

EASTERN REGIONAL POWER COMMITTEE

**AGENDA
FOR
THE
20th TCC MEETING**

Date: 16.12.2011

Venue: Hotel Sujata, Bodhgaya

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Item no. A1: Confirmation of the minutes of 19th TCC meeting held on 23.09.2011 at Goa

The minutes of 19th TCC meeting were circulated vide letter no. ERPC/TCC & Committee/14/2011/4479-4530 dated 13.10.2011.

No comments have been received from constituent members on the minutes of the meeting.

Members may confirm the minutes.

ISSUES FOR DISCUSSION & DECISION

Item no. B1: Non- availability of SCADA data from Powergrid sub-stations

The issue of non availability of SCADA data by ERLDC from Powergrid substations viz. Purnea, Maithon, Ranchi, Patna and Subhasgram was discussed many a time in the OCC meetings. However, in spite of repeated persuasion, ERLDC is not receiving SCADA data from some of the above substations. Moreover, voice communication facilities are also not available in some of the substation.

The issue was also discussed in the recently held 68th OCC meeting on 18.11.11. In the meeting, OCC Members expressed their dismay as the problems were not resolved till date. OCC further decided that, if data availability and voice communication from above substations are not restored within 30th November 2011, the same would be reported to TCC/ERPC.

ERLDC vide its letter furnished the following status as on 30th November 2011:

Sl. No.	Substation	Availability of real time data	Availability of voice communication
1	Purnea	Available from 25 th Nov' 11	Not available
2	Maithon	Not available	Not available
3	Ranchi	Available from 24 th Nov' 11	Not available
4	Patna	Available from 30 th Nov' 11	Not available
5	Subhashgram	Not available	Not available

Regarding Maithon s/s, Powergrid had earlier informed that once the 400kV Maithon-Jamshedpur line gets restored, the data availability & voice communication problem would be resolved. The said line is under outage and was expected to be restored by end of Dec. 2011.

ERLDC may place the latest status before the TCC for further direction.

Item no. B2: Implementation of SPS & availability of SCADA data from upcoming IPPs

SPS

- 19th TCC decided that SPS at Maithon RB, Mejia-B (DVC) and DSTPS (DVC) as well at Sterlite (SEL) should be implemented on or before 30th November 2011, otherwise ERLDC may curtail the injection from these stations to operate the grid in a safe way. ERPC Secretariat was entrusted to monitor the implementation of the above mentioned SPS schemes.
- The status of the above SPSs was reviewed in the Protection sub-Committee meeting on 24.11.2011 and it was noted that these SPS were yet to be implemented. Concerned agencies were allowed to complete the works by 15.12.2011 to avoid penal measures like curtailment of injection from these plants.

SCADA data availability

- Notwithstanding, all the above mentioned IPPs started injecting huge quantum of power to grid without the SCADA data made available to ERLDC.
- The issue of non availability of SCADA data by ERLDC from many IPPs viz. Sterlite Energy, Maithon Power, Mejia and DSTPS was discussed many a time in the OCC meetings. However, in spite of repeated persuasion, ERLDC is not receiving complete SCADA data and voice communication from above IPPs.
- The issue was also discussed in the recently held 68th OCC meeting on 18.11.11. In the meeting, OCC empowered ERLDC to chalk out injection curtailment plan in case of non availability of SCADA data & voice communication for Sterlite, MPL, Mejia & DSTPS by 30th Nov' 11 and the same would be placed before TCC/ERPC.
- ERLDC vide its letter informed the following status as on 30th November 2011:

Sl. No.	IPPs	Availability of real time data	Availability of voice communication
1	Sterlite	Data available (partial) is erratic	Not available
2	MPL	Not available	Not available
3	Mejia	Partial data available	Not available
4	DSTPS	Data available (partial) is erratic	Available

In view of non compliance of TCC/OCC/PCC directions by Sterlite Energy Limited, Maithon RB (MPL), Mejia-B (DVC) and DSTPS (DVC)

- ERLDC may inform the injection curtailment plan for the defaulting IPPs,**
- TCC may deliberate and advise.**

Item no. B3: Metering arrangements of various IPPs

A. MEJIA – B POWER STATION

- In the 16th ERPC meeting it was decided that Mejia – B shall be considered as a separate control area and its scheduling shall be done by ERLDC as per the provisions of IEGC.

- Metering requirement of the power station had been examined and proposed metering scheme of Mejia - B had been forwarded to DVC, who in consultation with CTU would finalize installation of meters.

One no. of SEM (as Check meter) each at Mejia-B end of both the 400 kV outgoing Feeders, 02 nos. of SEMs (as Standby) at EHV side of GTs, 02 nos. of SEMs (as standby) at EHV side of Station transformer were required to be installed. Thus total 06 nos. of SEMs were required to be installed.

In the last CCM (02.12.11).

- POWERGRID confirmed the installation of main meters.
- The status of the check meter installation would be conveyed to ERPC Secretariat by POWERGRID before the ensuing TCC meeting.

Powergrid may intimate the status of installation of check meters.

B. SEL (STERLITE ENERGY LIMITED)

- The metering requirement at Sterlite had been re-examined in a meeting with ERPC, ERLDC & SEL at Jharsugda on 23.05.2011.
- It had been decided in the meeting that SEM should be installed on HV Side as well as LV Side of each ICT, CPP to Budhipadar connection at VAL end, which has to be arranged by SEL.
- Further 02 nos. of L&T make ABT meter were required to be installed on the VAL-Budhipadar feeder at Budhipadar end.
- For UI energy accounting purpose, 02 nos. of SEM were required to be installed (One SEM each at EHV side of GT & Station transformer).
- Thus total 08 nos. of SEMs were required to be installed at Sterlite.

The L&T make ABT meters were to be provided and installed by POWERGRID. POWERGRID would also arrange for 02 no DCDs to enable downloading of data from these meters. SEL shall arrange to send all the ABT meter readings on weekly basis (by every Monday) to ERLDC.

In the last CCM (02.12.11).

- SEL representative was not present.
- ERLDC informed that all the 8 meters on 220 KV side have been installed. However, there is mis-match of data formats. This has been informed to SEL by ERLDC for rectification.

SEL may respond.

Item no. B4: Identification of non-ISTS lines carrying inter-state power in respect of sharing of ISTS charges and losses as per new regulations of CERC

In the last ERPC (19th) meeting, members made a detailed deliberation and the following decisions were taken unanimously:

- ERPC Secretariat shall convene a special Commercial Sub-Committee meeting on 10.10.2011 to sort out the diverging interpretation on the identification procedure.

- Thereafter, ERLDC will make the system study to identify the non-ISTS lines of ER.
- The entire exercise shall be completed in such a way that the deadline for submission of necessary information to NLDC/Implementation Agency (IA) by 30.11.2011 is adhered to.
- ERPC Secretariat shall write to NLDC/IA requesting extension of the deadline by two months at least.
- ERPC Secretariat will write to NLDC/IA to evolve a common methodology for identification of non-ISTS lines.

A special commercial subcommittee meeting was held at ERPC on 10.10.2011 to deliberate the issue in detail. Minutes of the meeting were circulated vide ERPC letter no-ERPC/COM-I/GEN/2011/5324-55 dated 15.11.2011. Based on the discussions held therein ERPC Secretariat vide letter no ERPC/COM-I/IC/2011/4790-91 dated -31.10.2011 addressed to GM, NLDC and Coordinator, Implementation Committee, has apprised the Implementing Agency about the concerns of eastern regional constituents. Also, clarifications regarding the issues highlighted by ERPC have been sought. Copy of the letter has also been circulated among the constituents vide ERPC Secretariat letter no ERPC/COM-I/GEN/2011/5292-5223 dated 15.11.2011 (copy of the letter is at **Annexure-I**).

Response from Implementing Agency is awaited.

In the last CCM (02.12.11).

Members noted the letters issued by ERPC Secretariat to GM, NLDC and Co-ordinator, Implementation Agency in compliance with the decision taken in the last ERPC meeting. Members also noted that in the 1st amendment of CERC (Sharing of Inter-State Transmission Charges and Losses)(1st Amendment) Regulation 2011, notified on 24.11.2011, issues raised by ERPC have not been addressed.

ERPC Secretariat further informed that it had received a letter from NLDC dated 22.11.2011 regarding submission of details of non-ISTS lines.

After deliberation, members decided to refer the issue to TCC and ERPC for further advice.

TCC may suitably advice further action.

Item no. B5: Splitting of 400 kV Kahalgaon STPS bus by NTPC

This issue was re-discussed in the last TCC meeting (19th), wherein NTPC informed that bus splitting is possible at Kahalgaon STPS and approximate cost involvement would be around Rs. 60-70 crore.

In the 67th OCC, NTPC informed that their engineering team had suggested that bus splitting is possible at Kahalgaon with an approximate cost involvement of Rs. 60-70 crore. NTPC had further added that in order to proceed further, cost approval from beneficiaries would be required and if constituents agree, then they would put up the matter before CERC.

In OCC of ERPC, it was suggested that as beneficiaries of Kahalgaon STPS-I and STPS-II are from diverse regions, the matter should be discussed and vetted in the appropriate levels of other regions also. NTPC agreed.

The issue was referred to Commercial sub-Committee by 67th OCC for further deliberation.

In the last CCM (02.12.11).

It was informed by ERPC Secretariat that the Standing Committee of CEA has recommended splitting of 400 KV Kahalgaon STPS bus due to high fault level. Similar recommendations have also been made for three other sub-stations.

It was decided to recommend to TCC to empower NTPC to go ahead with the bus splitting at Kahalgaon with approximate cost of 60-70 crore.

This cost would be apportioned among the beneficiaries of Kahalgaon Stage-I and Stage-II in the ratio of CERC approved project cost of Kahalgaon Stage-I and Stage-II.

Commercial Sub-Committee also recommended that the approval from the other regions may be obtained by NTPC from concerned regions.

TCC may discuss and recommend to ERPC.

Item no. B6: Replacement of check meter of 400 kV Tala-Binaguri feeder-4 at Tala end

In the 18th CCM on 05.09.11 it was decided that PGCIL, on receipt of written request from PTC, would undertake and complete the replacement work within one month. The cost incurred by PGCIL in this respect would be fully reimbursed by PTC.

PTC vide their letter dated 16.09.2011 to GM (O&M), PGCIL (with a copy to this office) had requested for cost estimates for replacement of the check meter.

Accordingly, TCC was informed in the 19th TCC Meeting.

In the last CCM (02.12.11).

In the absence of PTC representative, the items could not be discussed. It was decided to refer the issue to TCC.

TCC may discuss.

Item no. B7: Status of auto-reclosure facilities on 400 kV Tala-Binaguri lines

ERLDC had requested Tala authorities to put the single phase auto-reclosure feature in service at Tala end in order to improve system reliability during grid incidents.

The issue was discussed in the 11th Protection sub-Committee meeting on 24.11.2011, where Bhutan representative agreed to discuss with Tala HPA and explore the possibility of implementing single phase auto-reclosure facility at Tala end of the above line.

Tala authorities may share their views.

Item no. B8: Procurement and installation of numerical relays by BSEB and JSEB for Kahalgaon, Sabour and Lalmatia substations

The following settings of the timer relay at Lalmatia end in respect of 132 kV Kahalgaon - Lalmatia line was done on 01.02.2011:

- i) T1 -0 m.sec (instantaneous)
- ii) T2- 240 m.sec in place of 400 m. sec
- iii) T3- 800 m. sec in place of 1040 m.sec

The above modified setting was reviewed in the Protection sub-Committee meeting and NTPC suggested to continue with the present settings for observation till new numerical relays is installed by JSEB.

The Protection sub-Committee was in favour of installation of new numerical relays for Kahalgaon, Sabour and Lalmatia S/s ends. BSEB and JSEB agreed to expedite its procurement and their installation.

BSEB and JSEB may intimate the present status of procurement..

Item no. B9: Power supply at 400 kV Bulk Power Receiving Station (BPRS) at Jamshedpur of DVC

- 400 KV Mendhasal-Baripada D/C line which was declared commercial w.e.f. 01.09.2011 by PGCIL is to be constructed upto Jamshedpur S/S of PGCIL as per approved scheme.
- As approved by CEA, one circuit of Jamshedpur-Baripada section is to be made LILO at Jamshedpur BRPS S/S of DVC.
- Due to RoW problem for terminating at Jamshedpur S/S of PGCIL the completion of Baripada-Jamshedpur D/C section of the line is getting delayed. Due to this, the supply of Power to Tata Steel Ltd. by DVC, which is urgently required, is also getting delayed.
- The matter was discussed with PGCIL and TSL at Gurgaon and it was agreed that till the ROW issue is resolved, the Baripada-Jamshedpur D/C section may be temporarily terminated at 400 KV Bus of DVC (Jamshedpur BPRS S/S).
- Till the completion of the D/C line upto Jamshedpur S/S of PGCIL transmission charges will be borne by DVC, which in turn will be reimbursed by TSL.
- After termination of D/C line at Jamshedpur S/S of PGCIL, single ckt LILO will be made as per approved scheme of CEA and transmission system will be pooled in the regional asset.
- DVC letter is at **Annexure-II**.

In the last CCM (02.12.11).

It was informed by ERPC Secretariat that in view of the urgency of the issue, the same was discussed in the Protection Sub-Committee meeting held on 24.11.2011 wherein Protection Committee recommended for accepting the arrangement as proposed by DVC.

In the Commercial Sub-Committee meeting, DVC agreed to share the transmission charges between Baripada and Jamshedpur S/s of DVC till the original scheme is in place. *DVC requested POWERGRID to expedite the completion of construction as per the original scheme.*

Commercial Sub-Committee members recommended to TCC for accepting the DVC proposal.

TCC may approve the interim measure of terminating the 400 KV Baripada-Jamshedpur line at BPRS S/s of DVC in Jamshedpur.

Item no. B10: Land requirement for establishment of 400/220 kV s/s at Uttara under ERSS-III - (Reference: Item No.A.9 of 19th ERPC meeting)

- POWERGRID was given the responsibility for construction of 400/220 kV S/S at Uttara in Odisha. Original land identified by Powergrid was not available to POWERGRID due to the identification of said land for International Airport.
- In the last ERPC meeting, POWERGRID informed that alternative sites for construction of the substation will be visited by their official in the month of Sept'2011.

Powergrid & OPTCL may intimate the present status.

Item no. B11: Interim arrangement for evacuation of power from Teesta-III HEP (6x200 MW) by Teesta Urja Ltd. through LILO of one circuit of 400kV Teesta V -Siliguri d/c line at Teesta-III HEP (Reference: Item No. B 1 of 19th TCC meeting)

- Standing Committee approved LILO of 400kV Teesta-Binaguri line for evacuation of power from Teesta-III HEP.
- In the 19th TCC meeting, NHPC expressed their reservation against the LILO of 400 kV Teesta-Binaguri line for evacuation of Teesta-III HEP. It was decided that NHPC's concern would be discussed in a special meeting.
- The issue was discussed in the 11th Protection sub-Committee meeting on 24.11.11. In the said meeting, NHPC reiterated their reservation vide letter dated 24.11.2011. Teesta Urja informed that the commissioning schedule of their units would be delayed by 6 months in view of recent earthquake in Sikkim and the ATS, i.e. 400kV Teesta-Kishenganj D/C is expected by September,2012 (280 foundations completed).
- In view of delayed schedule of commissioning of Teesta Urja units and expected commissioning of its ATS by September 2012, the necessity of LILO of 400kV Teesta-Binaguri may be reviewed. NHPC may interact with Standing Committee with its reservation.

TCC may note and advise.

Item no. B12: Payment of UI -- present status

As submitted by ERLDC, the status of UI payment for 2011-12 (upto 17.11.11) is enclosed at **Annexure-III** and the status of outstanding of MPL and NR is shown below:

SL NO	PERIOD	MPL		NR	
		PRINCIPAL	INTEREST	PRINCIPAL	INTEREST
1	2011-12 (up to week -32)	25.39 Cr.		223.14 Cr.	
2					
	TOTAL	25.39 Cr.		223.14 Cr.	

ERLDC had informed MPL and NR for early liquidation of dues.

MPL may inform the payment schedule.

In the last CCM (02.12.11).

- MPL informed that outstanding UI dues would be liquidated in the coming 7-8 days.
- ERLDC informed that Rs.50 crore had been received from NR and for the balance amount a letter had been issued to NR.

ERLDC may update latest status.

Item no. B13: Reconciliation of UI pool account

ERLDC has informed that reconciliation of UI account for the period from April'11 to Sept'11 has been sent to all constituents on 24.10.2011 for confirmation.

Confirmation already received from NHPC, DVC, MPL, NER, NTPC and SR.

In the last CCM (02.12.11).

- It was decided that if no confirmation is received within 17.12.2011, the UI account for the period from April 2011 to September 2011 would be considered as confirmed.

ERLDC may intimate to TCC the latest status of reconciliation of accounts.

Item no. B14: Reactive energy charges – present status.

As per ERLDC, the updated position of Receipt/Payment of Reactive Energy Charges in the pool is indicated in **Annexure-IV**.

Members may please note.

Further, in the 15th ERPC meeting, ERPC approved ERLDC proposal of holding 6 nos. of Workshop on “Black Start & Restoration Procedures” at an estimated cost of Rs.1.5 lakh per Workshop, totalling Rs. 9 lakh. Two no of Workshop have been held as follows:

Sl. No	Date	Workshop details	Payment made by	Status of reimbursement if applicable
1	24.06.2011	Black Start & Restoration	Rs. 1,74,998 made from ERPC Fund	Reimbursed to ERPC Fund from Reactive Pool A/c
2	26.07.2011	-do-	Rs 1,25,942 by GRIDCO	Reimbursed to GRIDCO from Reactive Pool A/c

Four workshops are due to be conducted on “Black Start & Restoration Procedures”. An amount of Rs 5, 99,060 is available for expenditure on “Black Start & Restoration Procedures”.

In the 13th ERPC meeting, ERPC approved an additional expenditure of Rs.20 lakh for conducting Workshop and Seminar on various technical issues to be funded from Reactive Pool Fund. Two no of workshop/seminar have been held as follows:

Sl. No	Date	Workshop details	Payment made by	Status of reimbursement if applicable
1	18.07.2011	Reliability Coordination for ER	Rs. 89,998 made from ERPC Fund	Reimbursed to ERPC Fund from Reactive Pool A/c
2	25.07.2011	Emerging Trend for System Operation	Rs 4,91,782 by GRIDCO	Reimbursed to GRIDCO from Reactive Pool A/c

An amount of Rs. 14,18,220 is available for expenditure against “Workshop and Seminar on various technical issues”.

- *In the last ERPC meeting ERPC agreed that GRIDCO shall be reimbursed subject to the cost ceiling approved in 13th and 15th ERPC meetings. As per this decision, post facto approval for GRIDCO expenditure would be taken in the ensuing ERPC meeting.*

In the last CCM (02.12.11),

- It was decided that ERLDC in the coming TCC would submit a tentative schedule of holding 4 nos. of Workshops on Black Start and Restoration Procedure and 3 nos. of Workshop on emerging technical issues.

ERLDC may furnish the tentative schedule and TCC may discuss and confirm.

Item no. B15: Opening of LC by ER constituents for UI payments

As per the requirement of Unscheduled Interchange charges and related matters (Amendment) Regulations, 2010 issued by CERC vide notification No. L-1(1)/2009-CERC dated 28th April, 2010 (effective from 03.05.10) the BSEB & JSEB are required to open LC for requisite amount.

ERPC Secretariat had earlier also intimated to BSEB and JSEB on vide letter dated 13.09.2011 in this regard.

In the last TCC (19th) meeting,

- *JSEB assured that they have taken necessary steps and the LC would be opened within fifteen days.*
- *BSEB informed that they are examining the issue and will take necessary action.*

As provided by ERLDC, the LC amount to be opened by BSEB and JSEB is given in **Annexure-V.**

In the last CCM (02.12.11),

- BSEB and JSEB representatives were not present in the meeting. It was decided to inform the TCC members of JSEB and BSEB regarding this issue.
- ERLDC informed that as MPL has started default in making of UI payment, MPL is also required to open LC. The quantum as ascertained by ERLDC would be conveyed to MPL.
- ERLDC further informed that as required by CERC, they have already furnished the status of opening of LC during the past period.

TCC members may take a view.

Item no. B16: Non-release of payment towards service charges for maintenance of EMS/ SCADA system –7th & 8th quarters’ by following constituents

LTSA(Long term Service Agreement) contract for EMS/SCADA system installed at all control centres (ERLDC ,WBSETCL, OPTCL, DVC, JSEB, BSEB & Sikkim) was awarded to M/s Areva India T & D Ltd. on 15th January 2010 by ERLDC.

Status of payment due is as below:

Sl.No.	Name of Constituent	Quarter	Period	Bill Amount (Rs.)	Due Date
1.	BSEB	8 th	18.10.11 to 17.01.12	14,86,542	17.10.11
2.	SIKKIM	7 th	18.07.11 to 17.10.11	49,432	17.07.11
		8 th	18.10.11 to 17.01.12	49,432	17.10.11

In the last CCM (02.12.11),

- BSEB and Sikkim representatives were not present.
- It was decided to bring this issue before the members of TCC in the ensuing meeting.

TCC may discuss and decide

Item no. B17: Installation of bus differential protection scheme at Biharshariff sub-station

- Construction of the extension part of the 220kV Biharshariff S/S was completed
- The bus-bar differential relays from M/s. AREVA have also been procured by BSEB
- BSEB requested (BSEB letter dtd. 16.03.2011), M/s. AREVA, to depute their commissioning Engineer for its installation
- POWERGRID agreed to get expedited commissioning of the bus differential protection scheme at Biharshariff S/s with M/s. AREVA.
- The issue was discussed in the 19th TCC meeting. It was opined that old PBDCB Scheme (procured by BSEB) should be replaced with suitable modern bus bar (low impedance differential) Protection Relay.

- BSEB was impressed upon by ERPC Secretariat for expediting the new scheme at Biharshariff
- Till date, the scheme is yet to be implemented.

TCC may discuss.

Item no. B18: Implementation of Synchrophasor technology in Eastern Region.

For enhanced monitoring and visualization of grid, Implementation of synchrophasor technology with 28 Nos. of PMUs was proposed by ERLDC in the 14th ERPC meeting held on 11.06.2010 wherein the scheme along with cost estimate of Rs 18.65 crore was duly approved by ERPC and thereafter put up to PSDF for 100 % funding of the project. Due to constraints in full funding of the scheme by PSDF, ERPC secretariat & ERLDC was advised to take up with CERC by the 17th ERPC.

In the last meeting, ERPC approved expenditure for procurement of few PMUs by preponing ERLDC CAPEX plan for 2012-13. Accordingly ERLDC is in process of preparing technical specification for tendering.

ERLDC may inform the latest status.

Item no. B19: Finalisation of Regulations on Technical Co-ordination Sub-Committee and other sub-committees of ERPC

Draft regulations on Technical Co-ordination Sub-Committee (TCC) were circulated to TCC members vide letter no.5037-62 dated 8th November 2011 seeking comments. (copy of the regulations is at **Annexure-VIA**). No comments have been received from the TCC members.

Besides, Conduct of Business Regulations in respect of other sub-Committees of ERPC viz. OCC, Commercial sub-Committee and Protection sub-Committee approved by respective sub-Committees are given at **Annexure-VIB, VIC & VID** respectively.

TCC may discuss, finalize and recommend to ERPC.

ISSUES FOR INFORMATION

Item no. C1: Special Protection Schemes for important 400 kV lines

(Reference: Item No. A.6 of 19th TCC meeting)

- ERPC in its 16th meeting approved the following System Protection Schemes (SPSs) proposed by ERLDC:
 - i. **400kV Farakka-Kahalgaon line**
 - ii. **400kV Farakka-Malda line**
 - iii. SPS for Purnea – Muzaffarpur D/C
 - iv. SPS for Purnea – Binaguri D/C
 - v. SPS for Tenughat – Biharshariff S/C
- Regarding implementation of the schemes mentioned at sl. no. i) and ii), NTPC expressed their reservations in the 18th as well as 19th ERPC meetings.

- In the 19th ERPC meeting it was decided that both ERLDC & NTPC would make separate studies and submit their results in a special meeting to be convened before the next TCC meeting.
- Since then, 400kV Farakka- Kahalgaon 2nd D/C line is commissioned on 31.08.2011, at present three out of four circuits are operational. The remaining one circuit is yet to be made operational because of pending works at Farakka end.
- ERLDC study results (considering Farakka-Kahalgaon 2nd D/C line) have indicated that SPS for Farakka-Kahalgaon line is not required. Accordingly, it was agreed by the 11th Protection sub-Committee.
- The scheme (ii) was also discussed in the 11th Protection sub-Committee, where ERLDC presented various contingency cases pertaining to loading condition of 400 kV Farakka-Malda D/C line particularly during non-hydro (winter season) condition, in which power flow through each circuit of 400kV Farakka-Malda D/C would exceed 650MW, and upon outage of one of it would definitely endanger the grid condition. NTPC viewed that the study carried out by ERLDC considering maximum generation from Farakka , Kahalgaon STPS of NTPC & other generating stations and higher drawal from NER & NR systems, which may not be feasible owing to coal shortage etc. during this winter.
- Finally, it was decided that ERLDC would further carry out the simulation study in association with NTPC taking into consideration of most likely generation schedule of NTPC stations as well as load profile for NER & NR during winter to decide upon the necessity of implementation.
- On completion of this study TCC will be accordingly informed.

TCC may note.

Item no. C2: Composite transmission system for transfer of power from Odisha UMPP and Odisha Phase-II IPP projects to beneficiaries (under the scope of Powergrid) - (Reference: Item No. A.2 of 19th ERPC meeting)

- Even after two meetings held between Odisha and CTU after the SCM held on 28.12.2010, the composite transmission system is yet to be finalized. Powergrid viewed that the requirement of pooling station and drawal of its share is a technical matter. As regards transmission charges are concerned the same would be governed by the prevailing regulations / norms of CERC. In the last ERPC meeting, OPTCL made a brief presentation. After the presentation, it was agreed that CTU & OPTCL may deliberate further in a meeting to be held at Gurgaon.
- OPTCL gave a detailed presentation on the issue highlighting the separate evacuation plan during 19th ERPC meeting. Powergrid was not against OPTCL proposal of pooling of IPPs Power at OPTCL sub-station and then injecting this pool power to CTU system, if IPPs agreed to. OPTCL was requested by Powergrid to take it up with IPPs for getting the power pool at proposed 400kV sub-station of OPTCL.

- It was emphasized that state in which IPPs located should have a final say on how the connectivity to the CTU network would be established, if so the necessary provision may be built in the regulation of SERCs.
- OPTCL had already filed a petition before OERC, and the hearing took place on 30.09.2011. The view sought for by OERC from ERPC Secretariat was forwarded accordingly.
- The scheme is yet to be finalized.

TCC may note.

Item no. C3: Evacuation of power from upcoming IPPs in Odisha

(Reference: Item No. A3 of 19th ERPC meeting)

- In the SCM held on 28.12.2010, PGCIL made a presentation on the evacuation of power from the IPPs coming near Dhenkanal i.e. Tata power, CESC, Visa Power, Mahanadi Aban, Bhusan by setting up of a 765kV Pooling station at Dhenkanal. GRIDCO/OPTCL also made a presentation justifying of one 400kV STU S/s at Khuntuni (near Dhenkanal) for evacuation of state share power from the Phase-I & Phase-II IPPs by swapping mechanism. GRIDCO stated that 765kV S/s at Dhenkanal is not required.
- Subsequently PGCIL came up with the proposal of connecting one unit each from Tata power, CESC, Visa Power, Mahanadi Aban, Bhusan with OPTCL network & PGCIL 765kV S/s separately through swapping arrangement.
- With the above arrangement only 3600MW out of total Odisha share of about 6000MW can be evacuated into STU network. Connection of IPP generator with STU S/s at Khuntuni is a better proposal due to following reasons:
 - i. Less RoW and forest involvement.
 - ii. In case tie bus is closed, fault MVA will increase.
 - iii. OPTCL need not have to pay PoC charges.
- Powergrid viewed that the requirement of pooling station and drawal of its share is a technical matter. As regards transmission charges are concerned the same would be governed by the prevailing regulations / norms of CERC. In the last ERPC meeting, OPTCL made a brief presentation. After the presentation it was agreed that CTU & OPTCL may deliberate further in a meeting to be held at Gurgaon.
- OPTCL had already filed a petition before OERC, and the hearing took place on 30.09.2011. The view sought for by OERC from ERPC Secretariat was forwarded accordingly.
- The scheme is yet to be finalized.

TCC may note.

Item no. C4: Commissioning of 220kV bus bar protection at Ramchandrapur & Chandil substations (JSEB) - (Item No. B.3 of 19th ERPC meeting)

- The Bus Bar Protection of 220 kV Ramchandrapur substation of JSEB is yet to be commissioned by JSEB.
- As advised by the 18th TCC, a sub-group comprising member from ERPC, ERLDC, POWERGRID and JSEB was constituted to assess the feasibility of its implementation.
- The group visited the above sub-station on 14.11.2011 & 15.11.2011 respectively and presented the report in the 11th Protection sub-Committee meeting on 24.11.11.
- In its finding, the committee felt that the installation of the bus bar protection scheme might be feasible at Ramchandrapur 220kV sub-station with some necessary retrofitting at the existing bus arrangement, but it is ruled out in respect of old Chandil 220kV sub-station. Only LBB protection, which is available, is feasible for implementation at Chandil 220 kV sub-station to avoid total power failure.

TCC may note.

Item no. C5: Reactive capability testing of generators in Eastern Region

As per the decision taken in OCC meetings, the reactive capability testing of various units in different plants in Eastern Region have been carried out in the following order:

- i. TSTPP - 12/09/11
- ii. FSTPP -13/09/11
- iii. BAKRESWAR TPS-14/09/11
- iv. TEESTA - 08/11/11
- v. KAHALGAON STPS-09/11/11

Reactive Capability for Mejia units has been planned in the month of December-11.

During testing it was observed that change of around 4 kV could be achieved by regulating MVAR in one unit. Although the above stations carried out the testing in designated units, but the desired improvement in voltage profile can be achieved only when those units exploit their reactive capabilities.

It has been observed that in real time operation the performance of the reactive capabilities are yet to be achieved by the above mentioned plants as per their respective reactive capability curves in order to bring effect in the system.

TCC may note.

Item no. C6: Synchronisation of 400 kV Baripada-Mendhasal line with grid

400 kV Baripada-Mendhasal D/c line along with associated bays and line reactors under ERSS-I project was successfully commissioned on 29.08.11. The circuit –II & I has been charged from Baripada s/s up to Mendhasal at 19:40 hrs and 21:25 hrs respectively on

29.08.11. The line was synchronized but switched off by OPTCL citing overloading of 220 kV system. The line was lying out of service for more than 2 months.

The issue was brought to the notice of 68th OCC. OCC persuaded OPTCL to charge the line. Accordingly, the line was charged on 19.11.11.

TCC may note.

Item no. C7: Black start preparedness in ER generating stations

Mock drills for black-starting of units have been successfully carried out at the following hydro stations of ER since last ERPC meeting.

SL NO.	COSTITUENT	PLANT	CAPACITY (MW)	DATE OF TEST	ACTIVITIES	STATUS
1	DVC	MAITHON	3X20	14.10.11	MOCK BLACT START EXERCISE WAS CARRIED OUT.	SUCCESSFUL
2	JSEB	Subarnarekha	3X20	19.11.11	MOCK BLACT START EXERCISE WAS CARRIED OUT.	SUCCESSFUL

TCC may note.

Item no. C8: Grid performances during the period September'11 to November'11

Highlights of grid performances during the period September' 11 to November'11 are given at **Annexure-VII.**

TCC may note.

Item no. C9: Nomination of Member Secretary I/C to PSDF managing committee

Subsequent to the transfer of Shri A.K Rampal, who was holding the post of Member Secretary, ERPC Shri A.K.Bandyopadhyaya Member Secretary I/C had been nominated to the Managing Committee of PSDF vide ERPC Secretariat letter dated 31.010.2011, subject to ratification in the ensuing ERPC Meeting.

In the last CCM (02.12.11).

Members noted.

TCC may note.

Item no. C10: Nomination to coordination committee of revenue sharing agreement

It has been intimated to PGCIL vide ERPC Secretariat letter dated 25.10.2011 that as per the decision in the 19th TCC/ERPC meetings held on 23-24.09.2011 the issue of nomination for the Coordination Committee shall be taken up only after all the ER constituents have signed the TSA.

TCC may note.

Item no. C11: Substation equipment for disaster management/ERS substation in Eastern Region

In the last CCM (18th on 05.09.11),

- PGCIL had informed that CERC had again raised queries on cost benefit analysis and social impact issues in August-11.
- Replies from PGCIL had been furnished on 02.09.2011.

Accordingly, TCC was informed in the 19th TCC Meeting.

In the last CCM (02.12.11),

POWERGRID informed that necessary CERC order is expected shortly.

TCC may note.

Item no. C12: Procurement of laptops/DCDs by PGCIL for Malbase s/s and as spare

In the 18th CCM (05.09.11),

- PGCIL representative informed that bid evaluation is going on.
- Order is likely to be placed within ten days and delivery is expected to start from 10th Oct-11.
- PGCIL expressed concern regarding frequent malfunctioning of DCDs at Malbase.
- Until now, a total of 4 nos. DCDs had been made available to Malbase and all of them have malfunctioned.
- However, PGCIL assured that, after delivery of new DCD/Laptops, Malbase would be provided as per its requirement.
- During discussion of this agenda item ERLDC informed that 15 minutes data from Hydro stations of Bhutan were not being made available to them and requested PTC to take up the matter with respective Hydro Station Authorities.
- PTC informed that they would take up these issues in a meeting scheduled with Bhutan Hydro Station Authorities.

Accordingly, TCC was informed in the 19th TCC Meeting.

In the last CCM (02.12.11),

POWERGRID informed that order for the Laptops has been placed on 01.12.2011. Delivery is expected within 1½ months. Regarding the provisions of DCDs / Laptops to Malbase S/s and furnishing of 15 minutes data from hydro stations to ERLDC, PTC vide letter dated 01.12.2011 has informed that the matter would be taken up with Bhutanese authority during the proposed meeting of PTC with them in the month of December 2011 / January 2012.

PGCIL and ERLDC informed that the DCD's and Laptops were required in future to ensure back up incase of failure of AMR system.

TCC may note.

Item no. C13: ULDC system – signing of MOU for AMC of wideband communication and auxiliary power supply system.

In the last ERPC (19th) meeting, BSEB informed that they would sign the MoU for AMC of wideband communication and Auxiliary Power Supply System within a fortnight.

JSEB informed MoU for Wideband communication would be signed within a day or two.

In the last CCM (02.12.11),

- BSEB and JSEB representatives were absent
- POWERGRID informed that both BSEB and JSEB have already signed the MOU for AMC.

TCC may note.

Item no. C14: Implementation of automatic meter reading in Eastern Region

In the 18th ERPC meeting it was decided that the project would be implemented by PGCIL and the cost (Rs 3.6 Cr approx including AMC for 5 years for 115 meter locations) would be recovered as per procedure of sharing of meter costs.

However, the cost of AMR for the IPPs would be borne by the respective owners.

In the 18th CCM (05.09.11),

- PGCIL informed that they have tied up with M/s Wipro for a demonstration project at Subhasgram S/S.
- During this process it was discovered that the L&T meters were not modbus protocol enabled.
- However, L&T has informed that they are ready to share the modbus protocol if PGCIL, L&T and the implementing party enter into a legal tripartite agreement to regulate the sharing of the protocol.
- PGCIL informed that there would be no additional cost implications for modbus protocol compliance.
- GM, ERLDC requested that the L1 party for the purchase of current lot of meters may be impressed upon to share modbus protocol.
- Further, in future, any purchase of meters may include this as criteria modbus protocol enabled) in the tendering stage itself.

ERLDC pointed out in the ERPC (19th) meeting that instead of modbus protocol, meters will be of IEC-1107 protocol. With this modification the TCC had endorsed the views of 18th Commercial Sub-Committee Meeting. PGCIL had informed that a demonstration will be given by M/s Wipro on 26.09.2011.

In the last CCM (02.12.11),

POWERGRID informed that demonstration was organized on 26.09.2011. An offer from WIPRO has also been received. The approximate estimate is Rs.4 crore. L&T has also agreed

to share the IEC 1107 protocol once the tripartite agreement is signed and necessary order is placed. POWERGRID also informed that NIT for the same is expected to be floated by 31.03.2012. Powergrid assured that the current lot of meters being procured would also be IEC 1107 compatible.

TCC may note.

Item no. C15: Declaration of COD of PGCIL elements

Commercial declaration of Transmission assets associated with Eastern Region Strengthening scheme-II.

1. POWERGRID has declared the COD of 400 KV, 125 MVAR Bus Reactor and shifting of 3No 63 MVAR Reactors at 400 KV Siliguri S/S w.e.f. 01.11.2011.
2. POWERGRID has declared the COD of 400 KV, 125 MVAR, Bus Reactor-I at New Purnea S/S w.e.f. 01.10.2011.

In the last CCM (02.12.11),

Powergrid supplied the necessary information which is at **Annexure-VIII**.

TCC may note.

Item no. C16: Testing of special energy meters at Binaguri

In the last Commercial Sub Committee Meeting (18th), PGCIL informed that testing of SEM at Binaguri would be done in the month of October-11. Before testing, they would inform PTC who, in turn, would coordinate with Tala Authorities.

Accordingly, TCC was informed in the 19th TCC Meeting.

In the last CCM (02.12.11),

POWERGRID informed that the testing kit has become defective and is under repair now. The work will be undertaken once the repaired kit is received by POWERGRID. POWERGRID was informed to complete the testing before the ensuing TCC meeting and inform the TCC members about the status.

PGCIL may inform the status of testing of meters.

TCC may note.

Item no. C17: Fibre optic connectivity in Eastern Region

In the last CCM (02.12.11)

It was informed by POWERGRID that NIT has been floated on 23.11.2011 and the same would be opened on 13.01.2012.

This is for information of the TCC members.

Item no. C18: Less registration at 132 kV Maithon-Jamtara tie flow from 23.09.2007 to 03.12.2007

Pursuant to the decision of 18th ERPC meeting, a meeting was held on 20.07.2011 in Ranchi in which both JSEB and DVC accepted the formula for calculation of correct meter readings. The payment settlement by adjustment of JSEB UI receivables was also agreed upon.

Accordingly, DVC had started receiving payments from JSEB by adjustment of JSEB UI receivables and shown in the UI Account beginning from the week 1st Aug, 2011.

The total amount receivable by DVC has been completely adjusted in the week ending 25.09.11

TCC may note.

Item no. C19: Transfer to power system development fund (PSDF)

As submitted by ERLDC, the status of fund transferred to PSDF so far is enclosed in **Annexure-IX**.

TCC may note.

Item no. C20: Non receipt of SEM data from JSEB

Since 22.02.10, SEM readings from JSEB substations for JSEB tie lines were not being received at ERLDC. The matter had been discussed in various fora of TCC/ERPC wherein it was intimated by JSEB that they are taking expeditious action in this regard.

- *In the last ERPC (19th) meeting, JSEB assured that SEM data would be made available at ERLDC on and from 15.10.2011.*

In the last CCM (02.12.11),

- ERLDC informed that the requisite data are being received in the last 3 weeks.

TCC may note.

Item no. C21: 66 kV Rangit – Rabangla line

- During the last standing committee meeting, approval was accorded for converting 66 KV Rangit –Melli line to (i) 66 KV Rangit – Rabangla line and (ii) 66 KV Rabangla--Melli line.
- Sikkim/Powergrid were to initiate action for shifting of Melli end meter to Rabangla and Sikkim was to arrange for sending of Rabangla end data for UI computation purpose.

In the last CCM (02.12.11),

POWERGRID informed that the necessary installations have been completed on 30.11.2011.

TCC may note.

Item no. C22: Installation of meter at PPSP

400 KV PPSP – Durgapur line was made LILO at Bidhannagar in WBSETCL. With this, the new Tie line became as 400 KV Bidhannagar- Durgapur. SEM is required to be installed at Bidhannagar end for UI accounting.

- *In the last TCC (19th) meeting, TCC member from WBSETCL assured that the matter will be resolved within a week's time.*

In the last CCM (02.12.11),

It was informed in the meeting that the necessary installation at Bidhannagar has been completed on 19.11.2011.

TCC may note.

Item no. C23: Upcoming transmission elements for the current fiscal

Powergrid has informed that following Powergrid elements will be commissioned during the current fiscal:

- (i) 765 kV S/c Gaya-Sasaram line
- (ii) 765 kV S/c Gaya-Balia line
- (iii) LILO of 400 kV D/c Barh-Balia (Quad conductor) at Patna
- (iv) 400 kV D/c Koderma-Gaya (Quad conductor)
- (v) LILO of 220 kV D/c Dehri-Bodhgaya line at Gaya

TCC may note.

Item no. C24: Surrender of power by Delhi

Department of Power, Govt. of NCT Delhi had vide their letters dated 03.10.2011 and 25.10.2011 (with a copy to this office) had desired to surrender power from its share of NTPC Eastern Regional stations from November-11 to February-11. Copies of these communications were forwarded to the Eastern Regional Constituents vide ERPC Secretariat letter dated 12.10.2011 and 03.11.2011 for information and necessary action at their end.

In the last CCM (02.12.11),

It was noted that West Bengal and Bihar had already communicated to MoP regarding availing of surrendered power by NCT, Delhi.

Since surrendered power was from the ISGSs of the Eastern Region, so Members felt Eastern Regional constituents should have highest priority regarding the allocation of this power.

Commercial Sub-Committee unanimously recommended to TCC to take a suitable resolution in this regard and send it to MoP, GoI and CEA. NTPC added that necessary agreement with NTPC is required to be signed at the earliest once the allocation is made by MoP.

In the meanwhile, MoP vide letter dt.8.12.2011 has allocated the full surrendered power from Farakka (for all time blocks) and Kahalgaon-I (00:00 to 00:60) & Kahalgaon-II(00:00 to 00:60) to BSEB and WBSEDCL for month of December'11 and January'12 (to BSEB) and February'12 (to WBSEDCL) against opening of LC by them.

ERPC Secretariat has already communicated the order to BSEB and WBSEDCL for necessary action.

This is for the information of TCC members.

Item no. D: Any other item with the permission of the Chair.

ANNEXURES

**Eastern Regional Power Committee
14 Golf Club Road, Tollygunge
Kolkata-700033
Phone:033-24235199/5106 Fax: 033-24221802/24171358**

FAX MESSAGE

SPEED POST

No-ERPC/COM-I/IC/2011/

dated-31.10.2011

From: Member Secretary I/C, ERPC, Kolkata

**To: General Manager, NLDC, New Delhi and Co-ordinator of Implementation Committee, B-9
Qutab Institutional Area, Katwaria Sarai, New Delhi-110016) Fax-011-26524525/26536901**

Subject: Identification of non-ISTS lines in Eastern Region-Reg

The Issue of identification of non-ISTS lines for Eastern Region was deliberated at length in the 19th TCC meeting and 19th ERPC meeting held on 23rd September'2011 and 24th September'2011 respectively. During deliberation, it emerged that a number of issues needed to be resolved first before the finalizing the identification. Further, it was felt that a uniform approach should be adopted throughout the country to avoid inconsistency in this regard.

To deliberate further on this, a Commercial Sub-Committee of the Eastern Region was held on 10.10.2011 at ERPC Kolkata in accordance with the decision of aforesaid TCC and ERPC meetings.

There was threadbare discussion on the different issues involved in the identification process. It was unanimously decided that the issue shall be referred to the Implementation Agency by ERPC Secretariat for further clarification. The concerns/ comments expressed and recommendations by the members in the meeting is enclosed as Annexure-A.

(A.K.Bandyopadhyay)

Member Secretary I/C

Copy to- The Secretary, Central Electricity Regulatory Commission, 3rd and 4th Floor Chanderlok Building,
Janpath, New Delhi-110001

Member Secretary I/C

Annexure-A

Issues involved in identification of non-ISTS lines of Eastern Region referred to Implementation Agency

CTU owned lines & lines of ISTS licensees

- i) For inter-state transmission of power, there are CTU owned ISTS lines, lines of ISTS licensees as well as non-CTU or state owned lines. The non-CTU lines were constructed much before the inception of IE Act 2003 and formation of Powergrid. These lines were constructed up to geographical border of the state by the concerned state and are owned by the concerned state. For example, 400 kV Kolaghat- Baripada line was constructed by West Bengal from Kolaghat upto West Bengal border by Govt. of West Bengal and thereafter by Govt. of Orissa. These lines are used also to transfer power from one state to another. **While computing POC charges for a period will YTC of these lines be considered?**

The present CERC (Sharing of Inter State Transmission Charges & Losses) Regulation, 2010 defines YTC as under-

Quote

Yearly Transmission Charge (YTC) means the Annual Transmission Charges for existing lines determined by the Commission in accordance with the Terms and Conditions of Tariff Regulations or adopted in the case of tariff based competitive bidding in accordance with the Transmission License Regulations as specified by the Commission and as in force from time to time and for new lines based on benchmarked capital costs.

Unquote

The principal regulation on Sharing of Inter State Transmission Charges and Losses has not defined the word "Commission". But CERC (Unscheduled Interchange charges and related matters) Regulations, 2009 defines:

Quote

'Commission' means the Central Electricity Regulatory Commission referred to in sub-section (1) of section 76 of the Act.

Unquote

YTC for lines like Kolaghat-Baripada cited above is not determined by the commission in accordance with the Terms & Conditions of Tariff Regulations & accordingly on the above two accounts these type of non-CTU or state owned lines may not get place in calculation of POC.

Non-CTU State-Owned ISTS lines

On the other hand the principal regulation on Sharing of Inter State Transmission Charges and Losses has not defined ISTS. But IEGC defines ISTS as:

Quote

- i) Any system for the conveyance of electricity by means of a main transmission line from the territory of one State to another State
- ii) The conveyance of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-state transmission of energy
- (iii) The transmission of electricity within the territory of State on a system built, owned, operated, maintained or controlled by CTU

Unquote

In addition Para 2.1.2 (g) of Annexure to the Sharing Regulations provides for the following under the head "Network Data"-

Quote

Overall charges to be allocated among nodes shall be computed by adopting the YTC of each of the lines of the ISTS licensees, and any other non-ISTS line that has been certified by the respective RPCs as being used for interstate transmission. The YTC for such lines shall be based on the YTC of the transmission licensee / SEB as approved by the Appropriate Commission.

Unquote

CTU owned lines as well as non-CTU or state owned lines are all falling within the purview of the above (along with the definition of ISTS as per IEGC, which is sufficiently broad so as to include nearly all state lines) and as such on this account non-CTU or state-owned lines should also be considered as ISTS and accordingly should get included in POC regime. Because, in an interconnected grid, the flows in all lines are dynamically dependent on the changing load generation scenario. So, even if a line is not carrying inter control area power in one scenario, it may do so in another scenario.

Now the question is, if non-CTU or state-owned lines on fulfilling the ISTS definition of IEGC and para 2.1.2 (g) of the principal regulations are automatically falling under POC regime, then whether present exercise is needed or will NLDC automatically consider these lines for computation of POC charges for a period.

Non-CTU state non-ISTS lines

There is no definition for non-ISTS lines as such. Extrapolating the definition of ISTS lines as given in IEGC, can we say that non-ISTS lines are the lines which are fully embedded in a control area and not carrying inter-control area power? That is, carrying only intra-control area power. If it is so, then through the present exercise are these lines only required to be identified?

If all the above is correct then, we should have following categories of lines-

- CTU owned ISTS lines and lines of ISTS licensees
- Non-CTU or state owned ISTS
- Non-CTU state non-ISTS lines

ii) As per the sharing regulations Approved injection and Approved Withdrawal means:

Quote

2.1.(c) Approved Injection means the injection in MW vetted by Implementing Agency (IA) for the Designated ISTS customer for each representative block of months, peak and other than peak scenarios at the ex-bus of the generator or any other injection point of the designated ISTS customer into the ISTS, and determined based on the generation data submitted by the designated ISTS customers incorporating total injection into the grid, considering the long term and medium term contracts.

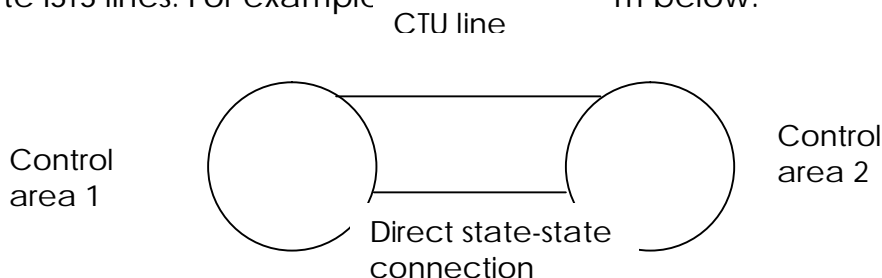
Unquote

Quote

2.1.(f) Approved withdrawal means the simultaneous withdrawal in MW vetted by Implementing Agency for any Designated ISTS customer in a control area aggregated from all nodes of ISTS to which any Designated Customer is connected for each representative block of months, peak and other than peak scenarios at the interface point with ISTS, and where the Approved Withdrawal shall be based on the demand data submitted by the Designated ISTS Customers incorporating long term and medium term transactions.

Unquote

As such, the long term and medium term access is deemed to take place at present through the ISTS (CTU and lines of ISTS licensees only) network. However, part of such flows may take place through CTU-owned ISTS/lines of ISTS licensees and part through state-state ISTS lines. For example see the diagram below:



Now, if a DIC of control area 1 has made a LTA for 200 MW (say) to a DIC of control area 2 and 150 MW flows through the CTU network and 50 MW through the direct state-

state connection then as per the sharing regulations the DIC of control area 1 shall be liable to share the charges of the CTU line for 200 MW utilization though the state-state line is carrying 50 MW of that power. Same is the case for the DIC of control area 2.

Actually, the DIC of control area 1 should share charges of CTU line only for 150 MW. Or, alternatively, the cost of the direct state-state line must also be shared through PoC methodology.

iii) In line with definition of IEGC in respect of ISTS line a peculiar condition arises in case of Bihar. Bihar has almost no generation of its own. Therefore all its internal networks are utilized for transfer of Inter-control area power coming from different sources into Bihar. Therefore all the transmission lines of Bihar qualify to be pooled for calculating POC Charges.

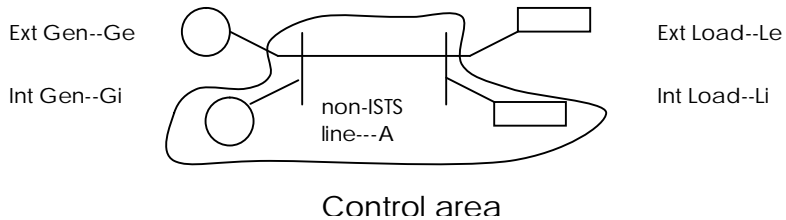
iv) There is no clarity regarding inter-state power. It is not defined in IE Act,2003 or any regulation. Can we take it that any power flowing from one control area to another control area (inter-control area) can be called inter-state power? This seems to be the case from a logical interpretation of the definition of ISTS provided in IEGC.

v) Most of the state owned lines are of 220 KV and lower voltage levels, whereas, the truncated network on which load flow for determination of PoC is to be done is of 400 KV voltage level. Thus, beneficiaries who utilize these state-owned lines will not get identified. In that case, the cost of these lines will simply increase the overall YTC and be distributed over the country without any differentiation between users and non-users. Thus, the user pays principle will be violated.

To rectify this anomaly, provision should be made to conduct load flow studies at lower voltage levels (220 KV and below) for identification and quantification of utilization of such lines by the 400 KV nodes. Then, the cost of these lines should be apportioned among those 400 KV nodes as per usage.

vi) The utilization of a non- CTU/state owned ISTS line may be by a number of generators as well as by a number of loads. Through tracing techniques, the extent of utilization of such lines by loads and generators can be found. The question arises- how the utilization of generators and loads can be combined to get a single utilization factor. For example, a line might be used by 70% of the generators which are located outside the control area and the power flowing through the lines are utilized to the extent of 60% by the loads located inside the control area. **Then the question arises on how to find out a single utilization factor by combining all these.**

For example, starting from the results of tracing, the load/generation (int/ext) (modeled below) (values are assumed) the following cases may arise:



Ge= generator external to the control area=200 MW, Gi=generator internal to the control area=100 MW, Le=Load external to the control area=250 MW, Li= Load internal to the control area=50 MW

Case 1:

50 MW internal load is met by Gi, so inter- control area power will comprise of:

1. contribution of Gi to Le = 50 MW
2. contribution of Ge to Le =200 MW

Total inter-control area power through the line =250 MW

Percentage = 83.33%

Case 2:

50 MW internal load is met by Ge, so inter-control area power will comprise of:

1. contribution of Ge to Li = 50 MW
2. contribution of Gi to Le = 100 MW
3. contribution of Ge to Le = 150 MW

Total inter-control area power through the line = 300 MW

Percentage = 100%

Case 3:

50% of Li met by Gi and rest by Ge, so inter-control area power will comprise of:

1. contribution of Ge to Li = 25 MW
2. contribution of GI to Le = 75 MW
3. contribution of Ge to Le = 175 MW

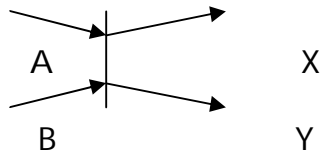
Total inter-control area power through the line = 270 MW

Percentage = 90%

Thus, maximum inter control area flow occur when total internal load is met by external generation. Minimum inter control area flow occurs when total internal load is met by internal generation. When part internal load is met by internal generation and part external generation then % of inter control power is within the maximum and minimum limits. There will be infinite number of combinations of internal/external load/generation.

Which figure is correct?

- vii) Again, the tracing method is based on a proportional distribution of electrical power between incoming and outgoing lines, whereas, the flow of electricity depends on laws of physics. It is well documented that the method (tracing) can neither be proved nor disproved. The whole point is that since we are attempting to find out actual usage the proportional distribution or any sort of averaging distorts the very base of our calculations.



According to tracing, flow through line X can be broken into contribution from A as follows:

$$X_a = X * (A / (A + B))$$

Whereas, electrically the flow in X due to A is dependent on the transfer impedance Z_{ax} and line characteristics.

$$X_a = Z_{ax} * A$$

Z_{ax} may not be equal to $(X / (A + B))$

- viii) Flow through a line varies at different hours (e.g. Peak and Off-peak), at different months (seasonality effect), different days of the week (working day and week end) etc. Taking only one set of data (annual average basis as directed by the commission vide order dated 04.04.2011) shall eat away the very essence of variation in flow and may not be representative figure at all.
- ix) While the PoC for sharing of costs for CTU lines is to be based on projected seasonal, peak-off peak demand/generation, the pooling of costs of non CTU/State

owned ISTS is proposed to be based on annual average basis. This differing treatment of CTU-ISTS and non CTU-ISTS lines cannot be justified.

- x) While making the system study, if only the long-term and medium term transactions are taken, then the real picture would not emerge as there are considerable short term transactions that are also taking place. Now STOAs are quite volatile and historical figures may not be quite reliable for future projection. This issue needs to be resolved.

Although it may be argued that average annual values of load/generation is inclusive of short term transactions, being extremely volatile past data will not be correct. Again, commissioning of new units in the middle of the year (which will only be reflected in the annual average data to be considered for next year) may dramatically change flows in the state lines which may result in some lines which were carrying more than 50% inter state power earlier to carry less than 50 % and vice versa. Due to this the whole point of carrying out the exercise of identification of non-ISTS lines carrying inter state power may be brought to naught.

- xi) The contention that only lines carrying more than 50 % inter state power be considered for pooling of costs appears arbitrary. A line carrying 49% of such power also has sufficient claim to be considered as carrying substantial amount of inter state power.

But what is interstate power. There is no clarity regarding inter-state power. It is not defined in IE Act,2003 or any regulation. Is it so, that any power flowing from any control area to another control area can be called inter-state power or only ISGS and IPP long-term and medium term power?

It is suggested that the costs should be pooled based on the actual percentage of inter state power being carried by the line rather than an arbitrary fixed cut off of 50 %. This will also be more fairly reflective of the provisions of IE Act, 2003.

- xii) Software for system study to be used by all the regions for identification of non-ISTS lines must be identical. Different models of software are likely to give different results. One suggestion is that the software being used by the Implementation Agency may be used by all.

- xiii) It is the apprehension of Eastern Region that the exercise of identification of non-ISTS line will create a rush for states all over the country in trying to include as many state lines as possible. This along with the slabbing of rates may increase the drawl/injection PoC of the ER states substantially.

- xiv) Members in the special commercial sub-committee meeting held on 10.10.2011 expressed their apprehension that the whole exercise may generate lot of animosity /mistrust and disputes among the states which may not be good for a healthy power sector.

- xv) In the special commercial sub-committee meeting held on 10.10.2011 WBSEDCL informed that the percentage of inter state power should be calculated based on the total capacity of the line (its SIL) rather than the actual flows. For example a line of 200 MW SIL may carry power only upto 100MW. Out of this if 51MW is inter state power then the percentage inter state power carried by the line should be 25.5% instead of 51%. Using the proposal of pooling of proportional costs only 25.5% of the costs shall be pooled.

- xvi) Members expressed that charges for state-state lines which were being shared by more than one states before the commencement of the sharing regulations (15.06.2011) is satisfactory and may be continued. The cost of such lines need not be pooled in accordance with the new sharing regulations.

- xvii) Members expressed that for state lines the present system of collection of transmission charges should be continued.

Therefore, the Commercial sub-Committee has suggested the followings to the Implementation Agency for consideration:

- a) Only **CTU lines, Deemed ISTS lines as approved by the commission and lines of ISTS licensees having valid license from the Commission** may be considered for the purpose of the sharing regulations. **The non-ISTS lines whose YTC were shared by the constituents before 15.06.2010 also should not be considered.** There should not be any further addition to this list as this would unnecessarily complicate the process and may create heart burning in some regions (those states not being able to push through more lines).

- b) Before the exercise of identification *non-ISTS* lines is taken up Implementing Agency may give a clear cut guidance on the following issues:

1. Relevant provisions on Sharing of transmission charges provided in CERC (Terms and Conditions of Tariff), 2009 need to be changed.
2. Definition of inter state power
3. Definition of non-ISTS lines
4. Representative load generation balance scenario to capture the true picture
5. Adoption of common software and methodology for calculation
6. Common methodology for achieving at a single percentage of utilization after tracing(if applied).
7. Proper accounting of short term transactions

c) Also, keeping in view the above complex issues that need to be settled first, the date of submission of list of non-ISTS lines may be extended by two months at the least.

.....

Minutes of Special Commercial Sub-Committee Meeting held to discuss the issues regarding identification of non-ISTS lines of Eastern Region held on 10.10.2011 at ERPC Conference Hall, Kolkata

Member Secretary I/C Shri A.K. Bandyopadhyaya welcomed the participants and informed the house that the Issue of identification of non-ISTS lines for Eastern Region was deliberated at length in the 19th TCC meeting and 19th ERPC meeting held on 23rd September'2011 and 24th September'2011 respectively. During deliberation, it had emerged that a number of issues needed to be resolved first before the finalizing the identification. Further, it was felt that a uniform approach should be adopted throughout the country to avoid inconsistency in this regard. To deliberate further on this, ERPC had desired that a Special Commercial Sub-Committee of the Eastern Region be held on 10.10.2011 at ERPC Kolkata to discuss the issue in detail and arrive at consensus.

- i) S.E. (Commercial), ERPC informed that for inter-state transmission of power, there are CTU owned ISTS lines, lines of ISTS licensees as well as non-CTU or state owned lines. The non-CTU lines were constructed much before the inception of IE Act 2003 and formation of Powergrid. These lines were constructed up to geographical border of the state by the concerned state and are owned by the concerned state. For example, 400 kV Kolaghat- Baripada line was constructed by West Bengal from Kolaghat upto West Bengal border by Govt. of West Bengal and thereafter by Govt. of Orissa. These lines are used also to transfer power from one state to another. The treatment of these lines as ISTS or non-ISTS and sharing of the cost of such lines needs to be clarified.

Member Secretary I/C informed that whereas, the present CERC (Sharing of Inter State Transmission Charges & Losses) Regulation, 2010 defines YTC as under-

Quote

Yearly Transmission Charge (YTC) means the Annual Transmission Charges for existing lines determined by the Commission in accordance with the Terms and Conditions of Tariff Regulations or adopted in the case of tariff based competitive bidding in accordance with the Transmission License Regulations as specified by the Commission and as in force from time to time and for new lines based on benchmarked capital costs.

Unquote

The principal regulation on Sharing of Inter State Transmission Charges and Losses has not defined the word "Commission". But CERC (Unscheduled Interchange charges and related matters) Regulations, 2009 defines:

Quote

'**Commission**' means the Central Electricity Regulatory Commission referred to in sub-section (1) of section 76 of the Act.

Unquote

YTC for lines like Kolaghat-Baripada cited above is not determined by the commission in accordance with the Terms & Conditions of Tariff Regulations & accordingly on the above two accounts these type of non-CTU or state owned lines may not get place in calculation of POC.

On the other hand, the principal regulation on Sharing of Inter State Transmission Charges and Losses has not defined ISTS. But IEGC defines ISTS as:

Quote

- i) Any system for the conveyance of electricity by means of a main transmission line from the territory of one State to another State
- ii) The conveyance of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-state transmission of energy
- (iii) The transmission of electricity within the territory of State on a system built, owned, operated, maintained or controlled by CTU

Unquote

In addition Para 2.1.2 (g) of Annexure to the Sharing Regulations provides for the following under the head “Network Data”-

Quote

Overall charges to be allocated among nodes shall be computed by adopting the YTC of each of the lines of the ISTS licensees, and any other non-ISTS line that has been certified by the respective RPCs as being used for interstate transmission. The YTC for such lines shall be based on the YTC of the transmission licensee / SEB as approved by the Appropriate Commission.

Unquote

Members agreed that CTU owned lines as well as non-CTU or state owned lines are all falling within the purview of the above (along with the definition of ISTS as per IEGC, which is sufficiently broad so as to include nearly all state lines) and as such on this account non-CTU or state-owned lines should also be considered as ISTS and accordingly should get included in POC regime. Because, in an interconnected grid, the flows in all lines are dynamically dependent on the changing load generation scenario. So, even if a line is not carrying inter control area power in one scenario, it may do so in another scenario.

Also, if non-CTU or state-owned lines on fulfilling the ISTS definition of IEGC and para 2.1.2 (g) of the principal regulations are automatically falling under POC regime, then the present exercise may not be needed and NLDC shall automatically consider these lines for computation of POC charges for a period.

- ii) S.E.(Commercial), ERPC impressed that there is no definition for non-ISTS lines as such. Extrapolating the definition of ISTS lines as given in IEGC, can we say that non-ISTS lines are the lines which are fully embedded in a control area and not carrying inter-control area power? That is, carrying only intra-control area power. If it is so, then through the present exercise are these lines only required to be identified?

Members agreed that based on the above discussions lines may be categorized as,

1. CTU owned ISTS lines and lines of ISTS licensees
2. Non-CTU or state owned ISTS
3. Non-CTU state non-ISTS lines

and decided that there is no clarity regarding which lines are to be identified.

- iii) The matter of sharing of charges based on LTA and its effect on the sharing of charges of CTU/ISTS licensee and state-state lines was thoroughly discussed. It was pointed out in the meeting that as per the sharing regulations Approved injection and Approved Withdrawal means:

Quote

2.1.(c)Approved Injection means the injection in MW vetted by Implementing Agency (IA) for the Designated ISTS customer for each representative block of months, peak and other than peak scenarios at the ex-bus of the generator or any other injection point of the designated ISTS customer into the ISTS, and determined based on the generation data submitted by the designated ISTS customers incorporating total injection into the grid, considering the long term and medium term contracts.

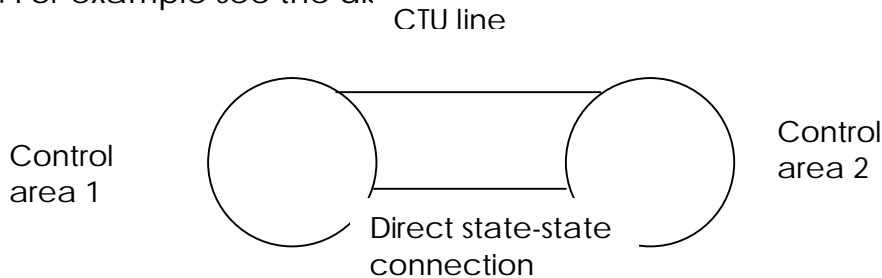
Unquote

Quote

2.1.(f)Approved withdrawal means the simultaneous withdrawal in MW vetted by Implementing Agency for any Designated ISTS customer in a control area aggregated from all nodes of ISTS to which any Designated Customer is connected for each representative block of months, peak and other than peak scenarios at the interface point with ISTS, and where the Approved Withdrawal shall be based on the demand data submitted by the Designated ISTS Customers incorporating long term and medium term transactions.

Unquote

The long term and medium term access is deemed to take place at present through the ISTS (CTU and lines of ISTS licensees only) network. However, part of such flows may take place through CTU-owned ISTS/lines of ISTS licensees and part through state-state ISTS lines. For example see the diagram below:



Now, if a DIC of control area 1 has made a LTA for 200 MW (say) to a DIC of control area 2 and 150 MW flows through the CTU network and 50 MW through the direct state-state connection then as per the sharing regulations the DIC of control area 1 shall be liable to share the charges of the CTU line for 200 MW utilization though the state-state line is carrying 50 MW of that power. Same is the case for the DIC of control area 2.

Actually, the DIC of control area 1 should share charges of CTU line only for 150 MW. Or, alternatively, the cost of the direct state-state line must also be shared through PoC methodology.

- iv) S.E.(Commercial), ERPC, informed that in line with definition of IEGC in respect of ISTS line a peculiar condition arises in case of Bihar. Bihar has almost no generation of its own. Therefore all its internal networks are utilized for transfer of Inter-control area power coming from different sources into Bihar. Therefore all the transmission lines of Bihar qualify to be pooled for calculating POC Charges.
- v) Members agreed that there is no clarity regarding inter-state power. It is not defined in IE Act,2003 or any regulation. A logical interpretation of the definition of ISTS provided in IEGC leads to the conclusion that any power flowing from one control area to another control area (inter-control area) can be called inter-state power. This issue needs to be clarified.
- vi) Members expressed their concern that most of the state owned lines are of 220 KV and lower voltage levels, whereas, the truncated network on which load flow for determination of PoC is to be done is of 400 KV voltage level. Thus, beneficiaries who utilize these state-owned lines will not get identified. In that case, the cost of these lines will simply increase the overall YTC and be distributed over the country without any differentiation between users and non-users. Thus, the user pays principle will be violated.

To rectify this anomaly, provision should be made to conduct load flow studies at lower voltage levels (220 KV and below) for identification and quantification of utilization of such lines by the 400 KV nodes. Then, the cost of these lines should be apportioned among those 400 KV nodes as per usage.

- vii) ERLDC informed that the utilization of a non- CTU/state owned ISTS line may be by a number of generators as well as by a number of loads. Through tracing techniques, the extent of utilization of such lines by loads and generators can be found. The problem that requires a decision is how the utilization of generators and loads can be combined to get a single utilization factor. For example, a line might be used by 70% of the generators which are located outside the control area and the power flowing through the lines are utilized to the extent of 60% by the loads located inside the control area.

Members expressed that this issue requires clarification and any method adopted requires sufficient justification since this will determine the final percentage of line utilization for carrying inter state power.

Members expressed concern that the tracing method is based on a proportional distribution of electrical power between incoming and outgoing lines, whereas, the flow of electricity depends on laws of physics. It is well documented that the method (tracing) can neither be proved nor disproved. Members emphasized that the whole point is that since we are attempting to find out actual usage the proportional distribution or any sort of averaging distorts the very base of our calculations.

- viii) Representatives from GRIDCO and WBSEDCL informed that flow through a line varies at different hours (e.g. Peak and Off-peak), at different months (seasonality effect), different days of the week (working day and week end) etc. Taking only one set of data (annual average basis as directed by the commission vide order dated 04.04.2011) shall eat away the very essence of variation in flow and may not be representative figure at all.

Also, they stressed that while the PoC for sharing of costs for CTU lines is to be based on projected seasonal, peak-off peak demand/generation, the pooling of costs of non CTU/State owned ISTS is proposed to be based on annual average basis. This differing treatment of CTU-ISTS and non CTU-ISTS lines cannot be justified.

Members agreed that the data considered for load flows should be more representative of actual conditions rather than average values.

- ix) S.E. (Commercial), ERPC opined that while making the system study, if only the long-term and medium term transactions are taken, then the real picture would not emerge as there are considerable short term transactions that are also taking place. Now STOAs are quite volatile and historical figures may not be quite reliable for future projection. This issue needs to be resolved.

Although, it may be argued that average annual values of load/generation is inclusive of short term transactions, being extremely volatile past data will not be correct. Again, commissioning of new units in the middle of the year (which will only be reflected in the annual average data to be considered for next year) may dramatically change flows in the state lines which may result in some lines which were carrying more than 50% inter state power earlier to carry less than 50 % and vice versa. Due to this the whole point of carrying out the exercise of identification of non-ISTS lines carrying inter state power may be brought to naught.

- x) Representative from GRIDCO and WBSEDCL expressed that the contention that only lines carrying more than 50 % inter state power be considered for pooling of costs appears arbitrary. A line carrying 49% of such power also has sufficient claim to be considered as carrying substantial amount of inter state power.

But, since there is no clarity on what is interstate power (It is not defined in IE Act,2003 or any regulation). Should it be taken as any power flowing from any control area to another control area can be called inter-state power or only ISGS and IPP long-term and medium term power? This needs to be clarified.

Members unanimously agreed that the costs of lines should be pooled based on the actual percentage of inter state power being carried by the line rather than an arbitrary fixed cut off of 50 %. This will also be more fairly reflective of the provisions of IE Act, 2003.

- xi) All the members present unanimously agreed that Software for system study to be used by all the regions for identification of non-ISTS lines must be identical. Different models of software are likely to give different results. It was suggested that the software being used by the Implementation Agency may be used by all.
- xii) All Members present expressed the apprehension that the exercise of identification of non-ISTS line will create a rush for states all over the country in trying to include

as many state lines as possible. This along with the slabbing of rates may increase the drawl/injection PoC of the ER states substantially.

- xiii) Members expressed their apprehension that the whole exercise may generate lot of animosity /mistrust and disputes among the states which may not be good for a healthy power sector.
- xiv) WBSEDCL representative informed that the percentage of inter state power should be calculated based on the total capacity of the line (its SIL) rather than the actual flows. For example a line of 200 MW SIL may carry power only upto 100MW. Out of this if 51MW is inter state power then the percentage inter state power carried by the line should be 25.5% instead of 51%. Using the proposal of pooling of proportional costs only 25.5% of the costs shall be pooled.
- xv) Members unanimously expressed that charges for state-state lines which were being shared by more than one states before the commencement of the sharing regulations (15.06.2011) is satisfactory and may be continued. The cost of such lines need not be pooled in accordance with the new sharing regulations.
- xvi) Members expressed that for state lines the present system of collection of transmission charges should be continued.
- xvii) Further, the Members unanimously agreed that based on the above discussions Implementing Agency may consider the following issues related to identification process for clarification before the exercise of *identification of non-ISTS lines carrying more than 50% inter state power* is carried out for Eastern Region:
 - a) Only **CTU lines, Deemed ISTS lines as approved by the commission and lines of ISTS licensees having valid license from the Commission** may be considered for the purpose of the sharing regulations. **The non-ISTS lines whose YTC were shared by the constituents before 15.06.2010 also should not be considered.** There should not be any further addition to this list as this would unnecessarily complicate the process and may create heart burning in some regions (those states not being able to push through more lines).

b) Before the exercise of identification *non-ISTS* lines is taken up Implementing Agency may give a clear cut guidance on the following issues:

1. Relevant provisions on Sharing of transmission charges provided in CERC (Terms and Conditions of Tariff), 2009 need to be changed.
2. Definition of inter state power
3. Definition of non-ISTS lines
4. Representative load generation balance scenario to capture the true picture
5. Adoption of common software and methodology for calculation
6. Common methodology for achieving at a single percentage of utilization after tracing(if applied).
7. Proper accounting of short term transactions

c) Also, keeping in view the above complex issues that need to be settled first, the date of submission of list of non-ISTS lines may be extended by two months at the least.

It was decided that ERPC Secretariat would convey the details of discussions and opinion of the Commercial sub-Committee to the Implementing Agency for consideration/clarification.



Copy of Chief Engineer (Commercial), DVC, Kolkata letter no. Coml/ERPC-6677 dated 14.11.2011 addressed to Member Secretary, ERPC, Kolkata.

Sub: Proposed Agenda of DVC for the forthcoming 19th Commercial Sub-committee meeting scheduled to be held on 02.12.11.

Ref: Your fax message No. 330 dated 09.11.11

Dear Sir,

With reference to above, it is requested to kindly include the following as one of the agenda in the forthcoming 19th Commercial Sub-Committee meeting scheduled to be held on 02.12.11.

1. “Power supply at 400 KV BPRS at Jamshedpur of DVC”

As approved by CEA, S/c 400 KV Jamshedpur-Baripada line of PGCIL will be liloed at 400 KV bus of DVC in BPRS at Jamshedpur to supply additional power to Tata Steel Limited by DVC. Due to ROW problem at Jamshedpur end, the same 400 KV D/c PGCIL lines cannot be completed up to Jamshedpur PGCIL Sub-station though nearly 95% of the construction work of the said lines is completed from Baripada end. Since power supply to TSL is urgent in nature as they are planning to start their production very soon, matter was discussed in a meeting with PGCIL at their Corporate Office at Gurgaon in presence of the representative of TSL where PGCIL agreed that till ROW problem at Jamshedpur is resolved, both the line may be temporarily terminated to 400 KV DVC bus at 400 KV BPRS Jamshedpur. Till the final completion of the line up to Jamshedpur S/s of PGCIL, transmission charge will be borne by DVC which in turn will be reimbursed to DVC by TSL. After termination of D/c line up to Jamshedpur S/s of PGCIL, single ckt LILO will be made as per approved scheme of CEA & transmission system will be pooled to the regional asset.

The above is for information of ERPC for endorsement

It is, therefore, requested to kindly include the above in the agenda item of 19th Commercial Sub-Committee meeting.

Yours faithfully,

Sd/-

Chief Engineer (Commercial)

Annexure - III

SUMMARY OF UI RECEIPT AND PAYMENT STATUS

BILL UPTO 06.11.2011 (Week - 32 of 2011 - 12)
Last Payment Disbursement Date - 17.11.11

Figures in Rs. Lakhs

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
WR	597.48433	634.06517	36212.43743	28374.64495	-7874.37332
SR	4505.45461	3745.24763	3204.14856	3218.58452	774.64294
NER	1738.81381	1674.21653	7396.29237	7244.36057	-87.33452
NR	59119.59846	36582.39140	771.33048	548.26930	22314.14588
BSEB	1292.74246	1292.74246	13458.81996	9887.61535	-3571.20461
JSEB	1475.59442	1475.59442	10570.82968	6421.95411	-4148.87557
DVC	22794.42267	22794.42267	4781.40333	2604.99043	-2176.41290
GRIDCO	2720.42633	2720.42633	16109.23278	14428.52187	-1680.71091
WBSETCL	12381.27732	12127.59129	14204.51006	13489.27153	-461.55250
Sikkim	1005.15875	1005.15875	4275.84146	3995.06968	-280.77178
NTPC	5584.84696	5584.84696	5681.08384	3223.87327	-2457.21057
NHPC	0.00000	0.00000	1226.81896	1137.32593	-89.49303
MPL	2752.57996	213.69201	1995.80517	1995.80517	2538.88795
STERLITE	9749.66033	9749.66034	1844.97377	1356.96889	-488.00489
Pool Balance	0.00000	0.00000	1842.06024	1061.96285	-780.09739
Additional UI charge	2244.29886	688.78889	0.00000	0.00000	1555.50997
Transfer to IRE	0.00000	0.00000	-110.61037	0.00000	110.61037
TOTAL	125718.06041	99600.05596	123464.97772	98989.21842	

% Realization **79.22** **As on 17.11.11**

Receivable: Receivable by ER POOL Payable Payable by ER POOL
 Received Received by ER POOL Paid Paid by ER POOL
 "- ve" Payable by ER pool "+ ve" Receivable by ER pool

ANNEXURE-IV

**STATUS OF REACTIVE CHARGES IN ER REACTIVE POOL AS PER PUBLISHED A/C UPTO 04.09.2011
AS ON 13.09.11**

Figures in Rs

CONSTITUENTS	2003-04		2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12		TOTAL			
	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED	RECEIVABLE	RECEIVED		
BSEB	0	0	0	0	0	0	284950	0	0	0	0	0	0	0	284950					284950	284950	
DVC	6593	6593	86391	86391	264138	264138	0	0	0	0	0	0	0	0	0	0					357122	357122
GRIDCO	0	0	0	0	0	0	0	0	0	0	223311	223311	0	0							223311	223311
WBSEB	1778848	1778848	451090	451090	350045	350045	3519490	3519490	881058	881058	3716019	3716019	3431470	3431470	1273089	1273089	0	0			15401109	15401109
UPPCL	0	0	0	0	0	0	28575	8465	0	0	0	0	0	0							28575	8465
TOTAL	1785441	1785441	537481	537481	614183	614183	3833015	3527955	881058	881058	3939330	3939330	3431470	3431470	1273089	1558039	0	0			16295067	16274957

Total Received	16274957
Expenditure incurred for organising workshop on Black Start Procedure (4 SLDCs)	160000
Expenditure incurred for organising a seminar on Power Exchange on 17.07.08	290000
Expenditure incurred for organising seminar on "Reduction of Agreed technical & commercial Loss-Issues and Challenges " at Bhubaneswar on 05.12.08	184991
Expenditure incurred for organising workshop on Black Start Procedure at ERPC on 19.11.09	123028
Expenditure incurred for organising a seminar on Black Start on 18.04.09 at Hotel Big Boss	49050
Amount Retained in Reactive A/C	15467888
Waival of UPPCL amount on 14 th commercial sub committee meeting on 10.09.10	20110
Amount Credited to reactive account due to TDS (2003-04 to 2007-08) on 25.11.10	402619
Expenditure for SCADA Training at ERLDC ON 23.02.11	226115
Expenditure incurred for organising Blackstart workshop at ERPC on 24.06.11	174996
Expenditure incurred for organising Reliability workshop at ERPC on 18.07.11	89998
Expenditure for organising workshop at GRIDCO, Bhubaneswar on 25.07.11 on FGMO	491782
Expenditure for organising workshop at GRIDCO, Bhubaneswar on 26.07.11 on Black Start	125942
Net Retained in Reactive A/C	14741564
Proposed Expenditure for EMS training approved in 13th ERPC meeting	2725584
Proposed Workshop/Seminar on Transmission pricing, Power Exchange & FGMO	1508218
Proposed Workshop/Seminar on Black Start & Reliability	509064
Estimated Available Amount in the POOL	9998698

ANNEXURE-V

2010-11: Letter of Credit (LC) Amount against UI charges*Figures in Lacs of Rupees*

ER Constituents	Total UI charges payable to pool during 2010-11 (A)	Average weekly UI liability (A)/52 weeks (B)	LC Amount 110% of (B)
BSEB	6590.62	126.74	139.42
JSEB	2951.66	56.76	62.44

Eastern Regional Power Committee

(TECHNICAL CO-ORDINATION SUB-COMMITTEE) REGULATIONS 2011

[Dated: December 2011]

General

Drawing powers from the para (10) of the GoI Resolution, ERPC hereby makes the following Sub-Committee called “**Technical Co-ordination Sub-Committee**” (hereinafter referred to as ‘TCC’).

1. Functions of TCC:

TCC shall consider issues referred to it by the

- a) Operation Co-ordination Sub-Committee
- b) Commercial Sub-Committee
- c) Protection Sub-Committee
- d) System Study Sub-Committee
- e) Other groups/committees/task force constituted by ERPC
- f) Agenda points proposed by the constituents

concerning operation of regional grid, commercial aspects, inter-state/inter-regional transfer of power, grid stability etc. leading to economy and efficiency in the operation of power system in the region.

TCC shall consider the matters/issues referred to it by Standing Committee on transmission planning of Eastern Region constituted by CEA.

TCC shall also consider the matters/issues referred to it by ERPC.

TCC shall assist to implement the decision of the ERPC and provide guidance on formulation of policy matters on regional grid operation, grid security and commercial matters.

2. Composition of TCC:

- 2.1 TCC shall comprise of one technical person each from the ERPC member organizations.
- 2.2 The representation shall be at the level of Member/ Director in State Utilities, and Executive Director/ General Manager in CPSUs, Technical Head of Distribution Company/ Traders/ IPPs, Heads of NLDC & ERLDC and Chief Engineer of CEA.

- 2.3 Chairperson of TCC shall be a person nominated by Chairperson, ERPC and shall be from the members from the State, Chairperson, ERPC represents, for a period concurrent with his/her tenure.
- 2.4 In the event Chairperson, TCC ceases to be a member of TCC, then Chairperson, ERPC will nominate a new Chairperson.
- 2.5 In the event of change in the Chairperson, ERPC during a year, the incumbent Chairperson, TCC shall continue.

PROCEDURE FOR CONDUCTING TCC MEETING

3. Periodicity, Place and date of TCC Meeting

- 3.1 TCC shall normally meet a day before the ERPC meeting.
- 3.2 TCC may meet separately also as and when needed to address urgent matter which shall be called a special TCC meeting.
- 3.3 Whenever TCC meeting will be held a day preceding the ERPC meeting, the place and venue for the meeting shall be same as that for ERPC meeting.
- 3.4 The place and date of Special TCC meeting will be decided by Member Secretary, ERPC in consultation with TCC Member of host organisation.

4. Hosting the TCC meeting

- 4.1 TCC Meeting will be hosted by member organization as per the roster finalized for ERPC meeting. Special TCC meeting shall be hosted separately. The host member organisation shall incur its expenditure.

5. Re-scheduling / Cancellation of Meeting

- 5.1 If a meeting is required to be cancelled or rescheduled, the same shall be intimated to the members at the earliest by telephone / fax / e-mail and also posted on ERPC website immediately.

6. Notice for the Committee meeting and Agenda

- 6.1 Notice for the TCC meeting shall be issued by Member Secretary, ERPC at least one month in advance in consultation with Chairperson, TCC. Member Secretary, ERPC may convene a meeting on short notice on any urgent matter in consultation with Chairperson, TCC. In that case notice of one week is to be given.

- 6.2 Agenda for TCC meeting shall include issues referred to it by various sub-committees, other groups/committees/task force constituted by ERPC, agenda points proposed by constituents, matters/issues referred by Standing Committee on transmission planning of Eastern Region and matters/issues referred by ERPC (as stated under para-1 above).
- 6.3 The agenda points proposed by the constituents for the meeting should reach ERPC Secretariat at least 15 days in advance of the meeting.
- 6.4 The Member Secretary, ERPC shall finalize the agenda and get it posted on the ERPC Website at least 10 days in advance, and shall also circulate the agenda to all of its members. Agenda submitted beyond cut-off time as specified shall be posed to Chairperson, TCC for his/her permission. If permitted, it shall be taken up as additional agenda. Agenda submitted after the commencement of the meeting shall not be permitted.
- 6.4 Member Secretary, ERPC may also put any agenda involving urgent matters/ policy issue directly in consultation with Chairperson, TCC.

7. Effect of Non-receipt of Notice of Meeting by a Member

- 7.1 The non-receipt of notice by any member of TCC or Sub-Committees shall not invalidate the proceeding of the meeting or any decision taken in the meeting.

8. Quorum of TCC Meeting

- 8.1 The Quorum of the meeting shall be 50% of its members or the person authorized by the member.

9. Decision making and implementation

- 9.1 All decisions in the TCC shall be taken by consensus on all issues relating to economy and efficiency in the operation of power system in the region. For other issues, efforts shall be made to evolve decision by consensus, failing which the issue(s) shall be placed before ERPC. TCC shall decide whether its recommendations will be placed before ERPC for approval or information or refer its decisions to sub-committee(s) for implementation.
- 9.2 ERLDC shall follow the decision of the TCC concerning scheduling, despatch and operation of the regional grid, provided it is consistent with CERC Regulations/orders.
- 9.3 Each constituent must ensure the implementation of decision taken in the meeting.

- 9.4 Each constituent should furnish its “action taken report” on the decision taken by TCC in its next meeting as also in subsequent meeting(s).

10. Presiding Authority and the Convener

- 10.1 The Chairperson, TCC shall preside over the meeting.
- 10.2 The Member Secretary, ERPC shall convene the meeting.
- 10.3 If the Chairperson is unable to be present at the meeting for any reason, the latest ex-Chairperson of the previous years shall preside over the meeting. If no ex-Chairperson is present then the members present shall choose a person among themselves, who shall preside over the meeting.
- 10.4 If Member Secretary is unable to be present at the meeting for any reason, the next senior most officer of the ERPC Secretariat shall convene.

11. Recording of the minutes

- 11.1 The host organisation shall get the proceedings of the meeting electronically recorded and handover its copy to the Secretariat. The Secretariat shall keep it as record until the minutes of the meeting are got confirmed.
- 11.2 The minutes of the meeting shall be finalized and circulated to all its members by Member Secretary, ERPC within 15 working days from the date of this meeting. The minutes shall also be posted on the website of ERPC.

12. Confirmation of the minutes

- 12.1 Minutes of the TCC meeting shall be placed in the next meeting for confirmation. In case of minutes pertaining to urgent matters, it may be got confirmed by circulation.

The Eastern Regional Power Committee

(OPERATION CO-ORDINATION SUB-COMMITTEE) REGULATIONS 2011

[Dated: December 2011]

General

Drawing powers from the para (10) of the GoI Resolution, ERPC hereby makes the following Sub-Committee called “**Operation Co-ordination Sub-Committee**” (herein after referred to as ‘**OCC**’)

1. Functions of OCC:

- 1.1 OCC shall discuss all issues related to operation of the regional grid, power supply position of the region, maintenance schedule for generating units and major transmission lines, operation discipline, operation of Automatic Under-Frequency Relays, grid incidents/disturbances, and the status of implementation of the recommendations of the Inquiry Committees, *etc.*
- 1.2 OCC shall also discuss any other operational issues as specified in Indian Electricity Grid Code (IEGC) and other CERC regulations.
- 1.3 OCC shall also deliberate upon any matter as referred by TCC or ERPC.

2. Composition of OCC:

- 2.1 OCC shall comprise of one technical person each from the constituent organisation of ERPC. The nominated person shall be at the level of Chief Engineer or equivalent.
- 2.2 Member Secretary, ERPC shall be Chairperson of OCC.
- 2.3 Superintending Engineer (Operation) of Secretariat shall be the convener of OCC.
- 2.4 Member Secretary, ERPC may co-opt any other person/entity in OCC as special invitee.

PROCEDURE FOR CONDUCTING OCC MEETING

3. Periodicity, Place and date of OCC Meeting

- 3.1 The meeting will be held at regular interval of about 6 weeks or earlier.
- 3.2 The place and date of the meeting will be decided by Member Secretary, ERPC.

4. Hosting the OCC meeting

- 4.1 The OCC meeting shall be hosted at ERPC Secretariat, Kolkata. The expenditure for hosting the meeting will be met from “ERPC Fund”.

5. Re-scheduling / Cancellation of Meeting

- 5.1 If a meeting is required to be cancelled or rescheduled, the same shall be intimated to the members at the earliest by telephone / fax / e-mail and also posted on ERPC Website immediately.

6. Notice for the Committee meeting and Agenda

- 6.1 Notice for the Committee meeting shall be issued by Convener at least 10 days in advance.
- 6.2 The agenda points proposed by the constituents for the meeting should reach ERPC Secretariat at least 5 days in advance of the meeting. ERPC Secretariat shall finalize the agenda and get it posted on the ERPC Website at least 3 days in advance. Agenda submitted beyond cut-off time as specified shall be posed to Chairperson for his/her permission. If permitted, it shall be taken up as additional agenda. Agenda submitted after the commencement of the meeting shall not be permitted.
- 6.3 Member Secretary, ERPC may also put any agenda involving urgent matters/ policy issue directly.

7. Effect of Non-receipt of Notice of Meeting by a Member

- 7.1 The non-receipt of notice by any member of OCC or Sub-Committees shall not invalidate the proceeding of the meeting or any decision taken in the meeting.

8. Quorum of OCC Meeting

- 8.1 The Quorum of the meeting shall be 50% of its members or the person authorized by the member.
- 8.2 Special Invitees from Member Secretary may also participate in the meeting.

9. Decision making and implementation

- 9.1 All decisions in the OCC shall be taken by consensus on all issues relating to economy and efficiency in the operation of power system in the region.

- 9.2 Each constituent must ensure the implementation of decision taken in the meeting.

10. Presiding Authority and the Convener

- 10.1 Member Secretary, ERPC shall preside over the meeting.
- 10.2 Superintending Engineer, ERPC (Operation) shall convene the meeting.
- 10.3 If Member Secretary is unable to be present at the meeting for any reason, the next senior most officer of the ERPC Secretariat shall preside.

11. Recording of the minutes

- 11.1 The minutes of the meeting shall be finalized and circulated to all its members by Member Secretary, ERPC within 10 working days from the date of the meeting. The minutes shall also be posted on the website of ERPC.

12. Confirmation of the Minutes

- 12.1 Minutes of the OCC meeting shall be placed in the next meeting for confirmation. However, in case of urgency the minutes may be confirmed by circulation.

The Eastern Regional Power Committee

(COMMERCIAL SUB-COMMITTEE) REGULATIONS, 2011

[Dated: December 2011]

General

Drawing powers from the para (10) of the GoI Resolution, ERPC hereby makes the following Sub-Committee called "Commercial Sub-Committee" (herein after referred to as 'CC').

1. Functions of CC:

- 1.1 Commercial Sub-Committee(CC) shall discuss all commercial related issues viz. energy accounting, schemes required for inclusion in the Bulk Power Transmission Agreements, requirement of power from the new projects, installation of special energy meters and its cost sharing, etc., metering aspects, reviewing of the payments towards UI charges, treatment of transmission losses, commercial declaration of lines/substation, on request from CTUs, commercial issues in inter-state and inter-regional exchange of power, issues concerning settlement of payments among constituents, if any, etc. and any other matter referred by the TCC/ERPC.

2. Composition of Commercial Sub-Committee (CC):

- 2.1 Commercial Sub-Committee shall comprise of one person (dealing with commercial matters) each from the constituent organisation of ERPC. The nominated representative shall be at the level of Chief Engineer or equivalent.
- 2.2 Member Secretary, ERPC shall be Chairperson of the CC
- 2.3 Superintending Engineer of Secretariat shall be Convener of the CC.

PROCEDURE FOR CONDUCTING CC MEETING

3. Periodicity, Place and date of CC Meeting

- 3.1 The meeting will be held at regular interval of about 4 months or earlier.
- 3.2 The place and date of the meeting will be decided by Member Secretary, ERPC.

4. Hosting the CC meeting

- 4.1 The CC meeting shall be hosted at ERPC Secretariat, Kolkata. The expenditure for hosting the meeting will be met from "ERPC Fund".

5. Re-scheduling / Cancellation of Meeting

- 5.1 If a meeting is required to be cancelled or rescheduled, the same shall be intimated to the members at the earliest by telephone / fax / e-mail and also posted on ERPC Website immediately.

6. Notice for the Committee meeting and Agenda

- 6.1 Notice for the Committee meeting shall be issued by Member Secretary, ERPC at least 15 days in advance.
- 6.2 The agenda points proposed by the constituents for the meeting should reach ERPC Secretariat at least 10 days in advance of the meeting. The Member Secretary, ERPC shall finalize the agenda and get it posted on the ERPC Website at least 7 days in advance, and shall also circulate the agenda to all of its members. Agenda submitted beyond cut-off time as specified shall be posed to Chairperson for his/her permission. If permitted, it shall be taken up as additional agenda. Agenda submitted after the commencement of the meeting shall not be permitted.
- 6.3 Member Secretary, ERPC may also put any agenda involving urgent matters/ policy issue directly.
- 6.4 Member Secretary, ERPC may convene a meeting on short notice on any urgent matter. In that case notice of one week is to be given.

7. Effect of Non-receipt of Notice of Meeting by a Member

The non-receipt of notice by any member of CC or Sub-Committees shall not invalidate the proceeding of the meeting or any decision taken in the meeting.

8. Quorum of CC Meeting

- 8.1 The Quorum of the meeting shall be 50% of its members or the person authorized by the member.
- 8.2 Only members of CC and not more than two representatives of his/her organization shall participate in the meeting. Additional representatives may participate with the prior permission of the Member Secretary.
- 8.3 Special Invitees from Member Secretary may also participate in the meeting.

9. Decision making and implementation

- 9.1 All decision in the CC shall be taken by consensus on all issues relating to economy and efficiency in the operation of power system in the region. For other issues, efforts shall be made to evolve decision by consensus, failing which the issues shall be referred to TCC for discussion.

- 9.2 ERLDC shall follow the decision of the CC concerning scheduling, despatch and operation of the regional grid, provided it is consistent with CERC Regulations/orders.
- 9.3 Each constituent must ensure the implementation of decision taken in the meeting.
- 9.4 Each constituent should furnish its "action taken report" on the decision taken by CC in its next meeting as also subsequent meeting(s).

10. Presiding Authority and the Convener

- 10.1 Member Secretary, ERPC shall preside over the meeting.
- 10.2 Superintending Engineer, ERPC shall convene the meeting.
- 10.3 If Member Secretary is unable to be present at the meeting for any reason, the next senior most officer of the ERPC Secretariat shall preside.

11. Recording of the minutes

The minutes of the meeting shall be finalized and circulated to all its members by Member Secretary, ERPC within 10 working days from the date of this meeting. The minutes shall also be posted on the website of ERPC.

12. Confirmation of the Minutes

Minutes of the CC meeting shall be placed in the next meeting for confirmation. However, in case of urgency the minutes may be confirmed by circulation.

HIGHLIGHTS & GRID PERFORMANCE FOR THE PERIOD FROM SEPTEMBER TO NOVEMBER, 2011**FREQUENCY:**

Frequency profile for the months of September to November'11 is shown below:

Months	% of time of the month frequency remained			Average Frequency (Hz)
	<49.5 Hz	49.5 to 50.2 Hz (IEGC Band)	>50.2 Hz	
September'11	10.75	84.12	5.13	49.93
October'11	23.11	76.09	0.80	49.74
November'11	10.59	88.90	0.51	49.75

From the above table it may be observed that:

- Frequency profile in the IEGC band (i.e. 49.5 to 50.2 Hz) remained in between 76.09 % to 88.90 % of time during the above months. The average frequency for these three months remained in between 49.74 Hz to 49.93 Hz.

2. PERFORMANCE REVIEW (YoY COMPARISON)

Description	Average (MU / MW)			Nov'10	Nov'11	% Change
	Sept'10 to Nov'10	Sept'11 to Nov'11	% Change			
Net Generation (MU)/Month	8305	8553	2.9	7916	8667	9.5
Net Central Sector Thermal Generation (MU)/Month	2447	2450	0.1	2597	3035	16.9
Import from CPPs (MU)/Month	403	443	9.9	448	476	6.3
ER Consumption (MU)/Month	7720	7872	1.9	7895	7767	-1.6
Net Export to outside Region (MU)/Month	986	1368	38.7	1036	1755	69.4
Regional Peak Demand Met (MW)	12951	13169	1.7	12846	13469	4.8
Peak Export (MW)	3329	3886	16.7	3499	3950 (approx)	12.9

Generation / Demand / Export:

During the period from September'11 to November'11 as compared with the corresponding period of previous year (i.e. September'10 to November'10)

- Net average generation/month has increased by 2.9 %
- Net Central Sector Thermal Generation/month increased marginally
- Overall Availability/month from CPPs has shown improvement by 9.9 %
- Energy consumption/month in ER has increased marginally by 1.9 %
- Net Export from ER to other regions has increased substantially by 38.7 %
- Regional Peak Demand met increased by 1.7%.
- Peak Export has increased substantially by 16.7 %

A) 125 MVAR Bus Reactor -I at New Purnea under ERSS-II.

DOCO	01/10/2011
Name of Project	Eastern Region System Strengthening Scheme-II
Approved Cost	227.52 Cr. (Including IDC of Rs.14.66 Cr.)
Standing Committee-ER reference	22/06/2006 at Mirik, Darjeeling
EREB / ERPC Meeting reference	1 st TCC at Kolkata on 28/08/06 2 nd ERPC at Kolkata on 29/08/06 and 2 nd TCC at Kolkata on 09/02/07
Sharing of Transmission Charge	As per New Sharing methodology of PoC

B) 125 MVAR Bus Reactor and Shifting 03 nos. 63 MVAR Reactors at Siliguri S/S under ERSS-II

DOCO	01/11/2011
Name of Project	Eastern Region System Strengthening Scheme-II
Approved Cost	227.52 Cr. (Including IDC of Rs.14.66 Cr.)
Standing Committee-ER reference	22/06/2006 at Mirik, Darjeeling
EREB /ERPC Meeting reference	1 st TCC at Kolkata on 28/08/06 2 nd ERPC at Kolkata on 29/08/06 and 2 nd TCC at Kolkata on 09/02/07
Sharing of Transmission Charge	As per New Sharing methodology of PoC

ANNEXURE-III

DETAILS OF DISBURSEMENT TO POWER SYSTEM DEVELOPMENT FUND

SI No	Nature of Amount	Amount transferred to PSDF (Rs Lakhs)	Date of Disbursement	Cheque No	Remarks
1	UI (Principal)	4976.07019	11.11.10	219865 to 219891	Capping of 2007 - 08
	UI (Principal)	12153.10284	11.11.10	219865 to 219891	Capping of 2008 - 09
	UI (Principal)	3430.79751	11.11.10	219865 to 219891	Capping of 2009 - 10
	UI (Principal)	3836.50702	11.11.10	219865 to 219891	Surcharge of 2009 - 10
	UI (Principal)	975.41106	11.11.10	219865 to 219891	Capping of 2010 - 11
	UI (Principal)	1314.55152	11.11.10	219865 to 219891	Surcharge of 2010 - 11
	Total	26686.44014			
2	UI (Interest)	1284.96601	19.11.10	219919 & 219920	Bank interest of 2009 - 10
3	UI (Principal)	581.47030	22.02.11	219990	Capping & Surcharge
4	UI (Principal)	487.14040	14.03.11	220021	Capping & Surcharge
5	UI (Interest)	200.00000	14.03.11	220021	Bank Interest for UI of 2010-11
6	Reactive (Interest)	6.16992	14.03.11	220021	Bank Interest for Reactive of 2010-11
7	UI (Principal)	202.29434	20.05.11	No Cheque	Capping of 2010 - 11
8	UI (Principal)	204.06337	20.05.11	No Cheque	Surcharge of 2010 - 11
9	UI (Principal)	1645.35624	20.08.11	No Cheque	Surcharge of 2010 - 11
	Total	31297.90072			