



Government of India  
Ministry of Power  
Central Electricity Authority  
System Planning & Project Appraisal Division  
Sewa Bhawan, R. K. Puram, New Delhi-110066  
[ISO: 9001:2008]  
Website: www.cea.nic.in



No. 81/4/2014/SP&PA/ 2094

Date: 14<sup>th</sup> Nov., 2014

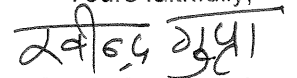
To,

1	The Member (PS), Central Electricity Authority, Sewa Bhawan, R. K. Puram, New Delhi-110066.	8	Engineer-in-Chief Power & Electricity Department, Govt. of Mizoram, Tuikhuahtlang, Aizawl (Mizoram) <b>Fax: 0389-2320862</b>
2	The Member Secretary, North Eastern Regional Power Committee(NERPC), Meghalaya State Housing Finance Co- Operative Society Ltd. Building Nongrim Hills, Shillong (Meghalaya) – 793003 <b>Fax: 0364 – 22520030</b>	9	The Chief Engineer (Power), Electricity Department, Keisampat, Imphal (Manipur) - <b>Fax: 0385 – 2220702</b>
3	The Director (Projects ), Power Grid Corp. of India Ltd., "Saudamini", Plot No. 2, Sector-29, Gurgaon-122001 <b>Fax 0124-2571760/2571932</b>	10	The Chairman-cum-Managing Director, Tripura State Electricity Corporation Limited, Bidyut Bhavan, Banamalipur, Agartala, Tripura. <b>Fax: 0381 – 2319427</b>
4	The Managing Director, Assam Electricity Grid Corporation Limited, Bijulee Bhawan; Paltan Bazar, Guwahati (Assam) – 781001. <b>Fax: 0361 – 2739513 &amp; 0361 – 2739989</b>	11	The Chairman and Managing Director, North Eastern Electric Power Corporation Ltd, Brookland Compound, Lower New Colony, Shillong (Meghalaya) – 793003. <b>Fax: 0364 – 2226417</b>
5	The Chairman-cum-Managing Director, Meghalaya Energy Corporation Limited, Lum Jingshai, Short Round Road, Shillong (Meghalaya) – 793001. <b>Fax: 0364 – 2590355</b>	12	Director (Projects), National Thermal Power Corp. Ltd.(NTPC), NTPC Bhawan,Core-7, Scope Complex, Lodhi Road,New Delhi-110003 <b>Fax 011-24360912</b>
6	The Chief Engineer (Power), Vidyut Bhawan, Department of Power, Zero Point Tinali, Itanagar (Arunachal Pradesh) – 791111. <b>Fax: 0360 – 2217302</b>	13	CEO, POSOCO, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi – 110016. <b>Fax: 011 – 26852747 / 26524525/ 26536901</b>
7	The Chief Engineer, Department of Power, Nagaland, Kohima <b>Fax: 0832 – 222354</b>		

**Sub:** 4<sup>th</sup> Standing Committee Meeting on Power System Planning of North Eastern Region.

Sir,

The agenda of 4<sup>th</sup> Standing Committee Meeting on Power System Planning of North Eastern Region has been uploaded on CEA Website ([www.cea.nic.in](http://www.cea.nic.in)) at the following link –Home page-wing specific document-power systems- Standing Committee Meeting on Power System planning -North Eastern Region). The date and venue of the meeting will be intimated shortly.

Yours faithfully,  
  
(Ravinder Gupta)  
Director, SP&PA

## **Agenda for 4<sup>th</sup> Standing Committee Meeting on Power System planning of North Eastern Region**

### **1.0 Confirmation of the minutes of 3<sup>rd</sup> Standing Committee Meeting on Power System planning of North Eastern Region.**

1.1 The minutes of the 3<sup>rd</sup> meeting of the Standing Committee on Power System Planning held on 21<sup>st</sup> Dec., 2011 at Katwaria Sarai, New Delhi were circulated vide CEA letter no. 81/4/2011-SP&PA/50-62 dated 11<sup>th</sup> Jan., 2012. No comment from any constituent has been received. The minutes may be confirmed.

### **2.0 Procurement of spare transformers and Reactors in NER**

2.1 CEA vide its letter no. 81/4/2011-SP&PA/174-186 dated 6<sup>th</sup> Feb., 2012 has requested for approval of constituents for the following transmission works:

- i) 1x100 MVA 220/132 kV ICT (3-phase) at Dimapur S/S
- ii) 1x16 MVA 132/33 kV ICT (3-phase) at Nirjuli S/S
- iii) 1x5 MVA 132/33 kV ICT (1-phase) at Ziro S/S
- iv) 1x63 MVAr 420 kV Bus Reactor at Balipara S/S

2.2 The proposal has been agreed in the special TCC meeting of NER on 5<sup>th</sup> Aug., 2011 at Agartala and endorsed by NERPC in its 12<sup>th</sup> meeting held on 14<sup>th</sup> and 15<sup>th</sup> Nov., 2011 at Amritsar.

2.3 **Members may please note.**

### **3.0 Radial Cross Border Interconnection for Supplying 100 MW power from India (Tripura, NER) to Eastern Side of Bangladesh (Comilla)**

3.1 In the 7<sup>th</sup> Joint Steering Committee meeting on Cooperation on Power between India and Bangladesh held in Dhaka on 03<sup>rd</sup> April, 2014, a Joint Technical Committee (JTC) comprising of Indian and Bangladesh members, was constituted to study the proposal of Bangladesh for import of about 100 MW power from Palatana project (726.6 MW) in Tripura/NER to Eastern side of Bangladesh through radial interconnection.

3.2 The Indian side had carried out the necessary technical studies to firm-up the point of connectivity and type of interconnection out of the various alternatives. Three alternatives were discussed in meeting held on 23.05.2014 at Agartala, Tripura among CEA, CTU, NERLDC, TSECL, OTPC etc. In the meeting, it was decided to create Surajmaninagar- South Comilla 400 kV D/C (initially operated at 132 KV) interconnection between India and Bangladesh to supply 100 MW of power from Palatana to Bangladesh in radial mode.

3.3 Bangladesh side has also carried out their study in regard to isolating 100 MW load at South Comilla and connecting it to the Indian system. The joint meeting of the JTC members, followed by site visit to South Comilla, was held from 22<sup>nd</sup> to 24<sup>th</sup> June, 2014 at Dhaka.

3.4 The report of JTC was submitted in the 8<sup>th</sup> JSC Meeting held on 10-10-2014 at New Delhi. The JSC accepted the report of JTC regarding radial interconnection for import of 100 MW power by Bangladesh from Tripura side to the Eastern side of Bangladesh and decided that the respective organizations viz. POWERGRID of India and BPDB / PGCB of Bangladesh would take up the work within their territories. As this line is dedicated in nature, the necessary commercial agreement would be finalized between the two sides for sharing the transmission charges. The target date of completion of the link is December, 2015. The scope of work of the radial interconnection is as given below:

Indian side (To be implemented by Powergrid)

a) Surjyamaninagar (Tripura) – Bangladesh border 400 kV D/C line (initially operated at 132 kV) - 27 km (Twin Moose Conductor)

Bangladesh side (To be implemented by BPDB / PGCB of Bangladesh)

a) Indian Border- Comilla (North) 400 kV D/c line (initially operated at 132 kV)– 15 km (Twin Finch Conductor)

b) Comilla (North) - Comilla (South) 132kV D/c line – 16km

3.5 **Members may concur.**

#### **4.0 High Capacity multi-terminal HVDC bi-pole line interconnecting North-Eastern Region (NER), India, Northern Region (NR), India and Bangladesh**

4.1 The master plan for evacuation of Power from Hydro projects in Arunachal Pradesh envisages construction of high capacity HVDC / HVAC lines from NER to other parts of the country. The power from hydro projects proposed in Kameng and Twang basin is proposed to be pooled at Rangia/ Rowta pooling station from where, it would be evacuated to Northern Region. In view of Right of Way (RoW) constraints in chicken neck area, the possibility of routing the HVDC line through Bangladesh was explored, wherein it was proposed to build multi terminal HVDC with one inverter station in Bangladesh . A concept paper on same was presented by the Indian side in 8<sup>th</sup> JSC meeting held on 10<sup>th</sup> Oct, 2014 at New Delhi. Further, it was decided that a study report on the proposed system would be submitted by Nov, 2014 by JWG.

In this regard following transmission system is proposed:

- Establishment of 2x500 MVA, 400/220 kV Pooling Station at Rangia / Rowta<sup>§</sup> in Upper Assam

- LILO of both ckts of Balipara-Bongaigaon 400 kV D/C (twin moose) line at Rangia / Rowta Pooling Station
- LILO of both ckts of Balipara-Bongaigaon 400 kV D/C (quad moose) line at Rangia / Rowta Pooling Station
- 7000MW<sup>@</sup> (2 x 3500 MW),  $\pm$  800kV HVDC terminal at Rangia
- 2 x 500 MW,  $\pm$  800kV HVDC terminal at Barapukuria
- 2 x 3000 MW,  $\pm$  800kV HVDC terminal at Muzaffarnagar (New)
- Rangia – Barapukuria–Muzaffarnagar# (New) 7000MW,  $\pm$  800kV HVDC bipole line
- Muzaffarnagar (New) – Bagpat 400kV D/c line (HTLS)
- Muzaffarnagar (New) – Meerut 400kV D/c line (HTLS)

**Note:**

**1- $\$$ :** *Rangia/Rowta pooling station would also have infeed from Bhutan through Yangbari-Rangia/Rowta 400kV 2xD/c (quad) line; from hydro projects in Tawang Basin of Ar. Pradesh through Tawang PP – Rangia/Rowta 400kV D/c (HTLS) line and from hydro projects in Kameng Basin of Ar. Pradesh through Dinchang PP - Rangia/Rowta 400kV D/c (Quad) line.*

**2-#:** *Muzaffarnagar 765/400/220kV substation along with Muzaffarnagar(New)– Muzaffarnagar(UP) 400kV D/c line (HTLS) and Muzaffarnagar (New) – Saharanpur 400kV D/c line (HTLS) are being planned as a part of high capacity 765kV D/c WR – NR corridor viz. Bilaspur Pool (WR) – Dhanvahi (WR) – Fatehpur (NR) – Lucknow(NR) – Aligarh(NR) – Muzaffarnagar(NR) – Mohali(NR) – Gurdaspur(NR).*

**3-@ :** *Regarding MW rating of HVDC terminals, it is to mention that rating of HVDC terminals may be decided so as to ensure injection of 2x3500MW at 400kV AC substation of Rangia/Rowta and 2x500 MW at 400kV AC substation of Barapukuria (Bangladesh).*

Approximate line length from Rangia (Assam, NER) to Barapukuria (Bangladesh) would be about 400km and that from Barapukuria (Bangladesh) to Muzaffarnagar (Uttar Pradesh, NR) would be about 1500km.

**4.2 Members may discuss and concur.**

**5.0 Augmentation of Transformation Capacity at 400/220/33 kV Misa substation of POWEWRGRID**

5.1 Existing transformation capacity 400/220/33kV at Misa Sub Station is 2X315MVA out of which one is bank of 4x105 MVA (including one spare) single phase transformer. In 99<sup>th</sup> OCC Meeting held on 16<sup>th</sup> July, 2014 at Cherrapunji, the committee noted that the combined loading of both the ICTs

at Misa S/S frequently becomes more than 300MW (with a maximum loading of 410MW).

5.2 To improve the reliability of power supply at Misa S/S, following transformation capacity replacement/ augmentation at Misa S/S is proposed :

- Replacement of existing 4x105 MVA, 400/220 kV ICT by 1x500 MVA, 400/220 kV ICT
- Addition of 3<sup>rd</sup> 500 MVA, 400/220 kV ICT

5.3 Owing to space constraints at Misa, GIS bays for the transformers is proposed.

5.4 **Member may please discussed.**

## **6.0 Kameng Basin – Dinchang Pooling Station**

6.1 POWERGRID till date has received 22 nos. connectivity and LT(O)A applications for about 14751 and 7489.5 MW power respectively from generation projects in Lohit, Siang, Tawang, Kameng and Dibang basins of Arunachal Pradesh. 22 applications had already been discussed in earlier meetings and 4 of them in Kameng basin were granted connectivity / LTA for 495 / 423 MW. The remaining applications could not be granted connectivity / LTA due to unsatisfactory progress of the generation projects. One long pending application of Lower Siang HEP was closed due to no progress of the generation project. Following common transmission system was finalized for transfer of power from 4 generation projects in Kameng basin, which is to be implemented through competitive bidding route.

**Common transmission system for transfer of power from 4 generation projects in Kameng basin** (to be implemented through competitive bidding route)

### **Generation Projects**

1. KSK Dibbin Hydro Power Pvt Ltd
2. Patel Hydro Pvt Ltd (Dirang Energy Pvt. Ltd)
3. Adishankar Khuitam Power Pvt. Ltd
4. SEW Nafra Power Corporation Ltd

### **Transmission System**

#### **Sub-Station**

- Establishment of 7x105 MVA, 400/220kV Pooling Station (GIS) at Dinchang
- Establishment of 2x500<sup>#</sup> MVA, 400/220kV Pooling Station at Rowta / Rangia in Assam

[# Since cost of 315 MVA and 500 MVA are in the similar order, 2x500 MVA ICTs has been proposed].

## Transmission Line

- Dinchang – Rangia/Rowta PP 400kV D/c line with quad conductor
- LILO of Balipara – Bongaigaon 400kV D/c line (twin moose) at Rangia/Rowta PS

6.2 Subsequently, based on decisions taken in the meeting held at POWERGRID office, Gurgaon on 30-10-2013, Connectivity and LTA for Inter State Transmission System (ISTS) was reviewed for the above IPP generation projects in Kameng basin of Arunachal Pradesh. It was decided to cancel the connectivity & LTA granted to KSK Dibbin Hydro Power Pvt Ltd and Adishankar Khuitam Power Pvt. Ltd due to unsatisfactory progress of their generation projects. Further, it was also decided that the common system (to be implemented through TBCB) already planned would be implemented without any modification for the following projects :

- a. Patel Hydro Pvt Ltd (Dirang Energy Pvt. Ltd)
- b. SEW Nafra Power Corporation Ltd

The latest status of the above two projects was reviewed in Connectivity / LTA meeting for generation projects in North Eastern Region held on 25-09-14.

Accordingly, the updated status of the above two generation projects in Kameng basin is as given below:

SI No	Applicant	Capacity (MW)	Conn. / LTA Quantum (MW)	Commencement of Connectivity/LTA#	Commissioning Schedule	LTTA/ BG
1.	Patel Hydro Power Pvt. Ltd. (Dirang Energy Pvt. Ltd.)	144+45=189 Gongri-2x72 Saskan Rong – 2x22.5	189 / 165	Mar-2017	Unit#1 (Gongri): Mar-2017 Unit#2 (Gongri): May-2017 Unit#1 (Saskang Rong) : Mar-2017 Unit#2 (Saskang Rong) : May-2017	Yes
2.	Sew Nafra Power Corporation Ltd.	120 (2x60)	120 / 80	Sep-2017	Unit#1 : Sep-2017 Unit#2 : Sep-2017	Yes
	<b>Total</b>	<b>495</b>	<b>495 / 423</b>			

6.3 **Members may note.**

## **7.0 North Eastern Region Strengthening Scheme – II**

7.1 This scheme was earlier a part of comprehensive scheme for strengthening of transmission and distribution system in NER and Sikkim. Further, the intra state works for six states of NER (excl. Arunachal Pradesh and Sikkim) were taken up through World Bank funding and Arunachal Pradesh & Sikkim schemes through Government of India funding (NLCPR Central). The interstate works have been approved by constituents of NER in joint standing committee meeting of ER and NER held on 03.01.2014 at Guwahati. The following is the scope under this scheme:

## **Scope of Work**

### **NERSS-II : Part-A (to be implemented by POWERGRID)**

1. 2<sup>nd</sup> 400/220 kV, 315 MVA ICT at Balipara substation of POWERGRID
2. Replacement of existing 132/33 kV, 2X10 MVA ICT by 132/33 kV, 2X50 MVA ICT at Nirjuli sub-station of POWERGRID

### **NERSS-II : Part-B (to be implemented through TBCB Route)**

<b>Sl. No.</b>	<b>Transmission System</b>	<b>Line Length (km.)</b>
1	Biswanath Chariyalli (PG) – Itanagar (State) 132 kV D/C (Zebra conductor) <ul style="list-style-type: none"><li>• 2 no. of 132 kV line bays at Itanagar S/s</li></ul>	95
2	Silchar (PG) – Misa (PG) 400kV D/C (Quad) line	200
3	Ranganadi HEP – Nirjuli (PG) 132 kV D/C line <ul style="list-style-type: none"><li>• 2 no. of 132 kV line bays (GIS) at Ranganadi Switchyard</li></ul>	40
4	Imphal (PG) – New Kohima (State) 400 kV D/C line (to be initially operated at 132 kV) <ul style="list-style-type: none"><li>• 2 no. of 132 kV line bays at its New Kohima S/s</li></ul>	150
5*	Surajmaninagar-P. K. Bari 400 kV D/C (initially op. at 132 kV)	130

\* This line was recommended in the 14<sup>th</sup> TCC meeting held on 4<sup>th</sup> Sep, 2013 in Agartala and NERPC members approved the decision of the TCC.

#### **Note:**

##### CTU to provide:

- 2 no. of 132kV line bays each at Bishwanath Chariyali (PG), Nirjuli (PG) and Imphal (PG) sub-stations
- 2 no. of 400kV line bays each at Silchar (PG) and Misa (PG)
- 80 MVAR bus reactor at Misa (PG) along with GIS bay
- 1x80 MVAR switchable line reactor with GIS bays at Misa end of each circuit of Silchar– Misa 400kV D/C line

##### States to provide:

- 2 no. of 132 kV line bays at their Itanagar S/s of DoP, Arunachal Pradesh (DoP, Ar. Pradesh to provide space for the bays)
- 2 no. of 132 kV line bays (GIS) at Ranganadi Switchyard of NEEPCO (NEEPCO to provide space for the bays)
- 2 no. of 132 kV line bays at New Kohima S/s of DoP, Nagaland (DoP, Nagaland to provide space for the bays)
- 2 no. of 132 kV line bays at Surajmaninagar S/s of TSECL (TSECL to provide space for the bays)
- 2 no. of 132 kV line bays at P. K. Bari S/s of TSECL (TSECL to provide space for the bays)

## **7.2 Members may concur.**