

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

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

Dated: 02-09-2009

- | | |
|---|---|
| 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, 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: Meeting of the Standing Committee on Power System Planning in Eastern Region.

Sir,

The Agenda for the next Standing Committee on Power System Planning in Eastern Region has been uploaded on **CEA website: www.cea.nic.in**. (Path to access-*Power System/Standing Committee on Power System Planning/EASTERN REGION*).

The date and venue of the proposed meeting will be intimated shortly. Any additional issue to be discussed as an agenda for the meeting may please be communicated in advance.

Yours faithfully,

(Dr. 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 Bhubaneswar, Orissa on 08.11.2008.

Minutes of the Standing Committee meeting held on 08.11.2008 at Bhubaneswar, Orissa were circulated vide CEA letter No. 66/5/99/SP&PA/ dated 03.12.2008. Subsequently, GRIDCO, Orissa vide their letter dated 6-8-09 (copy enclosed) proposed establishment of a new 400/220kV Uttara S/S (Puri district) as inter-state system in lieu of 400/220kV S/S at Sundergarh covered under the system strengthening works in ER.

The minutes excepting the above issue of GRIDCO may be confirmed.

2.0 Proposal of DVC for establishment of New 400 kV sub-station at Jamshedpur by LILO of one ckt. of 400 kV Parulia-Jamshedpur D/C line.

Presently, the existing 400/220kV, 2x315MVA Jamshedpur S/S of PGCIL is meeting load demand in and around Jamshedpur. There is no further expansion scope in this S/S due to space constraint. DVC has indicated that there will be an additional industrial load growth over 250 MW in and around Jamshedpur, which is further to increase with time. Keeping this in view, they have proposed to establish a 400/220kV, 2x315MVA S/S at Jamshedpur at their own cost with LILO of one ckt. of 400 kV Parulia-Jamshedpur D/C line being established as an inter-state line in ER.

Members may discuss and concur.

3.0 Proposal of JSEB for additional two nos. 220 kV bays at 400/220 kV grid sub stations at Daltonganj (PG) and Chaibasa (PG).

The establishment of 2x315 MVA, 400/220 kV sub-stations at Daltonganj and Chaibasa in the state of Jharkhand has been finalized as a part of regional system strengthening in the Standing Committee meeting of ER held on 8.11.2008 at Bhubaneswar and subsequently concurred in the special meeting of the Eastern Regional Power Committee (ERPC) held on 30.12.08 in Kolkata. There is a provision of 4 nos. of 220kV line bays at each of these sub-stations for network expansion of JSEB. In addition, JSEB has proposed for two more 220kV line bays at each sub-station. As the present provision of 4nos. 220kV line bays at each of the 400/220kV S/Ss is adequate to meet the system requirement of Jharkhand, additional provision of 2nos. line bays is not required at this stage. However, PGCIL has to keep space provision for extension of two nos. 220kV bays at each of the sub-stations. In future, the cost of additional 220kV bays would be borne by JSEB.

Members may discuss and concur.

4. Proposal of GRIDCO for establishment of a new 400/220kV, 2x315 S/S at Uttara with LILO of 400kV Mendhasal- Baripada D/C line in place of 400kV/220kV Sundergarh S/S with LILO of both the circuits of 400 kV Talcher – Rourkela D/C line.

In the meeting of the Standing Committee on Power System Planning in ER held on 8-11-2008 at Bhubaneswar and subsequently in the special ERPC meeting held on 30-

12-08 in Kolkata, setting-up of 400/220kV, 2x315MVA Sundergarh S/S with LILO of the existing 400kV Talcher-Rourkela D/C line was decided to be constructed as part of system strengthening works in ER (considered as ERSS-III by PGCIL) as a regional/inter-state system.

In lieu of the aforesaid transmission works, GRIDCO vide its Ir. No. DC-28/2008/5542 dated 6-8-2009 has proposed for setting-up of a new 400/220kV,2x315MVA S/S at Uttara (in Puri District) with LILO of both the circuits of 400kV Baripada-Mendhasal D/C line being established as part of regional transmission line in ER. CEA vide its Ir. No. 68/1/09-SP&PA/ dated 20th August, 2009 has conveyed its concurrence subject to the proposal to be concurred by ERPC. It is understood that the proposal has been concurred by ERPC.

Members may please note.

5.0 Transmission System Associated with the Tilaiya Ultra Mega Power Project (4000 MW) in Jharkhand, and IPPs in Jharkhand, WB and Orissa

Generation specific transmission systems for evacuation of power for Tilaiya Ultra Mega Power Project (4000 MW) in Jharkhand, and IPPs in Jharkhand and Orissa were inter-alia discussed in the earlier standing committee meeting. Based on review of the progress for commissioning of various IPPs and issues relating to RoWs and space constraints, ATS and corresponding system strengthening works have been revised for the following projects.

5.1 ATS Specific to Generation Projects.

- **Tilaiya UMPP(4000MW) in Jharkhand**

As per the allocations finalized by Ministry of Power for Tilaiya UMPP, Eastern Region would get 1500 MW (Jharkhand-1000MW, Bihar-500MW), Northern Region 1700 MW (Uttar Pradesh-650 MW, Delhi-150 MW, Punjab-450 MW, Haryana-200 MW, Rajasthan-250 MW), and Western Region 800 MW (Madhya Pradesh-200 MW, Gujarat-300 MW, Maharashtra-300 MW).

Tilaiya transmission system was earlier firmed-up as following.

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

In view of space constraints at Sasaram, PGCIL has proposed to construct an additional 765kV Tilaiya UMPP – Balia S/C line in place of 765kV Tilaiya-Sasaram line. The revised ATS is,

- ✓ **Tilaiya UMPP – Balia 765kV 2xS/C line**
- ✓ **Tilaiya UMPP – Gaya 765kV S/C line**

The revised evacuation proposal was discussed and concurred in the 27th Standing committee meeting of NR held on 30-5-09 at Nanital, Uttarakhand. As decided earlier, the transmission charges for the above system will be shared by the beneficiaries of Tilaiya UMPP in proportion to allocation from Tilaiya UMPP.

Members may kindly discuss and concur.

- **CESC Haldia TPS(600MW) and related Transmission charges.**

Out of the 600MW installed capacity, CESC will draw 450MW for its use and 150MW would be wheeled to NPCL (Noida Power Company Ltd.). The transmission system firm-up for evacuation includes the following:

- **Haldia – Subhashgram(PG) 400kV D/c line**
- **2x315MVA ICTs at Subhashgram**
- **220kV D/c line from Subhashgram to CESC substation**

Out of the above transmission system, 2x315MVA, 400/220kV ICTs at Subhasgram (PG) was earlier decided to be under regional transmission along with 4nos. 220kV bays at Subhasgram(PG) for which CESC is to share the Eastern regional transmission corresponding to 600MW.

PGCIL has informed that they have granted LTOA for transfer of 400MW and 150MW power to CESC and NPCL respectively from Haldia Generation project. The transmission charges (as applicable) to be paid to PGCIL by CESC and NPCL may have the following basis:

- ER regional charges corresponding to 400MW by CESC and 150MW by NPCL
- NR regional charges corresponding to 150MW by NPCL

PGCIL has informed that the entire transmission works as stated above, including 4nos. 220kV bays at 400kV Subhasgram(PG) is now under the scope of CESC. CESC would not utilize the ISTS transmission system owned by POWERGRID except 400kV bus connectivity at Subashgram(PG). It is to decide whether CESC is to bear the ER transmission charges for utilization of 400MW from 400kV Subhasgram S/S of PGCIL.

Members may discuss and finalize.

5.2 ATS for IPPs in Jharkhand and WB

Generation Projects

| Sl No | Projects | Time Frame | Ins. Cap | LTOA | Allocation | | | |
|----------|------------------------------------|----------------|-------------|-------------|-------------|-------------|------------|-------------|
| | | | | | NR | WR | ER | Total |
| A | <u>Jharkhand</u> | | | | | | | |
| 1 | Adhunik | Mar-12 | 1005 | 910 | 500 | | 350 | 850 |
| 2 | Corporate | Mar-12 | 660 | 594 | 594 | | | 594 |
| 3 | ESSAR | Dec-11 | 1200 | 1100 | 400 | 400 | 300 | 1100 |
| 4 | Dumka | Jun-12 | 600 | 540 | 270 | 270 | 0 | 540 |
| | Sub-total | | 3465 | 3144 | 1764 | 670 | 650 | 3084 |
| B | <u>West Bengal Projects</u> | 2011-12 | 2000 | 2000 | 1200 | 800 | - | 2000 |
| | Total | | 5465 | 5144 | 2964 | 1470 | 650 | 5084 |

A. ATS in Jharkhand (under the scope of Generation Developer)

- **Corporate(660 MW):** Corporate – Jharkhand Pooling Station 400kV D/c line
- **Essar(1200MW):** Essar – Jharkhand Pooling station 400kV D/c (quad moose) line

Adhunik (1005 MW): LILO of Maithon-Jamshedpur 400kV D/c at Adhunik, Or
Adhunik – Jamshedpur 400kV D/c line

- **CESC – Dumka (600MW):** LILO of Kahalgaon-Maithon 400kV D/c lines at Dumka

Earlier, LILO of one circuit of Kahalgaon-Maithon 400kV D/c lines at Dumka and Dumka-Gaya 400kV D/C line were envisaged for evacuation of 1200MW from Dumka TPS. It is now envisaged that one unit with a capacity of 600MW would materialize at this stage. Accordingly, for evacuation of power (600MW), LILO of both the circuits of Kahalgaon-Maithon 400kV D/c lines at Dumka is being proposed by PGCIL by studying that there will be no appreciable rise in fault level at Kahalgaon.

JSEB has share of 25% from Dumka TPS. For drawal of their share directly from Dumka switchyard, a provision of 2x315MVA,400/220kV ICTs at the switchyard may be provided by CESC based on the commercial arrangement between CESC and JSEB.

Members may discuss and concur.

B. System Strengthening under the scope of WBSETCL in State sector

In the last standing committee, the generation specific ATS of WBSETCL for Purulia PSS(900 MW), Bakreshwar TPS (U#1-5, 1100MW), Katwa(1000 MW) and Sagardighi(1100MW), and the following system strengthening works by WBSETCL were concurred.

- Jagatballabhpur – Subhashgram 400kV D/c line
- Kolaghat – Guptamani 400kV line (D/C to be bunched at Kolaghat in case space constraint at Kolaghat or Quad conductor S/C line-WBSETCL was to explore the option)
- Jagatballabhpur-Guptamani 400kV D/c line
- Jagatballabhpur-Gokarna 400kV D/c line
- LILO of Baripada – Kolaghat 400kV S/c at Guptamani
- Guptamani – Jamshedpur 400kV D/c line
- Purulia PSS – Ranchi 400kV D/c line

For wheeling of 2000 MW power from various projects of WBSEDCL like Purulia PSS (900 MW), Santaldih U# 5 & 6 (500 MW), Bakreshwar TPS U#4, 5 & 6 (920 MW), Sagardighi U#1, 2 & 3 (1100MW) and Katwa (1000 MW), WBSEDCL has sought permission for LTOA from PGCIL w.e.f. 01-04-2009 for the following beneficiaries in NR/WR.

NR : 1200MW (Punjab, Haryana, Rajasthan, Delhi)

WR: 800MW (Maharashtra, Gujarat)

Members may kindly note.

C. Common System Strengthening for Transfer of power from generation projects in Jharkhand and West Bengal to NR/WR (under the scope of PGCIL)

• **In ER**

- Establishment of 400kV Pooling Station (Jharkhand Pool) near Essar and Corporate generation projects.
- Ranchi – Jharkhand Pooling Station - Gaya 400 kV Quad D/c

• **In NR**

- New 765/400 kV substation at Varanasi and Kanpur
- Gaya – Varanasi 765 kV S/c (instead of Gaya-Balia 765kV 2nd line)
- LILO of Tillaiya – Balia 765 kV S/c at Varanasi
- Varanasi – Kanpur 765 kV D/c
- Kanpur – Jhattikalan 765 kV S/c
- 400kV connectivity for new 765/400kV S/s at Varanasi & Kanpur

• **In WR**

- Ranchi - Dharamjayagarh 765kV S/c (instead of Ranchi-Sipat 765kV 2nd S/C line)
- Dharamjayagarh – Jabalpur 765kV D/c (2nd line) –proposed to be under Pvt. Sector.

The charges of the common transmission system would be borne by the generation developers of Jharkhand as well as WBSEDCL till the time the long term beneficiaries are finalized. Further, the regional charges of Eastern Region would be borne by Jharkhand projects in proportion to their installed capacity and by WBSEDCL corresponding to open access quantum i.e. 2000MW. The regional charges for WR and NR would also be shared by Jharkhand projects and WBSEDCL in proportion to the power allocated to these regions. Once, the long-term beneficiaries are tied-up, transmission charges would be shared by the beneficiaries in proportion to their allocation.

Members may kindly note.

5.3 Orissa IPPs

The following generation projects (phase-1) applied for seeking LTOA from PGCIL are proposed to be commissioned by XI Plan/ early XII Plan.

Phase-1 Gen Projects in Orissa

| Sl no | Projects | Installed Capacity (MW) | Date of Commissioning | LTOA Required (MW) | | | | |
|-------|---------------|-------------------------|-----------------------|--------------------|-------------|------------|------------|-------------|
| | | | | NR | WR | ER | SR | Total |
| 1 | Sterlite | 2400 | June-09 | 200 | 200 | - | - | 400 |
| 2 | GMR | 1050 | Sept -11 | 600 | - | - | 200 | 800 |
| 3 | Navbharat | 1050 | July - 11 | 465 | 255 | - | - | 720 |
| 4 | Monnet | 1050 | June-12 | 300 | 375 | 225 | - | 900 |
| 5 | Jindal | 1200 | March-11 | 834 | 210 | - | - | 1044 |
| 6 | Lanco Babandh | 2640 | Dec-13 | 650 | 950 | - | - | 1600 |
| 7 | Ind Barath | 700 | Sept-11 | 266 | 350 | - | - | 616 |
| | | 10090 | | 3315 | 2340 | 225 | 200 | 6080 |

A. ATS upto Pooling Station at Jharsuguda (under the scope of Generation Developer)

Sterlite (2400 MW)

Sterlite – Jharsuguda Pool 400kV D/c line with associated line bays

Ind-Barath (700 MW)

Ind-Barath – Jharsuguda Pool 400KV D/c line with associated line bays

B ATS upto Pooling Station at Angul (under the scope of Generation Developer)

Jindal Thermal (1200 MW)

Jindal – Angul Pool 400KV D/c line with associated line bays

Monnet (1050 MW)

Monnet – Angul Pool 400KV D/c line with associated line bays

GMR (1050 MW)

GMR – Angul Pool 400KV D/c line with associated line bays

Lanco Babandh(2640 MW)

Lanco Babandh – Angul Pool 400KV 2xD/C line along with 3x1500MVA 765/400kV ICTs at Angul

Navbharat Ph-I (1050 MW)

Navbharat – Angul Pool 400KV D/c line with associated line bays

C. Common System Strengthening Schemes

(a) ER:

- Establishment of 2x1500 MVA, 765/400kV Pooling Station at Jharsuguda
- Establishment of 4x1500MVA, 765/400kV Pooling Station at Angul
- Angul Pooling Station – Jharsuguda Pooling Station 765kV 2xS/c
- LILO of Rourkela – Raigarh 400kV D/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

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

(b) ER-WR:

- Establishment of 765kV substation at Dharamjaygarh
- Establishment of 2x1500 MVA, 765/400kV Jabalpur Pooling Station
- Jharsuguda Pooling Station – Dharamjaygarh (WR) 765kV D/c
- LILO of Ranchi – WR Pooling (near Sipat) 765kV S/C line at Dharamjaygarh
- Dharamjaygarh – Jabalpur Pooling Station 765kV D/c line
- Jabalpur Pooling Station – Jabalpur 400 kV D/C (high capacity)

(c) WR-NR:

- Establishment of 2x1500MVA, 765/400kV Bhopal Pooling Station
- Jabalpur Pool Pooling Station – Bina 765kV D/c line
- Bina – Gwalior 765kV S/C (3rd circuit)
- Jabalpur Pool Pooling Station – Bhopal – Indore 765kV S/C (proposed to be under Pvt. Sector)
- Bhopal New substation – Bhopal (M.P.) 400kV D/c (high capacity)
- Gwalior - Jaipur 765kV S/c line
- Jaipur - Bhiwani 765kV S/c line

The charges of the above system strengthening scheme for evacuation and transfer of power from the above IPPs in Orissa to beneficiaries in various regions would be borne initially by the generation developers. Once the generation developers identify long term beneficiaries of their generation projects, the same shall be borne by the beneficiary state transmission utilities. Based on the initial/signing of the BPTA (Bulk Power Transmission Agreement) by the project developers for sharing the transmission charges POWERGRID has to implement the system strengthening works.

Members may kindly note.

6.0 Evacuation of power from generation projects coming up in Sikkim, NER and Bhutan

6.1 Phase-1 Gen Projects in Sikkim

| Sl. No | Name of the Generation Plant | Capacity/ Power to be transferred | Tentative Beneficiaries | Expected Commissioning Schedule |
|--------------|------------------------------|-----------------------------------|--|---------------------------------|
| 1 | Teesta-III | 200x6 =1200 MW | PSEB-340MW, HPGCL-200MW, UPPCL-200MW, Rajasthan Discom-100MW | Aug., 2011 |
| 2 | Teesta-VI | 125x4=500 MW | MSEDCL (Maharashtra) | Nov, 2012 |
| 3 | Jorethang | 48x2 = 96 MW | NR/WR | Dec., 2011 |
| 4 | Rangit-IV | 40x3=120 MW | NR/WR | June, 2013 |
| 5 | Tashiding | 48.5x2 =97 MW | NR/WR | June, 2012 |
| 6 | Tingting | 49.5x2=99 MW | NR/WR | March, 2012 |
| 7 | Rongnichu | 48x2=96 MW | Chhattishgarh | March, 2012 |
| 8 | Chuzachen | 49.5x2=99 MW | PSEB, DVB, HSEB, BSEB | March, 2010 |
| 9 | Bhasme | 25.5x2 = 51 MW | NR/WR | March, 2012 |
| Total | | 2358 MW | | |

6.2 ATS (under the scope of Generation project developers)

A. Upto Pooling Station at New Melli/ Kishanganj / Mangan# (proposed at a later date)

- Teesta-III** :Teesta-III – Kishanganj 400kV D/c line with Quad Moose conductor(proposed to be implemented by TPTL under JV route)
- Teesta-VI** :Teesta-VI – New Melli 220kV D/c line with Twin Moose conductor
- Jorethang & Rangit-IV**:_Jorethang – New Melli 220kV D/c line with single moose conductor, one ckt via Rangit-IV.
- Tingting & Tashiding**:_Tingting – New Melli 220kV D/c line with twin moose conductor, one ckt via Tashiding.

[The line would be routed through the proposed pooling point substation near Tingting]

B. Upto Pooling Station at Rangpo

- Chuzachen** :_ Chuzachen – Rangpo 132kV D/C line with Zebra conductor.
- Rongnichu**: Rongnichu – Rangpo 220kV D/C line with Zebra conductor.

3. **Bhasme** : LILO of one ckt of Rongnichu-Rangpo 220kV D/c line at Bhasme with Zebra conductor.

[# Note : Teesta-III – Kishanganj 400kV D/c line (proposed to be implemented by TPTL under JV route) is to be LILoed at New Melli pooling station by PGCIL for evacuation of Phase-I generation projects in Sikkim to Kishanganj. This line would be LILoed at proposed Mangan pooling station at a later date on identification of future generation projects in Northern part of Sikkim. Accordingly, at present the Teesta-III – New Melli portion of this line is for evacuation of Teesta-III generation only, however after commissioning of Mangan pooling station, the Mangan – New Melli portion of this line would be utilized by other generation projects also.]

- 6.3 Among the various hydro projects in Bhutan, Punatsangchu-I (1200MW), Punatsangchu-II (990MW), Mangdechhu (720MW) HEPs in Bhutan are to come during 2014-2016 and major generation from these projects is to be delivered to the beneficiaries in NR/WR. The commissioning of Lower Subansiri HEP (2000MW) and Kameng HEP (600MW) in NER is likely to slip to 2012-2013 from end 11th Plan. In Sikkim, commissioning of some of the hydro projects are in the pipe line by early 12th Plan. Considering this scenario, the transmission system requirements for power evacuation and transfer of power from various projects to beneficiaries in NR/WR, has been relooked and revised to develop optimal transmission system. For instance, 3000MW HVDC station intended earlier to be set-up at Kishanganj, has been planned in the northern part of WB at Alipurduar to conserve RoW in the chicken-neck area and to facilitate transfer of power from generation projects in Bhutan, and for transfer of power from hydro-projects coming up in Sikkim, an additional 400kV D/C line from Kishanganj to Patna has been planned. The transmission system(s) has been evolved/revised not only to match with various generation projects but also to cater to the needs for long term requirements. The revised transmission works for transfer of power to NR/WR are given below.

Part – A: Transmission System for development of pooling station at Kishanganj and associated transmission works (under the Scope of POWERGRID)

(By 2011-12, for evacuation of 1300 MW from Sikkim)

- Establishment of New 2x315 MVA, 400kV sub-station at Kishanganj
- LILo of Siliguri (Existing) – Purnea 400kV D/c line(quad) at new pooling station Kishanganj
- LILo of Siliguri (Existing) – Purnea 400kV D/c line (on which reconductoring is being carried out) at Kishanganj with the higher capacity(HTLS) conductor
- LILo of Siliguri – Dalkhola 220kV D/c line at new pooling station Kishanganj
- LILo of Gangtok-Melli 132kV S/c line upto Rangpo, where Chuzachen-Rangpo 132kV D/c would be connected so as to form Chuzachen-Gangtok and Chuzachen-Melli 132kV S/c lines. [This would be a temporary arrangement till establishment of Rangpo pooling substation under Part-B of the scheme and termination of Gangtok-Rangpo, Melli-Rangpo and Chuzachen-Rangpo 132kV lines at Rangpo]

Part – B: Transmission System for development of pooling substations within Sikkim and transfer of power to a new pooling station Kishanganj in northern Part of West Bengal/Bihar (under the Scope of POWERGRID)

(By 2012-13, when additional 1100MW materializes in Sikkim)

- Establishment of 220/132kV, 3x100MVA Gas Insulated Substation at Rangpo
- Establishment of 10x167MVA, 1 ph, 400/220kV Gas Insulated substation at New Melli
- LILO of Teesta III – Kishanganj 400kV Quad D/c line (to be constructed through JV route) at New Melli
- Rangpo – New Melli 220kV D/c line (with twin Moose conductor)
- LILO of Gangtok-Rangit 132kV S/c line at Rangpo and termination of Gangtok-Rangpo/Chujachen and Melli–Rangpo/Chujachen 132kV lines (constructed under part-A through LILO of Gangtok-Melli 132kV S/c line upto Rangpo) at Rangpo sub-station
- LILO of Teesta V – Siliguri 400kV D/c line at New Melli
- Kishanganj – Patna 400kV D/c (quad) line

The transmission charges for Part 'A' & 'B' of the above transmission works shall be initially borne by the generation developers. However, the modality for cost and transmission resource sharing among the IPPs should be sorted out between IPPs and PGCIL.

Part-C: Transmission System for development for power transfer from Bhutan to NR/WR (under the Scope of POWERGRID)

(By 2014-15, when Punatsangchu-I(1200MW) comes up in Bhutan)

- New 2x315MVA, 400/220kV AC & HVDC sub-station with ± 800 kV, 3000MW converter module at new pooling station at Alipurduar.
- Extension of ± 800 kV HVDC station with 3000 MW inverter module at Agra
- LILO of Bishwanath Chariyali – Agra HVDC line at new pooling station in Alipurduar for parallel operation of the HVDC station
- LILO of Bongaigaon – Siliguri 400kV D/c line(quad) (Bongaigaon – Siliguri 400kV D/c line under Pvt. Sector) at new pooling station in Alipurduar
- LILO of Tala-Siliguri 400kV D/c line at new pooling station in Alipurduar.
- LILO of Birpara-Salakati 220kV D/c line at new pooling station in Alipurduar
- Punatsangchu-1 – Alipurduar 400kV D/c with quad conductor (Indian Portion)
- Earth Electrode line at new pooling station at Alipurduar
- Earth Electrode line at Agra HVDC Terminal

The transmission charges for Part 'C' shall be borne by beneficiaries of Bhutan power. The above system was discussed in the 27th standing committee meeting of NR held on 30th May, 2009 at Nainital, Uttarakhand. Northern Region Constituents agreed to share the transmission charges of Part-C of the scheme subject to the allocation of power from Bhutan projects to the Northern Region.

Members may kindly note.

7. Review of Progress on Earlier Agreed Transmission Schemes

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