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Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata

No. ERPC/TCC & COMMITTEE/2008/5558-96

Date: 12-01-2009

To: 1. The Members of Eastern Regional Power Committee
2. The TCC Members
3. The Member Secretary, NRPC, WRPC, SRPC & NERPC
4. The Secretary CERC
(As per list attached)

Subject: Special meeting of Eastern Regional Power Committee – Minutes of the Meeting

Sir,

Special Committee Meeting of Eastern Regional Power Committee was held on 30th December at ERPC, Kolkata. A copy of the minutes of the meeting is enclosed.

Yours faithfully,

(R.K.Grover)
Member Secretary

Encl: As Above

EASTERN REGIONAL POWER COMMITTEE
14, Golf Club Road, Tollygunge
Kolkata

MINUTES OF THE SPECIAL COMMITTEE MEETING OF EASTERN REGION HELD ON 30.12.2008 AT ERPC, KOLKATA

List of participants is enclosed at Annexure-I

Member Secretary, ERPC welcomed and thanked all the members, specially Member (PS), CEA, for attending the meeting. He briefly stated the necessity for holding this special meeting.

Shri C.J. Venugopal, Chairperson, ERPC and CMD, OPTCL & GRIDCO in his address stated that during the 8th TCC & ERPC meeting held at Bodhgaya on 20th & 21st November, 2008, the agenda items regarding power evacuation arrangement and system strengthening was deferred due to non-availability of minutes of meeting of the Standing Committee on Transmission Planning of ER held at Bhubaneswar and due to lingering doubts of the constituents of ERPC regarding issue of sharing of transmission charges. He requested constituents to clarify their doubts and respond positively to the proposals. He appreciated gesture of Member(PS),CEA in attending the meeting to dispel apprehensions of constituents. He requested the members for fruitful discussions so that consensus could be arrived at for the benefit of the Eastern Region.

Dr. H.B. Lal, Chairman, JSEB stated that there was shortage of power in Jharkhand. The per capita consumption of the State was low compared to All India average. He opined that ER central sector power should be allocated among the ER deficit constituents first and only surplus, if any, may be allocated to outside the region.

Chairperson, ERPC then requested Member Secretary, ERPC to take up the agenda items for deliberations.

MS, ERPC requested Superintending Engineer (PS), ERPC for presentation regarding existing/under construction 400/220 kV network of ER and proposed system strengthening scheme of ER.

ITEM NO. 1 TRANSMISSION SYSTEM ASSOCIATED WITH THE TILAIYA UMPP (4000 MW), BARH-II (1320 MW) AND NABINAGAR (1000 MW) AGREED IN THE STANDING COMMITTEE

a) Tilaiya UMPP (4000 MW)

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

b) Barh-II (1320 MW)

- i) Barh – Gorakhpur 400 kV quad D/C line

c) Nabinagar (1000 MW)

- i) Nabinagar – Sasaram 400 kV D/C line
with Twin Lapwing conductor line

As per the allocations finalized for Tilaiya UMPP (4000 MW), ER would get 1500 MW of which share of Bihar is 500 MW and Jharkhand 1000 MW, NR 1700 MW and WR 800 MW. In respect of Nabinagar TPS (1000 MW), which is JV of Railways and NTPC, share of Railways is 900 MW, and tentative share for Bihar & Jharkhand are 58 MW & 42 MW respectively. While allocations of Barh-II are yet to be finalized, beneficiaries of Barh-II are likely to be ER NR and WR.

Transmission charges for the above generation specific inter-connecting lines was proposed to be shared by the beneficiaries of the generation projects in ratio of their allocation of power. Jharkhand had been allotted 1000 MW from Tilaiya and 42 MW from Nabinagar. Share of Bihar was 500 MW from Tilaiya & 58 MW from Nabinagar. These states would bear the transmission charges in that proportion. The same was agreed in the Standing Committee.

DELIBERATIONS IN THE MEETING

Member(PS) clarified that the proposal of cost sharing was in line with the discussion paper circulated by CERC and the methodology adopted for Associated Transmission System for Sasan, Mundra and Krishnapatnam UMPPs. After detail deliberations in the meeting, Jharkhand, Bihar and other Members agreed to the proposal.

ITEM NO. 2 SYSTEM STRENGTHENING WORKS IN ER FINALISED IN THE STANDING COMMITTEE

- a) Sasaram – Daltonganj 400 kV D/C line
- b) Daltonganj 400 kV S/S, 2x315 MVA
- c) 400/132 kV, 2x200 MVA S/S near Lakhisarai/Jamalpur with LILO of both circuits of one of the Kahalgaon-Biharsharif 400 kV D/C line and space provision for 3rd transformer and 4 nos. of 132 kV line bays.
- d) An additional 400/132 kV, 2x200 MVA S/S at suitable location in Bihar and its connectivity with 400 kV grid (exact location of the 400/132 kV S/S will be intimated by BSEB)
- e) Establishment of 400/220 kV sub-station at Bolangir by LILO of Meramundali-Jeypore 400 kV S/C line.
- f) Establishment of 400/220 kV sub-station at Keonjhar by LILO of Rengali-Baripada 400 kV S/C line
- g) Establishment of 400/220 kV S/S at Sundargarh by LILO of both circuits of the existing Talcher-Rourkela 400 kV D/C line.

In the Standing Committee, it was also agreed 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.

DELIBERATIONS IN THE MEETING

JSEB accepted the proposal of 400 kV Sasaram - Daltonganj 400 kV D/C line and 400 kV Daltonganj sub-station.

BSEB representative confirmed that 400/132 kV, 2X200 MVA sub-station would be established at Lakhisarai (in respect of item no. 2c) and another sub-station of 400/132 kV, 2X200 MVA at Banka (in respect of item no. 2d).

DVC representative stated that the system strengthening scheme in ER under item no.2 would not be beneficial to DVC, therefore, they are not ready to share the cost for the project. They also intimated that 400 kV Parulia-Jameshedpur-Baripada-Mendhasal D/C line of DVC & WBSETCL, was not shared in ER though those lines would be strengthening the ER system. They insisted that the same principle should be followed and the cost of the above line should also be shared as regional asset.

After detailed discussions it was decided in the meeting that the 400 kV Parulia-Jameshedpur-Baripada-Mendhasal D/C line would be treated as regional asset of ER and transmission charges of the same would be shared by ER constituents.

It was also agreed that proposal under item no. 6, “suitable interconnection for providing 2nd feeder to Dubri 400 kV sub-station of OPTCL by making LILO of one circuit of 400 kV Baripada-Mendhasal D/C line”, and, item no. 7 (i), “Establishment of 400/220 kV Sub-station at Chaibasa by making LILO of both the circuit of 400 kV Rourkela – Jamshedpur D/C line”, would be considered under system strengthening works in ER and treated on regional basis.

WITH THE POOLED ABOVE MODIFICATIONS FOLLOWING SYSTEM STRENGTHENING WORKS FOR ER WERE AGREED:

- a) Sasaram – Daltonganj 400 kV D/C line
- b) Daltonganj 400 kV S/S, 2x315 MVA
- c) 400/132 kV, 2x200 MVA S/S near Lakhisarai with LILO of both circuits of one of the Kahalgaon-Biharsharif 400 kV D/C line and space provision for 3rd transformer and 4 nos. of 132 kV line bays.
- d) 400/132 kV, 2x200 MVA S/S at Banka in Bihar with LILO of both circuits of 400 kV Kahalgaon-Biharsharif D/C line(line not to be LILOed at Lakhisarai S/S) and provision of 4 nos 132 kV line bays.
- e) Establishment of 400/220 kV sub-station at Bolangir by LILO of Meramundali-Jeypore 400 kV S/C line.
- f) Establishment of 400/220 kV sub-station at Keonjhar by LILO of Rengali-Baripada 400 kV S/C line

- g) Establishment of 400/220 kV S/S at Sundargarh by LILO of both circuits of the existing Talcher-Rourkela 400 kV D/C line.
- h) 400 kV Parulia-Jameshedpur-Baripada-Mendhasal D/C line
- i) LILO of one circuit of the 400 kV Baripada-Mendhasal D/C line at Dubri for providing 2nd feeder to Dubri 400 kV sub-station of OPTCL
- j) Establishment of 400/220 kV Chaibasa sub-station and LILO of one circuit of 400 kV Rourkela-Jamshedpur line at 400/220 kV Chaibasa

ITEM NO.3 THE FOLLOWING TRANSMISSION SYSTEM FOR CREATION OF POOLING STATIONS IN ORISSA

- Establishment of 765/400 kV Pooling Station at Jharsuguda
- Establishment of 765/400 kV Pooling Station at Dhenkanal
- Establishment of 765/400 kV Pooling Station at Angul
- Dhenkanal Pooling Station – Angul Pooling Station 765 kV 2xS/C
- Angul Pooling Station – Jharsuguda Pooling Station 765 kV 2xS/C
- Jharsuguda Pooling Station – Dhenkanal Pooling Station 765 kV 2xS/C
- 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
- *LILO of Meramundali-Chandaka 400 kV D/C line at Dhenkanal Pooling Station

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

Regarding sharing of transmission charges for the above system, Member (PS), CEA stated that either these could be shared by the IPPs whose generation projects would connect to the pooling station or alternatively, beneficiaries of ISGS projects could utilise this system and share transmission charges corresponding to their share.

DELIBERATIONS IN THE MEETING

Member (PS), CEA clarified that cost of the above pooling stations would be borne by IPPs whose generation projects would connect to the pooling station and not by ER constituents. Since this system would be developed in phases and proposed LILOs would be developed as interim arrangement. Once 765 kV system comes up, these LILOs would be disconnected.

Members (PS), CEA emphasised that NR & WR will be the main beneficiaries and are willing to bear the transmission charges for 765 kV system or rather want it as extension of their grid into Eastern Region on the same methodology adopted for other inter-regional connection with ER.

Representative from PGCIL gave a presentation on indicative transmission charges per MW for transmission of power and they have shown that the cost per MW would

decrease (copy enclosed at Annexure-II), if the cost of transmission system, with corresponding generation is included in ER pool. At Present the transmission charge is Rs. 12.00 lakh/ MW, and with the transmission proposals already approved and under construction in ER in the year 2011-12 it would be Rs. 16.09 lakh/ MW, however, after considering the proposed system strengthening of ER it would be Rs. 11.93 Lakh/ MW and considering pooling of transmission/sub-station proposals for pooling of power of IPPs in Orissa, the charges would be Rs. 11.47 lakh/ MW.

Member (PS), CEA informed that this aspect was discussed in the Standing Committee meeting of WR at Aurangabad, where constituents of WR expressed their willingness to bear the transmission charges for 765 kV pooling stations and the associated transmission lines.

Member Secretary, ERPC requested constituents to review their stand and not to lose this opportunity. Director (Commercial), GRIDCO tried to impress upon other members the benefits of treating these 765 kV pooling stations as ER asset. Thereafter, after detail deliberation, all the Members of ER agreed for sharing of transmission charges of the above proposal as per the guidelines of CEA & CERC. Later, Members requested Member (PS), CEA to reopen this issue with NR & WR.

ITEM NO.4 CONSTRUCTION OF 400 KV D/C TRANSMISSION LINE FROM TENUGHAT TO RANCHI

In view of constraints in evacuation of power from existing Tenughat TPS, TVNL wants to construct a 400 kV D/C Transmission line from Tenughat TPS to Ranchi (Namkum), at their own cost, to connect with two nos. of 400 kV bays at the PGCIL Sub-Station.

DELIBERATIONS IN THE 8TH ERPC MEETING

TVNL submitted that their Board has accorded approval for feasibility survey and preparation of DPR for the proposed 400 kV Tenughat-Ranchi D/C line. Members also advised TVNL to take appropriate action for charging of the existing 220 kV lines to 400 kV to overcome existing evacuation problem of Tenughat TPS.

DELIBERATIONS IN THE MEETING

Member (PS), CEA observed that Tenughat is having generation of 420 MW and there are two evacuation path, one is 400 kV Tenughat – Biharshariff line (Presently operating at 220 kV) & another is 220 kV Tenughat – Patratu line and load at Ranchi is not more than 400 MW. There could be more economical alternative to meet this demand, hence construction of a 400 kV D/C Transmission line from Tenughat TPS to Ranchi (Namkum) was not justified. Member (PS), CEA advised JSEB and TVNL to review and make a complete proposal for evacuation and meeting demand at Ranchi.

ITEM NO. 5 INSTALLATION OF 2X315 MVA, 400/220 KV TRANSFORMERS AT BERHAMPUR

In respect of the proposal for transforming 400 kV Berhampur switching station (Part of 400 kV Talcher- Gazuwaka D/C transmission line, via Berhampur (Narendrapur) switching station, to be developed by 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”) into full-fledged 400/220 kV, 2x315 MVA S/S under State sector, Orissa is agreeable to share the transmission charges for the Talcher-Gazuwaka 400 kV D/C line in proportion to the allocation from Talcher. The issue would be taken up and decided in the Standing Committee of Southern Region/SRPC.

DELIBERATIONS IN THE 8TH ERPC MEETING

Members noted and advised OPTCL & GRIDCO to take up the matter with CEA/SRPC.

DELIBERATIONS IN THE MEETING

OPTCL & GRIDCO may take up the issue with CEA/SRPC/ERPC.

ITEM NO. 6 SUITABLE INTERCONNECTION FOR PROVIDING 2ND FEEDER TO DUBRI 400 KV SUB-STATION OF OPTCL

For providing reliable supply to 400 kV Dubri sub-station, OPTCL has proposed, LILO of one circuit of the 400 kV Baripada-Mendhasal D/C line at Dubri, under state sector, in addition to a 400 kV D/C Meramundali – Dubri line.

DELIBERATION IN THE 8TH ERPC MEETING

It was decided that since the cost of 400 kV Durgapur- Jamshedpur-Baripada-Mendhasal D/C line would be borne by WBSETCL and DVC, OPTCL/GRIDCO may discuss with WBSETCL & DVC for LILO of the line at Duburi and related issues.

DELIBERATIONS IN THE MEETING

The proposal has been considered in item no. 2 under system strengthening works in ER.

ITEM NO. 7 BASED ON THE DISCUSSION HELD IN THE OFFICE OF MEMBER (PS), CEA ON TRANSMISSION SYSTEM REQUIREMENT IN JSEB, FOLLOWING PROPOSALS ARE PLACED FOR DISCUSSION:

- i) ESTABLISHMENT OF 400/220 KV CHAIBASA SUB-STATION AND LILO OF ONE CKT OF 400 KV ROURKELA-JAMSHEDPUR LINE AT 400/220 KV CHAIBASA TO MEET LOAD GROWTH IN CHAIBASA AREA.**

In view of RoW problems construction works for LILO of both the ckts. of Rourkela-Jamshedpur 400 kV D/C line at Chaibasa S/S has been proposed. Out of the two LILOs, one LILO would be initially bussed at Chaibasa S/S and on a later date

(depending on the load growth around Chaibasa) the other LILO would be bussed to the sub-station. It was agreed upon and the LILO works were proposed to be included under ER system strengthening scheme.

DELIBERATIONS IN THE MEETING

The proposal has been considered in item no. 2 under system strengthening works in ER.

ii) ESTABLISHMENT OF 400/220 KV TORPA SUB-STATION BY MAKING LILO OF ONE CIRCUIT OF RANCHI - SIPAT 400 KV D/C LINE.

JSEB informed that the location of the new 400/220 kV TORPA S/S would be in the Southern part of Jamshedpur, tentatively 60 KM away from Ranchi. Load demand/growth to the tune of 300 MW is expected around Torpa . The exact location of the sub-station would be identified after completion of route survey by JSEB. It was learnt from Member (PS), CEA that the cost of Ranchi-Sipat 400 kV D/C line was borne by WR and not shared by ER constituents, hence JSEB is required to seek open access from WR beneficiaries.

DELIBERATIONS IN THE MEETING

JSEB stated that they would submit an alternative proposal.

MEETING ENDED WITH A VOTE OF THANKS

LIST OF PARTICIPANTS IN THE SPECIAL MEETING AT ERPC

Date : 30.12.2008

Venue : ERPC Kolkata

Name of the Constituent/Organisation	Sl. No.	Name S/Shri	Designation
ORISSA	1.	C.J. VENUGOPAL	Chairperson, ERPC & CMD, OPTCL & GRIDCO
	2.	A.C. MALLICK	Director(Commercial)
	3.	N. KHAN	L.O.
JHARKHAN	4.	DR. H.B. LAL	Chairman
	5.	G.N.S. MUNDA	Member(Technical)
	6.	S.N CHOUDHARY	Member(Distribution)
	7.	G. SHUKLA	G.M.-CUM-C.E
	8.	N.A. SIDDIQUE	C.E. (Trans.)
	9.	A. KUMAR	E.E.E., Ranchi
BIHAR	10.	SWAPAN MUKHERJEE	Chairman
	11.	R,K, SHARMA	Member(Technical)
	12.	S.K. GHOSH	E.S.E/IS
	13.	RAKESH	E.E.E
	14.	S.K. SENGUPTA	E.E.E
	15.	M. MAJUMDAR	Executive Director(Comm.), WBSEDCL
	16.	A. C. SARKAR	Director(Trans), WBSETCL
	17.	S.K. SHYAM CHOUDHURY	C.E., CP&ED, WBSETCL
	18.	A. KARMAKAR	S.E.(O),CP&ED, WBSETCL
CEA	19.	V. RAMAKRISHNA	Member(PS)
DVC	20.	T.K. PAL	C.E.(Comml)
	21.	C. KARMAKAR	D.C.E.(E)
	22.	S.GHOSHAL	S.E.
POWER GRID	23.	D. CHOWDHURY	Executive Director (Engg.)
	24.	RAVI P. SINGH	Executive Director(ER-II)
	25.	K.K. AGRAWAL	General Manager(I/C) ER-I
	26.	S.K. PRAMANIK	DGM(OS), ER-I
	27.	S. PRASAD	A.G.M.(Comml.)
	28.	PRASANT SHARMA	A.G.M.(Comml.),CC
	29.	AVINAH M. PAVGI	A.G.M.(Engg. SEP)
	30.	J.P. SINGH	G.M.(O&M), ER-II
ERLDC	31.	DR. L. HARI	General Manager
	32.	D.K.SHRIVASTAVA	D.G.M
	33.	P. MUKHOPADHYAY	DGM
	34.	S. BANERJEE	C.M.

Name of the Constituent/Organisation	Sl. No.	Name S/Shri	Designation
ERPC	35.	R.K. GROVER	Member Secretary
	36.	J. BANDYOPADHYAY	S.E.(C)
	37.	S.N. KAYAL	S.E.(O)
	38.	B. C. MALLIK	S.E(PS)
	39.	K.K.BHATTACHARYA	E.E
	40.	S. K. GHOSH	E.E
	41.	A.ROY	E.E
	42.	S.K. DEB	E.E
	43.	S.M. JHA	E.E
	44.	S. KEJRIWAL	A.E.E.
	45.	P.N. SARKAR	A.E.E
	46.	S. ROY	AEE
	47.	S.P. DATTA	DGM(NTPC)

Implication on Transmission Tariff

AS PER SCM PROPOSAL

Cost Summary (All Cost in Rs. Cr.)	Total Cost	To be Shared by			
		ER	WR	NR	Orissa
ER Strengthening	1500	1500			
ER-WR-NR AC Corridor for Orissa IPPs	4000		4000		
ER-NR HVDC Corridor for Orissa IPPs	8000			8000	

Share of Power	Total Capacity	ER	NR	WR	SR	Total
Tillaiyya (ER share= 1500, Jharkhand=1000, Bihar=500)	4000	1500	1700	800		4000
Nabinagar (ER share 440 out of Railway share 910 MW)	1000	440				440
Barh-II	1320	349	385	367		1101

Transmission Charges

	Annual Transmission Charges (Rs. Cr.)	Total MW	Rs(in cr.)/MW	Total Energy (MU)	Paisa/Unit
ER Transmission Charges					
Present	720	6000	0.1200	36792	20
Upto 2011-12	1302	8090	0.1609	56695	23
Addition Due to ER Strengthening (Rs. 1500 cr.)	210	2289	0.0917	16041	13
Total with ER Strengthening	1512	10379	0.1457	72736	21

Implication on Transmission Tariff

AS PER SCM PROPOSAL+CHAIBASA

Cost Summary (All Cost in Rs. Cr.)	Total Cost	To be Shared by			
		ER	WR	NR	Orissa
ER Strengthening+Chaibasa	1800	1800			
ER-WR-NR AC Corridor for Orissa IPPs	4000		4000		
ER-NR HVDC Corridor for Orissa IPPs	8000			8000	

Share of Power	Total Capacity	ER	NR	WR	SR	Total
Tillaiyya (ER share= 1500, Jharkhand=1000, Bihar=500)	4000	1500	1700	800		4000
Nabinagar (ER share 440 out of Railway share 910 MW)	1000	440				440
Barh-II	1320	349	385	367		1101

Transmission Charges

	Annual Transmission Charges (Rs. Cr.)	Total MW	Rs(in cr.)/MW	Total Energy (MU)	Paisa/Unit
ER Transmission Charges					
Present	720	6000	0.1200	36792	20
Upto 2011-12	1302	8090	0.1609	56695	23
Addition Due to ER Strengthening (Rs. 1500 cr.)	252	2289	0.1101	16041	16
Total with ER Strengthening	1554	10379	0.1497	72736	21

Implication on Transmission Tariff

AS PER SCM PROPOSAL+CHAIBASA+JAMSHEDPUR

Cost Summary (All Cost in Rs. Cr.)	Total Cost	To be Shared by			
		ER	WR	NR	Orissa
ER Strengthening+Chaibasa+Jamshedpur	1950	1950			
ER-WR-NR AC Corridor for Orissa IPPs	4000		4000		
ER-NR HVDC Corridor for Orissa IPPs	8000			8000	

Share of Power	Total Capacity	ER	NR	WR	SR	Total
Tillaiyya (ER share= 1500, Jharkhand=1000, Bihar=500)	4000	1500	1700	800		4000
Nabinagar (ER share 440 out of Railway share 910 MW)	1000	440				440
Barh-II	1320	349	385	367		1101

Transmission Charges

	Annual Transmission Charges (Rs. Cr.)	Total MW	Rs(in cr.)/MW	Total Energy (MU)	Paisa/Unit
ER Transmission Charges					
Present	720	6000	0.1200	36792	20
Upto 2011-12	1302	8090	0.1609	56695	23
Addition Due to ER Strengthening (Rs. 1500 cr.)	273	2289	0.1193	16041	17
Total with ER Strengthening	1575	10379	0.1517	72736	22

Implication on Transmission Tariff

AS PER SCM PROPOSAL+CHAIBASA+JMSDPUR+JHARKHAND IPPs

Cost Summary (All Cost in Rs. Cr.)	Total Cost	To be Shared by		
		ER	WR	NR
ER Strengthening	1950	1500		
ER-WR-NR AC Corridor for Orissa IPPs	4000		4000	
ER-NR HVDC Corridor for Orissa IPPs	8000			8000

Share of Power	Total Capacity	ER	NR	WR	SR	Total
Tillaiyya (ER share= 1500, Jharkhand=1000, Bihar=500)	4000	1500	1700	800		4000
Nabinagar (ER share 440 out of Railway share 910 MW)	1000	440				440
Barh-II	1320	349	385	367		1101
Jharkhand IPPs	4000	600	1700	1700	0	4000

Transmission Charges

	Annual Transmission Charges (Rs. Cr.)	Total MW	Rs(in cr.)/MW	Total Energy (MU)	Paisa/Unit
ER Transmission Charges					
Present	720	6000	0.1200	36792	20
Upto 2011-12	1302	8090	0.1609	56695	23
Addition Due to ER Strengthening (Rs. 1500 cr.)	273	2289	0.1193	16041	17
Addition due to Jharkhand IPPs	0	600	0.0000	4205	0
Total with ER Strengthening & Orissa	1575	10979	0.1435	76941	20

Implication on Transmission Tariff

AS PER SCM PROPOSAL+CHAIBASA+JMSPUR+ORISSA

Cost Summary (All Cost in Rs. Cr.)	Total Cost	To be Shared by		
		ER	WR	NR
ER Strengthening	1950	1500		
ER Strengthening for Orissa IPPS	2500	703	822	851
ER-WR-NR AC Corridor for Orissa IPPs	4000		4000	
ER-NR HVDC Corridor for Orissa IPPs	8000			8000

Share of Power	Total Capacity	ER	NR	WR	SR	Total
Tillaiyya (ER share= 1500, Jharkhand=1000, Bihar=500)	4000	1500	1700	800		4000
Nabinagar (ER share 440 out of Railway share 910 MW)	1000	440				440
Barh-II	1320	349	385	367		1101
Orissa IPPs	15746	4213	5100	4927.5	747.5	14987.5

Transmission Charges

	Annual Transmission Charges (Rs. Cr.)	Total MW	Rs(in cr.)/MW	Total Energy (MU)	Paisa/Unit
ER Transmission Charges					
Present	720	6000	0.1200	36792	20
Upto 2011-12	1302	8090	0.1609	56695	23
Addition Due to ER Strengthening (Rs. 1500 cr.)	273	2289	0.1193	16041	17
Addition due to Orissa IPPs	98	4213	0.0234	29521	3
Total with ER Strengthening & Orissa	1673	14592	0.1147	102257	16