



Agenda for **142nd OCC Meeting**

Date: 23.02.2018
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

Eastern Regional Power Committee

Agenda for 142nd OCC Meeting to be held on 23rd February, 2018 at ERPC, Kolkata

Item no. 1: Confirmation of minutes of 141st OCC meeting of ERPC held on 18.01.2018

The minutes of 141st OCC meeting were uploaded in ERPC website and circulated vide letter dated 31.01.2018 to all the constituents.

Members may confirm the minutes.

PART A : ER GRID PERFORMANCE

Item no. A1: ER Grid performance during January, 2018

The average consumption of Eastern Region for January - 2018 was 371.8 MU. Eastern Region has achieved maximum energy consumption of 386 MU on 29th January - 2018. Total Export schedule of Eastern region for January - 2018 was 2426.9 MU, whereas actual export was 2182.3 MU.

ERLDC may present the performance of Eastern Regional Grid covering the following:

- 1. Over drawal/under injection by ER Entities**
- 2. Performance of Hydro Power Stations during peak hours**
- 3. Performance of ISGS during RRAS**

Item no. A2: Commissioning of new transmission elements in Eastern Region

The details of new units/transmission elements commissioned in the month of January - 2018 based on information furnished by the constituents are depicted below:

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400kV Jharsuguda - Rourkela - IV	Powergrid	02-01-18	17:06	LILO of 400kV Rourkela Raigarh IV at Jharsuguda
2	125MVAR Bus reactor at Rourkela	Powergrid	05-01-18	0:16	Replacement of old 50MVAR Bus Reactor
3	400Kv Jharsuguda - Rourkela - III	Powergrid	05-01-18	22:19	LILO of 400kV Rourkela Raigarh II at Jharsuguda
4	400kV Jharsugud – Raigarh - III	Powergrid	05-01-18	22:25	LILO of 400kV Rourkela Raigarh II at Jharsuguda
5	400 KV Sasaram – Daltonganj - II	Powergrid	31-01-18	23:32	Charged on No load basis
6	400KV Bus - I at Daltonganj	Powergrid	31-01-18	23:32	
7	63 MVA line Reactor of 400 KV Sasaram - Daltonganj II at Daltonganj	Powergrid	31-01-18	23:32	
8	132 KV Chapra(New) - Chapra	BSEB	26.12.17		
9	132 kV Sonebarsa -Kuseshwarshtan	BSEB	08.01.18		
10	132 kV Jehanabad - Ataula ckt-II	BSEB	14.01.18		
11	132 kV Jainagar - Madhubani	BSEB	27.01.18		

12	132 kV Jainagar - Jhanjharpur (LILO at Loc No.162 at Jainagar)	BSEB	27.01.18		
13	132 kV Jhanjharpur - Phoolparas	BSEB	27.01.18		

Constituents may update.

Item no. A3: Persistent over drawl by West Bengal and Odisha

Over drawl figure of West Bengal and Odisha from 01-02-2018 to 07-02-2018 are shown below:

State	West Bengal		Odisha	
Date	Over Drawl (MU)	Max. Over Drawl (MW)	Over Drawl (MU)	Max. Over Drawl (MW)
01-02-18	0.397	312	2.463	452
02-02-18	2.609	469	2.920	459
03-02-18	2.080	451	2.825	413
04-02-18	2.372	453	2.971	515
05-02-18	-0.255	345	1.651	422
06-02-18	1.045	273	2.601	378
07-02-18	0.964	427	3.131	429

In 141st OCC, over drawl pattern of West Bengal and Odisha was deliberated in details. Some improvement in West Bengal and Odisha Drawl pattern has been observed during January which is most possibly due to decrease in system demand during winter season. However, till date February-2018, West Bengal average over drawl quantum is increased to 1 to 2 MU whereas for Odisha over drawl quantum is increased to around 2 to 3 MU per day.

With the onset of summer, system demand of Odisha and West Bengal system is expected to increase further. The problem would be compounded with the outage of thermal units and less water reservoir level in hydro generators of Odisha. This may lead to further increase in over drawl and the situation may be worsened further.

In view of above, West Bengal and Odisha are advised plan accordingly to maximize their internal generation availability and increase their power purchase quantum in STOA/Power Exchange or from any other source in future to avoid any over drawl during February and March.

ERLDC may present. WBSETCL and Odisha may explain.

Item no. A4: Reactive Power performance of Generators

Generating stations have been monitored for certain sample dates in the month of January,18.

Power Plant	Max and Min Voltage observed for Jan 18 (KV)	Date for occurrence (Jan 18)
Farakka STPS	425, 410	27,12
Khalgaon STPS	422, 409	8,12
Talcher STPS	414, 395	2,7
Teesta-v	425,398	27,05
Bakreshwar TPS	413, 394	10, 29

Kolaghat TPS	426, 405	10,3
Sagardighi TPS	426, 411	4,6
MPL	419, 408	9,18
Mejia-B	422, 410	6,8
DSTPS	422, 412	8,20
Adhunik TPS	423, 408	8,22
Barh	424, 409	3,12
JITPL	418, 408	8,22
GMR	417, 404	8,9
HEL	429,398	15,26
Kodarma	422, 407	3,3

ERLDC may present the reactive performance.

Item no. A5: Restricted Governor /Free Governor Mode Operation of generators in ER

Generating units are requested to share change in generation output recorded at the terminal of generating units for the following events.

1. On 10.01.2018 at 17:34Hrs, Due to Loss of Evacuation path 1050 MW Generation loss occurred at Teesta-III, Dikchu,Tashding. Frequency changed from 50.02 Hz to 49.96 Hz.
2. On 30.01.2018 at 10:46Hrs, Due to Fault at Korderma S/s , Generation loss of 1250 Mw & Load Loss of 350 Mw occurred at Koderma & Bokaro S/S. Frequency changed from 49.90 Hz to 49.84 Hz.

ERLDC may present.

Item no. A6: UFR operation during the month of January'18

System frequency touched a maximum of 50.29 Hz at 21:59 Hrs of 31/01/18 and a minimum of 49.62 Hz at 20:48 Hrs of 31/01/18. Hence, no report of operation of UFR has been received from any of the constituents.

Members may note.

Item no. A7: Non-compliance of directions issued by SLDC

Vide clause no 5.5.1.(c)(h) of IEGC, non-compliance of SLDC directions by SEB/Distribution licenses/bulk consumers to curtail overdrawal are to be reported to ERLDC for incorporating the same in weekly report to be prepared and published by ERLDC.

All SLDCs are to inform ERLDC the instances of non-compliance of SLDC directions by SEB/Distribution licenses/bulk consumers to curtail overdrawal, within two days after the day of operation.

No report from any constituent has yet received. Hence, ERLDC would be considering 'Nil' report for all constituents for January18.

Members may note.

Item no. A8: Grid incidences during the month of January, 2018

Sr No	GD/GI	Date	Time	S/S involved	Summary
1	GD-I	10/01/2018	17:34	Teesta III	At 17:34 hrs tripping of 400 kV Binaguri - Rangpo - II on R-Y-N fault initiated of SPS - I operation which resulted in tripping of B/C at Teesta III and unit tripping at Tashiding. As only one unit was in service at Chujachen and Dikchu, no generation reduction occurred due to operation of SPS - I. Though power flow through 400 kV Binaguri - Rangpo - I was more than 850 MW for less than 350 ms(as per PMU data), SPS - II operated resulting tripping of 400 kV Teesta III - Rangpo S/C and the running unit at Teesta III and Dikchu.
2	GD-I	14/01/2018	23:20	Purnea	220/132 kV ICT - II at Purnea, 132 kV Purnea - Kishangunj S/C and 132 kV Purnea - Purnea III were under shut down. At 23:20 hrs 132 kV Purnea - Purnea I & II tripped from BSPTCL end only due to operation of O/C relay.
3	GD-I	19/01/2018	12:23	Kalyaneswari	During normalization of 220 kV bus II at Kalyaneswari, 220 kV bus I failed along with bus tie breaker resulting tripping of all connected lines and ATRs at 12:25 hrs. Subsequently 220/132 kV ATR I, II & III tripped on O/C . DSTPS #4 tripped at same time as its auxiliary power was supplied through 220/132 kV ATRs at DSTPS.
4	GD-I	20/01/2018	13:28	Sahebgunj	At 13:28 Hrs, 132 KV KhSTPP-Lalmatia and 132 KV Kahalgaon (BSPHCL)-Lalmatia tripped from Lalmatia end only, leading to load loss at Sahebgunj.
5	GD-I	30/01/2018	10:46	Koderma	Due to problem in tie CB of 400 kV Koderma - Gaya - II and 400 kV Koderma - Biharshariff - II, all 400 kV lines i.e. 400 kV Koderma - Biharshariff D/C, 400 kV Koderma - Gaya D/C & 400 kV Koderma - Bokaro A D/C along with all 400/220 kV ICTs at Bokaro A & Koderma tripped resulting loss of total power supply at Koderma and Bokaro A and running units at Koderma & BokaroA.

Members may note.**Item no. A9: Reporting of voltage deviation indices (VDI) for select S/Stns in ER**

ERLDC submitted the Voltage Deviation Index (VDI) of selected 400 kV Sub-stations for January 2018 of Eastern Region which is enclosed at **Annexure- A9**.

Members may note.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Implementation of Automatic Generation Control

For better frequency control by utilisation of spinning reserves, CERC vide order no 11/SM/2015 dated 13-10-2015 has approved introduction of AGC in the country. A pilot implementation at Dadri TPS in NR is already operating successfully. However, it is now required to introduce AGC on regional basis considering each region as a control area.

In Eastern Region it is therefore necessary to identify a power station for participation in AGC, based on several enabling factors such as healthiness of generator control system, availability of wideband communication with ERLDC etc.

Members may discuss and decide.

Item No. B.2: Automatic Under Frequency Load Shedding (AUFLS) and mapping of Feeders -NPC

In 7th NPC, it was agreed that there is need for review of the quantum of load shedding and introduction of additional slabs/stages of frequency.

NPC sought the views of RPCs on the review of quantum of load shedding and stages of frequency.

Present load relief of ER is given below:

Control Area	Stage –I (49.2 Hz) (MW)	Stage –II (49.0 Hz) (MW)	Stage–III (48.8Hz) (MW)	Stage–IV (48.6Hz) (MW)	Total Relief by Control Area
BSEB	98	99	99	101	397
JSEB	61	62	61	62	246
DVC	134	135.5	136	137	542.5
Odisha	181.5	183.5	184	186	735
WB & CESC	345.5	350	350	354	1399.5
Total	820	830	830	840	3320

It was also agreed that the RPCs to initiate the process of mapping of feeders covered under AUFLS scheme to have a real time assessment of load-relief likely to be available under the scheme if it operated.

Members may discuss and decide.

Item No. B.3: CONTINGENCY PLAN TO MEET DEFICIENT / EXCESS RAILFALL DURING MONSOON -CEA

The anticipated monthly demand profile in respect of various states and the annual maintenance plan of various generating units of has been received from Eastern Region. It is understood that this data is based on normal monsoon scenario. However, a poor or excess monsoon activity, sudden excess silt in the river, and such other contingencies may lead to increased demand – supply gap in the region(s) or county. Each RPC needs to be fully prepared to meet such credible contingencies.

In the above background, it is requested to estimate the impact (in terms of average MW) of various contingencies including the above ones, on the demand and availability in respect of each state/ UT for the months of June to September,2018, and an implementable action plan be

prepared for handling the contingency situation like deficit or delayed monsoon, excessive monsoon, flooding of mines or damaging of railway network or situation of high silt(in the Northern Region during July-August),etc, Implementable concrete steps like identification of flexible plant outages, maintaining sufficient coal stock at critical plant sites and diversion of coal via alternate route may also be identified and documented by each RPC. Contingency arising out of failure of transmission towers also needs to be considered and preparedness by the CTU/STUs to meet the same using ERS be examined and outcome/action plan documented. The Ministry of Power has desired that the aforesaid contingency plan be made ready by this month end.

Members may submit the contingency plan.

Item No. B.4: Status of Implementation of Enquiry Committee Recommendations

9.4 Ensuring primary frequency response from generators:

In Petition No. 84/MP/2015, Date of order: July 31, 2017 section 23 (a), CERC noted

- ... the Commission, starting from the month of September, 2017 shall be closely watching the primary response of ISGSs as reported by POSOCO/NLDCs.
- At the State level, SLDCs shall report the frequency response of intra-State generators to the concerned SERCs."

To comply with this order, ERLDC is sending the primary response of all ISGS/IPP in the region to NLDC. Reports from all RLDCs are in turn compiled by NLDC and submitted to the Hon'ble Commission.

DVC informed that they are calculating the RGMO response of their generators and sending to ERLDC.

OCC advised other SLDCs to monitor performance of the generators under their control area.

9.9 Optimum utilization of available assets:

9.9.2 An audit of devices such as HVDC, TCSC, SVC and PSS should be done immediately to ensure that their stability features are enabled. Further, exercise of PSS tuning should be planned and implemented. Settings of these dynamic stabilizing devices should be reviewed at appropriate intervals.

In 2007 Based on a system study (Prof. Kulkarni) were proposed the following units to be equipped with PSS devices:

1. Kolaghat stage II 400 kV U#4.5.6.(201MW each)of WBPDL;
2. Farakka U#4,5 (500MW each)of NTPC;
3. U.Kolab 4 units (80 MW each) of OHPC;
4. Budge Budge U# 1,2,(250 MW) of CESC Ltd.

Thereafter, PSS tuning of all units were carried out with the help of BHEL Service Manager, Shri K. Partha Sarathi in the presence of Prof. Kulkarni except Budge Budge units. PSS tuning of Budge-Budge unit 1&2 of CESC has been carried out on 28th &29th July, 2015.

9.10.2 Possibility of voltage collapse prediction, sensing global power system conditions derived from local measurements may be explored.

9.11 Need of Dynamic Security Assessment and review of State Estimation: In order to assess the system security in real time and assess the vulnerability condition of the system, dynamic security assessment need to be periodically carried out at the control centers. A proper

review and upgradation of the state estimation procedure is required to improve the visibility and situational awareness of the system.

Dynamic Security Assessment is proposed to be covered in NLDC SCADA upgradation package. State Estimation is currently in working condition at ERLDC.

9.12 Implementation of islanding schemes: Efforts should be made to design islanding scheme based on frequency sensing relays so that in case of imminent grid failure, electrical islands can be formed. These electrical islands can not only help in maintaining supply to essential services but would also help in faster restoration of grid.

*Latest status is enclosed at **Annexure-B5**.*

No islanding scheme is available in Odisha, Bihar and Sikkim.

9.13 Autonomy to Load Despatch Centres

9.13.1 As National Grid is on the horizon, homogenization of system operation philosophy is need of the hour. The present organizational set up of Load Despatch Centres need to be reviewed. System operation needs to be entrusted to Independent System Operator (ISO). In addition, SLDCs should be reinforced and ring fenced for ensuring functional autonomy.

9.13.2 Training and certification of system operators need to be given focused attention. Sufficient financial incentives need to be given to certified system operators so that system operation gets recognized as specialized activity.

9.14 Development of Intra-State transmission system

Intra-State transmission system needs to be planned and strengthened in a better way to avoid problems of frequent congestion.

In 30th TCC/ ERPC held on 19/20th June, 2015 constitution of Standing Committee on Transmission Planning for State Sector was approved by ERPC. In this forum of ERPC various proposals for system strengthening schemes of Eastern Region mainly under state sector/s (STU) will be discussed.

9.15 Network visualization

9.15.2 The Communication network should be strengthened by putting fibre optic communication system. Further, the Communication network should be maintained properly to ensure reliability of data at Load Despatch Centres.

9.15.3 RTUs and communication equipments should have uninterrupted power supply with proper battery backup so that in case of total power failure, supervisory control and data acquisition channels do not fail.

9.16 Reduction in Start-up time for Generators

9.18 Strengthening of system study groups in various power sector organizations

There is need to reinforce system study groups in power sector organisations to analyse the system behaviour under different network status/ tripping of lines/outage of generators. Where these do not exist, these should be created.

9.20. Improved telecom Infrastructure for cyber security

Members may update the latest status.

Item No. B.5: Status of projects funded under PSDF schemes

In the PSDF review meeting, it was advised to RPCs to monitor the status of all the projects funded by PSDF. Therefore, constituents are requested to update the status of projects which are being funded by PSDF in the desired format.

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (in Rs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018	108.6 Cr	18.26 Cr.	100 % Supply is Completed 92% Erection is completed
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	19 months from date of release of 1 st instalment	43.37	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	25 months from date of release of 1 st instalment	70.13	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
4	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	10.05.15	10.05.17	162.5 Cr.	16.25 Cr + 8.91 Cr	Total contract awarded for Rs. 51.35 Cr
5	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16	Project is alive from 30 th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Hardware supplied and installed. 2) SAT completed for pilot state 3) Protection database management software (PDMS) put in live w.e.f. 30.03.17. 4) Training on PDMS organised at ERPC, Odisha, Bihar, WBSETCL, Jharkhand and DVC.
6	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharsharif, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone & 132/33 kV GSS Kataiya	11/5/2015	31.03.2018	64.22 crore	23.68 crore	Project is on going. Contract awarded for Rs.71.37 Cr till date.
7		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	12 th March 2019	18.88 crore	Nil	LOA awarded
8		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.2017	31 st March 2018	54.69 Cr.		
9	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.2017	01.06.2019	25.96 Cr	2.596 Crore on 01.06.2017	Work awarded for 28.07 crore.
10		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.2017	24 Months from the date of release of fund.	140.5 Cr.	1 st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 6.45 crores
11	WBPDC	Implementation of Islanding scheme at Bandel Thermal Power Station	10.04.2017	March 2018	1.39 Cr		Award placed to ABB. Material delivery by Dec, 17. Most of the materials have reached the site and the

							installation would commence soon.
12		Upgradation of Protection and SAS			26.09		Approved by Ministry of Power. Tendering has been completed.
13	OHPC	Renovation and up-gradation of protection and control system of 4 nos OHPC substations.		<i>U.Kolab-March 19 Balimela-Feb 2019 U.Indravati-Jan 19 Burla-Nov 2018, Chiplima Dec 2018</i>	22.35 Cr		Tendering under progress.
14	Powergrid	Installation of STATCOM in ER		June 2018	160.28 Cr	63.028 Cr	work is in progress, eexpected to complete by June 2018
15	JUSNL	Renovation and up-gradation of protection system	<i>September 2017</i>	<i>138.13 crores</i>			Approved by Appraisal Committee. Tendering is in progress.
16a	ERPC	Training for Power System Engineers					The proposal was approved by Appraisal Committee. The proposal was sent to CERC. CERC has sought some queries from the Appraisal Committee.
16b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					

Respective constituents may update the status.

Item No. B.6: Charging of 220/132 kV 160MVA ICT-1 & 400/220 kV 315 MVA ICT-1 of Daltonganj SS from 132kV side

Powergrid vide letter dated 10.02.2018 informed that Daltonganj SS of Powergrid is ready for charging in all respect and both 400KV Sasaram - Daltangunge line has already been charged on 31.01.2018.

Further CTU has advised for charging of 220/132 kV ,160MVA ICT-1 & 400/220 kV, 315 MVA ICT-1 of Daltonganj SS from 132kV side (through charging from 132 kV Dalatonganj Daltonganj Line -I of JUSNL). Accordingly the following elements will be charged at Daltonganj SS:

- 1) 132kV Line bay no. 106 (Daltonganj Line-1 bay) along with 132kV Main Bus
- 2) 220/132 kV 160MVA ICT-1 through 132 kV bay no. 102
- 3) 220 kV Bus-1 & 2 through charging bay no. 201 & 211
- 4) 400/220 kV 315MVA ICT-1 through 220kV bay no. 203
- 5) 80 MVAR Bus Reactor

After 24 hours charging of ICTs on no-load, it will be synchronized from 400kV side " or " Alternatively if synchronisation is not possible, charging of 220/132 kV, 160MVA ICT-1 & 400/220 kV, 315 MVA ICT-1 from 400KV side along with the 132KV line simultaneously for power flow in radial mode.

JUSNL vide letter dated 8th February 2018 informed that ERLDC has considered only one unit of TVNL for load flow analysis of 132 kV Dalatonganj Daltonganj Line. This will increase the loading of 220kV Ranchi(PG)-Hatia II line. Details are enclosed at **Annexure-B6**.

Members may discuss.

Item No. B.7: Methodology for Submitting the Status of New Transmission Elements/ Generating Units to be Commissioned within the State

For clear visibility of the Eastern Region networks and better system operation, all the new transmission elements (ISTS & STU links) need to be updated regularly. The commissioning of

new transmission elements of ISTS lines has been processed and updated by RLDC whereas commissioning of STU lines has been processed by SLDCs. However, commissioning status of new STU lines of states has not been updated to ERLDC and ERPC regularly. Sometime SLDCs used to submit the status of their new commissioning of elements during OCC meeting. To regularize the process following methodology need to be adopted:

1. Transmission elements/ Generating units expected to be commissioned during next month need to be submitted to ERLDC/ERPC in every OCC.
2. Detail parameters of new transmission element before commissioning need to be shared with RLDC.
3. Detail date and time of synchronization need to be updated on real time to ERLDC after commissioning of any new Transmission element/Generating unit.
4. SLDC SCADA team needs to configure the new element in their SCADA and share the same to ERLDC SCADA for network update.
5. List of the new transmission elements/ generating units commissioned during last month need to inform RLDC/RPC within 7th day of the current month, so that same to be updated in OCC.

In 141st OCC, all the constituents were advised to submit the information within 7th day of the month to following mail ids:

- *erldcam@gmail.com*
- *ftcer@posoco.in*
- *mserpc-power@nic.in*

However, only Bihar and West Bengal have submitted their list to ERLDC/ERPC within time line and no one has submitted any update on expected transmission elements planned to be commissioned during next month.

Members may discuss.

Item No. B.8: Approval of outage procedure and Submission of outage request to ERLDC as per procedure-ERLDC

The procedure for transmission element outage was approved in 87th ERPC meeting. After this some minor modifications in the approved procedure was also done. As per the procedure following need to be adhered by the outage indenting parties while applying OCC approved transmission element outages to ERLDC for approval:

1. Request for outages which are approved by OCC must be sent by the indenting agency of the transmission asset at least 3 days in advance to respective RLDC by 1000 hours. (For example, if an outage is to be availed on say 10th day of the month, the indenting agency would forward such requests to the concerned RLDC on or before 7th day of the month by 1000 hours.)
2. In case the request for transmission element outage is not received within the timeline prescribed above, it will be assumed that the indenting agency is not availing the outage. However, indenting agency is duty bound to inform ERLDC at least 3 days in advance, if it is not availing the OCC approved outage.

Since last few months it was observed that some of the indenting agencies were deviating from submission dates corresponding to their OCC approval date while submitting their request, which causes a lot of inconvenience to coordinate with multiple agencies and also to carry out system study before approve the outage request. In some cases, indenting agencies were also not intimated ERLDC/ERPC in advance for cancellation of any outage approved in OCC.

Detail outage procedure as on date is updated in ERLDC website.

In this regard, it is advised to all indenting agencies to follow the updated outage procedure while submitting any outages to ERLDC/ERPC. All beneficiaries are also requested to go through the outage procedure and give their comments if any modification required.

Members may approve the updated outage procedure available in ERLDC website.

Item No. B.9: Difficulty for issuance of Planned/Emergency outage of Inter Regional lines due to ownership issues

Generally line maintenance responsibility of various inter-regional lines lies with the concerned regions up to their jurisdiction as decided within the regions in their internal meetings. However, the responsibility for outage verification of the line lies with only one region between the two for submission of outage data to respective RLDC/RPC for availability certification. E.g 400kV transmission lines in ER-NR corridor like 400kV Patna-Balia-Q/C and 400kV Biharsariff-Balia-D/C lines, maintenance activity lies on both NR-3 and ER-1 region of Powergrid as per their agreed jurisdiction while for transmission element availability calculation purpose NR-3 is submitting the line outage data to NRLDC/NRPC for outage verification/certification, due to which for any outage of these lines NR-3 availability is affected. Due to this when ER-1 is availing any outage in respect of 400kV Patna-Balia-Q/C and 400kV Biharsariff-Balia-D/C, NR-3 is not willing to allow this shutdown due to reduction of its availability factor which leads to difficulty for getting consent from NLDC and NRLDC during outage approval process.

In this regard, it is advised that, transmission licensee shall submit the ownership region name with whom the availability responsibility lies to ERLDC/ERPC for all ER inter-regional links and outage duration of the line shall considered for availability calculation purpose as per the regulation irrespective of which region is taking the line shutdown permission.

Members may please note.

Item No. B.10: Ratification of projected Demand and generation for POC transmission charges and loss calculations for Q1(2018-19)

The projected Demand and Generation of ER constituents to be considered in the base case for POC transmission charge and loss calculations for Q1 (April 18-June 18) are attached at **Annexure-B10** for ratification by the constituents.

Members may kindly go through and confirm.

Item No. B.11: Recovery of loss due to schedule revision during flooding of Kishanganj S/S of PGCIL-Teesta Urja Ltd.

Due to flooding at Kishanganj S/S of PGCIL, the IEX schedule of Teesta-III HEP and other Projects was directed to be revised from 10:00 hours to 24:00, hours on 13.08.2017. However, vide subsequent communications, the curtailment of schedule was initially directed to start from 10.00 hrs , which got changed to 10.30 hrs and again to 10.00 a.m. However, the IEX schedule which had got curtailed from 10.30 hrs could not get revised to 10.00 hrs leading to the Teesta-III (and other Projects) being penalized under DSM for two time blocks from 10.00 hrs to 10.30 hrs.

In 141st OCC, it was informed by ERPC that request for discrepancy in schedule should have been pointed out much earlier. Request for revision for old cases might not be considered in future. In the instant case, schedule for collective transaction was not revised. Post facto revision of schedule of collective transaction is not feasible . Further, payment for the scheduled transaction had been received by Teesta Urja Ltd. Therefore, to accommodate the request for schedule revision with retrospective effect for DSM, payment received from collective transaction needed to be disclosed. Otherwise, there is a possibility of double accounting, leading to excess payment due to revision.

Teesta Urga Ltd. vide letter dated 13th February 2018 informed that for the two blocks from 10:00 to 10:30 hrs on 13.08.2017, the total deviation charges levied on Teesta Urga Ltd. is ₹ 12,06,362 whereas for the same blocks, Teesta Urga Ltd has received ₹ 2,61,610 from the Power Exchange (IEX) resulting in a net loss of ₹ 9, 44,752.

Members may discuss.

Item No. B.12: Revision of final schedule of Dikchu HEP and revocation of UI penalty inflicted on 13.08.2017- Dikchu

On 13.08.2017, Dikchu was advised by ERLDC through mail and phone to back down the generation to Zero w.e.f 10:00 hrs, 13.08.2017, as all STOA & collective transactions were cancelled due to flooded condition at Kishanganj S/s. Dikchu plant was shut down promptly within 10:01 hrs.

The final schedule of Dikchu HEP was revised to Zero w.e.f 10:30 hrs by NLDC. The consequence was that as per final generation schedule data, although Dikchu was able to generate 96 MW in between 10:00 hrs to 10:30 hrs, Dikchu generation was Zero in real time incurring heavy UI penalization.

It is requested to consider the merit of the incidence and accord consent in revision of the final schedule of 13.08.2017 from 10:00hrs to 10:30 hrs to Zero in respect of Dikchu HEP.

In 141st OCC, it was informed by ERPC that request for discrepancy in schedule should have been pointed out much earlier. Request for revision for old cases might not be considered in future. In the instant case, schedule for collective transaction was not revised. Post facto revision of schedule of collective transaction is not feasible. Further, payment for the scheduled transaction had been received by Dikchu HEP. Therefore, to accommodate the request for schedule revision with retrospective effect for DSM, payment received from collective transaction needed to be disclosed. Otherwise there is a possibility of double accounting, leading to excess payment due to revision.

Subsequently no further information was received from Dikchu.

Members may note.

Item No. B.13: Failure of Real time telemetry

a) In geographically located area of North Bengal and Sikkim to ERLDC:

On 06th December 2017 at 17:26 hours, there was failure of real time SCADA data of 17 nos Central Sector station to ERLDC due to communication failure between Malda – Farakka OPGW link. The real time data restored at 09:37 Hours of 07th December 2017.

The real time SCADA data of North Bengal & Sikkim is totally dependent on availability of Malda – Farakka communication link. The path redundancy of Malda – Farakka communication link must be planned and implemented by POWERGRID so that such failure could be avoided.

The real time SCADA data failure of 17 nos Central Sector station to ERLDC due to communication failure Malda – Farakka OPGW link has been discussed in 141st OCC meeting held on 18th January 2018 wherein POWERGRID pointed out the alternate communication path could be established after installation of OPGW communication link between Purnea 400 kV to Biharshariff 400 kV. This link is owned by M/s East North Interconnection Company Limited (A subsidiary of Sterlite Power Transmission Limited).

POWERGRID may update

b) Muzaffarpur S/S to ERLDC:

Real time SCADA data from Muzaffarpur is not available at ERLDC since 14:00 Hrs of 04/01/2018. Telemetered data of Muzaffarpur substation is significantly important not only to ERLDC but also for NLDC as it has international interconnections with Nepal and Inter-regional tie-lines with Northern Region.

Real time SCADA data failure has been intimated to Muzaffarpur Substation and POWERGRID ERTS-1 ULDC team as well on number of occasions; verbally over phone, & through mail & letter dated 16.01.18 but the same is yet to be rectified.

POWERGRID may update

c) Motihari S/S to ERLDC:

Real time SCADA data from Motihari S/S is not available at ERLDC since 09:42 Hrs of 28/10/2017. Real time SCADA data failure has been intimated to Motihari Substation (M/s DMTCL) on number of occasions; verbally over phone & through but the same is yet to be rectified.

DMTCL may update

d) Farakka STPS to ERLDC:

Real time SCADA data from Farakka STPS stage #3 SAS is not available at ERLDC since 10:32 Hrs of 09/09/2017. Real time SCADA data failure has been intimated to NTPC Farakka Generating station on number of occasions; verbally over phone & through but the same is yet to be rectified.

NTPC may update

e) NLDC Bhutan to Back up NLDC India:

Real time data communication between NLDC Bhutan main and Back up NLDC India located at ERLDC, Kolkata is down since 15th September 2017. Due to the same, ERLDC not getting real time SCADA data of Tala HPS, Chukha HPS, Malbase S/s and Dagachu HPS. The matter has been informed to NLDC Bhutan on several occasions but same is yet to restore. NLDC Bhutan is requested to restore the real time SCADA data communication at the earliest.

Bhutan may update

Item No. B.14: Replacement of old RTUs in Eastern Region for reporting of RTU/SAS to backup control centres

35th ERPC advised ERLDC to convene a separate meeting a form a committee with CTU/POWERGRID as nodal agency for assessment of old RTUs of Central Sector and further necessary action on replacement. Subsequently, two meeting were held at ERLDC, Kolkata on 09th June-2017 and 4th August-2017. The report has been finalized by the committee based on the suggestions received from the various committee members.

In 36th TCC/ERPC meeting, ERPC approved the proposal of replacement of RTU as submitted by the committee constituted as per advice of ERPC. The Committee report is enclosed. The scope of Replacement of RTUs in Eastern Region comprises of following:

A. Replacement of RTUs and Upgradation of SAS:

Replacement of existing S-900 and C264 RTUs installed in ULDC phase-I along with upgradation of RTU/SAS/ Remote Operation RTUs for dual reporting to both Main ERLDC &

Backup ERLDC over IEC 60870-5-104 Protocol and lack of maintenance support due to non-availability of spares.

S.no	Region	Name of Substations	Remarks
1	ER-II	Durgapur	RTU to be replaced
2	ER-II	Malda	RTU to be replaced
3	ER-II	Binaguri	RTU to be replaced
4	ER-II	Siliguri220	RTU to be replaced
5	ER-II	Birpara	RTU to be replaced
6	ER-II	Subhasgram	RTU to be replaced
7	ER-II	Dalkhola	RTU to be replaced
8	ER-II	Gangtok	RTU to be replaced
9	ER-II	Berhampore	Hardware/License upgradation
10	ER-II	Rangpo	Hardware/License upgradation
11	ER-II	NewMelli	Hardware/License upgradation
12	ER-I	Biharsharif	RTU to be replaced
13	ER-I	Jamshedpur	RTU to be replaced
14	ER-I	Purnea 400	RTU to be replaced
15	ER-I	Purnea 220	RTU to be replaced
16	ER-I	Sasaram HVDC	RTU to be replaced
17	ER-I	Patna	Hardware/License upgradation
18	ER-I	Banka	Hardware/License upgradation
19	ER-I	Lakhisarai	Hardware/License upgradation
20	ER-I	Ranchi	Hardware/License upgradation
21	ER-I	New Ranchi	Hardware/License upgradation
22	ER-I	Chaibasa	Hardware/License upgradation
23	ER-I	Sasaram 765	Hardware/License upgradation
24	ER-I	Ara	Hardware/License upgradation
25	Odisha Projects	Jeypore	RTU to be replaced
26	Odisha Projects	Baripada	RTU to be replaced
27	Odisha Projects	Indravati	RTU to be replaced
28	Odisha Projects	Rourkela	RTU to be replaced
29	Odisha Projects	Rengali	RTU to be replaced
30	Odisha Projects	Angul	Hardware/License upgradation
31	Odisha Projects	Jharsuguda	Hardware/License upgradation
32	Odisha Projects	Bolangir	Hardware/License upgradation
33	Odisha Projects	Keonjhar	Hardware/License upgradation
34	Odisha Projects	Pandiabili	Hardware/License upgradation
35	Odisha Projects	Talcher HVDC	Hardware/License upgradation

B. Implementation of BCU based Substation Automation System at Purnea 220 KV, Ara 220 KV, Birpara220KV, Siliguri220KV, Sasaram S/s in addition to the replacement of RTUs for data reporting to ERLDC through single RTU/SAS as per advice of ERLDC.

C. Replacement of DCPS for replacement of old DCPS commissioned in ULDC phase-I:

Following old DCPS & UPS in 18 nos. Central Sector locations is decided to be replaced:

Sr. No.	Location	Item
1	Durgapur	UPS
2	ERLDC, Kolkata	
3	Durgapur	
4	Kanchanpur	
5	Barkot	

6	Jamui	DCPS
7	Maldah	
8	Siliguri 400	
9	Jamshedpur	
10	Siliguri 220	
11	Rengali	
12	Birpara	
13	Rourkela	
14	Purnea 220	
15	Indravati	
16	Muzaffarpur	
17	Biharsharif	
18	Sasaram HVDC	

D. Laying of OPGW in the second circuit of following links commissioned in ULDC Phase-I:

S/n	Name of links	Length (Km)
1	Rourkela-Talcher	171
2	Durgapur-Jamshedpur	175
3	Durgapur-Farakka	150
4	Biharsharif-Sasaram	193
5	Biharsharif-Kahalgaon	202
6	LILO portion of Biharsharif-Balia at Ara	12
	Total	903

It is proposed for implementation of the above as 'Upgradation of SCADA/RTUs/SAS in Central Sector stations and strengthening of OPGW network in Eastern Region' through tariff basis and investment made by POWERGRID on this project shall be recovered through tariff.

Members may approve.

Item No. B.15: Issuance of TOC for DSTPS-RTPS OPGW link by DVC-Powergrid

In 19th SCADA O & M meeting held on 07th April 2017 at ERLDC, Kolkata, POWERGRID informed that they are not able to complete the OPGW work in DSTPS – RTPS in DVC Sector under Microwave Replacement Package due to severe ROW issue. POWERGRID further informed that they have mobilized the team several times but work could not be completed due to heavy ROW / compensation issues related to TL construction resulting non-completion of 2 nos. OPGW drum (approx. 9 Km) out of total 69.182 Km. POWERGRID again informed that this issue is discussed in various forums but the solution is yet to be provided by DVC. DVC informed that they are not able to resolve the issue as this is old ROW / compensation issue related to TL construction. OPGW work in this link could not be completed due to ROW/Compensation issues since September-2013.

In 36th ERPC meeting, matter has been deliberated and DVC informed that they will try to resolve ROW issues by 31st October-2017 otherwise they will provide the necessary certificate. In 20th SCADA O&M meeting held on 15th December-2017, POWERGRID informed that DVC has not yet issued TOC for this link. DVC confirmed that they will issue TOC and request for a letter from POWERGRID. POWERGRID issued the request letter on 20.12.2017. However, TOC is yet to be issued by DVC.

DVC may update.

Item No. B.16: PPA details for the years 2017-18 to 2019-20

CEA vide mail dated 21st November 2017 informed that it has been decided to estimate the demand and availability of power (energy and peak), initially for the year 2017-18 and

subsequently for the years 2018-19 and 2019-20. In this regard, PPA details for the years 2017-18 to 2019-20 are required as per the format enclosed at **Annexure-B16**.

All the constituents furnish the data as per the format to CEA by email: rk.jena@gov.in.

In 140th OCC, Member Secretary, ERPC informed that PPA details of the utility constituents and generators are required by CEA to identify the capacities of the IPPs which are available for fresh PPAs as well as the utility constituents who may utilize these.

OCC advised all the constituents to send the PPA details for the years 2017-18 to 2019-20 as per the format to CEA vide email: rk.jena@gov.in with a copy to mserpc-power@nic.in.

Constituents may update.

Item No. B.17: Option for handling intra-day load/generation variation due to RE or otherwise.

Sub-Group under FOR Technical Committee on Grid Integration of Renewable Energy (RE), with reference to regional cooperation had a meeting on 18.8.2017 in CERC office, New Delhi. Record of proceedings is placed in **Annexure-B17**.

As decided in the meeting various options for handling intra-day load / generation variation due to RE or otherwise, as discussed in the meeting be circulated and discussed with Members of Regional Power Committees and **feedback on the same may be provided to us to facilitate further deliberations and suitable recommendations by the FOR Technical Committee on Grid Integration of RE.**

In 140th OCC, all the members were advised to submit their comments to ERPC vide mail (mserpc-power@nic.in) within ten working days.

Members may update.

PART C: ITEMS FOR UPDATE

Item no. C.1: Status of UFRs healthiness installed in Eastern Region

UFR Healthiness Certification for the month of January, 2018 has been received from CESC, WBSETCL, DVC, JUSNL, OPTCL and BSPTCL.

OCC advised OPTCL to change 33kV Laxmipur feeder with suitable feeder of desired load.

OPTCL may update.

Item no. C.2: Status of Islanding Schemes healthiness installed in Eastern Region

At present, the following islanding schemes are in service:

1. CESC as a whole Islanding Scheme, CESC
2. BkTPS Islanding Scheme, WBPCL
3. Tata Power Islanding Scheme, Haldia
4. Chandrapura TPS Islanding Scheme, DVC
5. Farakka Islanding Scheme, NTPC

In 108th OCC meeting, respective constituents agreed to certify that the islanding schemes under their control area are in service on monthly basis.

In 134th OCC, JUSNL was advised to submit the healthiness certificate of the UFR and PLCC system related to Farakka islanding scheme at their end.

The healthiness certificate for Islanding Scheme for January, 2018 has been received from NTPC, CTPS, DVC, Tata Power, JUSNL, WBPDC and CESC.

Members may note.

Item no. C.3: Healthiness of SPS existing in Eastern Region

GMR, JITPL, Chuzachen, CESC, & NTPC (TSTPS) have submitted the healthiness certificate for the month of January 2018.

In 136th OCC, members felt that healthiness certificate for SPS of 132 kV Muzaffarpur-Dhalkebar D/C line may also be submitted on monthly basis and advised Powergrid to submit the healthiness certificate in every OCC meeting.

In 138th OCC, ERLDC informed that Tashiding HEP is also included under Rangpo SPS, two units of Tashiding HEP will trip on actuation of SPS. However, it will be reviewed in coordination with other generators covered in the SPS.

Powergrid vide mail dated 11-01-2018 informed that the SPS system at HVDC, Talcher and Angul are healthy but SPS system of Rourkela S/S is not in service after the isolation of LILO connectivity with Sterlite.

Powergrid may update.

Item no. C.4: Commissioning of breakers at 400/220kV Indravati (OHPC) S/s

In 141st OCC, it was explained that 3x105 MVA 400/220kV ICT-I tie breaker, 220kV Bus coupler and transfer bus breakers are not in service at 400/220kV Indravati (OHPC) S/s.

OCC advised OHPC to submit the action plan in next OCC meeting.

OHPC may update.

Item no. C.5: Controlling overdrawal of states by disconnection of radial feeders -ERLDC

In accordance with IEGC sections 5.4.2 (c) and 5.4.2 (f), feeders for disconnecting demand of every state in the order of their priority for switching off, were identified in the past. However, with growth of network interconnection and load as well as change of load distribution (if any) during the intervening period, it is felt that the list needs reviewing.

All constituents are requested to furnish views regarding their respective identified feeders and indicate the expected load (average and peak) that would be disconnected by switching off the feeders, so that the list can be finalized at the earliest.

Updated list of feeders is yet to be received from OPTCL and DVC.

*In 141st OCC, ERLDC presented the list of feeders to be disconnected during overdrawal of states. Presentation is enclosed at **Annexure-C5**.*

OCC advised all the constituents to go through the list of feeders in Annexure-C5 and finalize the list.

*DVC has submitted the list enclosed at **Annexure-C5.1**.*

Members may update.

Item no. C.6: Implementation of Automatic Demand Management Scheme (ADMS)-ERLDC

The latest status along with proposed logic as follows:

SI No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	Bihar	F <49.7 AND deviation > 12 % or 150 MW	Not Known	F <49.9 AND deviation > 12 % or 150 MW
2	Jharkhand	Yet to provided	9 Months	
3	DVC	F <49.7 AND deviation > 12 % or 150 MW	17.06.2016	F <49.9 AND deviation > 12 % or 150 MW
4	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
5	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	25.11.16	F <49.9 AND deviation > 12 % or 150 MW

Members may update.

Item no. C.7: Commissioning of 220 kV Patna-Sipara third ckt.

Major load of Capital city Patna is fed from 220 kV Sipara Substation, Further Sipara is conneted with Khagaul as well as well as Fatuah at 220 kV level. These are also major load centers normally fed in radial mode from Patna (except Fatuah, which is usually supplied radially from Biharshariff). This causes very high loading of 220 kV Patna-Sipara D/C and it did not satisfy N-1 Contingency criteria for most of the time in last quarter.

The third circuit of 220kV Patna-Sipara line is expected to be commissioned soon, which will help in relieving the loading on other two lines. Further with commissioning of 220 kV Patna-Sipara T/C 220 kV Khagul-Arrah-Pusauli loop may be kept close, which will help in improving system reliability and maintaining better voltage regulation in and around that area.

In view of above BSPTCL may expedite commissioning of 220 kV Patna-Sipara third ckt.

In 141st OCC, BSPTCL informed that testing of bus bar protection is in progress and the line would be commissioned by 31st January 2017.

BSPTCL may update the latest status.

Item no. C.8: Reactor at 400kV Behrampur

In 140th OCC, Powergrid informed that in view of high voltage at Behrampur they have diverted one 125MVAR reactor to Behrampur and the reactor will be installed by end of December 2017.

In 141st OCC, Powergrid informed that 125MVAR bus reactor would be installed by end of February 2018.

Powergrid may update.

Item no. C.9: Repeated tripping of 220kV Chuka-Birpara D/c line

In 60th PCC, meeting Powergrid explained that the line is in lightning prone area. The line is getting tripped due to Insulator failures. Powergrid added that line insulators of part of the line

which belongs to Powergrid have been replaced with polymer insulators. The insulator failures during lightning have been reduced. However, the line is getting tripped due to failure of porcelain insulators in 39.8 km stretch which belongs to Bhutan.

In 138th OCC, DGPC informed that BPC is the owner of part of the line which belongs to Bhutan. They have already replaced porcelain insulators of 7 to 8 towers with polymer insulators.

In 141st OCC, BPC representative informed that supply order has been placed for insulator replacement and the material will be delivered by January, 2018. The replacement of insulators would be completed by April, 2018.

BPC/DGPC may update.

Item no. C.10: Repair/Rectification of tower at location 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines - Powergrid

Powergrid informed that their patrolling team has observed bent in part of tower no. 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines which may further degrade the condition of tower.

In 137th OCC, Powergrid informed that tower no. 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines falls under the jurisdiction of Energy & Power Department, Govt. of Sikkim.

In 141st OCC, Sikkim informed that rectification of the tower has been taken up with Chuzachen. The work would be completed by 2nd week of February 2018.

Powergrid and Sikkim may update.

Item no. C.11: Replacement of CT at both ends of 400kV Jeerat-Baharampur Line

In 135th OCC, Powergrid agreed to replace 1000/1A CT by 2000/1 A CT at both ends of 400kV Jeerat-Baharampur Line.

WBSETCL and Powergrid may update.

Item no. C.12: Status of Installation of STATCOM in Eastern Region

In the 15th meeting of SCM it was agreed to install STATCOM in combination with mechanically switched Reactors (MSR) and Capacitors (MSC) and co-ordinated control mechanism of MSCs and MSRs at Ranchi, Rourkela, Jeypore and Kishanganj substations in Eastern Region.

The matter was again discussed in the 28th ERPC/TCC meeting held on 12th -13th September, 2014 at Goa, wherein, it was decided that POWERGRID may go ahead with implementation of the STATCOM project in Eastern Region with debt – equity ratio of 70:30 funding. The debt part should be refunded through PSDF and Equity Component (30%) to be funded by POWERGRID to be recovered through regulated tariff mechanism. CTU should initiate the process of availing fund from PSDF.

Powergrid updated the latest status as follows:

SI No	Location /Sub-Station of POWERGRID in ER	STATCOM - Dynamic Shunt Controller (MVar)	Mechanically Switched Compensation Sl. (MVar)		Latest status
			Reactor (MSR)	Capacitor (MSC)	
1	Rourkela	±300	2x125		<i>Expected to complete by Mid Feb. 2018</i>
2	Kishanganj	±200	2x125		<i>70% civil work completed.</i>

					30% switchyard equipment supplied. Expected to complete by December 2018
3	Ranchi(New)	±300	2x125		80% civil work completed. All switchyard equipment, reactors and 3 transformers supplied. Expected to complete by April 2018
4	Jeypore	±200	2x125	2x125	Expected to complete by June 2018

Powergrid may update.

Item no. C.13: 220 kV inter-connecting lines of OPTCL with 400/220 kV Bolangir (PG), Keonjhar & Pandiabil S/s

PGCIL has already commissioned the 2x315MVA 400/220kV Bolangir S/s by LILOfing of 400kV Meramandali-Jeypore S/C line and 400/220 kV Keonjhar S/s with an objective of supplying power from ER grid to its adjoining areas in Odisha.

In last OCC, OPTCL updated the completion schedule of inter-connecting system as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	2x315MVA 400/220kV Bolangir S/s	
a.	LILOf of one circuit of Sadeipalli-Kesinga 220 kV D/C line at Bolangir S/S	Only 7 towers left (Severe ROW problem). By June, 2018.
2.	400/220 kV Keonjhar S/S	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By Mar, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.
3.	400/220kV Pandiabil Grid S/s:	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	By Mar, 2018.

OPTCL may update.

Item no. C.14: 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV sub-stations at Chaibasa, Daltonganj & Dhanbad

In last OCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	Chaibasa 400/220kV S/s	
a.	Chaibasa (JUSNL) – Ramchandrapur (JUSNL) 220kV D/c	The line charged from both ends on 31 st January 2018.
2.	Daltonganj 400/220/132kV S/s:	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By Dec, 2017. Forest clearance is pending, it will take time.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	May, 2018. Forest clearance is pending, it will take time.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	Dec, 2018. Forest clearance is pending, it will take time.
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Matching with S/s, Forest clearance is pending, it will take time.
3.	Dhanbad 400/220 kV S/s: Awarded under TBCB	
a.	Dhanbad – Dhanbad (Govindpur) (JUSNL) 220kV D/c	Matching with S/s. Forest clearance is pending, it will take time.

JUSNL may update.

Item no. C.15: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Alipurduar & 2x500 MVA Rajarhat sub-stations

In last OCC, WBSETCL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	2x315MVA, 400/220kV Alipurduar sub-station	
a.	Alipurduar (POWERGRID) – Alipurduar (WBSETCL) 220kV D/c (<i>Twin moose</i>)	<i>end of January 2018</i>
2.	2x500MVA, 400/220kV Rajarhat ---	
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	Matching
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	June, 2018
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	June, 2018

WBSETCL may update.

Item no. C.16: Erection and commissioning of 02 nos. of 220 kV line bays at KBUNL

Despite of several requests and reminders, KBUNL is not taking up this work seriously and it appears that the initiatives of KBUNL for construction of bay, which is essential for making available second circuit with Samastipur(New) and Motipur are far from satisfactory and the work is yet to start. Presently 220 KV KBUNL- Samastipur (new) (D/C) & 220 KV KBUNL - Motipur (D/C) tr. lines have only one 220 KV bays each at KBUNL end since long & due to this one circuit each from KBUNL to Samastipur (new) & KBUNL to Motipur remain unutilised. Due to unavailability of these bays at KBUNL end, BSPTCL is facing difficulties for synchronising 220 KV line at KBUNL and also unable to shift loading of Biharsharif(PG)-Begusarai D/C T/L on MTPS for off loading of Biharsharif(PG) ICTs and in case of any contingency occurs at DMTCL(D)-Motipur D/C T/L, MTPS-Motipur S/C T/L also tripped at overloading. It is evident that the transmission infrastructure developed by BSPTCL in North Bihar could not be fully utilized causing limitations in power flow as well as power interruption.

The unavailability of bays at KBUNL is affecting the evacuation of power from KBUNL (Generating Station 2*110 MW+2*195MW). So, keeping these lines in loop at KBUNL will enhance the quality, reliability and stability of system. KBUNL may begin the construction and complete commissioning of 2nd bay in minimum possible time in order to avoid crisis arisen due to unforeseen outage of Biharsharif(PG) and DMTCL(Darbhanga).

As such target dates for the start and completion of the above works may kindly be got ensured from KBUNL.

In 140th OCC, KBUNL informed that tender has been floated and the work will be awarded in December 2017. The work will be completed by March 2018.

In 141st OCC, it was informed that the work will be awarded by end of April 2018.

KBUNL may update.

Item no. C.17: Update on status of telemetry

CERC vide order dated 28.02.2016 on Petition No. 007/SN/2014 directed NLDC and respective RLDCs to update the status of telemetry every month at their respective websites and take up the issue of persistent non-availability of data from Generating Stations/substations at RPC meetings for appropriate action.

ERLDC may present.

a) Frequent failure of JITPL data to ERLDC:

In 36th TCC, Powergrid agreed to allow JITPL to shift their PLCC modem from Bolangir S/s within a week.

JITPL informed that they will shift the modem within a week and they will commission the communication system in another 10 days subject to availability of OEM (ABB) engineers.

TCC advised JITPL to shift the modem as decided and update the status in forthcoming OCC meeting scheduled to be held on 21st September 2017.

In 137th OCC, JITPL informed that they have shifted the PLCC modem from Bolangir to Angul and they will commission the communication system by 15th October 2017.

In 140th OCC, ERLDC informed that JITPL data through PLCC is not yet restored.

In 141st OCC, JITPL informed that data through PLCC will be restored by end of January 2018.

JITPL may update.

Item no. C.18: Transfer capability determination by the states -- Agenda by NPC

In order to ensure, safe and secure operation of the grid, the states should carry out the power system study for operational planning and power transfer capability through their respective transmission links with the rest of the grid.

It was decided in the NPC meeting that to begin with, power system study for assessment of operational limits / power transfer capability for each state will be done by the concerned RLDC in association with concerned SLDC. Monthly TTC /ATC will be uploaded by the SLDCs at their respective websites and also communicated to concerned RLDC & NLDC subsequently.

ATC/TTC declared by states for the month of February-2018 is given below:

SI No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW	
		Import	Export	Import	Export	Import	Export
1	BSPTCL						
2	JUSNL	885		60		825	
3	DVC	955	3065	54	44	901	3021
4	OPTCL						
5	WBSETCL						
6	Sikkim						

BSPTCL, OPTCL and WBSETCL may please appraise their respective import TTC and ATC with the assumptions and limiting constraints.

Item no. C.19: Updating of GT and ICT Tap position of all EHV transformers

All the generation, transmission and distribution utilities have been requested to go through **Annexure-C19** related to last updated information related to GT/ICT/ATRs available at ERLDC and update the capacity, number, tap details, make (Company name) and other information including addition of new transformers, wherever felt necessary.

OCC advised all the constituents to go through the Annexure and send the updated information to erldcprotection@gmail.com.

Members may update.

Item no. C.20: Checklist for submission of updated data for Protection Database

The network data in Protection Database needs to be updated on regular basis on account of commissioning of new elements in the CTU as well as STU networks. Accordingly, a checklist has been prepared which is enclosed in **Annexure-C20**.

All the constituents are requested to submit the checklist on monthly bases in every OCC/PCC meetings.

In 139th OCC, all the constituents were advised to submit the data to ERPC vide mail (mserpc-power@nic.in) as per the checklist for last three months.

OCC advised all the constituents to submit the data to ERPC vide mail (mserpc-power@nic.in) as per the checklist for last three months.

Constituents may update.

Item no. C.21: Time correction of SEMs in Eastern Region – Replacement of heavily drifted SEMs

The issue was discussed in 35th TCC/ERPC meetings and it was felt that the meters with severe drift greater than 10 min need to be replaced first and if replacement is done with Genus then readings are to be collected manually using Laptop till interfacing with AMR is completed. 35th ERPC advised Powergrid to replace the 10% of the heavily drifted SEMs with new Genus make meters in Phase-I. Subsequently drifted meter replacement work of Phase –I for 24 meters have been completed.

As per decision taken in 134th OCC meeting, another 10% heavily drifted meter list was prepared by ERLDC and given to Powergrid for replacement. In 140th OCC it was informed that all the Phase-II meters have been replaced except Kharagpur. Since issue of integration of Genus meter is already resolved, It was also decided that list of meters to be replaced in next phase may be prepared.

Accordingly List of drifted meters to be replaced in Phase-III is placed below:

List of drifted meters to be replaced in Phase-III				
SNO	LOCATION	METER SNO	FEEDER NAME	Region
1	JEERAT(WB)	NP-6445-A	400 KV JEERAT (WBSETCL) - BERHAMPORE(PG)	ER-II
2	JEERAT(WB)	NP-6446-A	400 KV JEERAT (WBSETCL) - SUBHASGRAM	ER-II
3	RANCHI(PG)	NP-7853-A	400 KV RAGHUNATHPUR 1	ER-I
4	RANCHI(PG)	NP-7871-A	400 KV RAGHUNATHPUR 2	ER-I
5	ALIPURDUAR(PG)	NR-3716-A	400 KV POLE-3 MAIN BAY-AGRA(NR)	ER-II
6	ALIPURDUAR(PG)	NR-3718-A	400 KV POLE-3 TIE BAY AGRA(NR)	ER-II
7	NEW MELLI(PG)	NR-4620-A	220 KV JORETHANG(JLHEP)-1	ER-II
8	NEW MELLI(PG)	NR-4621-A	220 KV JORETHANG(JLHEP)-2	ER-II
9	TEESTA-III	NR-3714-A	400 KV SIDE OF TEEST-III HEP GT-1	ER-II
10	TEESTA-III	NR-3715-A	400 KV SIDE OF TEEST-III HEP GT-2	ER-II
11	TEESTA-III	NR-4450-A	400 KV SIDE OF TEEST-III HEP GT-3	ER-II
12	TEESTA-III	NR-3720-A	400 KV SIDE OF TEEST-III HEP GT-4	ER-II
13	TEESTA-III	NR-4623-A	400 KV SIDE OF TEEST-III HEP GT-5	ER-II
14	TEESTA-III	NR-3719-A	400 KV SIDE OF TEEST-III HEP GT-6	ER-II
15	TEESTA-III	NR-4456-A	400 KV TEESTA-III - DICKCHU (MAIN)	ER-II
16	TEESTA-III	NR-4618-A	400 KV TEESTA-III - DICKCHU (CHECK)	ER-II
17	TEESTA-III	NR-4454-A	400 KV TEESTA-III - RANGPO (MAIN)	ER-II
18	TEESTA-III	NR-4453-A	400 KV TEESTA-III - RANGPO (CHECK)	ER-II
19	JINDAL (GRIDCO)	NP-6502-A	220KV JAMSHEDPUR (DVC)	ODHISA PROJECT
20	JAMSHEDPUR (DVC)	NP-6010-B	220 KV JINDAL	ER-I
21	GANGTOK(PG)	NP-6026-A	132KV CHUZACHEN(GATI)	ER-II
22	RANGPO(PG)	NP-7958-A	132 KV CHUZACHEN (GATI)	ER-II

Powergrid informed that they would start the replacement work of Phase III after collecting the SEMs.

Powergrid may update.

Item no. C.22: Meter related Issues-ERLDC

Due to the meter related issues of following locations energy accounting and its validation is being affected.

Issue	Location	Meter No	Line	Responsibility	Problem Since	Present Status
Non receipt of Data	1. NPGC	NP-1282-A NP-1287-A	132 KV Rihand & Sonnagar	BSPTCL	More than 3 month	Not Received. Status is same
Installation of Check/Standby meter	1. Subhashgram(WB)		220 KV Subhashgram(PG) D/C	WBSETCL/PGCIL	Charging of Line	As informed by PGCIL, Meter is available at Subhashgram and the same to be collected by WBSETCL and to be put into service.
	2. New Town(WB)		220 KV Subhashgram(PG) S/C	WBSETCL/PGCIL	Charging of Line	
	3. Bantala(WB)		220 KV Subhashgram(PG) S/C	WBSETCL/PGCIL	Charging of Line	
	4. EM Bypass(CESC)		220 KV Subhashgram(PG) D/C	WBSETCL/PGCIL	Charging of Line	Meter already connected but time synchronisation yet to be done. SEM data is not received by ERLDC

In 140th OCC, BSPTCL was advised to communicate the problem of downloading the data of NPGC to Powergrid. WBSETCL was also advised to install the meters at the earliest. However NPGC end data is not received by ERLDC. Meter at WBSETCL/CESC end for New Town, Bantala and Subhashgram is yet to be installed.

In 141st OCC, BSPTCL informed that meter received at NPGC and it would be installed within 2 days.

PGCIL/BSPTCL/WBSETCL/may please further update the status.

Item no. C.23: Less recording by Joda OPTCL end meter

Meter No NP-5937-A installed at Joda end of 220 Ramchandarpur is recording 10 % to 15 % Less as compared to Ramchandarpur end since 06.12.2017. Subsequently ERLDC vide mail dated 14.12.17 (with a copy to PGCIL) requested OPTCL to check CT/PT connection to the said meter. However the problem is still persisting and GRIDCO accounting is done with Ramchandarpur end meter.

In 141st OCC, OCC advised OPTCL to check CT/PT connections and CT burden first; the meter can be replaced if required.

OPTCL/PGCIL may please further update.

Item no. C.24: Replacement of SEM meters/ time drift correction of SEMs installed in 400kV Derang-Phoolpada(PG) D/C line.

JITPL vide letter dated 5th February 2018 informed that there was time drift in SEMs installed in 400kV Derang-Phoolpada(PG) D/C line. Details are enclosed at **Annexure-C24**.

JITPL requested to resolve the long pending issue for which they are incurring loss in billing and DSM.

ERLDC, JITPL and PGCIL may update.

Item no. C.25: Mock Black start exercises in Eastern Region – ERLDC**i) The status of black start exercises**

The tentative schedule of black-start exercises for F.Y 2017-18 is as follows:

SI no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2017	30 th May 2017	Last Week of January 2018	Done on 9 th January 2018
2	Maithon	1st week of June 2017	Completed on 04.04.17	1st Week of February 2018	
3	Rengali	2nd week of June 2017	Done on 29.06.2017	Last week of November 2017	Done on 30 th November 2017
4	U. Indravati	3rd week of June 2017	November 2017	2nd week of February 2018	January 2018
5	Subarnarekha	1st week of October 2017	Done on 14 th October 2017	1st week of January 2018	In mid March 2018
6	Balimela	3rd week of October 2017	November 2017	1st week of March 2018	January 2018
7	Teesta-V	2nd week of Nov 2017		Last week of February 2018	Done on 26 th December 2017
8	Chuzachen	Last Week of May 2017	May, 2017	January 2018	
9	Burla	Last Week of June 2017	Dec, 2017	Last week of February 2018	Feb. 2018
10	TLDP-III	1 st Week of June 2017	Done on 20 th Dec, 2017.	2nd Week of January 2018	
11	TLDP-IV	Last Week of June 2017	After Mansoon	1st Week of February 2018	
12	Teesta-III		December 2017		Done on 8 th January 2018

The black start exercise of Upper Indravati P.H. which was scheduled to be carried out on 09.01.2018 at 11:00Hrs could not be carried out due to transmission line problem and would be performed later.

In 141st OCC, WBSETCL was advised to submit the report on black start exercise of TLDP III to ERLDC and ERPC.

Members may update.

ii) Testing of of DG sets by SLDCs

In the event of failure of local supply, the critical function of monitoring and controlling state grids by SLDCs should not get affected. Hence it is essential to maintain the respective DG sets in healthy condition at all times.

SLDCs may confirm whether their DG sets are tested on weekly basis.

SLDCs may confirm.

Item no. C.26: Schedule for reactive capability tests

The following was status of regarding reactive capability testing:

- a. Adhunik TPS(both units) –Yet to be confirmed by Adhunik
- b. *JITPL(both units) – After the emergent inspection of OEM(BHEL)*
- c. *Barh TPS – November 2017. Revised schedule yet to be received.*
- d. *Raghunatpur (both units) – by December 2017. Revised scheduled awaited.*
- e. GMR (Three units)- January 2018

Testing of reactive capability of the above generating units is pending since long.

Members may update.

Item no. C.27: Installation of PMUs in Eastern Region under URTDSM project

LOA for installation of PMUs in Eastern Region under URTDSM project was awarded to M/s Alstom on 15th January 2014. The contract has to be completed in all respect within 24 months from the award. The status of implementation may be informed since PMU data is very much important to real time shift operator for analyzing the security of the grid. The updated status as furnished in 140th OCC by Powergrid is given at **Annexure-C.27**.

Powergrid vide mail dated 8th January 2018 informed that they are facing difficulty in installation of PMUs at following locations:

1. IBEUL: Material delivered at site in the month of August. Accordingly team was deployed for installation. But Due to non-readiness at site the team could not work and has to returned back. Till now permission has not been granted for PMU installation.
2. JITPL: Material delivered at site in the month of August. Team was deployed for PMU installation. Due to space constraint the installation could not be done.

POWERGRID may update the status.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position during March'18

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of March'18 were prepared by ERPC Secretariat on the basis of Provisional LGBR for 2015-16 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc. is at **Annexure-D.1**.

ERPC Secretariat is not receiving the actual figures of previous month power supply position in time. All the constituents should furnish the information to ERPC Secretariat by 10th of every month.

Members may confirm.

Item no. D.2: Shutdown proposal of transmission lines and generating units for the month of March'18

Members may finalize the Shutdown proposals of transmission lines and generating stations for the month of March'18 as placed at **Annexure-D.2**.

- *FSTPS unit #4 shutdown from 10th March 2018 for annual maint.*
- *KhSTPS unit #2 shutdown from 5th to 29th March 2018 for annual Maint.*

ERLDC may place the transmission line shutdown. Members may confirm.

1. Replacement of defective porcelain insulator with polymer insulator in NR-ER linked inter regional transmission line —Powergrid

Powergrid vide letter dated 10th February 2018 informed the following

1. Installation of polymer insulators in 400 kV Biharsarif – Balia – I & II transmission line:
It is to be informed here that due to redistribution of transmission lines between Power Grid ER-I and NR-III, the all NR-ER link transmission lines have been transferred to POWER Grid ER-I and being maintained by ER-I. The replacement of Porcelain insulators with polymer insulators in various transmission lines of POWERGRID/ER-I are being replaced in phased manner including the transmission lines transferred to POWERGRID/ER-I from POWERGRID NR-III.
2. As per discussion in 30th ERPC meeting held on 20th June 2015 at Shimla, the outage period for replacement of porcelain insulator with polymer insulator due to flashover in porcelain/anti fog disc type insulators due to environmental pollution is being considered under force majeure condition for calculation of availability by ERPC.
3. As per the record notes of discussion of special meeting of NRPC on 22.07.2008 at New Delhi. It may kindly be recalled that NRPC has considered the outage of lines on account of replacement of porcelain insulator with polymer insulator under force majeure condition for calculation of availability.

In view of above it is requested to consider the outage period for replacement of porcelain insulator with polymer insulator due to flashover in porcelain/anti fog disc type insulators due to environmental pollution of all NR-ER link transmission lines under force majeure condition for calculation of availability

Members may approve.

Item no. D.3: Prolonged outage of Power System elements in Eastern Region**(i) Thermal Generating units:**

Sr. No	Generating Station	Unit Number	Capacity(MW)	Reasons For Outage	Outage Date
1	KOLAGHAT	3	210	MAINTENANCE	2-Jan-17
2	BAKRESHWAR	1	210	MAINTENANCE	3-Jan-18
3	VEDANTA	1	600	ANNUAL OVERHAULING	19-Jan-18
4	VEDANTA	2	600	BOILER PROBLEM	8-Feb-18
5	ADHUNIK	2	270	FLAME FAILURE INITIALLY ,LATER GENERATOR VIBRATION	7-Sep-17
6	JITPL	1	600	BOTTAM ASH EVACUATION PROBLEM	30-Dec-17
7	KHSTPP	1	210	HYDROGEN LEAKAGE IN LLD	9-Feb-17
8	KOLAGHAT	3	210	MAINTENANCE WORK	25-Jan-18
9	DPL	8	250	MAINTENANCE WORK	11-Dec-17
10	MEJIA	5	250	PROBLEM IS IN BARRING GEAR	22-Sep-17
11	CTPS	3	130	TURBINE BLADE DAMAGE	30-Jul-17
12	Bokaro - B	3	210	COAL SHORTAGE	30-Jan-18
13	RAGHUNATHPUR	2	600	COAL SHORTAGE	27-Dec-17
14	Sagardighi	2	300	COAL SHORTAGE	1-Feb-18
15	TENUGHAT	2	210	COAL SHORTAGE	5-Feb-18

(ii) Hydro Generating units:

Sr. No	Generating Station	UNIT NO	CAP(MW)	REASONS FOR OUTAGE	OUTAGE DATE
1	BURLA	5	37.5	R & M WORK	25.10.2016
2	BURLA	6	37.5	R & M WORK	16.10.2015
3	CHIMPLIMA	3	24	R & M WORK	15.10.2015
4	BALIMELA	1	60	R & M WORK	05.08.2016
5	BALIMELA	2	60	R & M WORK	20.11.2017
6	BALIMELA	7	75	Governor & Guide vane problem	12.10.2017
7	U.KOLAB	2	80	Repair of MIV & Draft tube gate leakage	28.05.2017
8	RENGALI	5	50	Hoist gate problem	21.03.17

(iii) Transmission elements

Transmission Element / ICT	Agency	Outage Date	Reasons for Outage
220 KV BALIMELA - U' SILERU	OPTCL / APSEB	27.04.15	LINE IDLE CHARGED FROM UPPER SILERU END AT 12:42 HRS OF 25.01.17
400KV TALA -BINAGURI –I	POWERGRID/BHUTAN	29.12.17	S/D AVAILED BY BHUTAN

(Reported as per Clause 5.2(e) of IEGC)

Members may update.

Item no. D.4: Status of commissioning of generating station and transmission elements**New generating units:**

S.No.	Power Plant	Plant Size	Expected date

New transmission elements:

SI No.	Name of Element	Expected date
1	400kV Rajarhat-Purnea D/C (with LILO of one circuit each at Farakka and Gokarno)	
2	Augmentation of 400kV Farakka-Malda D/C with HTLS conductor	
3	400kV Ind-Bharath-Jharsuguda D/C	
4	400kV Talcher-Bramhapur-Gazuwaka D/C	
5	400kv Talcher-Rourkella(2 nd D/C-Quad)	
6	400kV Sterlite-Jharsuguda D/C	
7	765kv Anugul-Srikakulum D/C	
8	400kV Sasaram-Daltonganj D/C &Daltonganj S/Stn	
9	400 kV Ranchi-Raghunathpur D/C	
10	220 kV TLDP-IV – NJP ckt-2	
11	220 kV Bidhansai-Cuttack D/C	
12	220kV Gola- Ranchi	

Members may update.

PART E:: ITEMS FOR INFORMATION

Item No. E.1: Restricted Governor /Free Governor Mode Operation of generators in ER

CERC vide their letter dated 05-06-2017 desired to know the present status of RGMO/FGMO response of all eligible thermal and hydro units. Accordingly ERLDC vide letter no.ERLDC/SS/FGMO/2017 dated 07-06-17 requested all concerned power stations and SLDCs to provide updated status of FGMO/ RGMO of units under their control.

The latest status of the RGMO/FGMO of ER generators is enclosed in **Annexure-E1**.

Members may note.

Item No. E.2: Preparation of crisis management plan for Cyber Security in Power Sector in line with CERT-IN.

The activity of the preparation of Crisis Management Plan for countering the cyber attacks and its implementation including the Mock Drills, audits etc. is being monitored by CEA regularly in line with crisis management plant of Ministry of Power. Power Utilities (including generation, transmission & distribution utilities) of eastern region are to furnish regularly the updated status to on the same to Chief Engineer, Distribution Planning & Development Division, CEA.

NTPC communicated their activity of the preparation of Crisis Management Plan for countering the cyber attacks vide letter dated 2nd August, 2013.

In 113th OCC, Member Secretary informed that during interaction with consultants of Grid Study Committee, NLDC agreed that they will plan for conducting workshops on crisis management plan for Cyber Security and few workshops will also be held in Eastern Region.

CESC vide letter dated 22.08.15 had furnished their status of the preparation of Crisis Management Plan (CMP) for Cyber attacks in their system.

Members may note.

Item No. E.3: Certification through BIS as per IS 18001:2007 to all generating/ transmission units.

In 84th OCC meeting all constituents were requested to interact with BIS with intimation to ERPC and get certified as per CEA direction.

As per the information received from the constituents the following generators certified with IS 18001:

- All NTPC stations in Eastern Region
- Teesta, NHPC
- All OHPC generating units
- All CESC generating units
- All units of WBPDC
- DGPC units

Members may note.

Item No. E.4: Status of Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipment.

The status of DR/EL and GPS as updated in previous OCCs is enclosed at **Annexure-E.4**.

Constituents are also requested to furnish their list of new DR/EL which are not included in the list.

Teesta Urja Limited vide letter dated 8th September 2017 informed that Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipments are available at Teesta III HEP.

Members may note.

Item No. E.5: Status of Emergency Restoration System (ERS Towers) for Eastern Region constituents

CEA vide letter dated 21.07.2017 requested to send the status of state-wise availability of ERS towers and requirement of ERS towers.

In 136th OCC, MS, ERPC informed that CEA vide letter dated 21.07.2017 has sought the latest status on ERS. Therefore, OCC advised all constituents to send the updated status to ERPC secretariat vide mail (mserpc-power@nic.in).

Latest status is enclosed at **Annexure- E.5.**

In 138th OCC, WBSETCL informed that they are having total 10 ERS towers, 5 at Arambagh and 5 at Gokharno.

In 139th OCC, JUSNL informed that they are having eight 220/132kV ERS towers at following locations:

- Hatia – 3 nos
- Ranchi – 2 nos
- Dumka – 3 nos

Members may note.

Item No. E.6: Status of 1st Third Party Protection Audit:

The compliance status of 1st Third Party Protection Audit observations is as follows:

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	46	85.19
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	27	39.71
Odisha	59	42	71.19
JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

** Pending observations of Powergrid are related to PLCC problems at other end.*

The substation wise status of compliance are available at ERPC website (Observations include PLCC rectification/activation which needs a comprehensive plan).

In 118th OCC, all the constituents were advised to comply the pending observations at the earliest. All the STUs informed that most of the observations are related to funding from PSDF. DPRs have been submitted to PSDF committee.

Members may comply.

Item No. E.7: Black-start and restoration procedure of Eastern Region

The black-start and restoration plan for E. Region has been updated in compliance to Section 5.8(a) of the IEGC.

All SLDCs, ISGSs and regional IPPs may kindly provide their valuable feedback on the suggested changes preferably by 25-01-18, as the updated document is to be published in the current month.

The draft black start and restoration procedure of Eastern Region was circulated to all regional entities of the region through mail on 19-01-18 for their observations / comments. Based on feedback received from some of the constituents, the procedure has been updated and emailed to concerned utilities vide letter no. ERLDC/RP/2018/SS/ 5846 dated 30-01-17.

Members may note.

Item No. E.8: Final list of links executed under Fiber Optic Communication System in lieu of existing Unified Load Despatch & Communication (ULDC) Microwave links in Eastern Region

PGCIL vide mail dated 15th February 2018 informed that the following is the list of links which has been executed under the project:

SI no	Link Name	Link Length (Km)
A	Central Sector	
1	MTPS (Kati)- Muzaffarpur 400	23.909
2	Durgapur (CS) - Bidhannagar	12.004
3	Maithon-Ranchi	199
4	Hatia-Ranchi 400 (CS)	21.003
5	Sasaram (CS) - Gaya 765 (CS)	149.003
6	Muzaffarpur - Biharsharif (CS)	129.638
7	ERLDC-Kasba (UGFO)	10.7
B	BSPTCL Sector	
1	Samastipur-Baroli	64
2	Samastipur-Hajipur	61
3	Samastipur-Kati	76
4	BTPS-Biharsharif	64
5	Biharsharif-Bodhagaya	80
6	Biharsharif-Fatua	46
7	Fatua-Jharkhanpur	26
8	Jakkanpur-SLDC Patna (UGFO)	6
C	OPTCL Sector:	
1	Chainpal-Meramandali	7
2	Talcher (TSTPS)- Meramandali	45
3	Duburi-Meramandali	96
4	Meramandali-Mendhasal	100.593
5	Tarkera- Budhipadhar	109
6	Rourkela-Tarkera	15
7	Mancheswar-Bhubaneswar SLDC	4
8	Bhubaneswar SLDC-Vidyut Bhawan (Last Mile)	1.5
D	WBSETCL Sector:	
1	Bidhannagar- Barjora	25.624
2	Barjora- Bishnupur	42.803
3	Bishnupur- Arambag	50.789
4	Kolaghat TPS- Howrah SLDC	69.207
5	NJP-NBU	14

6	NBU-Binaguri	1
7	Rishra-Bighati	9
8	Bighati-BTPS	23
9	BTPS-Dharampur	18
10	Dharampur-Jeerat	8
11	Arambag- Kolaghat	78.26
12	132 kV Lilua-Rishra	17.03
13	132 kV Howrah- Lilua (WBSETCL)	12.459
14	132 Kv Kasba - Salt Lake (WBSETCL)	22.585
15	LILO at Liluah-Rishra	2.34
16	Saltlake S/s to Abhikshan Bhawan (UGFO)	0.514
17	Vidyut Bhawan to Saltlake GIS (UGFO)	1.03
18	Bidhannagar400-Bidhannagar220	0.91
E	DVC Sector:	
1	132 kV Maithon SLDC - MHPS	1
2	MHPS- 132 kV Kalyaneswari	2
3	220 kV Kalyaneswari - Mejia A	55
4	220 kV Mejia - Waria	34
5	220 kV Waria DTPS - Parulia	21
6	220 kV Parulia - Durgapur	1
7	132 kV Kalyaneswari - CTPS A	87
8	CTPS A - BTPS	32
9	220 kV Ramchandrapur - Chandil	33
10	Mejia A - Mejia B (UGFOC)	4.7
11	400 kV Barhi-KTPS	20.723
12	220 Kv Koderma-KTPS	17.559
13	Bokaro-Ramgarh	54.887
14	Konar-Bokaro	23.733
15	Konar-Barhi	58.455
16	Maithon-Kalyaneshwary	6.854
17	MHPS-Panchet	14.599
18	CTPS 132 kV C/R to CTPS-A 220 kV C/R	0.8
19	Kalyneshwari-Kalipahari	27.91
20	LILO at Raghunathpur	21.83
21	Kodarma TPS-Kodarma 400/220 S/s	0.787
22	BTPS A-BTPS B	1.265
23	Ramgarh220-Ramgarh 132	0.735
24	DSTPS-RTPS	59.65

Members may note.

Item No. E.9: Final list of links executed under Fiber Optic Communication System in ER under Expansion of Wideband Communication Network in ER

PGCIL vide mail dated 15th February 2018 informed that the following is the list of links which has been executed under the project:

S/n	Link Name	Link (Km)	Length
1	Dhalkola-Purnea	40.94	
2	Birpara-Siliguri	80.44	
3	LILO of Malda-Binaguri at Purnea	58.22	
4	Baripada-Jamshedpur	140.91	

5	Subhashgram -Jeerat	63.99
6	Bolangir - Jeypore	308.32
7	Bolangir - Angul	200.63
8	Rengali - Keonjhar	100.25
9	Ara -Patna	64.00
10	Ranchi 400 - Ranchi 765	78.00
11	Banka-Kahalgaon	48.95
12	Rangit - Gangtok (upto T-85)	22.00
13	400 KV Purnea S/s to LILO of Malda- Binaguri TL Section (Binaguri Section)	60.50
14	Patna-Barh	92.53
15	Teesta V - TP Rangpo/Binaguri	110.38
16	LILO at Sundargarh (Rourkela-Raigarh)	22.89
17	Angul- Jharsuguda	286.40
18	Uttara-Mendhasal (Pandiabili)	27.797
19	132 KV Rangpo S/s to LILO Siliguri-Gangtok (CS)	3.737
20	New Melli-Rangpo	25.40
21	MPL-Maithon PG	31.50
22	Indravati HPS - Indravati PG	3.79
23	Maithon - Kahalgaon	171.83
24	Biharsharif-Koderma	109.00
25	Siliguri 400 - Kishanganj (Incl LILO)	98.65
26	Baripada- Keonjhar	157.54
27	Dalkhola - Malda	116.15
28	Birpara - Alipurduar	59.184
29	Barh-Kahalgaon	215.22
30	Chandawa-Ranchi	68.31
31	LILO of Biharsharif-Kahalgaon at Lakhisarai	31.63
32	Daltonganj-Sasaram	196.13
33	Dalkhola-Siliguri LILO at Kishanganj (Dalkhola-Kishanganj)	31.09
34	Gaya-Chandwa	117.13
35	Jamshedpur-Chaibasa	47.86
36	Biharsharif-Banka	178.89
37	Purnea400-Purnea220	1.99
38	Punatsangchu- Alipurduar	63.78
S/n	Link Name	Link Length (Km)
39	Rourkela-Raigarh(Rourkela to LILO at Sundargarh)	123
40	Ranchi-Rourkela	144.97
41	Siliguri-Gangtok	126.064
42	Bongaingaon-Gelephu	55.00

Members may note.

Item No. E.10: Additional agenda

VDI of Selected 765 kV & 400 kV in Eastern Region in the month of January - 2018

नई राँची / Ranchi New			जमशेदपुर / Jamshedpur			मुजफ्फरपुर / Muzaffarpur		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
792	758	0.00	426	409	19.90	417	388	0.00

बिहार शरीफ / Bihar Sariff			बिनागुरी / Binaguri			जीरत / Jeerat		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
421	399	0.09	425	399	15.22	432	397	39.10

राउरकेला / Rourkela			जयपुर / Jeypore			कोडरमा / Koderma		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
420	404	0.00	424	367	0.65	427	403	0.97

मैथन / Maithon			तीस्ता / Teesta			रांगपो / Rangpo		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
421	403	0.12	425	389	10.48	422	386	1.76

Eastern Regional Power Committee, Kolkata**Details of islanding schemes in Eastern Region**

Sr. No	State	Name of Islanding Scheme	Generating Stations Covered	Electrical Size(in MW)	Present Status	Area / Load covered
1	West Bengal	CESC	Titagarh, Budge-Budge	1100 MW	Operational.	CESC load of Kolkata area LOADS: All major city loads are covered
		Bakreswar TPS, WBPDC	Bakreswar TPS	715 MW	Operational wef from 31.03.2015	LOADS: Satgachia, Krishnanagar, Ranaghat, Debagram, Katwa, Kalna, Gokarna, Behrampur, Amtala, Rampurhat, Raghunathganj&Lalgola
		Tata Power, Haldia	Haldia 120 MW	92 MW	Operational wef 24.04.2015.	Haldia and its adjoining area LOADS: Industrial areas of Haldia and Port
		Bandel TPS, WBPDC	Bandel TPS	110 MW	Being implemented through PSDF	LOADS: Khanyan, Chanditala & Bighati
2	Jharkhand	Farakka STPS	One unit of Farakka STPS	180 MW	Operational with unit 1 & 3 of FSTPS	Lalmatia, Dumka and Sahebganj LOADS : Coal mines and Indo-Bangladesh international border
3.	DVC	Chandrapura TPS (132KV) of DVC system	Chandrapura TPS	125 MW	Operational wef from 15.06.2015	Chaddrapura connected area
3.	Bihar	Studies in progress to extend above Farakka islanding scheme to include Bihar areas as well.				
4.	Odisha*	Islanding Scheme of IB TPS	IB TPS	420 MW	Scheme finalized. Under implementation stage.	Budhipadar LOADS : local loads to power plant

* Many CPPs like NALCO, HINDALCO, IFFCO, Rourkela Steel Plant, etc. in Odisha are also having islanding schemes.



JHARKHAND URJA SANCHARN NIGAM LIMITED

Office of the

Chief Engineer, SLDC/ULDC & Telecom

Kusai Colony, Doranda, Ranchi

Phone: 0651-2490090, Fax: 0651-2490486, Email: sldcranchi@gmail.com

Letter No. 58 ' SLDC/ ULDC, Ranchi, Dated, 08-02-2018

From,

C.M. Sharma
C.E. (SLDC/ULDC & Telecom),
Kusai Colony, Ranchi

To,

Shri J.Bandyopadhyay
Member Secretary (ERPC)
14 Golf club road,
Tollygunge, Kolkata,

Sub: Request for inclusion of an item in the agenda of 142th OCC meeting regarding charging of Daltonganj (PG)-Daltonganj (JUSNL) Transmission line.

Ref: Email dated 7th Feb 2018 of Sri S.Bannerjee, ERLDC.

Sir,

With reference to the above; it is to intimate that Load flow analysis of 132KV Daltonganj (PG)-Daltonganj (JUSNL) Transmission Line has been conducted by ERLDC keeping minimum one unit of TTPS in service. In case of availability of only one unit of TTPS the loading on 220KV Ranchi (PG)-Hatia (II) will increase drastically to compensate the load in Ranchi Zone. Due to this the voltage profile in Loherdaga, Gumla, Latehar and Daltonganj will be affected adversely. Neither JUSNL nor JBVNL are having capacitor bank arrangement for arresting the low voltage profile in the system, in this situation.

We have traction load connected from Hatia-I, Namkum and Kamdara for feeding important railway TSS in Ranchi-Rourkela section, which suffer a lot due to such low voltage profile in case of non availability of TTPS units.

To give a relief on Ranchi (PG)-Hatia (II) Transmission Line in case of outage of TTPS units the supply load of Daltonganj (50 to 60 MW peak) needs to be shifted to Daltonganj (PG) either by considering Radial Mode of connection or by exploring any other suitable arrangement so that the loading on Daltonganj (PG) should remain minimum 50-60 MW.

It is therefore requested to kindly include this item in the Agenda of 142th OCC meeting for proper discussion and decision.

Yours faithfully,

(Signature)
(C.M. Sharma)
C.E, SLDC/ULDC

08.02.2018

Recd

Annexure-B10

Generation Projection (April 2018 - June 2018)																	
				Generation declared Commercial from 1st July '17 to 31st Dec'17					Generation declared/expected to be declared Commercial from 1st Jan'18 to 31st Mar'18								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
1	West Bengal	ER	5234											5234			5234
2	Odisha	ER	3050											3050	As per data given by GRIDCO	3177	3177
3	Bihar	ER	241											241			241
4	Jharkhand	ER	340											340			340
5	Sikkim	ER	0											0			0
6	Chujachan	ER	113											113	As per CERC order dated: 22.06.2017	99	99
7	DVC	ER	4738											4738	As per data given by DVC	4527	4527
8	Durgapur Steel	ER															
9	Koderma TPP	ER															
10	Bokaro TPS	ER															
11	Raghunathpur	ER															
12	MPL	ER	1013											1013			1013
13	Teesta V	ER	533											533	As per NHPC data	510	510
14	Kahalgaon	ER	2155											2155	As per NTPC	2178	2178
15	Farakka	ER	1857											1857		1968	1968
16	Talcher	ER	972											972			972
17	Rangit	ER	70											70	As per NHPC data	60	60
18	Adhunik Power	ER	519											519			519
19	Barh	ER	1252											1252	As per NTPC	1057	1057

Generation Projection (April 2018 - June 2018)

				Generation declared Commercial from 1st July '17 to 31st Dec'17					Generation declared/expected to be declared Commercial from 1st Jan'18 to 31st Mar'18								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
20	Kamalanga TPP (GMR)	ER	595											595			595
21	JITPL	ER	894											894			894
22	Jorethang	ER	102											102	As per CERC order dated: 22.06.2017	96	96
23	Bhutan	ER	1213											1213			1213
24	Teesta-III	ER	959											959	As per CERC order dated: 22.06.2017	782	782
		ER															
		ER															
		ER															
		ER															
		ER															
25	Dikchu HEP	ER	83						Dikchu	1	48	48	95	95			95
26		ER							Dikchu	2	48	48					
27	Nabinagar BRBCL	ER		Nabinagar BRBCL	1	230	151	151	Nabinagar BRBCL	2	230	151	151	301			301
28	Tashiding HEP	ER							Tashiding HEP	1	49	48	96	96			96
									Tashiding HEP	2	49	48					
	TOTAL		25933					151					342	26342			25968

Note:

1. Projections are based on monthly maximum injection in the last 3 years from actual metered data.
2. Generation forecast has been done based on the following criteria
 - (i) If there is an increasing trend then last year average generation has been considered
 - (ii) Otherwise average of past three year average generation has been considered
3. In case of new generators where past data was not available following has been assumed
 - (i) 1.0 plf for hydro generators
 - (ii) 0.7 plf for thermal generators.
 - (iii) 0.3 plf for gas stations

DEMAND FORECAST USING PAST 3 YEARS DATA (April 2018 - June 2018)													
	2015-16			2016-17			2017-18			1	2	3	4
	Apr-15	May-15	Jun-15	Apr-16	May-16	Jun-16	Apr-17	May-17	Jun-17	2015-16 Average	2016- 17Average	2017-18 Average	Projected Demand for (April 2018 June 2018) before normalization
Bihar	2,945	2,630	2,892	3,521	3,638	3,441	3,904	4,021	4,131	2,822	3,533	4,019	4,654
DVC	2,547	2,610	2,719	2,562	2,478	2,686	2,651	2,684	2,518	2,625	2,575	2,618	2,598
Jharkhand	1,043	1,067	1,083	1,177	1,498	1,119	1,197	1,211	1,228	1,064	1,265	1,212	1,328
Odisha	3,850	3,880	3,824	4,012	3,898	3,970	4,227	4,208	3,929	3,851	3,960	4,121	4,248
West Bengal	7,517	7,629	7,853	7,602	7,641	7,542	7,793	7,495	7,768	7,666	7,595	7,685	7,668
Sikkim	77	77	83	112	93	93	91	78	78	79	99	82	90
Eastern Region	17,304	17,221	17,710	18,345	18,596	18,213	19,191	19,032	18,987				

Notes

1. Projections are based on the past 3 years' monthly Peak Demand Met data available on the website of CEA
2. The above projections are being done for financial year 2018-2019 (Q1) i.e April 2018 to June 2018
3. Projections are being done based on the forecast function available in MS Office Excel
4. CEA Reports can be accessed from the following links:
http://www.cea.nic.in/reports/monthly/powersupply/2017/osp_peak-04.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/osp_peak-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/osp_peak-06.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/osp_peak-04.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/osp_peak-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/osp_peak-06.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/osp_peak-04.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/osp_peak-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/osp_peak-06.pdf

PPA details for the year 2017-18 to 2019-20

[illegible]

FoR Technical Committee on Grid Integration of Renewable Energy (RE), with reference to regional cooperation and other options for managing intra-day load / generation variation due to RE or otherwise -- Record of Proceedings of the meeting held on 18.8.2017.

In order facilitate implementation of Framework on Renewables at State Level, FoR constituted a Technical Committee under the Chairmanship of Shri A.S. Bakshi, Member, CERC. The mandate given to the Committee *inter alia* includes evolving a roadmap for implementation of Framework on Forecasting, Scheduling and Deviation Settlement of Wind & Solar generating stations at State Level, implementation of ABT Framework, introduction of Ancillary Services and Reserves, implementation of Automatic Generation and Primary Control etc.

2. The Technical Committee in its meeting held on 28.3.2017 at Chennai, discussed the matter related to Co-operation among States for Optimum Utilization of their Generation Resources, amongst the other issues. During the discussion, it was decided that sub-groups be constituted in the Northern Region, Western Region and Southern Region (the three RE rich regions) headed by the Member Secretaries of the respective Regional Power Committees (RPCs). The Sub-groups were mandated to examine the feasibility and modality of co-operation among States in the respective region for ensuring optimum utilization of generation resources with least cost options for balancing across the region and submit their findings before the Technical Committee.

3. A meeting of the Heads / Representatives of the Sub-Groups was convened under the Chairmanship of Shri A.S.Bakshi, Member, CERC on 18.8.2017 in CERC, New Delhi to review the progress on framework for regional co-operation. The list of participants is at **Annexure - I**.

4. The following emerged during the deliberations in the meeting:-

- Of late, the States have recognized the value of electricity resource vis-à-vis the cost of generation. Some of the States are not willing to cooperate with other States in the Region on “cost” basis.
- It was also observed that some of the Regions are predominantly “Surplus” in power, leaving little scope for co-operation within the region. This necessitates a national level framework / product for optimum resource utilization.
- Various other options for handling intra-day load / generation variation due to RE or otherwise were also discussed as at **Annexure-II**, viz. (i) Banking; (ii) DAM price on PX as reference; (iii) Pool based on VC as approved by the Regulator and on payment of cost; (iv) Pool based on VC as approved by the Regulator and on payment of MC; (v) Pool based on auction for intra-day for the rest of the day; (vi) Pool based on auction for intra-day on hourly basis; (vii) Pool based on auction for intra-day on intra-hour basis i.e for 15 min. block-wise etc.

5. During the meeting it was decided to share with all RPCs the options raised therein and seek feedback.

List of participants attended meeting of the Sub-Group under FOR Technical Committee Meeting held on 18.8.2017 under the Chairmanship of Shri A.S. Bakshi, Member, CERC

1. Shri A.S. Bakshi, Member, CERC
2. Dr. M.K. Iyer, Member, CERC
3. Shri M.A.K.P. Singh, Member Secretary, NRPC
4. Shri A. Balan, Member Secretary, WRPC
5. Shri S.R. Bhat, Member Secretary, SRPC
6. Shri S.C. Shrivastava, Chief (Engineering), CERC
7. Dr. S.K. Chatterjee, Joint Chief (Regulatory Affairs), CERC
8. Shri K.V.S. Baba, CEO, POSOCO
9. Shri S.K. Soonee, Advisor (POSOCO)
10. Smt. Shilpa Agarwal, Joint Chief (Engg.)
11. Shri S.S. Barpanda, GM, NLDC
12. Shri Samir Saxena, DGM, NLDC
13. Shri M.M. Chaudhari Deputy Chief (Engg.)
14. Smt. Shruti Deorah, Advisor (RE), CERC
15. Shri Anil, SRPC
16. Shri H.K. Pandey, S.E, NRPC
17. Shri Rajasekhar Devaguptapu, Regulatory Executive Officer, CERC
18. Shri Siddharth Arora, Research Officer, CERC

I. Options for Intra-Day / Hour Ahead transactions:

Seven options have been proposed for Hour Ahead Transactions.

Option-1: Banking

- Pros: Voluntary; No price transaction; Easy to implement
- Cons: Still bilateral; Opaque to cheaper options; True marginal cost of meeting demand not known; Elements of Cost and Value missing; No knowledge of gain or loss

Option-2: Day Ahead Market Price on Power Exchange as reference

- Pros: Well accepted reference price; Dispute free
- Cons: Very remote chance of availability of generation sources with marginal cost equal to or less than Day Ahead Market(DAM) price; Liquidity will always be an issue

Option-3: Pool, based on variable cost as approved by the Regulator and on payment of cost

- Pros: Visibility of all options for purchase decision; Dispute free as regulator approved Variable Cost (VC); All resources get paid as per their cost or marginal cost; Improvement over option 2, liquidity
- Cons: Still based on cost and not on value; VC difficult to ascertain; Merchant plants cannot participate as their tariffs are not determined by regulator

Option-4: Pool, based on variable cost as approved by the Regulator and on payment of marginal cost

- Pros: Same as Option 3; Improvement over Option 3 – element of ‘value’ introduced because of marginal cost based payment
- Cons: VC difficult to ascertain; Merchant plants cannot participate as their tariffs are not determined by regulator; Payment based on marginal cost may lead to heart burn; still administered

Option-5: Pool, based on auction (intra-day for the rest of the day)

- Pros: Market Discovered Price; Dispute free; Not administered; Akin to DAM but closer to real time
- Cons: Preparedness of Power Exchange (PX); Discoms’ decision making process; OA registry, a pre-requisite

Option-6: Pool, based on auction (hourly)

- Pros: Market Discovered Price; Dispute free; Not administered; Akin to DAM but closer to real time
- Cons: Preparedness of PX; Discoms decision making process; OA registry, a pre-requisite

Option-7: *Pool, based on auction (intra-hour i.e. 15 min. block)*

- Pros: Market Discovered Price; Dispute free; Not administered; Akin to DAM but closer to real time
- Cons: Preparedness of PX; Discoms' decision making process; OA registry, a pre-requisite

II. Illustration:

- a. Auction: 7.30 Hrs. – 8.00 Hrs. window, transaction for 'rest of the day' (Intra-day : Option 5) / 'for 9.00 – 10.00 Hrs.' (Hourly : Option 6) / 'for 9.00 – 9.15 Hrs.' (Intra-hour : Option 7), and so on
- b. Generators can participate for sale of surplus power (over and above already scheduled on day-ahead basis)
- c. Sellers (other than generators) and buyers can participate for surplus / deficit vis-à-vis their schedule on day-ahead basis
- d. After the trade materializes under Option 5, 6 or 7 as the case may be, net schedule for the buyers and sellers shall be prepared, which will serve as reference point for DSM / UI
- e. However, payment for 'Day-ahead' transaction and 'Intra-day' (Option 5) / 'Hourly' (Option 6) / 'Intra-hour' (Option 7) transactions shall be settled separately based on the schedules for the respective segments
- f. Open Access Registry and delegation of decision making authority to operating level at Discom are pre-conditions to success of this framework.

Agenda C.5: Identification of suitable loads for disconnection to control overdrawal by constituents

141 st OCC Meeting

IEGC Section 5.4.2 : Demand Disconnection

5.4.2 (b) *The SLDC/ SEB/distribution licensee and bulk consumer shall ensure that requisite load shedding is carried out in its control area so that there is no overdrawal.*

5.4.2 (c) *Each user/STU/SLDC shall formulate contingency procedures and make arrangements that will enable demand disconnection to take place, as instructed by the RLDC/SLDC, under normal and/or contingent conditions. These contingency procedures and arrangements shall regularly be/updated by User/STU and monitored by RLDC/SLDC. RLDC/SLDC may direct any User/STU to modify the above procedures/ arrangement, if required, in the interest of grid security and the concerned User/STU shall abide by these directions.*

5.4.2 (f) *To comply with the direction of RLDC, SLDC may direct any SEB/ distribution licensee/bulk consumer connected to the STU to curtail drawal from grid. SLDC shall monitor the action taken by the concerned entity and ensure the reduction of drawal from the grid as directed by RLDC.*

Feeders already identified by W. Bengal in 138th OCC for demand disconnection (in case of persistent overdrawal)

Priority	Feeders/ICTs	Point of Disconnection	Expected Load Relief (MW)
1	220 kV Dalkohla (PG)-Dalkohla(WB)	220 kV Dalkohla-PG	
2	132 kV Malda (PG)-Malda(WB)	132 kV Malda-PG	
3	132 kV Birpara(PG)-Birpara(WB)	132 kV Birpara(PG)	

Additional feeders proposed to be included in the scheme for demand disconnection

Feeders	Expected load relief
132kV Satgachhia-Kalna D/C	
132kV Bidhannagar-Ukhra D/C	
132kV Arambag-Raina D/C	
132kV Domjur-Jangipara D/C	
132kV N. Bisnupur-Khatra D/C	
132kV L'kantapur-Kakdwip D/C	

There are several 132kV load centres in W. Bengal which have the scope for receiving power from alternative 220/132kV S/Stns. Normally however, they are supplied radially from one of the 220/132kV S/stns only. W. Bengal may please furnish the list of such 132kV S/Stns with their usual sources, and indicate the feasibility of including them in the demand management scheme.

Feeders already identified for demand disconnection (in case of persistent overdrawal) in Odisha

Priority	Feeders/ICTs	Point of Disconnection	Expected Load Relief (MW)
1	220 kV Rengali(PG)- Rengali(OPTCL)	220 kV Rengali-PG	
2	220/132 kV Baripada 160 MVA ICT	220 kV Baripada-PG	
3	220 kV Baripada(PG)- Balsore (Odisha)	220 kV Baripada-PG	

Additional feeders proposed to be included in the scheme for demand disconnection

Feeders	Remarks	Expected load Relief (MW)
132kV Bolangir(New)-Patnagarh S/C		
132kV Chhatrapur – Ganjam S/C		
132kV Bhanjanagar-Phulbani S/C		
132kV Bhadrak-Dhamra D/C		
132kV Chandaka-Nimapara / Ranasighpur		
132kV Jeynagar-Raygada / Sunabeda or 132kV Therubali-Raygada S/C	Depending upon source of supply	
132kV Baripada(PG)-Jaleswar/Bhograi Or 132kV Bhadrak-Jaleswar/Bhograi	Depending upon source of supply	
132kV Jajpur Rd. – Kendrapara D/C or 132kV Paradeep-Kendrapara D/C	Depending upon source of supply	

Feeders already identified for demand disconnection (in case of persistent overdrawal) **in DVC**

Priority	Feeders/ICTs	Point of Disconnection	Expected Load Relief (MW)
1	220 kV Maithon (PG)-Kalyaneswari (DVC)	220 kV Maithon-PG	
2	220 kV Parulia (PG)-Parulia (DVC)	220 kV Parulia PG	
3	220 kV Maithon (PG)-Dhanbad (DVC)	220 kV Maithon-PG	

Note: Kalyaneswari, Parulia(DVC) and Dhanbad have alternative sources of supply. Therefore if both the 220kV circuits from PGCIL to these S/stns are switched off, either there may be no load relief or the transmission system of the alternative source may trip on overload, leading to widespread load loss

Additional feeders proposed to be included in the scheme for demand disconnection

Feeders	Remarks	Expected load Relief (MW)
132kV Barhi-Hazaribagh D/C		
132kV Waria-Kalipahari D/C AND 132kV Kalyaneswari-Kalipahari D/C	Kalipahari supplied from both sources *	
132kV Waria-Bardhaman D/C AND 132kV Belmuri - Bardhaman D/C	Bardhaman supplied from both sources *	
132kV Kharagpur-Mosabani D/C AND 132kV Jamshedpur-Mosbani D/C	Mosabani supplied from both sources *	
132kV CTPS-Purulia D/C AND 132kV Jamshedpur-Purulia D/C	Purulia supplied from both sources *	

* Negligible availability of 132kV radial loads in DVC. Most of the 132kV S/Stns cater to traction / colliery loads in addition to other non-critical loads.

Feeders already identified **by JUSNL** for demand disconnection in 138th OCC(in case of persistent overdrawal)

Priority	Feeders/ICTs	Point of Disconnection	Expected Load Relief (MW)
1	One 400/220 kV 315 MVA ICT Jamsedpur	400 kV Jamsedpur	
2	220 kV Ranchi(PG)-Chandil(JUVNL)	220 kV Ranchi-PG	

Note: Above elements are either inadequate to effect any load relief or may lead to widespread load loss due to consequent overload of other interconnected elements

Feeders proposed to be included in the scheme for demand disconnection in Jharkhand

Feeders	Remarks	Expected load Relief (MW)
132kV Lohardaga-Latehar D/C		
132kV Chandil – Golmuri D/C		
132kV Dumka-Pakur S/C		
132kV Lalmatia-Sahebganj S/C		

NOTE: Most of the 132kV S/Stns in JUSNL supply traction loads besides other non-critical loads. Identification of 132kV feeders whose disconnection would not affect traction supply, is difficult.

Feeders identified by Bihar
in 138th OCC meeting, for demand disconnection (in
case of persistent overdrawal)

Priority	Feeders/ICTs	Point of Disconnection	Expected Load Relief (MW)
1	132kV Banka(PG)-Banka D/C line	132kV Banka PG	60
2	132kV Banka(PG)-Sultanganj D/C	132kV Banka PG	80
3	132kV Ara(PG)-Jagdishpur S/C line	132 kV Ara PG	45

Additional feeders proposed to be included in the scheme for demand disconnection

Feeders	Remarks	Expected load Relief (MW)
132kV Khagaul-Digha D/C		
132kV Khagaul-Bihta D/C		
132kV Bodhgaya-Sherghati S/C		
132kV Biharshariff-Hulasgarh / Ekangarsarai D/C		
132kV Sonenagar-Aurangabad D/C		

There are several 132kV load centres in Bihar which have the scope for receiving power from alternative 220/132kV S/Stns. Normally however, they are supplied radially from one of the 220/132kV S/stns only. Bihar may please furnish the list of such 132kV S/Stns with their usual sources, and indicate the feasibility of including them in the demand management scheme.

List of Sheddable Feeders of DVC

SUBSTN	NAME OF THE CONSUMER	Category	Rev. CD in MVA
Barhi	JSEB Barhi	JSEB	30.0
BTPS-A	JSEB Bokaro	JSEB	24.0
CTPS	JSEB Chas	JSEB	20.0
Konar	JSEB Konar Banaso	JSEB	10.0
Kumardubi	JSEB Mugma	JSEB	22.0
Giridih	JSEB Giridih	JSEB	55.0
Patherdih	JSEB Digwadih	JSEB	17.0
Patherdih	JSEB Gobindpur	JSEB	40.0
Putki	JSEB Ganeshpur	JSEB	35.0
Putki	JSEB Jamadoba	JSEB	13.0
Barhi	JSEB Padma PSS RGGVY	JSEB	18.0
CTPS	JSEB Dugdha	JSEB	25.0
Ramgarh	JSEB Ramgarh	JSEB	80.0
Konar	JSEB Karma PSS RGGVY	JSEB	3.0
Kumardubi	JSEB Kumardubi	JSEB	9.0
Nimiaghat	JSEB Dumri Banaso	JSEB	40.0
Patherdih	JSEB Mukunda	JSEB	13.0
Putki	JSEB Katras (Tilatand)	JSEB	17.0
Patherdih	PMCH Medical College	JSEB	9.0
Ramgarh	JSEB West Bokaro (Ghato)	JSEB	1.5
Sindri	JSEB Sindri	JSEB	9.0
Biada	JSEB Biada-Chas	JSEB	15.0
Putki	JSEB Katras(Sijua)	JSEB	2.5
Putki	JSEB Sendra Bansjora	JSEB	4.0
CTPS	JSEB Jainamore	JSEB	22.0
Maithon R/B	JSEB Badjna	JSEB	18.0
Belmuri	WBSEB Belmuri	WBSEB	25.00
Burdwan	WBSEB Burdwan	WBSEB	48.00
Kalipahari	WBSEB Kanyapur	WBSEB	29.00
Kalipahari	WBSEB Luchipur	WBSEB	25.00
Maithon L/B	WBSEB Dendua	WBSEB	10.00
Maithon L/B	WBSEB Kalyaneswary	WBSEB	1.00
MTPS	WBSEB Borjora	WBSEB	10.00
Patherdih	WBSEB Santhaldih	WBSEB	0.80
Jamuria	WBSEDCL Jamuria	WBSEB	20.0

List of the ICT/ATR/TRF belong to ISGS & ISTS transmission licensees

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Angul	765/400	1500	4	HV	23	4	12	12	NA
Gaya	765/400	1500	3	HV	23	4	12	12	NA
Jharsuguda	765/400	1500	2	HV	23	4	12	12	NA
New Ranchi	765/400	1500	2	HV	23	4	12	12	NA
New Sasaram	765/400	1500	2	HV	23	4	12	12	NA
Alipurduar	400/220	315	2	NA	NA	NA	NA	NA	NA
Baripada	400/220	315	2	HV	17	5	11	9	NA
Baripada	400/220	500	1	NA	NA	NA	NA	NA	NA
Biharshariff	400/220	315	3	HV	17	5	12	9	NA
Binaguri	400/220	315	2	HV	17	5	10	9	NA
Bolangir	400/220	315	2	HV	17	5	9B	9	NA
Chaibasa	400/220	315	2	HV	17	5	9B	9B	NA
Darbhanga	400/220	500	2	NA	NA	NA	NA	NA	NA
FSTPP	400/220	315	1	HV	17	5	11	9B	NA
Gaya	400/220	315	1	HV	17	5	12	9	NA
Gaya	400/220	500	1	HV	17	5	12	9	NA
Indravati	400/220	315	1	HV	17	5	9B	9	NA
Jamshedpur	400/220	315	3	HV	17	5	15	9	NA
Jeyapore	400/220	315	2	HV	17	5	14	9	NA
Keonjhar	400/220	315	2	HV	17	5	9B	9B	NA
Kishangunj	400/220	500	2	HV	17	5	9B	9B	NA
Maithon	400/220	315	1	HV	17	5	9B	9B	NA
Maithon	400/220	500	1	HV	17	5	9B	9B	NA
Malda	400/220	315	2	HV	17	5	10	9	NA
Muzaffarpur	400/220	315	2	HV	17	5	12	9B	NA
Muzaffarpur	400/220	500	1	HV	17	5	12	9B	NA
New Purnea	400/220	500	2	HV	17	5	11	9	NA
Pandiabili	400/220	500	2	HV	17	5	9B	9B	NA
Parulia	400/220	315	2	HV	17	5	11	9	NA
Patna	400/220	315	1	HV	17	5	9B	9B	NA
Patna	400/220	500	1	HV	17	5	9B	9B	NA
Ranchi	400/220	315	2	HV	17	5	9B	9	NA
Rangpo	400/220	315	5	HV	17	5	9	9	NA
Rengali	400/220	315	2	HV	17	5	9	9	NA
Rourkela	400/220	315	2	HV	17	5	10	9	NA
Sasaram	400/220	315	1	HV	17	5	14	9	NA
Sasaram	400/220	500	1	HV	17	5	14	9	NA
Subhasgram	400/220	315	4	HV	17	5	9	9	NA
Subhasgram	400/220	500	1	HV	17	5	9	9	NA
TSTPP	400/220	315	2	HV	17	5	13	9	NA
Banka	400/132	200	2	HV	17	5	7	9	NA
Barh	400/132	200	2	NA	NA	NA	NA	NA	NA
KhSTPP	400/132	200	2	HV	17	5	10	9	NA
Lakhsarai	400/132	200	2	HV	17	5	9	9	NA
Nabinagar	400/132	200	2	NA	NA	NA	NA	NA	NA
Arrah	220/132	100	2	LV	17	1.65	9	13	NA
Arrah	220/132	160	1	LV	17	1.65	9	13	NA
Baripada	220/132	160	2	NA	NA	NA	NA	NA	NA
Birpara	220/132	160	2	LV	17	1.65	12	13	NA
Bolangir	220/132	160	1	NA	NA	NA	NA	NA	NA
Dikchu	400/132	270	1	NA	NA	NA	NA	NA	NA
Malda	220/132	160	2	LV	17	1.65	10	13	NA
Malda	220/132	50	1	LV	17	1.65	10	13	NA
Muzaffarpur	220/132	100	1	NA	NA	NA	NA	NA	NA
NJP	220/132	100	2	LV	17	1.65	9	13	NA
NJP	220/132	160	1	LV	13	1.65	7	13	NA
Purnea	220/132	160	3	LV	17	1.65	9	13	NA
Rangpo	220/132	100	3	LV	17	1.65	NA	13	NA
Gangtok	132/66	50	2	HV	17	1.65	9B	9	NA

* NA means data not available

List of the ICT/ATR/TRF belong to BSPHCL

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Begusarai	220/132	100	2	HV	17	1.75	4	9	NA
Biharshariff	220/132	150	3	HV	17	2.75	4	5	NA
Bodhgaya	220/132	150	4	HV	25	1.85	9 (216.5 kV)	7	NA
Darbhanga	220/132	100	2	HV	13	2.75	10	9	NA
Dehri	220/132	100	4	HV	17	2.75	5	5	NA
Fatuah	220/132	100	4	HV	17	2.75	7	9	NA
Gopalgunj	220/132	100	2	HV	13	2.75	7	9	NA
Hazipur	220/132	100	3	HV	17	2.75	NA	9	NA
Khagul	220/132	100	3	HV	17	2.75	7	9	NA
Madhepura	220/132	100	2	NA	NA	NA	NA	NA	NA
Madhepura	220/132	160	1	NA	NA	NA	NA	NA	NA
MTPS	220/132	100	2	LV	17	1.65	1	9	NA
MUSHAHRI	220/132	160	2	HV	17	1.65	9	9	NA
Muzaffarpur	220/132	100	3	HV	17	2.75	NA	9	NA
New Kishangunj	220/132	160	2	HV	17	2.75	NA	9	NA
Pusouli	220/132	150	2	HV	17	1.75	9	9	NA
Samastipur	220/132	160	2	LV	17	1.65	1	9	NA
Sipara	220/132	150	2	HV	17	1.65	9	9	NA
Sipara	220/132	160	1	HV	17	1.65	9	9	NA
Sonenagar	220/132	160	2	HV	17	2.75	NA	9	NA

* NA means data not available

List of the ICT/ATR/TRF belong to JUVNL

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Chaibasa	220/132	50	2	HV	17	2.75	5	9	
Chaibasa	220/132	150	2	HV	13	2.75	9	9	
Chandil	220/132	100	4	HV	17	2.75	9	5	
Dumka	220/132	150	2	HV	17	2.75	7	9	
Hatia	220/132	150	3	HV	17	2.75	5	9	
Lalmatia	220/132	100	2	HV	17	2.75	5	9	
Patratu	220/132	150	2	HV	17	2.75	12	9	
Ramchandrapur	220/132	150	2	HV	19	2.75	10	9	
Ramchandrapur	220/132	150	1	HV	17	2.75	5	9	

* NA means data not available

List of the ICT/ATR/TRF belong to DVC

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Bokaro A	400/220	315	2	NA	NA	NA	NA	NA	NA
Koderma	400/220	315	2	HV	17	5	9B	9B	NA
RTPS	400/220	315	2	NA	NA	NA	NA	NA	NA
TISCO	400/220	315	2	HV	17	5	9B	9B	NA
Bokaro B	220/132	150	2	HV	17	2.75	NA	9	NA
Borojora	220/132	150	2	HV	17	2.75	7	9	NA
CTPS	220/132	150	2	HV	17	2.75	NA	9	NA
CTPS	220/132	100	2	LV	17	1.65	NA	9	NA
Giridih	220/132	150	1	HV	17	2.75	9B	9B	NA
Giridih	220/132	160	1	HV	17	2.75	9B	9B	NA
Jamshedpur	220/132	150	1	HV	17	2.75	3	9	NA
Jamshedpur	220/132	160	1	HV	17	2.75	3	9	NA
Kalyaneswari	220/132	150	3	HV	17	2.75	11	9	NA
Ramgarh	220/132	150	2	HV	17	2.75	10	9	NA
Waria	220/132	150	2	HV	17	2.75	NA	9	NA
Borojora	220/33	50	2	NA	NA	NA	NA	NA	NA
Burnpur	220/33	50	2	NA	NA	NA	NA	NA	NA
Durgapur	220/33	80	1	NA	NA	NA	NA	NA	NA
Giridih	220/33	80	1	NA	NA	NA	NA	NA	NA
Muchipara	220/33	80	1	NA	NA	NA	NA	NA	NA
Muchipara	220/33	50	2	NA	NA	NA	NA	NA	NA

* NA means data not available

List of the ICT/ATR/TRF belong to GRIDCO

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Indravati	400/220	315	1	HV	17	5	9B	9B	NA
Mendasal	400/220	315	2	HV	17	5	9	9	NA
Meramundali	400/220	315	2	HV	17	5	10	9	NA
New Duburi	400/220	315	2	HV	17	5	9	9	NA
STERLITE	400/220	315	2	HV	17	5	11	9	NA
Atri	220/132	160	1	NA	NA	NA	NA	NA	NA
Balasore	220/132	160	2	LV	17	1.65	NA	9	NA
Bhanjanagar	220/132	160	2	LV	17	1.65	NA	9	NA
Bidansi	220/132	160	1	LV	17	1.65	NA	9	NA
Bidansi	220/132	100	2	LV	17	1.65	NA	9	NA
Budipadar	220/132	160	2	LV	17	1.65	NA	9	NA
Chandaka	220/132	100	3	LV	17	1.65	NA	9	NA
Duburi	220/132	100	3	LV	17	1.65	NA	9	NA
Jaynagar	220/132	100	2	HV	17	2.75	NA	9	NA
Joda	220/132	100	3	LV	33	-0.83	11	17	NA
Katapalli	220/132	160	1	LV	17	1.65	NA	9	NA
Katapalli	220/132	100	2	LV	17	1.65	NA	9	NA
Mendasal	220/132	160	2	NA	NA	NA	NA	NA	NA
Meramundali	220/132	100	3	LV	17	1.65	NA	9	NA
Narendrapur	220/132	160	2	NA	NA	NA	NA	NA	NA
Narendrapur	220/132	100	1	LV	17	1.65	NA	13	NA
Paradeep	220/132	160	1	NA	NA	NA	NA	NA	NA
Paradeep	220/132	100	1	NA	NA	NA	NA	NA	NA
Puri	220/132	160	2	NA	NA	NA	NA	NA	NA
New Bolangir	220/132	160	2	LV	17	1.65	NA	9	NA
Samungara	220/132	NA	NA	HV	17	2.75	NA	9	NA
Tarkera	220/132	100	4	LV	17	1.65	NA	9	NA
Theruvai	220/132	100	2	LV	17	1.65	NA	9	NA
TTPS	220/132	160	2	LV	17	1.65	NA	9	NA
TTPS	220/132	150	1	LV	33	-0.83	NA	17	NA

* NA means data not available

List of the ICT/ATR/TRF belong to WBPDC/WBSETCL/WBSEDCL

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Arambag	400/220	315	4	HV	17	5	13	9	NA
Bakreswar	400/220	315	2	HV	17	5	11	9	NA
Bidhannagar	400/220	315	2	HV	17	5	9B	9	NA
Gokarna	400/220	315	2	NA	NA	NA	NA	NA	NA
Jeerat	400/220	315	4	LV	17	2.88	11	NA	NA
Kharagpur	400/220	315	3	HV	17	5	7	9	NA
KTPP	400/220	315	2	HV	17	5	12	9	NA
Sagardighi	400/220	315	1	HV	17	5	NA	9	NA
Arambag	220/132	160	1	LV	17	1.65	NA	9	NA
Arambag	220/132	100	1	LV	17	1.65	NA	9	NA
Asansol	220/132	160	2	LV	17	1.65	NA	9	NA
BBGS	220/132	NA	2	HV	16	5.55	10	9	NA
Bantala	220/132	160	1	NA	NA	NA	NA	NA	NA
Bidhannagar	220/132	160	2	LV	17	1.65	NA	9	NA
Dalkhola	220/132	160	2	LV	17	1.65	NA	9	NA
Dharma	220/132	160	2	LV	17	1.65	NA	9	NA
Domjur	220/132	160	2	LV	17	1.65	NA	9	NA
DPL (AREVA)	220/132	160	1	LV	17	1.65	9	9	NA
DPL (BHEL)	220/132	100	1	LV	17	1.65	9	9	NA
DPL (China)	220/132	160	1	HV	19	2.75	10	10	NA
EMSS	220/132	160	3	NA	NA	NA	NA	NA	NA
Egra	220/132	160	2	NA	NA	NA	NA	NA	NA
Foundry Park	220/132	160	2	NA	NA	NA	NA	NA	NA
Gokarna	220/132	160	2	LV	17	1.65	NA	9	NA
Howrah	220/132	150	3	LV	17	1.65	NA	9	NA
Howrah	220/132	160	1	NA	NA	NA	NA	NA	NA
Jeerat	220/132	160	3	LV	17	1.65	NA	9	NA
Kasba	220/132	160	2	LV	17	1.65	NA	9	NA
Kasba	220/132	150	2	NA	NA	NA	NA	NA	NA
Kharagpur	220/132	160	2	NA	NA	NA	NA	NA	NA
Krishnanagar	220/132	160	2	LV	17	1.65	NA	9	NA
KTPP	220/132	160	1	LV	17	1.65	NA	9	NA
KTPP	220/132	150	2	LV	17	1.65	NA	9	NA
Laxmikantapur	220/132	160	3	LV	17	1.65	NA	9	NA
New Bishnupur	220/132	160	3	NA	NA	NA	NA	NA	NA
New Haldia	220/132	160	2	NA	NA	NA	NA	NA	NA
N Jalpaiguri	220/132	160	2	LV	17	1.65	NA	9	NA
Rajarhat	220/132	160	2	NA	NA	NA	NA	NA	NA
Rishra	220/132	160	2	LV	17	1.65	NA	9	NA
Santaldih	220/132	100	1	LV	17	1.65	NA	9	NA
Santaldih	220/132	130	1	NA	NA	NA	NA	NA	NA
Satgachia	220/132	160	2	LV	17	1.65	NA	9	NA
Subhasgram	220/132	160	2	NA	NA	NA	NA	NA	NA
Vidyasagar Park	220/132	160	2	NA	NA	NA	NA	NA	NA

* NA means data not available

List of the GT situated in the Eastern Region

Name of Generating Unit	Voltage level	Capacity (MVA)	No of GT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Owner	Make
APNRL I	400/16.5	330	1	HV	19	4.83	8(420 KV)	NA	APNRL	NA
APNRL II	400/16.5	340	1	HV	5	10.5	3 (420 KV)	NA	APNRL	NA
CHPC - I	220/11	105.882353	1	HV	5	4.5	NA	4 (220 KV)	Bhutan	NA
Nabinagar (250 MW)	NA	NA	1	NA	NA	NA	NA	NA	BRBCL	NA
Nabinagar (250 MW)	NA	NA	1	NA	NA	NA	NA	NA	BRBCL	NA
BTPS VI & VII	139/11	147.058824	2	HV	5	3.475	2 (142.5 KV)	3 (139 KV)	BSPHCL	NA
MTPS - I & II	230/11	164.705882	2	HV	6	5.75	NA	4 (230 KV)	BSPHCL	NA
MTPS -III (195 MW)	NA	NA	1	NA	NA	NA	NA	NA	BSPHCL	NA
BBGS I & II	132/16.5	294.117647	2	LV	9	0.4125	6 (16.09 KV)	5 (16.50 KV)	CESC	NA
BBGS III	235/16.5	294.117647	1	HV	9	5.875	5 (235 KV)	5 (235 KV)	CESC	NA
Jorethang (48 MW)	NA	NA	2	NA	NA	NA	NA	NA	DEPL	NA
Bokaro A (500 MW)	NA	NA	1	NA	NA	NA	NA	NA	DVC	NA
Bokaro B (210 MW)	NA	NA	3	NA	NA	NA	NA	NA	DVC	NA
CTPS (140 MW)	132/13.8	164.705882	2	HV	5	3.3	NA	3 (132 KV)	DVC	NA
CTPS B (210 MW)	NA	NA	2	NA	NA	NA	NA	NA	DVC	NA
DSTPS I & II	400/21	588.235294	2	HV	9	10.5	5 (420 KV)	7 (399 KV)	DVC	NA
Koderma I & II	400/21	588.235294	2	HV	9	10.5	5 (420 KV)	7 (399 KV)	DVC	NA
Mejia I - IV	220/15.75	247.058824	4	HV	5	5.5	NA	3 (220 KV)	DVC	NA
Mejia V & VI	220/16.5	294.117647	2	HV	5	6	NA	NA	DVC	NA
Mejia VII & VIII	400/21	588.235294	2	HV	9	10.5	4 (430.5)	7 (399 KV)	DVC	NA
RTPS (600 MW)	NA	NA	2	NA	NA	NA	NA	NA	DVC	NA
Waria IV	220/16	294.117647	1	HV	5	5.5	NA	3 (220 KV)	DVC	NA
Chujachen (110 MW)	NA	NA	2	NA	NA	NA	NA	NA	GIPL	NA
GMR (350 MW)	NA	NA	3	NA	NA	NA	NA	NA	GKEL	NA
Haldia (300 MW)	NA	NA	2	NA	NA	NA	NA	NA	HEL	NA
Ind Bharat (350 MW)	NA	NA	1	NA	NA	NA	NA	NA	IBEUL	NA
Ind Bharat (350 MW)	NA	NA	1	NA	NA	NA	NA	NA	IBEUL	NA
IBTPS I & II	220/15.75	294.117647	2	HV	5	5.5	NA	3 (220 KV)	IBTPS	NA
JITPL (600 MW)	NA	NA	2	NA	NA	NA	NA	NA	JITPL	NA
SUBARNAREKHA	132/11	94.1176471	2	HV	5	3.3	2 (138.6 KV)	4 (132 KV)	JUVNL	NA
Maithon RB (525 MW)	NA	NA	2	NA	NA	NA	NA	NA	MPL	NA
NALCO I - VIII	220/10.5	141.176471	8	HV	5	5.875	NA	NA	NALCO	NA
Teesta V (170 MW)	400/13.8	70	9	HV	5	10	3 (400 kV)	3 (400 kV)	NHPC	ALSTOM
Barh IV & V (660 MW)	NA	NA	2	NA	NA	NA	NA	NA	NTPC	NA
FSTPP -I	400/15.75	247.058824	1	HV	5	10.5	3 (420 KV)	5 (399 KV)	NTPC	NA
FSTPP -II & III	400/15.75	247.058824	2	HV	13	5.25	6 (414.8 KV)	9(399 KV)	NTPC	NA
FSTPP -IV, V & VI	400/21	588.235294	3	HV	13	5.25	7 (409.5 KV)	9(399 KV)	NTPC	NA
KhSTPP I, II, III & IV (210 MW)	NA	NA	4	NA	NA	NA	NA	NA	NTPC	NA
KhSTPP V, VI & VII (500 MW)	NA	NA	3	NA	NA	NA	NA	NA	NTPC	NA
TSTPP I & II	400/21	588	2	HV	13	5.25	8 (404.3 KV)	9(399 KV)	NTPC	NA
Balimela I - VI	132/11	70.5882353	6	HV	5	3.615	NA	NA	OHPC	NA
Balimela VII - VIII	132/11	88.2352941	2	HV	7	3.615	NA	NA	OHPC	NA
Rengali I - V	220/11	58.8235294	5	HV	5	5	NA	NA	OHPC	NA
U Indravati (150 MW)	NA	NA	4	NA	NA	NA	NA	NA	OHPC	NA
U Kolab I - IV	220/11	94.1176471	4	HV	6	6.25	NA	NA	OHPC	NA
TTPS I - IV	132/13.8	70.5882353	4	HV	6	3.2	NA	NA	OPGC	NA
TTPS V - VI	132/11	129.411765	2	HV	9	6	NA	NA	OPGC	NA
SEL	242.4/22	750	4	HV	5	5.45	3 (242.45)	3 (242.45)	SEL	NA
Dikchu (48 MW)	NA	NA	2	NA	NA	NA	NA	NA	SKPPPL	NA
Teesta III (200 MW)	NA	NA	6	NA	NA	NA	NA	NA	TUL	NA
TENUGHAT	220/15.75	294.117647	2	HV	9	5.5	1 (231 KV)	3 (220 KV)	TVNL	NA
BKTPS	420/15.75	247.058824	5	HV	5	10.5	3 (420 KV)	NA	WBPDCL	NA
BTPS I, II & IV	132/13.2	117.647059	3	HV	7	3.3	2 (135.3 KV)	3 (132 KV)	WBPDCL	NA
BTPS V	138/15.75	276.470588	1	HV	3	3.45	3 (134.55)	2 (138 KV)	WBPDCL	NA
DPL III & V	132/10.5	100	2	HV	18	1.88	8 (135.76)	10 (132 KV)	WBPDCL	NA
DPL VI	235/11	125	1	HV	5	5.87	3(235 KV)	3(235 KV)	WBPDCL	NA
DPL VII	220/20	370	1	HV	5	5.87	3(235 KV)	NA	WBPDCL	NA
DPL VIII	220/16.5	315	1	HV	5	5.87	3(235 KV)	NA	WBPDCL	NA
KTPS I, II, III	220/15.75	247.058824	3	HV	5	5.75	3 (230 KV)	NA	WBPDCL	NA
KTPS IV, VI	420/15.75	247.058824	2	HV	5	10.5	4 (409.5 KV)	3 (420 KV)	WBPDCL	NA
KTPS V	420/15.75	247.058824	1	HV	5	10.5	5 (399 KV)	3 (420 KV)	WBPDCL	NA
Sagardighi I & II	400/20	352.941176	2	HV	5	10	NA	3 (400 KV)	WBPDCL	NA
STPS	220/13.8	164.705882	4	HV	5	5.5	NA	3 (220 KV)	WBPDCL	NA
STPS V & VI	220/16.5	294.117647	2	HV	5	5.875	4 (229.13)	NA	WBPDCL	NA

* NA means data not available

Checklist for Submission of new transmission elements for updation in Protection Database

NAME OF ORGANISATION:
FOR THE MONTH OF:

SUBSTATION DETAIL:

SI No	DETAILS OF ELEMENTS	DATA TYPE	Status of Submission (Y/N)	Remarks
1	TRANSMISSION LINE	LINE LENGTH, CONDUCTOR TYPE, VOLTAGE GRADE		
2	POWER TRANSFORMER	NAMEPLATE DETAILS		
3	GENERATOR	TECHNICAL PARAMETERS		
4	CURRENT TRANSFORMER	NAMEPLATE DETAILS		
5	VOLTAGE TRANSFORMER	NAMEPLATE DETAILS		
6	RELAY DATA	MAKE, MODEL and FEEDER NAME		
7	RELAY SETTINGS	NUMERICAL RELAYS: CSV or XML file extracted from Relay ELECTROMECHANICAL RELAYS: SNAPSHOT of RELAY		
8	REACTOR	NAMEPLATE DETAILS		
9	CAPACITOR	NAMEPLATE DETAILS		
9	UPDATED SLD			

SIGNATURE:
NAME OF REPRESENTATIVE:
DESIGNATION:
CONTACT:
E-MAIL ID:



JINDAL INDIA THERMAL POWER LIMITED

VILL/P.O : DERANG, TEH. : KANIHA, DIST. : ANGUL, ODISHA, PIN-759117

Phone : +91 9583040700/701/702/703

Date: 05.02.2018

To,
The Member Secretary,
ERPC,
Kolkata.

Kind attention: **Mr. P. Mukhopadhyay**

Subject: Energy meter time drift between JITPL power plant and PGCIL, 400 KV
Phoolpada receiving station

Dear Sir,

With reference to attached emails we wish to inform that there was time drift between SEM energy meters of 400 KV transmission lines 1 and 2 emanating from 2 X 600 MW JITPL Derang power station to PGCIL Phoolpada receiving station. The matter was taken up with PGCIL for time synchronization of these energy meters. Subsequently PGCIL suggested us to adjust time drift as per their laid down procedure. Time drift adjustment activity was started in check meters at JITPL end on 09 July 2016. As per OEM of SEM meters M/S L&T time drift is adjustable at rate one minute per week.

On 23.07.2016 when activity of time drift was initiated, both the check meters failed. The same was intimated to PGCIL and ERLDC on 23rd July 2016. ERLDC / PGCIL suggested shifting SEM meters of GT 1 and GT 2 to line 1 and line 2 respectively at JITPL end due to non availability of SEM meter at PGCIL stock as per verbal feedback. Hence on 26th July 2016 these meters were shifted as suggested by ERLDC.

Since then both the check meters of GT 1 and GT2 are not available at JITPL end. As well as activity of adjusting time drift is also on HOLD as per PGCIL instruction. Due to time drift we are not able to maintain the load schedule. Still PGCIL is not responding on the same issue.

Kindly advise PGCIL to arrange the replacement of failed SEM meters and initiate adjustment of time drift between JITPL and PGCIL Phoolpada receiving station.

Thanking you,

Yours faithfully,
B.K. Pandey,
Plant Head,
JITPL

S.No	Region	State	Sub-Station	Owner/Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
			78			296	175	74	75	66	65	61	62	42	58	
1	ER-II	West Bengal	Arambagh	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
2	ER-II	West Bengal	BAKRESHWAR TPS	WBSETCL	CR	4	1	Yes	Yes	done	done	done	done	done	done	
3	ER-II	West Bengal	Bidhannagar	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
4	ER-II	West Bengal	JEERAT	WBSETCL	CR	2	1	Yes	Yes	done	done	done	done	done	pending	SAT pending as customer didn't agree to witness SAT.
57	ER-II	West Bengal	Alipurduar	Powergrid	CR	6	7	Yes	Yes	partially done	partially done	partially done	partially done	Pending	pending	Work started on 22.12.2016. 4 PMU panels and network panel installed. Rest 2 PMU panels could not be erected because location not finalised. Cable laying and termination at PMU panel completed for 6 feeders. CT/PT interfacing pending due to unavailability of shutdown. PGCIL is asking to take DI points from field, which is not in scope. Work is held up. Team demobilised.
6	ER-II	West Bengal	KASBA	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
7	ER-II	DVC	DSTPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
67	ER-I	BIHAR	BANKA	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	pending	Integration is in progress, SAT pending.
9	ER-II	DVC	MEJIA-B	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	Integrated on 07.12.2016
45	ER-II	Jharkhand	Bokaro TPS	DVC	CR	1	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
11	ER-II	DVC	Raghunathpur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	
33	Odisha	Orissa	Bolangir	Powergrid	CR+Kiosk	2	3	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
13	ER-II	DVC	Bokaro	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
14	ER-II	DVC	CTPS(Chanderpura)	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
78	ER-I	Bihar	Barauni PP	Bihar	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	Substation will be deleted, verbal communication from PG.
16	Odisha	Orissa	MENDHASAL	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	
17	Odisha	Orissa	MERAMANDALI	OPTCL	CR	6	2	Yes	Yes	done	done	done	done	done	done	
18	Odisha	Orissa	RENGALI	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	Integrated on 22.06.2017
37	Odisha	Orissa	GMR	GMR	Kiosk	3	4	Yes	Yes	done	done	done	done	Pending	pending	SDH Panel not commissioned, powergrid supervision required for SAT activity
20	Odisha	Orissa	BALIMELA(H)	OPTCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
21	ER-II	West Bengal	Durgapur	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 30.05.2016.
15	Odisha	Orissa	Budhipadar	OPTCL	CR	10	0	No	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Under Manufacturing. Will be dispatched in next month.
23	Odisha	Orissa	Indrawati	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
24	Odisha	Orissa	Indrawati HPS	OPTCL	CR	1	1	Yes	Yes	done	done	done	done	done	done	Team deployed in substation. Permission for panel installation & cable laying given but no work permission in existing control panel is given. Team was idle for more than 10 days.
25	Odisha	Orissa	JEYPORE	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
26	ER-II	West Bengal	MAITHON	Powergrid	CR	7	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.06.2016.
27	ER-II	West Bengal	MALDA	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
28	Odisha	Orissa	Rengali	Powergrid	Kiosk	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 04.05.2016
29	Odisha	Orissa	ROURKELA	Powergrid	Kiosk	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.04.2016
30	ER-II	West Bengal	Binaguri	Powergrid	CR	7	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 28.07.2016

PMU Installation and commissioning status of ER as on 22.07.2017

S.No	Region	State	Sub-Station	Owner/Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
31	ER-II	West Bengal	SUBHASHGRAM	Powergrid	Kiosk	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 22.06.2016
32	Odisha	Orissa	Baripada	Powergrid	CR	3	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 30.01.2017.
75	ER-I	Jharkhand	Jharkhand Pool (Chand)	Powergrid	Kiosk	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
34	Odisha	Orissa	ANGUL	Powergrid	Kiosk	10	11	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.03.2017.
35	Odisha	Orissa	Keonjhar	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 18.01.2017.
36	Odisha	Orissa	Jharsuguda	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 29.07.2016
74	ER-I	Bihar	Kishanganj (karandegh)	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
8	ER-II	DVC	Kodarma TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	Pending	done	SDH panel does not exist.
39	ER-II	West Bengal	Baharampur	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 10.05.2016
40	ER-II	West Bengal	Birpara	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 15.07.2016.
41	ER-II	DVC	CTPS B	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	CT cable laying permission. I&C done. mom/sat signature pending from powergrid end.
42	ER-II	DVC	KALYANESWARI	DVC	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 02.01.2017.
43	ER-II	DVC	PARULIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.02.2017.
44	ER-II	West Bengal	Purulia PSP	WBSETCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	
66	ER-I	BIHAR	LakhiSarai	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	done	SAT completed. Integration planed
46	ER-II	West Bengal	Durgapur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	
73	ER-I	Jharkhand	Daltonganj	Powergrid	Kiosk	2	3	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Site on-hold as Substation is under construction.
22	ER-II	West Bengal	FARRAKA	NTPC	CR	5	2	Yes	Yes	done	done	pending	pending	pending	pending	Termination pending due to no permission for shutdown
54	Odisha	Orissa	Ind barath	Ind barath	Kiosk	1	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
10	ER-II	DVC	Maithon RB TPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Work started on 04.07.2016. Panel shifted. Team demobilised due to access issue and panel location issue. Team deputed again 18th August, I&C done, integration pending due to communication break with control center.
51	Odisha	Orissa	Jindal	JITPL	CR	2	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
5	ER-II	West Bengal	Kolaghat TPS	WBSETCL	CR	4	1	Yes	Yes	done	done	pending	pending	Pending	pending	Work under progress
52	Odisha	Orissa	Monnet	Monnet	CR	1	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
55	ER-II	Sikkim	New Melli	Powergrid	CR	0	0	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	BOQ submitted, yet to be approved. Substation will be deleted, verbal communication from PG.
76	ER-I	Jharkhand	Patratu	Jharkhand	CR	3	1	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
53	Odisha	Orissa	Strelite	Strelite	CR	3	1	Yes	Yes	done	done	done	done	pending	done	SDH not commissioned
48	Odisha	Orissa	TALCHER	NTPC	CR	5	2	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
58	ER-II	West Bengal	Rajarhat	Powergrid	CR	2	1	Yes	Yes	done	pending	pending	pending	Pending	pending	Site on-hold. Work withheld due to localite agitation issue.
59	ER-I	Jharkhand	JAMSHEDPUR	Powergrid	CR	6	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 14.02.2017
60	ER-I	BIHAR	Kahalgao(KHSTPP)	NTPC	CR	6	2	Yes	Yes	done	done	pending	pending	Pending	pending	Work on-hold. NTPC asked to use Armoured cable. Out of scope. Team idemobilized from site. Site assumed as closed as per PRM in Kolkatta.
61	ER-I	BIHAR	Purnea	Powergrid	CR	6	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 13.04.2017

PMU Installation and commissioning status of ER as on 22.07.2017

S.No	Region	State	Sub-Station	Owner/Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
62	ER-I	BIHAR	PATNA	Powergrid	Kiosk	6	7	Yes	Yes	done	done	done	done	done	done	PMU integrated on 11.04.2017
63	ER-I	Jharkhand	RANCHI	Powergrid	Kiosk	12	13	Yes	Yes	done	done	done	done	done	done	
64	ER-I	BIHAR	SASARAM(Pusauli)	Powergrid	CR+Kiosk	9	3	Yes	Yes	done	done	done	done	done	done	
65	ER-I	BIHAR	BARH	NTPC	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
12	ER-II	DVC	MEJIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
38	ER-II	Sikkim	RANGPO	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
68	ER-I	Jharkhand	Chaibasa	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	done	done	
69	ER-I	BIHAR	765kv Gaya	Powergrid	Kiosk	11	12	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
70	ER-I	Jharkhand	765/400kV Ranchi (N)	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
71	ER-I	Bihar	Biharshariff	Powergrid	CR	9	3	Yes	Yes	done	done	done	done	done	done	
72	ER-I	Bihar	MUZAFFAPUR	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	
49	ER-II	Sikkim	TEESTA	NHPC	CR	1	1	Yes	Yes	done	done	pending	done	done	pending	SAT due to no supervision & interfacing pending which is to be done by NHPC/PG whenever shutdown will be available as per PRM
77	ER-I	Jharkhand	Tenughat	Jharkhand	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	SDH panel not commissioned
19	Odisha	Orissa	U.KOLAB	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
56	ER-II	Sikkim	TT Pool	Powergrid	CR	0	0	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Substation deleted, verbal communication from PG.
50	Odisha	Orissa	Uttara	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication link from s/s to ERLDC and NTAMC to be provided by PGCIL.
47	Odisha	Orissa	TTPS(Talcher)	OPTCL	CR	3	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited

ER PMU site activity Summary:

Sl. No.	Region	Utility	As per approved BOQ		Supplied		Installed		Commissioned		Integrated to ERLDC/ SLDC	
			No. of Substations	No. of PMU	S/S	PMU	S/S	PMU	S/S	PMU	S/S	PMU
1	ER-I	Powergrid	15	94	15	94	14	92	14	92	10	76
2	ER-I	NTPC	2	10	2	10	2	10	1	4	0	0
3	ER-I	Jharkhand	2	5	2	5	1	2	1	2	0	0
4	ER-I	Bihar	1	0	0	0	0	0	0	0	0	0
	ER-I	Total	20	109	19	109	17	104	16	98	10	76
1	ER-II	Powergrid	12	41	11	42	9	35	8	33	7	29
	ER-II	NHPC	1	1	1	1	1	1	1	1	1	1
2	ER-II	NTPC	1	5	1	5	1	5	0	0	0	0
3	ER-II	DVC	13	37	13	37	13	37	13	37	7	22
4	ER-II	WBSETCL	7	21	7	21	7	21	6	17	6	17
	ER-II	Total	34	105	33	106	31	99	28	88	21	69
1	Odisha	Powergrid	10	38	10	38	10	38	10	38	6	30
2	Odisha	OPTCL	8	29	7	19	6	16	6	16	5	14
3	Odisha	NTPC	1	5	1	5	0	0	0	0	0	0
4	Odisha	IPP	5	10	5	10	2	6	2	6	0	0
	Odisha	Total	24	82	23	72	18	60	18	60	11	44
	ER	Total	78	296	75	287	66	263	62	246	42	189

**Anticipated Power Supply Position for the month of
Mar-18**

SL.NO	PARTICULARS	PEAK DEMAND MW	ENERGY MU
1	BIHAR		
i)	NET MAX DEMAND	4000	2300
ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	341	162
	- Central Sector	2860	1597
iii)	SURPLUS(+)/DEFICIT(-)	-799	-542
2	JHARKHAND		
i)	NET MAX DEMAND	1260	810
ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	390	266
	- Central Sector	592	312
iii)	SURPLUS(+)/DEFICIT(-)	-278	-232
3	DVC		
i)	NET MAX DEMAND (OWN)	2800	1734
ii)	NET POWER AVAILABILITY- Own Source	4830	2718
	- Central Sector	519	321
	Long term Bi-lateral (Export)	1300	967
iii)	SURPLUS(+)/DEFICIT(-)	1249	337
4	ORISSA		
i)	NET MAX DEMAND	4200	2492
ii)	NET POWER AVAILABILITY- Own Source	3124	1820
	- Central Sector	1183	705
iii)	SURPLUS(+)/DEFICIT(-)	107	33
5	WEST BENGAL		
5.1	WBSEDCL		
i)	NET MAX DEMAND (OWN)	6460	3573
ii)	CESC's DRAWAL	0	0
iii)	TOTAL WBSEDCL's DEMAND	6460	3573
iv)	NET POWER AVAILABILITY- Own Source	3613	2149
	- Import from DPL	166	0
	- Central Sector	3157	1397
v)	SURPLUS(+)/DEFICIT(-)	476	-27
vi)	EXPORT (TO B'DESH & SIKKIM)	5	4
5.2	DPL		
i)	NET MAX DEMAND	260	195
ii)	NET POWER AVAILABILITY	426	189
iii)	SURPLUS(+)/DEFICIT(-)	166	-6
5.3	CESC		
i)	NET MAX DEMAND	1810	958
ii)	NET POWER AVAILABILITY - OWN SOURCE	730	486
	FROM HEL	530	339
	FROM CPL/PCBL	0	0
	Import Requirement	550	133
iii)	TOTAL AVAILABILITY	1810	958
iv)	SURPLUS(+)/DEFICIT(-)	0	0
6	WEST BENGAL (WBSEDCL+DPL+CESC) (excluding DVC's supply to WBSEDCL's command area)		
i)	NET MAX DEMAND	8530	4726
ii)	NET POWER AVAILABILITY- Own Source	4769	2824
	- Central Sector+Others	4237	1736
iii)	SURPLUS(+)/DEFICIT(-)	476	-166
7	SIKKIM		
i)	NET MAX DEMAND	90	38
ii)	NET POWER AVAILABILITY- Own Source	5	3
	- Central Sector+Others	122	64
iii)	SURPLUS(+)/DEFICIT(-)	37	29
8	EASTERN REGION		
	At 1.03 AS DIVERSITY FACTOR		
i)	NET MAX DEMAND	20272	12100
	Long term Bi-lateral by DVC	1300	967
	EXPORT BY WBSEDCL	5	4
ii)	NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)	22972	12526
iii)	PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)	1395	-545

Proposed Maintenance Schedule of Thermal Generating Units of ER during March, 2018
(as finalised in LGBR meeting)

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
DVC	MTPS	5	210	05.03.18	25.03.18	21	AOH (Boiler)

Details of stations/Units required to operate under RGMO/FGMO as per IEGC							Whether operating under RGMO	indicate in case of status is not available
Name of State	Type	Name of Utility	Sector (CS/SS/Private)	Name of Station	Name of Stage/ Unit	Installed capacity (MW)		
JHARKHAND	Thermal	TVNL	SS	Tenughat	1	210	No	Difficulties in implementing RGMO & exemption not
			SS		2	210	No	
	Hydro	JSEB	SS	Subarnrekha	1	65	Yes	
			SS		2	65	Yes	
WEST BENGAL	Thermal	WBPDC	SS	Bandel TPS	1	82.5	No	
			SS		2	82.5	No	
			SS		3	82.5	No	
			SS		4	82.5	No	
			SS		5	210	No	
			SS	Santalidih	5	250	No	Unit#6 could not be implemented because of some technical problem
			SS		6	250	No	
			SS	Kolaghat	1	210	No	Nil
			SS		2	210	No	Nil
			SS		3	210	No	Nil
			SS		4	210	No	Nil
			SS		5	210	No	Nil
			SS		6	210	No	Nil
			SS	Bakreshwar	1	210	Yes	
			SS		2	210	Yes	
			SS		3	210	Yes	
			SS		4	210	Yes	
			SS		5	210	Yes	
			SS	Sagardighi	1	300	No	Without OEM support it is not possible to put in FGMO/RGMO. At present OEM support is not
			SS		2	300	No	
	Hydro		SS	PPSP	1	225	Yes	In 134th OCC WBPDC informed that the units are in RGMO/FGMO mode
			SS		2	225	Yes	
			SS		3	225	Yes	
			SS		4	225	Yes	
	Thermal	CESC	SS	Budge-Budge	1	250	Yes	
			SS		2	250	Yes	
			SS		3	250	Yes	
			SS	Haldia	1	300	Yes	
			SS		2	300	Yes	
	Thermal	DPL	SS	DPL	7	300	Yes	
Orissa		OPGC	SS	IB TPS	1	210	No	Not adequate response in RGMO
			SS		2	210	No	
	Hydro	OHPC	SS	Burla	1	49.5	No	
			SS		2	49.5	No	
			SS		3	32	No	
			SS		4	32	No	
			SS		5	37.5	No	
			SS		6	37.5	No	
			SS		7	37.5	No	
			SS	Balimela	1	60	No	
			SS		2	60	No	
			SS		3	60	No	
			SS		4	60	No	
			SS		5	60	No	
			SS		6	60	No	
			SS		7	75	No	
			SS	Rengali	8	75	No	
			SS		1	50	No	
			SS		2	50	No	
			SS		3	50	No	
			SS		4	50	No	
			SS		5	50	No	
			SS	Upper Kolab	1	80	No	
			SS		2	80	No	
			SS		3	80	No	
			SS		4	80	No	
			SS		1	150	No	

			SS	Indravati	2	150	No			
			SS		3	150	No			
			SS		4	150	No			
			64							
Central Sector	Thermal	DVC	CS	Bokaro-A	1	500	No	RGMO will be service once the unit comes in CMC mode of operation. It will be done shortly in presence of BHEL experts.		
			CS	Bokaro-B	1	210	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.		
			CS		2	210	No			
			CS		3	210	No			
			CS	CTPS	2	140	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.		
			CS		3	140	No			
			CS		7	250	Yes			
			CS	8	250	Yes				
			CS	DTPS	4	210	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.		
			CS	Mejia	1	210	No	Not possible due to non availability of Electro		
			CS		2	210	No			
			CS		3	210	No	Action has been initiated to put in RGMO, but testing is not yet completed.		
			CS		4	210	Yes			
			CS		5	250	Yes			
			CS		6	250	Yes			
			CS	Mejia - B	7	500	Yes			
			CS		8	500	Yes			
			CS	DSTPS	1	500	Yes			
			CS		2	500	Yes			
			CS	KODERMA	1	500	Yes			
			CS		2	500	Yes			
			CS	RTPS	1	600	Yes			
			CS		2	600	Yes			
			CS	Panchet	1	40	No	RGMO mode of operation would not be possible for		
			CS		2	40	No			
			Thermal	NTPC	CS	Farakka STPP-I	1	200	Yes	
					CS		2	200	Yes	
					CS		3	200	Yes	
					CS	Farakka STPP-II	1	500	Yes	
					CS		2	500	Yes	
					CS	Farakka-U#6		500	Yes	Kept in RGMO mode from April, 2014
					CS	Kahalgoan STPP	1	210	Yes	
					CS		2	210	Yes	
					CS		3	210	Yes	
	CS	4			210		Yes			
	CS	5			500		Yes			
	CS	6			500		Yes			
	CS	7			500		Yes			
	CS	Talcher STPP Stg-I			1	500	Yes			
	CS				2	500	Yes			
	CS	Barh			5	660	Yes			
	CS	Barh			6	660	Yes			
	Hydro	NHPC	CS	Teesta HEP	1	170	Yes			
			CS		2	170	Yes			
			CS		3	170	Yes			
			45							
Thermal	IPP	PS	Maithon RB TPP	1	525	Yes				
		PS		2	525	Yes				
		PS	Sterlite	1	600	Yes				
		PS		2	600	Yes				
		PS		3	600	Yes				
		PS		4	600	Yes				
		PS	Adhunik Power	1	270	Yes				
		PS		2	270	Yes				

IPP

Hydro	IPP	PS	JLHEP	1	48	No	(RoR project with 3 hours pondage)
		PS		2	48	No	
		PS	Chujachen HEP	1	49.5	No	(RoR project with 3 hours pondage)
		PS		2	49.5	No	
		PS	Teesta Urja	1	200	No	could be put in RGMO mode but because of transmission evacuation constraint RGMO/FGMO is disabled
		PS		2	200	No	
		PS		3	200	No	
		PS		4	200	No	
		PS		5	200	No	
		PS		6	200	No	
		PS	Dikchu	1	48	No	(RoR project with 3 hours pondage)
		PS		2	48	No	

AVAILABILITY STATUS OF EVENT LOGGER, DISTURBANCE RECORDER & GPS

Sl. NO	Substation	Protection & Control System						Remarks
		Availability			Time Synchronization			
		EL	DR	GPS	Relay	DR	EL	
1	Subhasgram	Yes	Yes	Yes	Yes	Yes	Yes	
2	Maithon	Yes	Yes	Yes	Yes	Yes	Yes	
3	Durgapur	Yes	Yes	Yes	Yes	Yes	Yes	
4	Malda	Yes	Yes	Yes	Yes	Yes	Yes	
5	Dalkhola	Yes	Yes	Yes	Yes	Yes	Yes	
6	Siliguri	Yes	Yes	Yes	Yes	Yes	Yes	
7	Binaguri	Yes	Yes	Yes	Yes	Yes	Yes	
8	Birpara	Yes	Yes	Yes	Yes	Yes	Yes	
9	Gangtok	Yes	Yes	Yes	Yes	Yes	Yes	
10	Baripada	Yes	Yes	Yes	Yes	Yes	Yes	
11	Rengali	Yes	Yes	Yes	Yes	Yes	No	New EL would be implemented in BCU under NTAMC project by March'2015
12	Indravati (PGCIL)	Yes	Yes	Yes	Yes	Yes	No	EL is old one(model-PERM 200), provision for time synchronisation is not available. New EL would be implemented in BCU under NTAMC project by March'2015
13	Jeypore	Yes	Yes	Yes	Yes	Yes	Yes	EL is old and not working satisfactorily. New EL would be implemented in BCU under NTAMC project by March, 2015
14	Talcher	Yes	Yes	Yes	Yes	Yes	Yes	
15	Rourkela	Yes	Yes	Yes	Yes	Yes	Yes	
16	Bolangir	Yes	Yes	Yes	Yes	Yes	Yes	
17	Patna	Yes	Yes	Yes	Yes	Yes	Yes	
18	Ranchi	Yes	Yes	Yes	Yes	Yes	Yes	
19	Muzaffarpur	Yes	Yes	Yes	Yes	Yes	Yes	
20	Jamshedpur	Yes	Yes	Yes	Yes	Yes	Yes	
21	New Purnea	Yes	Yes	Yes	Yes	Yes	Yes	
22	Gaya	Yes	Yes	Yes	Yes	Yes	Yes	
23	Banka	Yes	Yes	Yes	Yes	Yes	Yes	
24	Biharsariif	Yes	Yes	Yes	Yes	Yes	Yes	
25	Barh	Yes	Yes	Yes	Yes	Yes	Yes	
26	Sagardighi	No	Yes	Yes	Yes	Yes	No	EL is under process of restoration with help from OEM, China
27	Kahalgaon	Yes	Yes	Yes	Yes	Yes	Yes	
28	Farakka	Yes	Yes	No	No	No	No	Time synchronization available for Farakka-Kahalgaon line-III & IV. The same will be implemented in rest of the lines by December, 2014.
29	Meramundali	Defunct	Yes	Yes	Yes	Yes	Yes	
30	Tisco	Yes	Yes	Yes	Yes	Yes	Yes	
31	Bidhannagar	No	Yes	Yes	No	No	No	Using DR & EL available in Numerical

								relays. GPS will be put in service by January, 2015.
32	Indravati (OHPC)	Yes	Faulty	No	No	No	No	Time synchronization will be done by Feb, 2015. ICT-I feeders using DR & EL available in Numerical relays. 400 kV ICT-II feeder is being maintained by PGCIL, Mukhiguda. Status may confirm from PGCIL
33	Kharagpur	No	Yes	Yes	No	No	No	Using DR & EL available in Numerical relays.
34	DSTPS	Yes	Yes	Yes	Yes	Yes	Yes	
35	Sterlite	Yes	Yes	Yes	Yes	Yes	Yes	
36	Mejia 'B'	Yes	Yes	Yes	Yes	Yes	Yes	
37	Mendhasal	Defunct	Yes	Yes	Yes	Yes	No	EL will be restored by March, 2015.
38	Arambagh	No	Yes	Yes	No	No	No	Using DR & EL available in Numerical relays
39	Jeerat	No	Yes	No	No	No	No	Using DR & EL available in Numerical relays. Procurement of new GPS is in progress.
40	Bakreswar	Yes	Yes	Yes	Yes	Yes	Yes	
41	GMR	Yes	Yes	Yes	Yes	Yes	Yes	
42	Maithon RB	Yes	Yes	Yes	Yes	Yes	Yes	
43	Raghunathpur	Yes	Yes	Yes	Yes	Yes	Yes	
44	Kolaghat	Yes	Yes	Yes	Yes	Yes	Yes	
45	Teesta V	Yes	Yes	Yes	Yes	Yes	Yes	
46	Koderma	Yes	Yes	Yes	Yes	Yes	Yes	
47	Sasaram	Yes	Yes	Yes	Yes	Yes	Yes	
48	Rangpo	Yes	Yes	Yes	Yes	Yes	Yes	
49	Adhunik	Yes	Yes	Yes	Yes	Yes	Yes	
50	JITPL	Yes	Yes	Yes	Yes	Yes	Yes	
51	765kV Angul	Yes	Yes	Yes	Yes	Yes	Yes	
52	Chuzachen	Yes	Yes	Yes	No	Yes	Yes	
53	New Ranchi 765kV	Yes	Yes	Yes	Yes	Yes	Yes	
54	Lakhisarai	Yes	Yes	Yes	Yes	Yes	Yes	
55	Chaibasa							
56	765kV Jharsuguda	Yes	Yes	Yes	Yes	Yes	Yes	All are in working condition. However a dedicated DR for 765KV Lines; make TESLA is not working. M/s Siemens has assured to commission the same by 31.01.15
57	Beharampur	Yes	Yes	Yes	Yes	Yes	Yes	
58	Keonjhar	Yes	Yes	Yes	Yes	Yes	Yes	

Eastern Regional Power Committee

The status of ERS towers in Eastern Region as updated in OCC meetings is given below:

- 1) ERS towers available in Powergrid S/s is as given below:

Sl. No.	Name of S/S	No. of ERS towers available	ERS towers in use
1	Durgapur, ER-II	1 Set (8 towers)	
2	Rourkela, ER-II	3 towers incomplete shape	
3	ER-I (located at Jamshedpur)	15 towers (10 nos Tension tower and 5 nos suspension tower)	

- 2) The present status of ERS towers in OPTCL system is as follows:

- 220 kV ERS towers: 42 nos located at Mancheswar, Chatrapur & Budhipadar
- 400 kV ERS towers: 2 nos located at Mancheswar.
- 12 nos. of new 400 kV ERS towers have been recieved.

- Another, 16 nos of 400 kV towers accompanied with 6 sets of T&P are required which is under
- process

- 3) WBSETCL informed that they have placed order for 2 sets of ERS towers on 31.10.2014 and expected by June, 2015.
- 4) The 25th ERPC meeting held on 21.09.2014, the board concurred to the proposal of procurement of four sets of ERS and it was also informed that, the proposed four sets of ERS will be kept at Sikkim, Siliguri, Ranchi and Gaya and will be used by all constituents of ER during emergencies.

Powergrid informed that four sets of ERS for Eastern Region will be procured.

- 5) DVC informed that they are in process of procuring two (2) sets of 400 kV ERS towers.

Availability of Emergency Restoration System in BSPTCL system

Sl. No.	Type	Quantity	Remarks
1	Tension ERS Tower	12	New
2	Suspension ERS Tower	20	New
3	Old ERS Tower	10	1 no. is defective
Total		42	

Note:-

- As informed in ERS meeting held on 10-11-2014 taken by Member (Power System), CEA; **2 sets (12 tension & 20 suspension) of ERS towers had been procured and is currently available in our system** (as mentioned in above table with remarks “New”).
- Same ERS tower is used in both 220 Kv and 132 kV circuits.