96 MW	NR	July, 2012
7.#	Chungtang Hydro Pvt. Ltd.	BOP(Chungtang)	99 MW	NR/WR	April 2012
8.#	Teesta Hydro Power Pvt. Ltd.	Bhimkyongl	99 MW	NR/WR	April 2012
9.#	Lachung Hydro Power Pvt. Ltd.	Lachung-Tangchi.	99 MW	NR/WR	April 2012
10		Chakungchu	90 MW	NR/WR	April 2013
		Subtotal	2665MW		

B	Lower Part of Sikkim				
1.	Lanco Energy Pvt. Ltd.	Teesta-VI	500 MW	MSEDCL (Maharashtra)	June 2012
2.	DANS Energy Pvt. Ltd.	Jorethang	96 MW	NR/WR	Sept., 2010
3.	JAL Power Corporation	Rangit-IV	120 MW	ASEB, MP	July 2012
4.	Shiga Energy Pvt. Ltd.	Tashiding	80 MW	NR/WR	Dec., 2010 (to be delayed)
5.	TT Energy Pvt. Ltd.	Tingting	90 MW	NR/WR	July,2010 (to be delayed)
6.	Madhya Bharat Power Corporation	Rongnichu	96 MW	Chhattishgarh	March, 2012
7.	Gati Infrastructure Limited	Chuzachen	118 MW	PSEB, DVB, HSEB, BSEB	June, 2009
8.		Rolep	80 MW		Oct., 2011
9.		Ralong	100 MW		April 2013
10.		Sada Mangdher	71 MW		
11.		Bhasme	51 MW		
		Subtotal	1100MW		
		Total	3765MW		

For projects 7,8 & 9 of (A), as mentioned by M/s CPTL
Yet to apply for long-term open access.

Representative from Sikkim may indicate the updated progress/status of the generation projects so that PGCIL may formulate the programme for execution of transmission schemes. PGCIL may also inform progress on development of the pooling points at Melli/New Melli and New Siliguri HVDC.

6. Review of Progress on Earlier Agreed Transmission Schemes

6.1 POWERGRID may give the progress of earlier agreed transmission schemes under implementation giving:

- i) Date of firming-up in Standing Committee
- ii) Target as in the Standing Committee meeting
- iii) Date of FR for the scheme
- iv) Date of approval by PGCIL board or PIB as the case may be
- v) Date of award of the major part
- vi) Target date as of now
- vii) Reason for delay if any

Table - I									
Sl.No	PLANT NAME	STATE	AGENCY	CAPACITY (MW)	Sl.No	PLANT NAME	STATE	AGENCY	CAPACITY (MW)
BIHAR					SIKKIM				
1	KAHALGAON II U6,7	BIH	NTPC	1000	1	TEESTA- V	SIKKIM	NHPC	510
2	BARH-I	BIH	NTPC	1980	2	TEESTA - III	SIKKIM	LTOA/TE	1200
3	BARH II	BIH	NTPC	1320	3	CHUJACHEN	SIKKIM	GATI	99
4	NABINAGAR JV	BIH	NTPC	1000	4	Teesta-I	SIKKIM	LTOA	300
sub-total				5300	5	Teesta-II	SIKKIM	LTOA	480
JHARKHAND					6	Teesta-VI	SIKKIM	LTOA	500
1	CHANDRAPUR	JHAR	DVC	500	7	Rangit IV	SIKKIM	LTOA	120
2	MAITHAN RBC JV	JHAR	DVC	1050	8	Others-HEP in Sikkim	SIKKIM	LTOA	1625
3	KODERMA U1&2	JHAR	DVC	1000	sub-total				4834
4	BOKARO EXPANSION	JHAR	DVC	500	WEST BENGAL				
5	NORTH K PURA	JHAR	NTPC	1980	1	FARAKKA STAGE-III	WB	NTPC	500
6	TENUGHAT EXT.	JHAR	LTOA	830	2	Rammam Stage-III	WB	NTPC	120
7	Chitrapur(PTC)	JHAR	LTOA	480	3	MEJIA U-6	WB	DVC	250
8	Adhunik thermal	JHAR	LTOA	470	4	MEJIA PH II	WB	DVC	1000
9	Jharkhund UMPP	JHAR	LTOA	4000	5	DURGAPUR STEEL	WB	DVC	1000
10	Electrosteel(Latehar)	JHAR	LTOA	1200	6	RAGHUNATHPUR	WB	DVC	1200
11	Essar(Jharkhand)	JHAR	LTOA	1800	7	DURGAPUR EXT U 7	WB	DPL	300
12	Latehar Corporation Power	JHAR	LTOA	394	8	TEESTA LOW DAM-III	WB	NHPC	132
sub-total				14204	9	TEESTA LOW DAM-IV	WB	NHPC	160
ORISSA					10	SAGARDIGHI U 1&2	WB	WBPDCL	600
1	MALAXMI	ORISSA	LTOA/NAV BHARAT POWER	1040	11	SANTALDIH U5 & 6	WB	WBPDCL	500
2	KVK NILANCHAL	ORISSA	LTOA/KVK	1000	12	BAKRESHWAR U 4&5	WB	WBPDCL	420
3	BALIMELA ST-II	ORISSA	OHPC	150	13	BUDGE-BUDGE EXT	WB	CESC	250
4	STERLITE ENERGY	ORISSA	LTOA/STE RLITE	2400	14	PURLIA PSS	WB	WBSEB	900
6	Monnet Ispat	ORISSA	LTOA	1050	15	DPL U7A	WB	LTOA	300
7	Visa Power(ER)	ORISSA	LTOA	500	16	DPL U8	WB	LTOA	500
8	Jindal	ORISSA	LTOA	1320	17	Haldia (CSEC)	WB	LTOA	400
9	Lanco Babandh	ORISSA	LTOA	2640	18	Haldia (NDPL)	WB	LTOA	150
10	GMR Energy	ORISSA	LTOA	1050	19	Barkeshwar U6	WB	LTOA	500
11	Bhusan	ORISSA	LTOA	2000	20	Katwa	WB	LTOA	1000
12	Aban	ORISSA	LTOA	1000	sub-total				10182
sub-total				14150	TOTAL in ER				48670