

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

POWER GRID CORPORATION OF INDIA LIMITED

(A Government of India Enterprise)



पावरग्रिड

केन्द्रीय कार्यालय : "सौदामिनी" प्लॉट सं. 2, सेक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 2571700 - 719, फैक्स : 2571760, 2571761 तार 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001. Haryana
Tel. : 2571700 - 719, Fax : 2571760, 2571761 Gram : 'NATGRID'

संदर्भ संख्या/Ref. Number/ENG/SEF/S/09/LTOA

Date : 20 August 2009

1. Sh.V.Ramakrishna Member (PS) Central Electricity Authority Sewa Bhawan, R.K.Puram, New Delhi-66	2. The Member Secretary, Southern Regional Power Committee, 29, Race Course Cross Road, Bangalore 560 009.
3. The Director (Transmission), Transmission Corp. of Andhra Pradesh Ltd., Vidyut Soudha, Hyderabad – 500 082. FAX : 040-66665137	4. The Director (Transmission), Karnataka State Power Transmission Corp.Ltd., Cauvery Bhawan, Bangalore 560 009. FAX : 080 -22228367
5. The Member (Transmission), Kerala State Electricity Board, Vidyuthi Bhawanam, Pattom, P.B. No. 1028, Thiruvananthapuram - 695 004. FAX : 0471-2444738	6. Member (Distribution), Tamil Nadu electricity Board (TNEB), 6 th Floor, Eastern Wing, 800 Anna Salai, Chennai - 600002. FAX : 044-28516362
7. The Director (Power), Corporate Office, Block – I, Neyveli Lignite Corp. Ltd., Neyveli, Tamil Nadu – 607 801. FAX : 04142-252650	8. The Superintending Engineer –I, First Floor, Electricity Department, Gingy Salai, Puducherry – 605 001. FAX : 0413-2334277/2331556
9. Director (Projects), National Thermal Power Corp. Ltd. (NTPC), NTPC Bhawan, Core-7, Scope Complex, Lodhi Road, New Delhi-110003. FAX-011-24360912	10. Director (Operations), NPCIL, 12 th Floor, Vikram Sarabhai Bhawan, Anushakti Nagar, Mumbai – 400 094. FAX : 022- 25991258

Sub: Agenda for meeting on Long Term Open Access applications in Southern Region

Dear Sir,

Please find enclosed the agenda for the Long Term Open Access applications in Southern Region. The meeting would be held at Hyderabad on 27th August 2009 after the 29th meeting of the Standing Committee on Power System Planning of Southern Region. The details of the venue shall be communicated separately. It is requested to kindly make it convenient to attend the aforesaid meeting.

Thanking You,

Encl: Agenda

Yours faithfully

(Pankaj Kumar)

General Manager (Engg.-SEF)

पंजीकृत कार्यालय : बी-9, कुतब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016 दूरभाष : 26560121 फैक्स : 011-26560039 तार 'नेटग्रिड'
Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. : 26560121 Fax : 011-26560039 Gram : 'NATGRID'

स्वहित एवं राष्ट्रहित में ऊर्जा बचाएं
Save Energy for Benefit of Self and Nation

Agenda Note for Long Term Open Access Application of IPP Generation projects in Southern Region

A) Applications in Srikakulam District, Andhra Pradesh

1. East Coast Energy Pvt. Ltd. (4x660 MW)

M/s East Coast Energy Pvt. Ltd. seeking long term Open Access in ISTS had initially applied for 2450 MW (Capacity 2640 MW), subsequently informed through letter dated 3rd July, 2009 that only phase-I (2x660 MW) is to be considered for the evolution of transmission system and phase-II (2x660MW) is to be taken up at a later stage. Again, East Coast Energy vide letter dated 11th August, 2009 has informed that there will a tiome gap of 8-12 montrhs between stage-I and Stage-II. Therefore, transmission requirement for entire 2450 MW power has been evolved from the proposed generation project to its beneficiaries. The status of the generation project as informed by the developer is as given below:

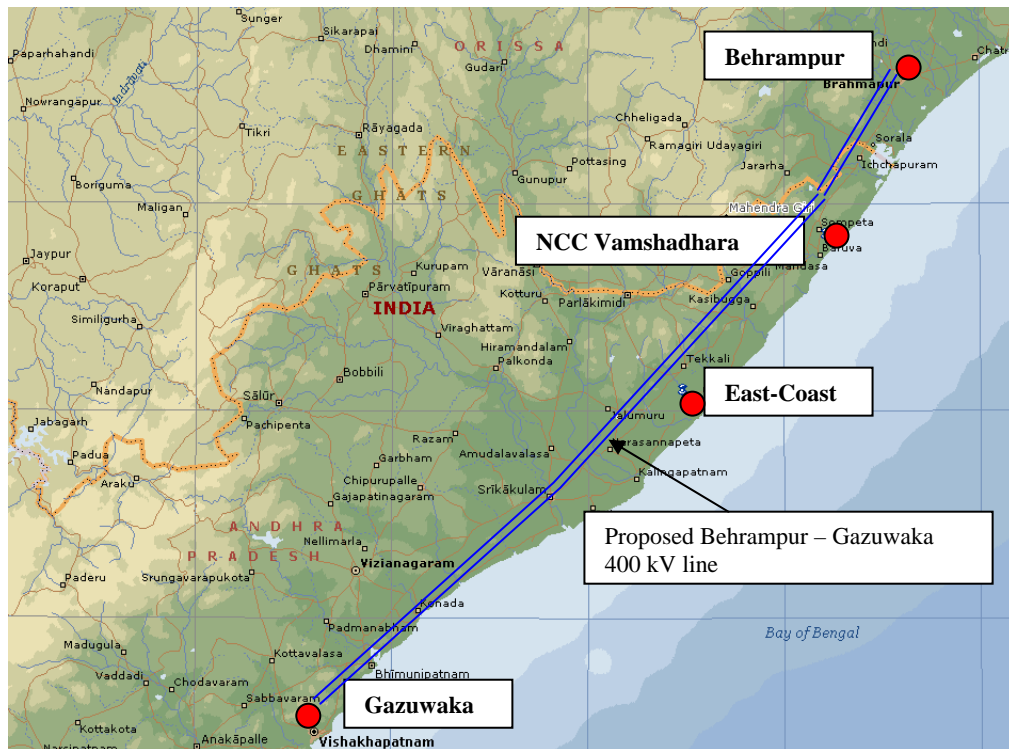
Applicant	- East Coast Energy Pvt. Ltd. (2x660MW)
o Land	- Complete land acquired
o Fuel	- Ministry of Coal has allotted coal required for the stage-I (2x660MW)
o Water	- Clearance obtained for Sea Water drawal
o Environment	- Clearances available
o EPC/BTG Status	- Awarded
o Beneficiaries	- SR-1940 MW, WR-500 MW
o Financial Closure	- By September 2009
o Commissioning	- Unit-I : March 2012 Unit-II : August 2012

2. NCC Power Project Ltd. (2x660 MW)

M/s NCC Power Project Ltd. seeking long term Open Access in ISTS had initially applied for 2640MW, however subsequently revised its application for only phase-I 1320MW (2x660 MW) power from their proposed generation project for transfer to its beneficiaries viz. SR-500MW, WR-500MW and NR-320MW. The status of the generation project as informed by the developer is as given below:

Applicant	- NCC Power Project Ltd. (2x660MW)
○ Land	- 80% of land acquired, total requirement 1890 acres
○ Fuel	- Min. of Coal, GoI has allotted 70% coal linkage and 30% would be imported coal
○ Water	- Clearance obtained for Sea Water drawal
○ Environment	- TOR approved by MoEF, Public hearing scheduled on 18.08.2009
○ EPC/BTG Status	- By December 2009
○ Beneficiaries	- SR-500MW, WR-500MW, NR-320MW
○ Financial Closure	- By December 2009
○ Commissioning	- Unit-I : December 2011 Unit-II : March 2012

3. Location of Generation Projects



4. Transmission System alongwith its Phasing

4.1 Generation step-up voltage and connectivity for drawl of startup power

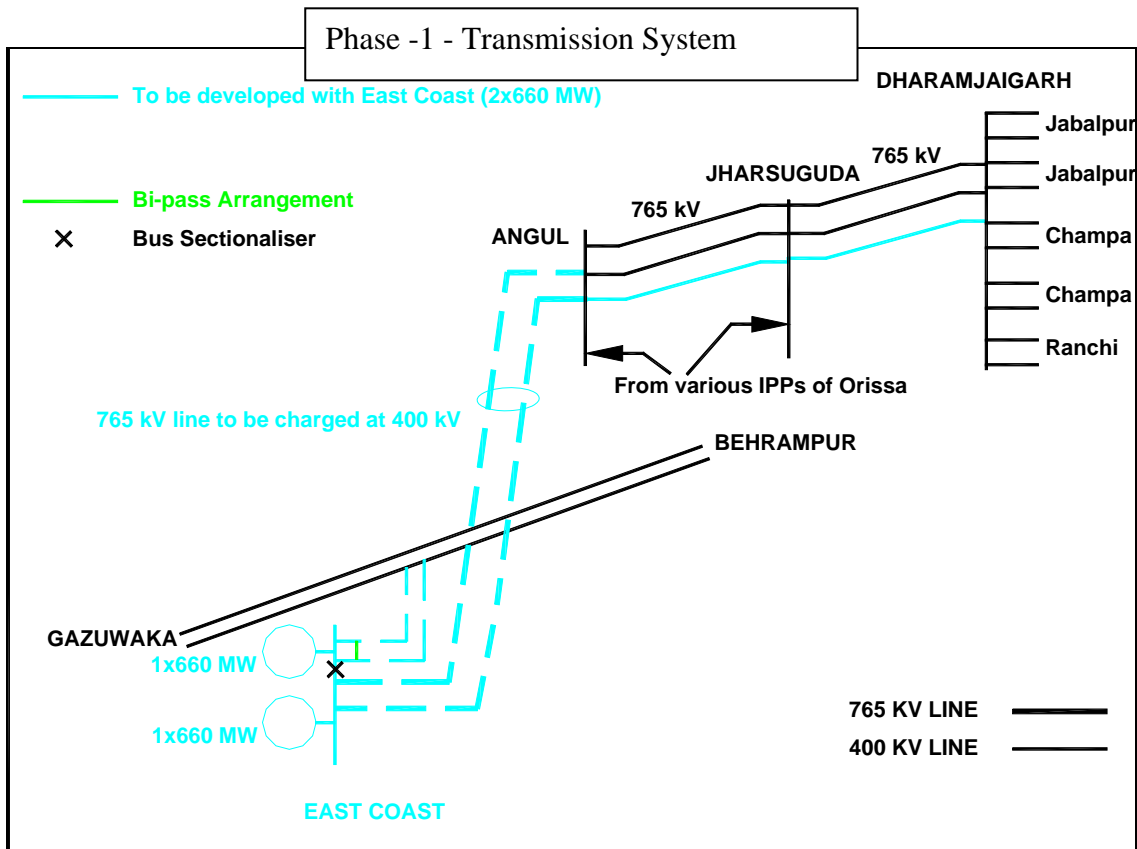
- The generation at both East-Coast and NCC shall be stepped up at 400 kV.
- Both the generation projects shall be connected to ER grid by LILO of one circuit of Behrampur – Gazuwaka 400 kV D/c line at respective switchyards to facilitate them to draw startup power.

- At both the generation projects, unit-1 alongwith the above referred LILO shall be separated with rest of the units through a bus sectionaliser so that, if required, power flow on the 400 kV lines can be made in controlled manner.
- Further, the LILO arrangement shall have suitable by-pass arrangement to enable through path between Behrampur and Gazuwaka, if required.

4.2 Transmission System

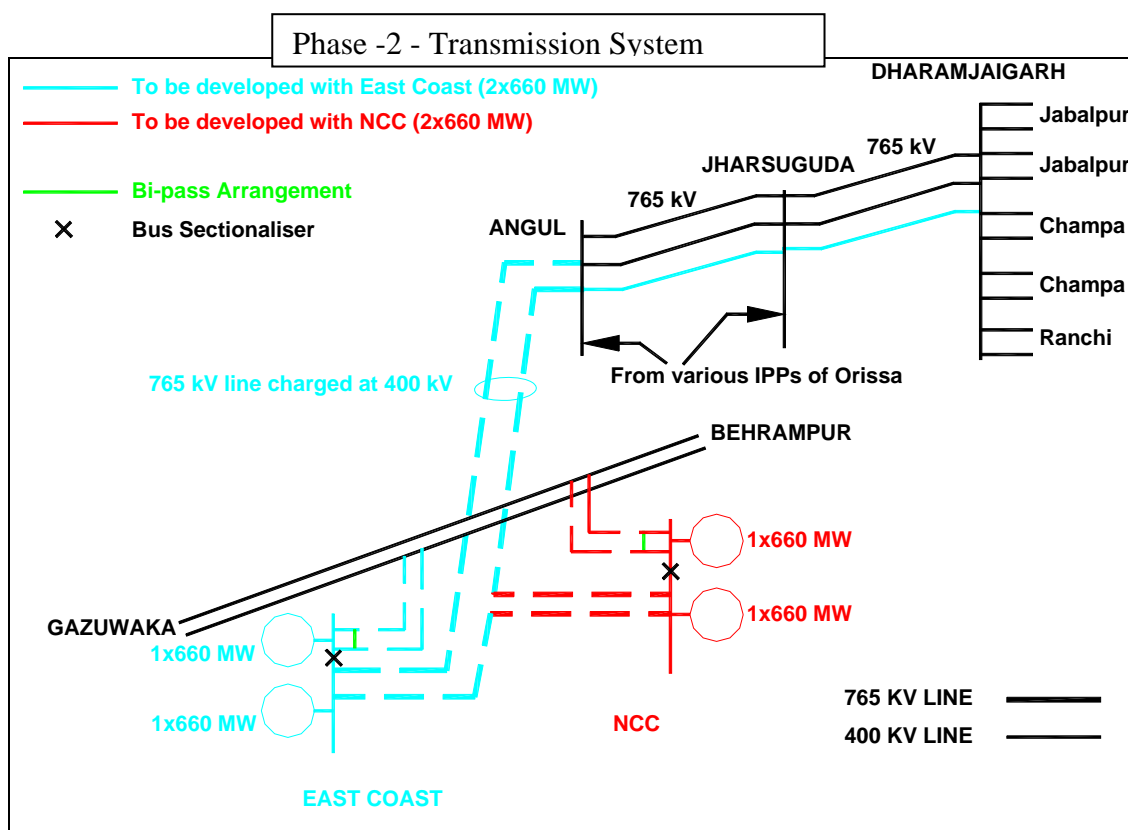
- Phase-1: Matching with the Commissioning of Unit – 1 & 2 (2x660 MW) at East-Coast
 - (i) LILO of one circuit of Behrampur – Gazuwaka 400 kV D/c line at East-Coast switchyard
 - (ii) East-coast – Angul 765 kV 2xS/c line initially charged at 400 kV level.
 - (iii) Angul – Jharsuguda - Dharamjaigarh 765 kV S/c line.

The estimated Cost of the evacuation system shall be about Rs. 1500 Crores.



- Phase-2: Matching with the Commissioning of Unit – 1 & 2 (2x660 MW at NCC Vamshadhara
 - (i) LILO of 2nd circuit of Behrampur – Gazuwaka 400 kV D/c line at NCC switchyard
 - (ii) LILO of one circuit of East Coast – Angul 765 kV initially charged at 400 kV at NCC switchyard

The estimated Cost of the evacuation system shall be about Rs. 150 Crores.

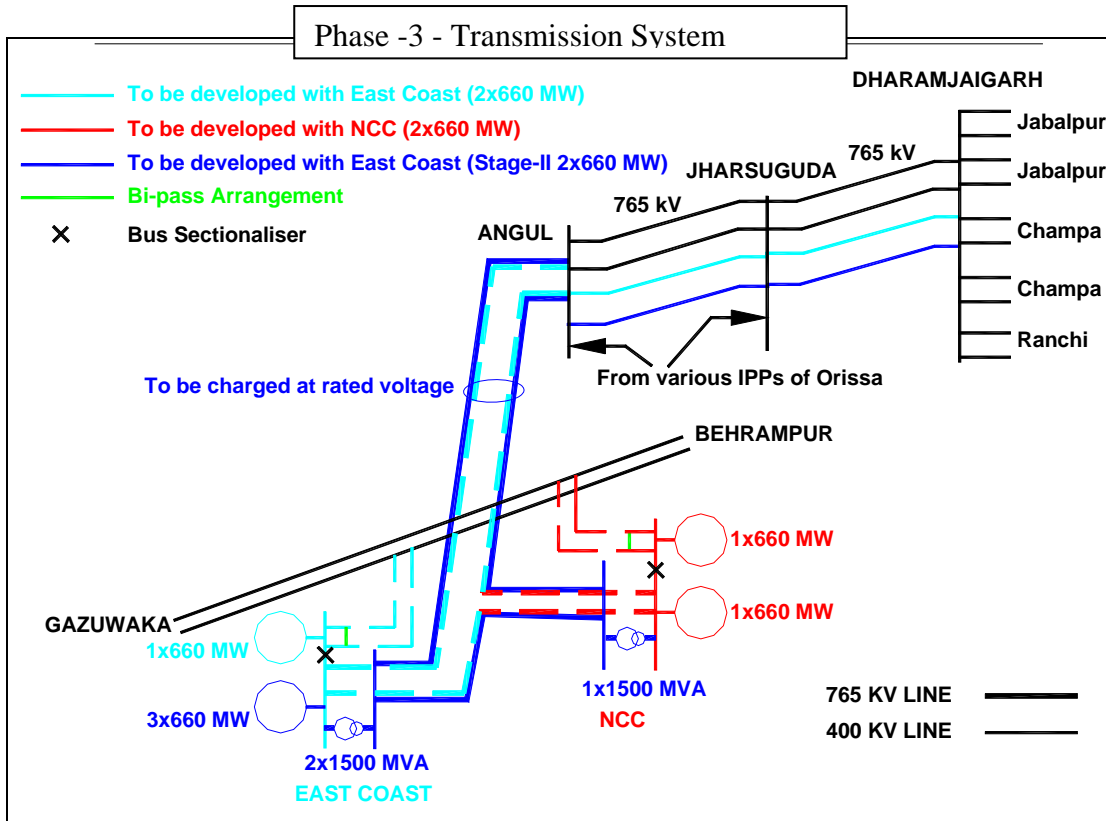


- Phase-3: Matching with the Commissioning of Unit – 3 & 4 (2x660 MW) at East-Coast
 - (i) Provision of 2x1500 MVA, 765/400 kV transformers at East Coast
 - (ii) Provision of 1x1500 MVA, 765/400 kV transformers at NCC
 - (iii) Provision of 765 kV switchgears at East Coast, NCC and Angul for 765 kV charging of East Coast – NCC, NCC – Angul and East Coast – Angul 765 kV lines.
 - (iv) Angul – Jharsuguda - Dharamjaigarh 765 kV 2nd S/c line.

The estimated Cost of the evacuation system shall be about Rs. 1350 Crores.

Accordingly the total estimated cost for all the three phases shall be Rs. 3,000 Crs.

The transmission system to be developed for above generations is as given below:



The load flow studies for the above three phases is enclosed at

Sl. No.	Case Description	Exhibit
1.	Case – 1 – 2x660 MW at East – Coast	IA
2.	Case – 2 – Case – 1 + 2x660 MW at NCC with associated system	IB
3.	Case – 3 – Case – 2 + additional 2x660 units at East-coast + charging of lines at 765 kV	IC

Members may discuss the proposal and decide.

B). Applications of The Singareni Collieries Company Ltd.

- a) Applicant - The Singareni Collieries Company Ltd.
- b) Project Capacity - 540 MW (2x270 MW)
- c) LTOA Applied for - 490 MW
- d) Location - Near Ramagundam, A.P.
- e) Beneficiaries - AP - 35% (171.5 MW),
Other SR constituents - 35% (171.5 MW),
WR - 30% (147MW)
- f) Commencement of Open Access - May, 2012
- g) Project Status
 - o Land - Final Stage, compensation paid, expected handing over by end of July'09
 - o Fuel - SCCL's own internal supply of coal
 - o Water - -
 - o Environment - Public hearing over, final clearance awaited
 - o EPC/BTG Status - -
 - o Financial Closure - -
 - o Commissioning - Unit-I : May 2012
Unit-II : August 2012

Project developer have mentioned in their open access application that the existing Ramagundam – Chandrapur 400kV D/c line is passing through the plant area, therefore it is convenient to LILO both the circuits of Ramagundam – Chandrapur 400kV D/c line at plant switchyard for evacuation of power.

Accordingly, studies were conducted for evacuation of the power from proposed generation project and supply power to their target beneficiaries. The load flow results are enclosed at **Exhibit-II**. Based on the studies results following transmission system is proposed.

Dedicated transmission system

- o LILO of both the circuits of Ramagundam – Chandrapur 400 kV D/c line at proposed generation switchyard

Members may discuss the proposal and decide

C) Applications in Tuticorin area, Tamil Nadu

1. Coastal Energen Pvt. Ltd. (2x600 MW)

- a) Applicant - Coastal Energen Pvt. Ltd.
- b) Project Capacity - 1200 MW (2x600 MW)
- c) LTOA Applied for - 1100 MW
- d) Beneficiaries - PPA with TPTC issued on 28.11.2008 upto 700 MW
TNEB - 300MW (Bulk consumers in TN)
TN (TPTC) - 320MW
PCK (KPTCL) (PTC) - 200 MW
Western Region (TPTC) - 280 MW
- e) Commencement of Open Access - December, 2011
- f) Project Status
 - o Land - Complete land acquired
 - o Fuel - Imported coal based, FSA signed
 - o Water - Permission for water supply available
 - o Environment - Clearances available for 2x600MW
 - o EPC/BTG Status - Contract for BGT signed on 25.02.2009
 - o Financial Closure - By 30.06.2009
 - o Commissioning - Unit-I : December 2011
Unit-II : March 2012

2. IND-Barath Power (Madras) Ltd. (4x350 MW)

- a) Applicant - IND-Barath Power (Madras) Ltd.
- b) Project Capacity - 1400 MW (4x350 MW)
- c) LTOA Applied for - 945MW
- d) Beneficiaries - SR-284MW, WR-236MW, NR-425MW
- e) Commencement of Open Access - December, 2011
- f) Project Status
 - o Land - Complete land acquired
 - o Fuel - Imported coal based, owns coal mine in Indonesia
 - o Water - Sea water
 - o Environment - TOR obtained
 - o EPC/BTG Status - BIDs called and finalized
 - o Financial Closure - By October 2009
 - o Commissioning - Phase-I (2x350MW) : December 2011
Phase-II (2x350MW) : March 2012

The Transmission system for above two applications of Tuticorin area in Tamil Nadu was discussed with the Southern region constituents in the Long Term Open Access Meeting held on 15.06.2009 at Coorg, Karnataka, wherein it was decided that POWERGRID shall workout with individual/group of generators coming in same vicinity to finalise the transmission system and its sharing mechanism. Therefore, POWERGRID called a meeting at its Gurgaon office on 15.07.2009 with the generation developers and following transmission system for the above two generation projects was decided. The load flow results enclosed at **Exhibit-II**.

i. Common transmission for Coastal Energen and Ind-Barath projects

- o Establishment of 765 kV pooling station in Tuticorin, Salem and Madhugiri (near Bangalore) (initially charged at 400 kV)
- o Tuticorin Pooling station – Salem Pooling station 765 kV D/c line initially charged at 400 kV.
- o Salem pooling station – Madhugiri pooling station 765 kV S/c initially charged at 400 kV.
- o Tuticorin pooling station – Tuticorin JV 400 kV D/c quad

The estimated Cost of the evacuation system shall be about Rs. 2500 Crores.

ii. Dedicated transmission system

- o Coastal Energen generation switchyard- Tuticorin pooling station 400 kV D/c quad/high capacity line
- o Ind-Barath generation switchyard - Tuticorin pooling station 400 kV D/c quad/high capacity line

iii. Both Coastal Energen and Ind-Barath has offered 125 acres of land in the vicinity for establishment of 765kV pooling station. It was agreed that a joint site visit shall be made by POWERGRID, TNEB, Coastal Energen and Ind-Barath to study the feasibility of establishing pooling station at the offered land taking into consideration the line crossings, ROW problem and other site conditions. Accordingly the joint site visit is being arranged.

iv. Further a temporary measure for Coastal Energen to draw startup power as well as to evacuate power till the commissioning of above transmission system, LILO of one circuit of Tuticorin JV – Madurai 400 kV Quad D/c line (under construction by POWERGRID) was agreed which shall be restored matching with the commissioning of pooling station in the Tuticorin area.

v. Similarly for the Ind-Barath project who's Phase-I (2x350MW) is scheduled for December 2011 the dedicated transmission line may be constructed in such a way that the same can be used for LILO of other circuit of Tuticorin JV – Madurai 400 kV Quad D/c line as a temporary measure to enable Ind-Barath to draw start-up power and evacuate power till commissioning of Tuticorin pooling station. However finally the line from switchyard is to terminate at Tuticorin pooling station.

Members may discuss the above proposal and decide.

D.) Common Transmission System for LTOA applications in Krishnapatnam, Tuticorin and Srikakulam area

LTOA Generation Projects in SR

LTOA Applicant	LTOA	Allocation of Power		
	Applied	(MW)		
		SR	WR	NR
Krishnapatnam Area				
Simhapuri Energy Private Ltd.	491	311	135	
PTC India Ltd. (Meenakshi)	600	205	195	200
APPDCL	175			175
Krishnapatnam Power (Navayuga)	1860	360	600	900
Total	3126	876	930	1275
Tuticorin Area				
Coastal Energen Pvt. Ltd.	1100	820	280	
Ind-Barath Power (Madras) Ltd.	945	284	236	425
Total	2045	1104	516	425
Srikakulam Area				
East-Coast Energy	2440	1940	500	
NCC Vamshadara	1320	500	500	320
Total	3740	2440	1000	320
Grand Total	8931	4420	2446	2020

For transfer of power to WR and NR beneficiaries following transmission system shall be required

- (i) Sholapur – Pune 765 kV S/c (1st already covered under transmission associated with Krishnapatnam UMPP).
- (ii) Establishment of 765 kV station at Orai by LILO of one circuit of Satna – Gwalior 765 kV line.
- (iii) Establishment of 765 kV station at Buland shahar by LILO of Agra – Meerut 765 kV line.
- (iv) Establishment of 765 kV station at Sonapat by LILO of Bhiwani – Meerut 765 kV line.
- (v) Jabalpur Pooling station – Orai 765 kV S/c line.
- (vi) Orai – Bulandshahar – Sonipat 765 kV S/c line.

The estimated Cost of the above system shall be about Rs. 3300 Crores.

Summary of total investment for LTOA projects in Southern region

Sl. No.	Area	LTOA projects	LTOA MW	Estimated Cost Rs. Crs
1	Krishnapatnam	Simhapuri Energy Private Ltd.	491	1700
		PTC India Ltd. (Meenakshi)	600	
		APPDCL	175	
		Krishnapatnam Power (Navayuga)	1860	
2.	Tuticorin	Coastal Energen Pvt. Ltd.	1100	2500
		Ind-Barath Power (Madras) Ltd.	945	
3.	Srikakulam	East-Coast Energy	2440	3000
		NCC Vamshadara	1320	
4.	System strengthening required in WR and NR			3300
	Total		8931	10500

Therefore, per MW investment in the transmission is of the order of Rs. 1.20 Crs per MW

Therefore, BG requirement at the rate of 10% of the investment shall work out to be of the order of Rs. 12 Lakhs/MW.

SYSTEM STUDIES - LONG TERM OPEN ACCESS CASES

