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

No.66/5/99-SP&PA/ **Dated: 3-12-2008**

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, Tollygunge,
Kolkata-700033.

4. Director (Commercial),
Grid Corporation of Orissa Ltd,
Jan path, Bhubaneshwar-751022.

5. Director (Transmission),
Orissa Power Transmission
Corporation Ltd,
Jan path, Bhubaneshwar-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: Minutes of the Meeting of the Standing Committee on Power System Planning in Eastern Region held on 8Th November 2008 at Bhubaneswar.

Sir,

Minutes of the Meeting of the Standing Committee on Power System Planning in Eastern Region held on 8Th November 2008 at Bhubaneswar is enclosed.

Minutes of the meeting has been uploaded on CEA **website:** **www.cea.nic.in** (path to access the minutes-*Power system/Standing Committee on Power System Planning/EASTERN REGION).*

Encl: As above.

Yours faithfully,

(R. Saha)
Director (SP&PA**)**

Minutes of the meeting of the Standing Committee on Power System Planning of Eastern Region held on Saturday the 8th November 2008 at Bhubaneswar, Orrisa.

List of participants is at Annex-I
Director (Commercial), GRIDCO welcomed all the participants to the meeting.

Shri V. Ramakrishna, Member (Power System), CEA welcomed all the participants and thanked GRIDCO for excellent arrangements to host the meeting. Highlighting the scenario of huge generation capacity addition program in ER by 2014-15, M(PS) informed that Tilaiya UMPP (4000 MW), Barh-II (1320 MW) and Nabinagar (1000 MW) were to take-off by 2014-15 of which Tilaiya UMPP (4000 MW) in Jharkhand would be through tariff based competitive bidding route, Barh-II (1320 MW) as a regional project and Nabinagar (1000 MW) as a JV between NTPC and Railways. Beneficiaries of these projects would be ER, WR and NR.

As per the allocations finalized from Tilaiya UMPP, ER would get 1500 MW of which share of Bihar was 500MW and Jharkhand 1000MW, NR 1700 MW, and WR 800 MW. In respect of Nabinagar TPS, share of Railways was 900 MW, and tentative share for Bihar was 58 MW and that of Jharkhand 42 MW. For Barh-II (allocations yet to be finalized), likely beneficiaries would be ER NR and WR. In addition, a number of projects would be developed by NTPC, DVC, State Utilities, and IPPs in Jharkhand and Orissa, many of whom have applied for Long Term Open Access to the CTU seeking export of their power from ER to NR/WR. With expected installed capacity of about 60000 MW in ER, the region was projected to have exportable power of the order of 23500-26500 MW by 2014-15 for export to WR and NR States. He stressed the need to firm-up generation specific transmission system and regional system reinforcement plan and sharing of transmission charges by ER constituents. He informed the constituents that as the benefits from UMPPs had not been allocated to all the beneficiaries in the Region, for sharing of transmission charges from UMPPs, CEA had evolved a methodology in consultation with constituents of NR, WR & SR. He stated that the transmission system from UMPPs had been divided into two categories - (i) The transmission system directly evacuating from the switchyard of the UMPP to the Regional grid point(s). (ii) Transmission system for delivery of power to the beneficiary states. In respect of transmission system at (i), the transmission charges are to be shared among the actual beneficiaries of the UMPP. In respect of transmission system at (ii), the transmission system would cater to several other generation projects coming up in the similar time frame and was therefore, agreed to be pooled in the Regional transmission charges to be shared by the beneficiaries of the region(s) in proportion to their share in the ISGS. Thereafter, he requested Chief Engineer (SP&PA), CEA to take up the agenda items for discussions.

1.0 **Confirmation of the minutes of the meeting held at Ranchi (Jharkhand) on the 5th November 2007.**

Chief Engineer(SP&PA), CEA stated that 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/ dated 05.12.2007. No Comments were received on the minutes.

The minutes of the Standing Committee meeting on Power System Planning of ER held on 5-11-2007 were thereafter confirmed.

2.0 **Transmission System Associated with the Tilaiya UMPP (4000 MW) in Jharkhand, Barh-II (1320 MW) & Nabinagar (1000MW) in Bihar (JV of Railways and NTPC).**

Chief Engineer (SP&PA), stated that for evacuation of power from all the projects, CEA had considered various alternatives considering 400kV and 765kV step-up voltages and evolved the major pooling points at Gaya for ER & NR, Ranchi for WR, Sasaram/Balia for NR and identified the system strengthening requirements in ER and WR/NR. Out of the various alternatives, for immediate evacuation of power from Tilaiya, Nabinagar and Barh-II projects, the optimal transmission system were stated to be as following:

2.1. Generation Specific Transmission System

Tilaiya UMPP (4000MW)

i) Tilaiya UMPP – Sasaram, 765kV S/C lines
ii) Tilaiya UMPP – Gaya, 765kV S/C line
iii) Tilaiya UMPP – Balia 765kV S/C line

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

Nabinagar(1000MW): Nabinagar – Sasaram 400kV D/C with Twin Lapwing conductor line

For the above generation specific inter-connecting lines, CE (SP&PA) suggested that the transmission charges would be shared by the beneficiaries of the specific generation projects in ratio of their allocation of power from the project and sought the views from the beneficiaries in ER. BSEB stated that there would be a burden to the Board to share transmission charges for the lines (viz. Tilaiya-Balia 765kV S/C, Barh-Gorakhpur 400kV D/C quad lines) to be exclusively utilized for export to NR. Member (PS) clarified that sharing of transmission charges for such lines as being apparently seen to be a burden at present would be certainly beneficial in long term and commercially attractive too. CMD, GRIDCO/OPTCL stated that due to rich coal reserves in ER, many generation developers had endeavored to establish power projects in the various part of the region and for common/regional projects viz. Tilaiya etc, beneficiary constituents in the region should agree to share transmission charges which would yield ultimate benefit to the respective states. Member (Trans.) BSEB stated that he had discussed the proposal in detail with CEA and the proposed evacuation systems was technically acceptable. After deliberation on this issue, the sharing of transmission charges for the proposed lines in ratio of allocation of power from the projects was agreed by the beneficiary constituents.

Chief Engineer (SP&PA) stated that for immediate evacuation of power from Nabinagar TPS(1000MW), a JV between NTPC and Indian Railways, Nabinagar TPS – Sasaram 400 kV D/C with Twin Lapwing conductor line was already agreed in Standing Committee meeting of ER on 05-11-2007 at Ranchi. He further added that it was decided by MoP that the dedicated transmission line from Nabinagar to Sasaram would be constructed by the PGCIL as a special case and the transmission charges for this would be borne by the beneficiaries of Nabinagar project. He enquired from PGCIL regarding latest status of the line. PGCIL representative stated that 400 kV Nabinagar TPS – Sasaram D/C line would be short line of about 90 kms, for which preparation of FR was undertaken and work would be awarded shortly.

2.2. System strengthening scheme in ER

Chief Engineer (SP&PA) stated that the following system strengthening requirements in ER were evolved corresponding to Tilaiya time frame and suggested to share transmission charges for the following works within regional pool pricing.

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.

2.2.1 M(PS) CEA stated that while Jharkhand share from Tilaiya would be 1000 MW, absorption of this power within the state would be difficult due to inadequate underlying 220 kV and 132 kV networks in the state-grid. He further added that in view of the major load centers being presently fed through DVC system, no major feedback for strengthening of the intra-state transmission system in the state was received and as such, there could be exportable surplus in the state corresponding to Tilaiya time frame. CE (SP&PA) stated that keeping in view the future load growth at Daltonganj and its adjoining areas, creation of Daltonganj 400/220 kV, 2x315 MVA S/S and construction of Sasaram-Daltonganj 400 kV D/C had been planned as part of ER system strengthening scheme for absorption Tilaiya share by the state. JSEB representative stated that Tilaiya

power would be utilized to meet future load growth in the state and for this, system studies on the strengthening of state-transmission grid would be carried out with the assistance from CEA.

2.2.2 Member (Trans.), BSEB stated that the exact location for construction of additional 400/132kV 2x200MVA S/S in Bihar under system strengthening scheme would be determined after carrying out system studies by the Board and accordingly, it would be intimated shortly to CEA.

2.2.3 On query from M (PS) CEA, OPTCL participant informed that the proposed Keonjhar 400/220 kV sub-station would be very close to 400kV Rengali-Baripada S/C line, about 20km, and it was about 100km from 400kV Baripada-Mendhasal line alignment. It was decided that establishment of 400/220kV Keonjhar by LILOing 400kV Rengali-Baripada S/C line would be adopted. Requirement of 400/220 kV s/s at Sundargarh by LILO of both circuits of the existing 400 kV Talcher –Rourkela D/C line was agreed.

2.2.4 With the above modifications following system strengthening works for ER were agreed:

i) Sasaram – Daltonganj 400kV D/C line
ii) Daltonganj 400kV S/S 2x315 MVA
iii) 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.
iv) 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).
v) Establishment of 400/220 kV sub-station at Bolangir by LILO of Meramundali- Jeypore 400 kV S/C line.
vi) Establishment of 400/220 kV sub-station at Keonjhar by LILO of Rengali – Baripada 400 kV S/C line.
vii) Establishment of 400/220 kV s/s at Sundargarh by LILO of both circuits of the existing Talcher –Rourkela 400 kV D/C line.

It was agreed by all the constituents 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 with corresponding share of generation of ER included in the total ISGS capacity for sharing of transmission charges.

2.2.5 In addition to above, the following transmission system for creation of pooling stations in Orissa was also agreed:

- 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 Dhenkenal Pooling station

[* These LILO would be later disconnected when Angul and Dhenkanal pooling stations at 765 kV are developed as otherwise it would cause increased short circuit levels in the grid.]

Regarding sharing of transmission charges for the above system, M (PS),CEA stated that either these could be shared by the IPPs whose generation projects would connect to the pooling stations or alternatively, sharing of transmission charges could be on pooled basis as a part of ER regional transmission system with corresponding generation included in total ISGS capacity for sharing of transmission charges and sharing the ER pooled transmission charges.

2.2.6 JSEB participant stated that in view of constraints to evacuate power from existing Tenughat TPS, TVNL wishes to construct 400kV D/C transmission line from Tenughat to Ranchi (Namkum) at their own cost, to connect with two bays of PGCIL's grid substation and for that TVNL agreed to share the ER pooled transmission charges in proportion to their generation capacity. The proposal was agreed.

2.3. ATS (under the scope of Generation Developer) to Haldia (600MW), Adunik(1000MW), Essar(1800MW), Electrosteel (1200MW), Corporate (800MW), and CESC Dumka (1200MW) and Orissa IPPs Generation Projects

2.3.1 Regarding generation projects of IPPs being envisaged in Orissa/Jharkhand, Member (PS) CEA highlighting the project specific interconnecting lines for immediate evacuation to be dedicated system, suggested that for optimal transmission development and for preserving RoWs, a common and/or intermediate pooling point within small radius, either at a IPP switchyard or a separate pooling point at nearby location should be developed in co-ordinated manner addressing proper commercial arrangement among generation developers. CE (SP&PA) focused on the project specific interconnecting lines and related LTOA issues.

- **Haldia (600MW) in WB**

For evacuation of power from the project, the following transmission system was envisaged.

- Haldia – Subhasgarm 400kV D/C line and
- 2x315 MVA 400/220kV transformers at Subhashgram.

At Subashgram CESC would draw 450 MW for its use and 150MW would be wheeled to NOIDA through ER &NR regional system.

Chief Engineer (SP&PA) CEA stated that instead of 1x500 MVA transformer, 2x315 MVA transformers should be considered to improve reliability of evacuation. Accordingly, it was agreed to provide 2x315 MVA 400/220 kV ICTs under regional transmission along with 4 nos. 220 kV bays at Subhasgram. CESC would share the Eastern regional transmission corresponding to 600 MW.

- **Adunik (1000MW) in Jharkhand**

As Adunik was located in the vicinity of 400 kV Jamshedpur S/S, it was decided to pool the power at this S/S. PGCIL informed that there was space constraints at Jamshedpur to accommodate the two bays as some portion of the S/S land was encroached upon. It was decided that efforts would be made to remove the encroachments. Alternatively, the existing Maithon -Jamshedpur line could be used for LILO of one ckt. of Maithon – Jamshedpur 400kV D/C at Adhunik IPP. It was decided that LILOing of both circuits of the 400kV D/C line would be done with a view to equal sharing of load in both the circuits.

- **Common ATS for Essar, Electrosteel and Corporate Projects in Jharkhand**

In order to preserve RoWs and optimal transmission investment, M(PS) stated that instead of specific dedicated lines to be constructed in isolated manner from each of the IPP's, to a nearby common pooling point for further dispersal of power, it would be prudent to pool power over 400kV from Electrosteel and Corporate IPPs to the 400kV switchyard of Essar IPP to be considered as an intermediate pooling point and thereon to the main pooling station at Jamshedpur or at Ranchi for further transfer of power. For this, project specific transmission system was decided as following:

Essar(1800MW):	Essar-Ranchi 400kV 2xD/C quad & Provision of eight nos of 400kV line bays
Electrosteel (1200MW):	Electrosteel-Essar 400kV D/C
Corporate (800MW):	Corporate-Essar 400kV D/C

While the above system configuration deemed to be dedicated system, M (PS), CEA stated that the modality for cost and transmission resource sharing among the IPPs for such a system should be sorted out with dialogue among concerned IPPs and PGCIL.

- **CESC Dumka (1200MW) in Jharkhand**

For evacuation of power from TPS at Dumka, LILO of one ckt of Maithon – Kahalgaon 400kV D/C at Dumka and Dumka-Gaya 400k D/C line was proposed by PGCIL.

GM (Engg.),NTPC stated that he anticipates increase in fault level at Khalgaon in case the LILO work be executed. He suggested that this needs to be examined. It was agreed that PGCIL would examine the issue and revert back. Member (PS) suggested that JSEB can examine the feasibility of sharing 2x315 MVA, 400/220 kV ICTs at Dumka switchyard to meet the increasing loads at Dumka area.

- **Orissa IPPs**

For immediate evacuation of power (under the scope of generation developer), three pooling points in Orissa at Dhenkanal, Angul and Jharsuguda were identified to be established. Considering the quantum of power and also high short circuit level problems exceeding permissible limits to the nearer grid stations, M (PS) CEA stated that the proposed pooling stations could be envisaged at 765kV level and accordingly, 765kV system for immediate evacuation of power should be considered in a composite and co-ordinated manner. He had also suggested that for identified IPP generation projects in Orissa, power pooling from each IPP by developing radial lines to respective pooling points should be reviewed with the idea that materialization of some fast track projects could be earmarked and accordingly, transmission requirements could be optimally planned. He had also suggested PGCIL to carry out detailed short circuit studies of the ER-grid by 2014-15 under the emerging scenario. It was agreed that PGCIL would do the exercise and forward the results of the studies to CEA.

2.3.2 M (PS), CEA stressed the need that PGCIL and IPP generators should sign BPTA for committing to pay the transmission charges for availing open access to facilitate PGCIL to take up the works as soon as possible and the evacuation facilities developed to match with the generation projects.

3. 400kV Transmission proposals of GRIDCO, Orissa during XI Plan Period.

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

GRIDCO had proposed establishment of a 400 kV S/S at Berhampur. Member (PS) stated that a 400kV Berhampur switching station (part of the 400kV Talcher - Gazuwaka via Berhampur (Narendrapur) switching station was proposed to be developed through Independent Transmission Provider as a back-up arrangement for power supply to SR from Talcher-II under the scheme "Augmentation of Talcher-II transmission system") and this switching station was proposed to be converted as a full-fledged 400/220kV, 2x315MVA S/S. The proposal by GRIDCO could be agreed after consulting of SR constituents once OPTCL agrees to share the transmission charges for the Talcher-Gazuwaka 400kV D/C line in proportion to the allocation from Talcher. Director (Comm) GRIDCO agreed to it share the transmission charges. It was decided that the issue would be taken up and decided in the Standing committee of Southern Region/SRPC.

For providing reliable supply to 400kV Dubri sub-station, OPTCL had proposed, in addition to a 400kV D/C line from Meramundali, LILOing of one circuit of the 400kV Baripada-Mendhasal D/C line under state sector. The proposal for construction of 400kV second feeder by OPTCL at Dubri was agreed.

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4.0 Transmission works of WBSEDCL under State Sector:

4.1 Regarding construction of Jagatballabhpur – Subhashgram 400kV D/C line envisaged under system strengthening scheme of WBSETCL, PGCIL confirmed availability of space for the 2 nos. 400 kV bay at their Subhashgram 400 kV S/s.

4.2 Director WBSETCL stated that the construction of 400kV Kolaghat-Guptamani 400 kV line as D/C line instead of a S/C line planned under state sector was in anticipation of high loading in the line in future. He further added that there was space constraint in Kolaghat station and sought the views of CEA. CE (SP&PA) suggested that the line could be constructed as D/C Twin Moos line to be bunched together as one circuit at Kolaghat end or alternatively, single circuit line with quad conductor configuration could be adopted. Accordingly, WBPDCL needs to explore the suitable option.

4.3 On the proposal of WBSETCL for construction of 400 kV Gokarna-Malda D/C and Malda-Purnea D/C lines under state sector as a part of system strengthening scheme, CE (SP&PA) CEA stated that the studies carried out indicated that the proposal would result in injection of WB power at Purnea for onward transmission to the beneficiaries in ER/NR/WR over the Tala transmission system (i.e. Purnea-Muzaffarpur D/C line), which is also to cater to Teesta-V project. As such there would be no additional margin on the above line especially under contingency conditions. Accordingly, the 400 kV Malda-Purnea D/C line did not appear to be appropriate proposal. He further added that under Farrakka III (500MW), establishment of 400kV Farrakka-Kahalgaon D/C line (3rd & 4th circuits) has been planned and strong 400 kV inter-connection between Siliguri and Purnea through 4 ckts was available, additional connectivity between South Bengal and North Bengal through Gokarna-Malda appears to be over provision. In this context, he suggested that WBPDCL should relook this issue and re-examine through system studies the need for 400 kV Gokarna-Malda D/C line.

4.4 Other system strengthening proposals and generation specific ATS of WBSETCL as given below were concurred.

<u>Katwa (1000 MW)</u>

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

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

- 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 Scheme

- Jagatballabhpur – Subhashgram 400kV D/c line
- Jagatballabhpur-Guptamani 400kV D/c line
- Jagatballabhpur-Gokarna 400kV D/c line
- Guptamani – Jamshedpur 400kV D/c
- LILO of Baripada – Kolaghat 400kV S/c at Gaptamani
- Purulia PSS – Ranchi 400kV D/c

5.0 Review of Progress on Earlier Agreed Transmission Schemes of PGCIL

PGCIL informed the status of various transmission schemes under implementation phase at Annex-2.

Annex -1

List of participants for the Standing Committee Meeting on Power System Planning in ER held on 08.11.08 at Bhubaneswar, Orissa.

S. N.	S/Shri	Designation	Organization	Mobile/ Tel no	E mail address
1	V. Ramakrishna	Member (PS)	CEA	26102721/ 26170572	
2	A.K. Asthana	Chief Engineer	CEA	011-26102045	
3	Dr. R. Saha	Director	CEA	011-26107144	
4	A.K. Saha	Dy Director	CEA	011-26732330	
5	R.K.Grover	Member Secretary	ERPC	9433095499	
6	Umesh Chandra	ED (Comml.)	PGCIL	9811907174	
7	D. Choudhary	ED (Engg.)	PGCIL		
8	Ravi Prakash Singh	ED (ER-II)	PGCIL	9434740001	ravipsingh2000@yahoo.com
9	Pankaj Kumar	GM (Engg.-SEF)	PGCIL	0124-2571100	
10	A. M. Pavgi	AGM (Engg._SEF)	PGCIL	124-2571818	apavgi@powergridindia.com
11	Ramchandra	Manager	PGCIL	124-2571818	ramchand@powergridindia.com
12	S.K.Shyam Choudhary	CE (CP&ED)	WBSETCL	9836043600	cped@cal3.vsnl.net.in
13	P.Gupta	Director	WBSETCL	9831734902	
14	A.Karmakar	SE Elect (CP&ED)	WBSETCL	9433339597	cped@cal3.vsnl.net.in
15	M.Majumdar	ED	WBSEDCL	9433886812	majumdar-48@yahoo.co.in
16	T.K.Pal	CE(Comml)	DVC	9831954239	tapan.pal@dvc.gov.in
17	B.K. Chakraborty	CE(PSR)	DVC	9903247104	biplab.chakraborty@dvc.gov.in
18	M.Rana	SE(E)	DVC	9831954263	mukut.rana@dvc.gov.in
19	C. J. Venugopal	CMD	GRIDCO		
20	A.C.Mallick	Director(Comml)	GRIDCO	9437012395	dircommercial@yahoo.com
21	K.N. Padhi	Sr.G.M.(PP)	GRIDCO	9437182874	
22	Dr. V.R.Raju	AM(PR)	GRIDCO	09438362262	
23	K.K. Nath	Director(Engg.)	OPTCL	09437960291	
24	D.K. Choudhary	CE(TP)	OPTCL	9437046353	
25	J.P.Das	CGM (O&M)	OPTCL	9437012391	jpdasoptcl@yahoo.co.in
26	G. Shukla	GM cum CE	JSEB	9431707300	gaya.shukla@yahoo.co.in
27	R. Sahu	TS/MD(ESE)	TVNL	9431929193	ramawatar.s@ rediffmail.com
28	S.R.Singh	EEE	TVNL	9431929187	srs@tvnlonline.com
29	R.K.Sharma	Member(T)	BSEB	9835036900	rksharma_bseb@rediffmail.com
30	S.K.Ghosh	ESE/IS	BSEB	9431020445	skg_eseis@rediffmail.com
31	Rakesh	EEE	BSEB		
32	A.K.Gupta	GM(Engg.) &HOD (Elect)	NTPC	9868390251	akgupta@ntpceoc.co.in
33	A.Basu Roy	DGM (Comml)	NTPC	9868391201	abasuroy@ntpc.co.in

Annex-II

Status of Transmission schemes in Eastern Region

Sl.	Transmission Scheme	Main Transmission Element	Commissioning Schedule
1	**ERSS-I**	•Reconductoring Siliguri-Purnea •Durgapur-Jamshedpur •Jamshedpur-Baripada •Baripada-Mendhsal	• Award expected: Mar/Apr 2009, Completion by Mar/2011 •Oct 2009 •Oct 2009 •March 2010
2	**ERSS-II**	•125MVAR Bus Reactors at Siliguri •125MVAR Bus Reactors at Purnea •160 MVA 220/132 kV ICT at Baripada •Durgapur-Maithon	•June 2010 •June 2010 •March 2010 •March 2010
3	**ER-WR**	•Ranchi-Sipat •Ranchi-Rourkela-Raigarh-Raipur	•Dec 2008 •March 2010
4	**DVC System**	•Koderma-Biharshariff •LILO of Jamshedpur-Maithon at Mejia •Maithon RB-Maithon •Ranchi –WR pooling •Gaya substation •Gaya –Balia •Gaya- Sasaram-Fatehpur •Fatehpur Substation •Balia-Lucknow	• Dec 2009 (unexpectedly high forest; line length increased by about 40%) • May 2009 • Dec 2009 • To be awarded by Jan 2009;exptd completion Apr 2011 • Expected to be awd by 12/08;exptd complt by3/11 • Completion by 3/11 • ---------- • Awd exptd by Mar 2009, Compltn by Jun 2011 • Awd exptd by Dec 2008, Compltn by Mar 2011
5	**System for export of power from NER to NR**	•Bongaigaon-Siliguri •Purnea-Biharshariff	• Taken up with Min. of Power for its completion matching with Pallatana/Bongaigaon TPS