Agenda

for

129th OCC Meeting

Date: 17.01.2017

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 129th OCC Meeting held on 17th January, 2017 at ERPC, Kolkata

PART A

Item no. 1: Confirmation of minutes of 128th OCC meeting of ERPC held on 23.12.2016

The minutes of 128th OCC meeting were uploaded in ERPC website and circulated vide letter dated 04.01.2017 to all the constituents.

Members may confirm the minutes.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Commissioning of new transmission elements in Eastern Region

In 118th OCC, it was informed that the network diagram of eastern region needs to be updated on regular basis on account of commissioning of new elements in the CTU as well as STU networks.

OCC advised all the constituents to update the list of newly commissioned power system elements to OCC on monthly basis so that ERLDC/ERPC can update the network diagram on regular basis.

The list of new Transmission Elements commissioned/charged during **December, 2016** as informed by ERLDC is given below:

1) 400/132kV ICT-I and its associated bays at Nabinagar first time charged on no load at 19:27hrs of 02/12/16.
2) Unit 3 of KBUNL(Muzaffarpur) along with GT-III(250 MVA, 220/15.75kVA) synchronised for first time on 03/01/16 at 10:10hrs.
3) 220kV Gaya- Sonenagar-I charged through its original bay on 04/12/16 at 17:18hrs.
4) Bokaro-A Unit-I along with GT(400/21KV) was synchronised for the first time 04/12/16 at 22:44hrs
5) 400KV, 125MVAr B/R-II at Kishanganj was charged for the first time on 07/12/16 at 18:44hrs.
6) 220/132kV, 100 MVA ICT-II at Muzaffarpur was idle charged for the first time in parallel with existing 100 MVA ICT-I at Muzaffarpur (for feeding power to Nepal) on 16/12/16 at 05:02hrs. Subsequently the same was loaded at 06:40hrs of 16/12/16.
7) 400kV RTPS-Ranchi-D/C was anti-theft charged for first time up to 63kMs from RTPS end through respective bays no 407, 408 & 409 at RTPS on 16/12/16 at 18:32hrs.
8) 400KV BUS Sectionalizer Bay-2 (between Bus-2 & Bus-4) at Biharsariff was charged for the first time on 16/12/16 on 20:23hrs.
9) 132kV Purnea-Purnea-III charged first time after re-conductoring to HTLS ACCC(Casablanca) on 20/12/16 at 18:01hrs.
10) LILO of 400kV D/C Binaguri-Bongaigaon line(ckt-III and IV) along with associated bays at ±800kV HVDC Converter station Alipurduar, Powergrid was charged for first time as per following details:

i) Binaguri-Alipurduar 2: 19:04hrs of 22/12/16
ii)Alipuduar-Bongaigaon 1: 20:49hrs of 22/12/16
iii)Alipuduar-Bongaigaon 2: 21:43hrs of 22/12/16
iv)Binaguri-Alipurduar1 :17:57hrs of 22/12/16

11) 400kV Main Bus – II (Section B) at ±800kV HVDC Converter station Alipurduar, was charged for the first time on 22/12/16 at 18:19hrs.
12) Tie Bay of 400kV Alipurduar-Bongaigaon-I and Future line at Alipurduar charged for first time on 27/12/16 at 18:08.
13) 125MVAr BR-III at Durgapur along with its associated bay was charged for the first time on 28/12/16 at 16:10 hrs.
14) 220kV Kishanganj(PG)-Kishanganj_New(BSPTCL) circuit-1(Bay no-211) and circuit-2(Bay no-212) was anti-theft charged for the first time from Kishanganj_New(BSPTCL) end by keeping isolator open at Kishanganj(PG) end on 28/12/16 at 17:55hrs.
15) 50MVAR temporary B/R through existing tie bay of Sagardighi-II (411) at Berhampur was charged for the first time on 29/12/16 at 16:18 hrs.
16) 132kV Purnea-Purnea-I TL charged first time after re-conductoring to HTLS ACCC(Casablanca) on 30/12/16 at 10:23hrs.

Other constituents may update.

Item No. B.2: 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. The latest status as updated in 34th TCC/ERPC is as given below:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	Amount approved (in Rs.)	Amount drawn till date (in Rs.)	Status as updated in 126th OCC
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in West Bengal	31-12-14		120.67 Cr	11.04 Cr.	95 % Supply Completed
2	WBSETCL	Transmission System lmprovement of WBSETCL					
3	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.	***19.53 Cr***	*Total contract awarded for Rs. 47.653 Cr* *Erection work for received equipment is in progress.*
4	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16		20 Cr.	4.94 Cr.	1st milestone-submission of DPR completed 2nd milestone part completed-Operational load flow studies 7th milestone preponed and completed-32 licenses of setting calculation tool software
5	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	Feb'2017	64.22 crore	1.219 crore	Project is on going
6		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016		18.88 crore		Approved (triparty agreement among NLDC, Govt. of Bihar & BSPTCL is in under process)

7		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.					Recommendation of appraisal committee is awaited. Estimated cost 54.69 crore.
8	*DVC*	*Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation*			*25.96*		*Approved by Ministry of Power*
9		*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*			*140*		*Appraisal committee has recommended. It will be placed in next monitoring Committee meeting.*
10	*WBPDCL*	*Implementation of Islanding scheme at Bandel Thermal Power Station*					*Appraisal committee has recommended. It will be placed in next monitoring Committee*
		Upgradation of Protection and SAS			*26.09*		*Approved by Ministry of Power*
11	*OHPC*	*Renovation and up-gradation of protection and control system of 4 nos OHPC substations.*					*Some clarifications are asked by sub-group committee. The reply is awaited.*

34th TCC/ERPC accorded post facto approval to the following three schemes of ERPC for submission to PSDF Appraisal Committee:

1) Training for Power System Engineers
2) Training on Integration of Renewable Energy resources
3) *Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents*

In 127th OCC, CE, NPC informed that the DPR from ERPC on training projects will be placed in the next Appraisal Committee meeting.

It was informed that techno economic sub-group has asked some observations on OHPC proposal.

OHPC informed that they will comply the observations.

Other constituents may update.

Item No. B.3: MONITORING OF SCHEMES FUNDED FROM PSDF—NPC Agenda

In the 6th meeting of NPC held on 19th December,2016 it was decided that all the RPCs in the monthly OCC meetings may follow up with entities to expedite completion of the scheme by giving due priority. The implementation of most of these schemes are based on the recommendation of the Enquiry Committee on Grid Disturbance of July 2012 headed by Chairperson, CEA. Therefore, timely implementation of these schemes would enhance the grid security and reliability. Accordingly, the grant sanctioned from PSDF for the schemes of Eastern Region is enclosed at **Annexure-B.3(I)** for deliberation in the OCC meeting.

The status of implementation of the above schemes (physical as well as financial progress) may please be reviewed and the entities are requested to expedite implementation of the schemes. The entities may also be advised to furnish information in the format enclosed at **Annexure-B.3 (II)** by first week of every month on regular basis to Member Convener, PSDF Project Monitoring Group (AGM, NLDC,POSOCO) with a copy to NPC Division.

Constituents may update.

Item No. B.4: OPERATIONAL LOAD FLOW STUDY FOR OFF-PEAK PERIOD (WINTER LEAN PERIOD)

In 124th OCC, after detailed deliberation, OCC decided that all constituents should provide the relevant data for off-peak load flow study for two instances:

- 13:00hrs on 27th August, 2016 &
- 03:00hrs on 28th August, 2016

OCC advised all the constituents to update the Network Data format with network augmentation from 31st May 2016 to 31st of August 2016 in the given format.

In 126th OCC, PRDC informed that 27th & 28th August, 2016 the total regional demand figures are almost equals to peak load scenario of previous study and it cannot be treated as off-peak scenario.

OCC felt that another set of data may be collected during lean winter for simulation of off-peak load flow scenario.

Further, OCC advised PRDC to complete the study with the data of 27th & 28th August, 2016.

In 127th OCC, PRDC informed that the detailed report of load flow study on data of 26th & 28th August, 2016 will be submitted to ERPC secretariat by next week.

Further for lean off-peak load flow study, OCC finalized the date and time as follows

- 13.00 Hrs of 28th December,2016.
- 02:00-03.00 Hrs of 29th December,2016

GM, ERLDC informed that the overvoltage phenomenon is predominant in the month of January. So, the off-peak study may also be carried out for January so that a proper overvoltage scenario can be obtained.

After discussion, OCC decided that another study for January,2017 may also be done apart from the December study.

In 128th OCC< for lean off-peak load flow study, OCC finalized the date and time as follows

- *13.00 Hrs of 28th December,2016.*
- *02:00 Hrs of 29th December,2016*

OCC advised to submit the data as per the format available in ERPC website.

Subsequently, PRDC vide mail dated 06.01.17 submitted the Operational load flow study report for off-peak as per the data of 27th & 28th August, 2016. The same is available at ERPC website under Important Documents (i.e. www.erpc.gov.in/ important-documents/)

Further, it is to inform that PRDC has also completed the installation of the Protection Database Management System (PDMS) in the ERPC server. The SAT of PDMS and pending points related to SAT of PSCT is going on as per the following schedule:

1) *SAT of PDMS: From 11.01.2017 to 13.01.2017 (3 days)*
2) *Pending points of PSCT SAT: From 19.01.2017 to 21.01.2017 (3 days)*

PRDC may update.

Item No. B.5: Consideration of STU lines as Non-ISTS lines carrying ISTS power

In line with 34th TCC decision, ERPC and ERLDC conducted the load flow study using WebNet software for first three quarters of validated data. Summary of the results for percentage utilization of the transmission line by STU to meet the own demand is given at **Annexure-B.5.**

Balance (100 - utilization of the transmission line by the STU) is the ISTS power flowing through the line.

128th OCC decided that ISTS power flowing through STU lines greater than 50% of the total power as per the WebNet software of the validated data for each quarter will be considered as ISTS line.

Members provisionally agreed to the above decision. OCC advised Member Secretary to have interaction with other RPCs to get acquainted with their decisions in this regard.

OCC advised all the state constituents to submit their comments if any, to ERPC and ERLDC. It was also pointed out that for final decision on the same needs to taken by CERC and for this constituents are to file petition before CERC.

Members may update.

Item No. B.6: Charging of 132KV Patratu(DVC) - Patratu(JSEB) tie line and Kolaghat(DVC) - Kolaghat(WBSETCL) tie line--DVC

It has been observed that 132KV, Patratu(DVC) - Patratu(JSEB) tie line and Kolaghat(DVC) - Kolaghat(WBSETCL) tie line are out since long. These lines are made on request to facilitate any shut-down/ maintenance purpose.

But, inter-state tie lines are meant for stability of any state network irrespective any power flow through it as per sec 40(a) of Elec Act 2003. It is learnt that at Kolaghat S/s of WBSETCL, all three ATRs have already been replaced and are all in service. DVC is supplying around 138MVA load to WBSEDCL between Burdwan S/s to Kharagpur S/s of DVC and it has been felt necessary that Kolaghat - Kolaghat tie be kept in service for reliability of power supply to WBSEDCL and stability of the grid. Similarly, Patratu(DVC) - Patratu(JSEB) tie line be also kept in service to obviate the low voltage problem at Patratu and North-karanpura S/s of DVC and stability of grid as well.

128th OCC felt that inter-state lines should be utilized to improve the reliability of the system and advised WBSETCL and JUSNL to charge 132KV Kolaghat(DVC) - Kolaghat(WBSETCL) and 132kV Patratu(DVC) - Patratu(JSEB) lines on continuous basis.

WBSETCL informed that 132kV Kolaghat(DVC) - Kolaghat(WBSETCL) line is being utilized during contingencies in radial mode and informed that ICT at Kolaghat may overload if the line charged in synchronous mode.

OCC advised to conduct a simulation study to verify the constraint before charging the line in synchronous mode. WBSETCL agreed.

DVC vide mail dated 10.01.17 informed that West Bengal SLDC has not agreed with synchronisation of DVC system with WBSETCL via 132kV network due to non availability of 132kv circuit breaker at WBSETCL end and high loading of 132kv KTPP - Kolaghat(WBSETCL) D/C with present peak load of Kolaghat S/S (above 130MW with traction)

DVC and WBSETCL may update.

Item No. B.7: Finalizing the methodology for computation of TTC, ATC and TRM— Agenda by NRCE

A sub-group of National Reliability Council for Electricity (NRCE) constituted for the purpose of determination of TCC, ATC and TRM and to suggest a clear methodology for the calculation. A meeting of this sub-group was held on 19th September, 2016 and sought the following information from the RPCs.

NRCE sub group felt that distribution of nodal MW and MVAR is important for computation of TTC. Advised RPCs to take up the issue with all the states to submit the accurate data at all generation and demand nodes of the power system in the state. Constituent wise peak and off-peak data of generation and demand is attached at **Annexure-B.7**.

In 127th & *128th OCC advised all the constituents to verify the node data and submit node wise (both peak & off-peak) data for the 3rd month in advance so that a realistic calculation of TCC,ATC,TRM will be possible.*

Members may update.

Item No. B.8: HIGH AMOUNT FOF DEVIATION CHARGES PAYABLE BY BSEB ON ACCOUNT OF M/s. TALA HEP

SBPDCL vide letter dated 07.01.17 informed that the deviation charges incurred by M/s TALA HEP are to be borne by its beneficiaries, and BSEB being a major beneficiary, having a share of 25.5% has to bear a major portion of these deviation charges.

For the last 8 weeks, it has been observed, to their great concern that the deviation charges incurred by M/s TALA HEP have been continually high, amounting to as high as few crores per week. A summary report of the amount incurred by M/s TALA HEP as deviation charges, and consequently the amount to be borne by BSP(H)CL erstwhile BSEB, is attached as a table at **Annexure- B.8**.

From the statistics in this table; & discussion with ERLDC, it was concluded that a major percentage of bill for UI & Deviation payable by BSP(H)CL erstwhile BSEB, is on account of huge deviation charges incurred by M/s TALA HEP.

As such, ERLDC should keep scheduled generation near to actual generation or devise a mechanism to make deviation zero or minimum. Beneficiaries should not be charged for the high declared capacity (DC) given by TALA or CHUKHA HEP, as they are not responsible for the high mismatch between scheduled generation and actual generation of Bhutan generating station.

So, it is requested that the future scheduling for power purchase on behalf of M/s TALA HEP and M/s CHUKHA HEP should be done keeping in mind the concerns of its beneficiaries.

Members may discuss.

Item No. B.9: HIGH VOLTAGE PROBLEM IN 400KV MERAMUNDALI GRID S/S: REGARDING

GRIDCO vide letter dated 07.01.17 intimated that presently Odisha is going through very high voltages at 400kV bus of Meramundali, Duburi and Mendhashal grid S/S. The situation is further worsened due to high reactive power flow from Meramundali to Angul pooling sub-station, from Duburi to Meramundali sub-station and from Kuchei to Duburi sub-station. It may be noted that, PGCIL has installed two nos. of 330 MVAr Bus reactors at Angul 765kV substation and two nos. of 125 MVAR Bus reactors at Ancul 400kV substation, thus resulting high reactive power flow from Meramundali to Angul & Duburi to Meramundali grid S/S. In view of the above OPTCL

suggests the following as short term and long term measures to mitigate the high voltage issue as well as to improve the high reactive power flow situation.

Short term measure

- OPTCL will install 80 MVAr reactor at Meramundali 400kV S/S.
- The Angul-Meramundali Double circuit tie to be opened at both ends.

Long term measure

- The Meramundali-Angul Double circuit will be terminated at Meramundali (B). A letter regarding the above change has already been forwarded to CEA and will be placed in the next Standing Committee meeting of CEA. Meremundali(B) will be a new 400kV substation of OPTCL,approved by CEA and the work order to be issued shortly.

In view of the above and as the high voltage situation is menacing, it is requested to grant permission for the short term measures, mentioned above, to get relief from the high voltage issue and high reactive power flow. The system in the above condition will remain stable.

Members may discuss.

Item No. B.10: Status of UFRs healthiness installed in Eastern Region

UFR Healthiness Certification for the month of December, 2016 has been received from OPTCL, JUSNL, WBSETCL, CESC and DVC.

33kV Raytar feeder at 132kV Rajgir is not in service and 33kV Silao has been considered as UFR feeder. BSPTCL may update the UFR feeders list.

BSPTCL may update.

Item No. B.11: Healthiness of SPS existing in Eastern Region

NTPC, GMR, & CESC have submitted the healthiness certificate for the month of December, 2016.

Chuzachen, Vedanta, JITPL, Powergrid-Odisha & Powergrid ER-II may submit the healthiness certificate for December, 2016.

Respective members may update.

Item No. B.12: Status of Islanding Schemes of Eastern Region

B12.1. Status of commissioned Islanding Schemes in Eastern Region

At present, the following islanding schemes are in service:

1. CESC as a whole Islanding Scheme, CESC
2. BkTPS Islanding Scheme, WBPDCL
3. Tata Power Islanding Scheme, Haldia
4. Chandrapura TPS Islanding Scheme, DVC

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

The healthiness certificate for Islanding Scheme for November, 2016 has been received from CTPS, DVC, BkTPS, Tata Power and CESC.

Members may note.

B12.2. FSTPS Islanding Scheme, NTPC

In 123rd OCC, NTPC informed that cable laying completed and interfacing is pending. Interfacing will be done after completion of the PLCC installation work by PGCIL at JUSNL sub-stations.

In 125th OCC, Powergrid informed that PLCC installation work has been completed and commissioning is under progress.

In 126th OCC Powergrid informed that the PLCC installation work has been completed and commissioning will be done by 1st week of November, 2016.

NTPC informed that after the commissioning of PLCC, they may require another 30-40 days to complete the cable termination and integration work. After the completion of installation work a special meeting may be convened to co-ordinate the complete implementation of the Islanding scheme.

OCC decided that a special meeting may be convened in after the completion of all installation and cable termination work by NTPC so that the Islanding scheme could be commissioned by December, 2016.

In 127th OCC, Powergrid informed that the work under the scope of JUSNL has been completed.

NTPC informed that the integration of cables at their end is going on and it may take another one month to complete it.

OCC decided that a special meeting may be convened after the completion of cable termination work by NTPC

In 128th OCC meeting it was informed that progress of the islanding scheme is being monitored at Ministry level and ERPC Secretariat has already communicated the completion schedule as December, 2016.

OCC took serious note of extending the completion schedule of the islanding scheme in the last moment.

OCC felt that NTPC is not serious about implementation of the islanding scheme advised NTPC to submit their complete action plan to ERPC and ERLDC.

Subsequently NTPC submitted that

QUOTE

Regarding Farakka Islanding scheme, Cabling work has been done up to unit control room but final hooking with C&I system is pending. After evaluating every aspect , NTPC Farakka is of the view that the connection to C&I system is to be done during unit overhaul only so that proper checking of control system response can be done by simulation. Due to this, there has been a revision of the plan at our end. Our overhauling plan as of now, has been informed through our earlier mail yesterday. We shall hook units one by one during these overhauls.

UNQUOTE

OCC advised NTPC to explore final hooking up with C& I system at an opportune S/D time of the unit.

NTPC may update.

B12.3. Bandel Islanding Scheme, WBPDCL

In 33rd TCC, WBPDCL informed that DPR has been submitted to NLDC on 22-06-2016 for funding from PSDF.

Subsequently, PSDF Secretariat vide mail dated 07.10.2016 informed that the Scheme was examined on 28.09.2016 and has sought some clarification from WBPDCL.

In 127th OCC, WBPDCL informed that clarification has been submitted.

It was informed that the Appraisal committee has recommended. It will be placed in next Monitoring Committee

In 128th OCC, it was informed that the PSDF Appraisal committee has accepted the proposal and forwarded to CERC.

WBPDCL may update the latest status.

Item No. B.13: Restoration of PLCC system of important lines

In 119th OCC, JUSNL informed that the following:

a) In 220 KV Chandil –Santaldih line auto-reclosure has been enabled and termination done in PLCC panels at Chandil end but due to non-availability of PLCC panels at Santaldih(WBPDCL) end the A/R and PLCC scheme could not be activated.
b) In 220 KV Ramchandrapur-Joda line auto-reclosure has been enabled and termination done in PLCC panels at Ramchandrapur end but due to non-availability of PLCC panels at Joda (OPTCL) end the A/R and PLCC scheme could not be implemented.

Further, it was informed that JUSNL is ready to share their standby PLCC panels (BPL make) with WBPDCL (for Snataldih end) and OPTCL (for Joda end) to complete the PLCC schemes of both the above lines.

In 34th TCC, WBPDCL informed that PLCC panels will be delivered by November, 2016 and installation of the panels will be completed by December, 2016.

OPTCL informed that purchase order has been placed to BPL and supply is expected by December, 2016.

In 128th OCC, WBPDCL informed that PLCC system will be installed by end of December, 2016.

OPTCL informed that PLCC panels will be installed by 2nd week of January 2017.

JUSNL/OPTCL/WBPDCL may update.

Item No. B.14: Concerned members may update the latest status.

B.14.1: Commissioning of 400 kV Ind-Bharath to Jharsuguda D/C (dedicated line)

In 126th OCC, Ind-Bharath informed that the CEA inspection for the line has been completed on 17.10.16 and PLCC work is In progress. They are expected to complete the line in all respect by first week of November, 2016.

OCC advised IBEUL to submit all the clearances (CEA clearance etc.) along with completion of line and communication system so that a special meeting could be convened before starting the commercial power transaction from IBEUL for final consideration of all aspects.

In 34th TCC, it was informed that construction of line has been completed but CEA clearance is still awaited.

In 128th OCC, IBEUL informed that the line will be commissioned by January 2017.

IBEUL may update.

B.14.2: Status of construction of 400 kV Sterlite-Jharsuguda D/C sections

In 34th TCC, Vedanta explained the status of construction with a presentation. Updated status along with the target date is given below:

Activities	Nos	Status as on 15-Nov-16	Target completion	Remarks
Tower Foundation	64	60	30-Dec-16	4 DD+30 tower foundation concrete: volume increased from 742 m3 to 1118 m3
Tower Erection	64	43	10-Feb-17	757 MT balance tower material to be erected.(DD+30 is 7)
Stringing /OPGW Cabling & Testing	20.5 Km	One stretch completed. Another four are under progress.	28-Feb-17	Stringing can be started only after harvesting. i.e. Dec-16.
Sub station Bay	2	Equipment Erection, Cable Trench, Earthing Completed	31-Dec-16	CR Panel errection, cabling & termination to be done, Testing to be carried out. CEA inspection to be done post completion
Statutory clearances	-	-	15-Mar-17	CEA inspection of line to be done Report generation to be done.
Line & Bay Charging	-	-	25-Mar-17	ERLDC clearance for line charging after attending CEA report punch points

Vedanta informed that significant progress has been made in last 5 months and the line will be commissioned by March, 2016. Vedanta requested to extend the removal of the LILO till March, 2017 as final commitment.

OPTCL added that since Vedanta has made substantial progress during last 5 months and the dead line for removal of the LILO may be extended till February, 2017.

TCC agreed and advised Vedanta to submit a fresh undertaking in affidavit form to CTU and ERPC stating that the dedicated line will be completed by 28.02.2017 with no further extension. Failing which, CTU/ERLDC is authorized to open the LILO with effect from 01.03.2017.

In 127th OCC, Vedanta updated that 43 towers erection have been completed.

OCC advised Vedanta to submit the affidavit as per the decision of 34th TCC latest by 30.11.2016.

OCC also advised Vedanta to complete the line by February,2017 as decided by ERPC. Vedanta assured.

Vedanta vide mail dated 03.01.17 updated the latest status. The latest status is enclosed at **Annexure-B.14.2**.

Vedanta may update.

B.14.3: Status of Bus Splitting schemes in Eastern Region

A. Bus Splitting of Powergrid Sub-stations

As per decision of Standing Committee of ER CTU was entrusted to do Bus splitting at 400 kV Maithon, Durgapur & Biharsariff S/Ss or ER. The latest status on the same are:

- 400 kV Maithon ---Completed
- 400 kV Durgapur--Completed
- 400 kV Biharshariff—Foundation work has been completed but shutdown are yet to be received to complete the work.

In 34th TCC, Powergrid informed that they have applied for bus shutdown of 400kV Biharsharff S/s for 28h November, 2016. OCC has already concurred the shutdown but BSPTCL is yet to give the clearance.

In 127th OCC, Powergrid informed that they are availing shutdown from 28.11.16.

In 128th OCC, Powergrid informed that bus splitting scheme has been implemented for Bus-II of 400kV Biharsharff S/s and Bus-I will be completed by 2nd week of January 2017.

Powergrid/BSPTCL may update.

B.14.4: Bus Splitting of Kahalgaon STPS Stage I&II, NTPC

In 24th ERPC meeting held on 27.04.2013, ERPC advised NTPC to go ahead with the bus-splitting scheme as it is a technical requirement for safe, secure operation of the grid.

In 32nd TCC, NTPC informed that they are going ahead with the implementation of Bus Splitting of Kahalgaon STPS Stage I&II and the implementation is expected to be completed by December, 2018.

In 126th OCC, NTPC has given the present status as follows:

- 400/132kV Switchyard package - bid opened on 14.03.16. Awarded on 04.05.2016.
- Site levelling – Site levelling package awarded, expected to be completed by November, 2016.
- Transformer package and Shunt reactor– have been awarded.

In 127th OCC, NTPC informed that the bus splitting will be completed by December, 2018.

In 128th OCC, NTPC informed that site levelling of 400kV side has been completed and 132kV side would complete by 31st March, 2017.

NTPC may update.

B.14.5: 11KV Auxiliary power supply of 400KV Berhampore Powergrid Substation.

In 34th TCC, WBSEDCL informed that the construction of dedicated line has been delayed due to ROW issues. The same has been resolved now and the construction of dedicated line will be completed by December, 2016.

WBSEDCL added that cable needs to be laid out for highway crossing for which cost estimate will be given to Powergrid within a week.

Powergrid agreed to do the payment after receiving the estimate.

WBSEDCL assured that on receipt of deposit from Powergrid all efforts will be made to resolve the issue on reasonable time.

In 128th OCC, WBSEDCL informed that work is in progress. PGCIL informed that requisite amount will be deposited shortly.

WBSEDCL/Powergrid may update.

B.14.6: 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 LILOing 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 126th 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.	LILO of one circuit of Sadeipalli-Kesinga220 kV D/C line at Bolangir S/S	Only 7 towers left (Severe ROW problem). By Mar, 2017.
b.	LILO of one circuit of Katapalli-Sadeipalli220 kV D/C line at Bolangir S/S	Charged on 04.05.16
2.	**400/220 kV Keonjhar S/S**	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By 2017.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.
3.	**400/220kV Pandiabil Grid S/s: Expected by June'16**	
a.	Pratapsasan(OPTCL)-Pandiabil (PG) 220 kV D/C line	Dec, 2017.
b.	LILO of one circuit of Atri-Puri (Samangara) 220 kV D/C line at Pandiabil (PG)	***March, 2017***

OPTCL may update.

B.14.7: 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV sub-stations at Chaibasa, Daltonganj & Dhanbad

In 125th 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 (POWERGRID) – Chaibasa (JUSNL) 220kV D/c	Completed.
b.	Chaibasa (POWERGRID) – Ramchandrapur (JUSNL) 220kV D/c	January, 2017
2.	**Daltonganj 400/220/132kV S/s: Expected by Mar'17**	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By 2017.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	Matching with S/s
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	Matching with S/s
D	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Matching with S/s
3.	**Dhanbad 400/220 kV S/s: Awarded under TBCB**	
a.	Dhanbad – Dhanbad (Govindpur) (JUSNL) 220kV D/c	Matching with S/s

JUSNL may update.

B.14.8: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Alipurduar & 2x500 MVA Rajarhat sub-stations

In 126th 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 (***Twin moose***)	**April, 2017**
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. B.15: Third Party Protection Audit

1. 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	37	68.52
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	27	39.71
Odisha	59	38	64.41
JUSNL	34	16	47.06
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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.

OCC advised all specially JUSNL and BSPTCL to send the revised DPRs at the earliest after clarifying the queries if any.

Members may comply.

2. Schedule for 2nd Third Party Protection Audit:

The latest status of 2nd Third Party Protection audit is as follows:

1) Jeerat (PG) — Completed on 15th July 2015
2) Subashgram (PG) — Completed on 16th July 2015
3) Kolaghat TPS (WBPDCL)- — Completed on 7th August 2015

4) Kharagpur (WBSETCL) 400/220kV - Completed on 7th August 2015
5) Bidhannagar (WBSETCL) 400 &220kV Completed on 8th September, 2015
6) Durgapur (PG) 400kV S/s Completed on 10th September, 2015
7) DSTPS(DVC) 400/220kV Completed on 9th September, 2015
8) Mejia (DVC) TPS 400/220kV Completed on 11th September, 2015
9) 400/220/132kV Mendhasal (OPTCL) Completed on 2nd November, 2015
10) 400/220kV Talcher STPS (NTPC) Completed on 3rd November, 2015
11) 765/400kV Angul (PG) Completed on 4th November, 2015
12) 400kV JITPL Completed on 5th November, 2015
13) 400kV GMR Completed on 5th November, 2015
14) 400kV Malda (PG) Completed on 23rd February, 2016
15) 400kV Farakka (NTPC) Completed on 24th February, 2016
16) 400kV Behrampur(PG) Completed on 25th February, 2016
17) 400kV Sagardighi (WBPDCL) Completed on 25th February, 2016
18) 400kV Bakreswar (WBPDCL) Completed on 26th February, 2016
19) 765kV Gaya(PG) Completed on 1st November, 2016
20) 400kV Biharshariff(PG) Completed on 3rd November, 2016
21) 220kV Biharshariff(BSPTCL) Completed on 3rd November, 2016

The list of observations for the above sub-stations is already available at ERPC website (www.erpc.gov.in). Respective constituents are requested to comply and submit the report to ERPC for regular update.

Members may note.

Item No. B.16: Inspection of Under Frequency Relays (UFR)

In 124th OCC, DVC informed that the UFR relays will be delivered by August, 2016 and the UFRs at 220/132/33 KV Ramgarh S/s will be replaced by next month.

In 125th OCC, DVC informed that the UFR relays are in transit and the UFRs at 220/132/33 KV Ramgarh S/s will be replaced by next month.

In 127th OCC, *DVC informed that the UFR relays at 220/132/33 KV Ramgarh S/s will be replaced by December, 2016.*

In 128th OCC, DVC informed that the UFR relays at 220/132/33 KV Ramgarh S/s will be replaced by January, 2017.

DVC may update the status.

The proposed UFR audit schedule for Third quarter of 2016-17 is placed below:

Sl No	Proposed Date	Substation/feeder inspected by the sub-group
1	Jan, 2017	220/132/33 KV Sampatchak of BSPTCL
2		132/33 KV Purnea of BSPTCL
4	Feb 2017	220/132/33 KV Kalyaneswari of DVC
5		220/132/33 KV New Bishnupur of WBSETCL
6		132/33 KV Old Bishnupur of WBSETCL
7	Mar 2017	BRS (Liluah S/Stn.) of CESC

Members may decide.

Item No. B.17: 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 and comply.

Item No. B.18: 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.

In 85th OCC NTPC informed that, NTPC-Farakka has been certified with IS 18001. Other constituents including OHPC requested to interact with BIS with intimation to ERPC and get certified as per CEA direction. The matter is getting reviewed by highest authorities with top priority.

In 88th OCC NTPC informed that, all NTPC stations in Eastern Region are certified with IS 18001. NHPC informed that, Teesta is also certified with IS 18001. After that, OHPC and CESC informed that their stations are certified with IS18001.

In 104th OCC, WBPDCL informed that Bandel TPS is certified with IS 18001.

OPTCL vide letter No. TB-SO-MISC-9/2010/1914 dated 20.12.2014 had proposed to go for IS 18001:2007 certification as per direction of CEA.

In 113th OCC, CESC informed that Budge-Budge Generating station (3x250 MW) has renewed their certification of BS 18001:2007.

In 121st OCC, it was informed that Kolaghat Generating station of WBPDCL has also received certification of IS 18001:2007 from BIS on 29.04.2016.

In 124th OCC, WBPDCL informed that Bakreswar Generating station is also received certification of IS 18001:2007 from BIS.

Members may note and update the status.

Item No. B.19: FORMULATION OF A SKILL PLAN FOR POWER SECTOR BASED ON THE ASSESSED SKILL GAP IN THE SECTOR

CEA vide letter dated 04.07.16 intimated that a meeting on the above subject was held in the Ministry of Power, New Delhi on 1st July,2016. The meeting was Chaired by the Additional Secretary Shri B.P.Pandey. Power Sector Skill Council (PSSC) made a presentation on the

subject. The meeting was attended by the representatives of BEE, PSUs, CEA, PGCIL, NPTI, PFC etc.

The main emphasis made by the Additional Secretary are as follows:

- The Report has to be submitted by PSSC by 10th of July, 2016 clearly indicating the needs of training and sill gaps in power sector.
- All the data captured, analysis made and other facts in the draft skill plan have to be validated by CEA before finalization of the Report.

In this regard officials from PSSC may visit various formations of CEA and / or circulate the Draft Report for obtaining the relevant inputs and validation of the data gathered by them. Chairperson CEA has been appraised of the same.

Further to this, MoP vide their letter No.7/5/2015-T&R dated 01.07.2016 have sought information in the matter. Based on the letter of MoP a proforma has been prepared. It is requested that the relevant information pertaining to the sector/sub-sector as per the attached proforma (Attached at **Annexure-B.19**) may please be sent to CEA (by mail: ceahrd@gmail.com).

124th *OCC advised all the constituents to send the relevant information as per the proforma.*

Constituents may note and comply.

Item No. B.20: Energy Generation data management from Renewable Energy Sources

RES development Division, CEA has been receiving monthly generation details and installed capacity of Renewable Energy Sources from respective SLDCs and other authorized agencies. Some discrepancies has been found in the data as received by CEA and MNRE.

Constituents are requested to reconcile/confirmed the correct information at the earliest.

In 120th OCC, all the SLDCs were advised to submit the data to CEA as per the format given in **Annexure- B.20** with a copy to ERPC Secretariat.

In 121st OCC, SLDC West Bengal and SLDC Odisha informed that they have submitted the relevant data to CEA.

SLDCs may update.

Item No. B.21: Compilation of data for meeting Renewable Energy targets of 175 GW by 2020 -- Reference from MNRE

CEA vide letter dated 29.03.16 has referred Ministry of Power letter no. 23/2/2005-R &R(Vol-XI), dated 22.03.2016 & MNRE letter dated 02.03.2016 regarding compilation of data for meeting Renewable Energy targets of 175 GW by 2020.

Concerned State Utilities /Generating companies are requested to submit data of their respective control areas.

Members may update.

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Item No. B.22: Reporting of Energy generated from renewable resources on daily basis--- ERLDC

Government of India has set an ambitious target to achieve 175 GW of renewable generation by year 2022. Renewable energy sources(RES) development division of CEA alongwith MNRE is continuously monitoring the progress in installation of renewable resources and also collecting actual generation data on monthly basis. However the energy injected from the renewable

generating plants into the grid also needs to be monitored on daily basis and incorporated in the reports by NLDC, to determine the correct percentage of energy mix for whole country on any particular day. Thus the renewable generators/ concerned SLDC may furnish following data on daily basis:

a) Grid connected RES whose scheduling and metering is done as regional entity : Maximum/Time and energy injected(MWh) for the previous day (from the SEM meters on a daily basis till the AMR is commissioned/working)

b) Grid connected RES which is under state purview: Maximum/Time and energy injected(MWh) for the previous day. Concerned SLDCs to compile station wise / connection point wise energy injected into the state grid and send it RLDC on a daily basis.

The above data may be sent by mail to erldc.cal@gmail.com positively by 01:00hrs of the day i.ro data for the previous day. This is essential as the power supply report has to be sent by early morning hours for the previous day.

In 126th OCC, ERLDC informed that the data for renewable generation on daily basis is required from the constituents.

SLDC Odisha informed that generation data for renewable energy sources connected at 132 kV is possible but at lower voltage level connected to the distribution network is difficult to get. Moreover, the data on monthly basis is possible instead of daily basis.

WBSEDCL informed they will look into the matter and submit the renewable generation data to ERLDC.

OCC advised all the respective constituents to submit the data along with their comments, if any.

In 127th OCC, ERLDC informed that though they have received some data, but generation data on daily-basis is yet to be furnished by the respective generators.

OCC advised all the respective constituents to look into the matter and make possible to submit the data on daily-basis.

In 128th OCC, ERLDC informed that they are receiving the requisite data from Odisha and NTPC Talcher stations.

OCC advised all the other SLDCs to submit the data to ERLDC.

All SLDCs may kindly update.

Item No. B.23: Data of Peak Demand – Submission of hourly power cut data

The peak demand met figure calculated by CEA is a part of the monthly Power Supply Postion Report prepared by CEA, based on the data provided by five Regional Power committee (RPCs), who in turn collect the data from State / UTs and RLDCs. As per the present methodology being adopted for calculation of States /Regional peak demand met, the figure of peak demand met at any time in the month is taken as peak demand met for the month. For all India monthly peak demand met, the sum of five regional peaks met, which may occur at different points of time is taken.

The above methodology has been reviewed and it has been decided with the approval of Chairperson, CEA that Peak demand Met and Peak Demand in the country should be based on hourly all India demand data. The matter was taken up with POSOCO for getting the hourly data of peak demand met for each month in respect of all the regions in the country in the first week of following month and they have assured to furnish the same. To calculate the demand, data of

hourly scheduled and unscheduled power-cuts / load shedding is also required, which is not available with POSOCO.

It is, therefore, requested that hourly figures of scheduled/ unscheduled power cuts/load shedding data may be collected from States / UTs and the same may be sent to CEA every month as per above schedule in the enclosed format, in spread sheet, so that hourly figures of peak demand can be calculated and incorporated in Power Supply Position report.

This data for a month may kindly be sent in the first week of each month, along with PSP data, starting from the data for the month of February, 2015. The format for sending the data of hourly scheduled and unscheduled power-cuts / load shedding has already been circulated.

In 110th OCC meeting, OCC advised all the concerned utilities (BSPTCL, JUSNL, OPTCL, WBSETCL & Sikkim) to send the data of hourly scheduled and unscheduled power-cuts / load shedding by mail to mserpc-power@nic.in latest by first week of each month.

For the month of December, 2016 data has been received from OPTCL, DVC, WBSETCL, CESC.

JUSNL & BSPTCL, may furnish the data.

Item No. B.24: Recovery Procedures of ER Constituents – ERLDC

As per IEGC clause 5.8 (b) “Detailed plans and procedures for restoration after partial/total blackout of each user’s/STU/CTU system within a Region, will be finalized by the concerned user’s/STU/CTU in coordination with the RLDC. The procedure will be reviewed, confirmed and/or revised once every subsequent year”.

In 117th OCC, ERLDC informed that all STUs have to develop their own restoration plan and procedure of their state in coordination with ERLDC/ERPC.

If such restoration plans are already available, it may be shared with ERLDC.

The restoration procedure received from all the state constituents except Bihar.

Bihar and ERLDC may update.

Item No. B.25: 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.

In 120th OCC, DVC informed that they are providing the monthly TTC/ATC on their website.

WBSETCL informed that they are calculating the TTC/ATC but their website is under construction.

Bihar and OPTCL agreed to implement.

JUSNL informed that they are unable to compute the TTC/ATC for their state.

OCC advised JUSNL to interact with ERLDC to get acquainted with the ATC/TTC calculation.

In 33rd TCC Meeting, respective members updated the status as follows:

- All the states are computing TTC/ATC except Sikkim and JUSNL.
- DVC is calculating and uploading in DVC website.
- BSPTCL is calculating and uploading through a link in BSPHCL website.
- WBSLDC is calculating but they could not upload due to non-readiness of website.
- OPTCL is calculating and uploading in website.

TCC felt that grid operator should have the information on how much power they can export and import and they should restrict to that figures in order to avoid major grid disturbances.

Accordingly, TCC advised all the constituents to place the details in monthly OCC meetings till they upload the information in their respective websites.

TCC advised JUSNL to send their representatives to ERLDC so that they could get acquainted with the ATC/TTC calculation procedure. Representative from JUSNL informed that they are ready to send three officers to ERLDC, the names of officers would be shared in tomorrow's ERPC meeting.

123rd OCC advised all the SLDCs to mention the constraints along with ATC/TCC figures.

124th OCC advised all the SLDCs to mention the constraints along with ATC/TCC figures.

In 126th OCC, OCC *advised all the SLDCs to mention the constraints along with ATC/TCC figures.*

WB, SLDC has uploaded monthly Import TTC/ATC figures for October, November and December 2016.

OCC advised all the SLDCs to calculate ATC/TTC for Dec-16/Jan-17 and submit it in next OCC meeting.

SLDC, Odisha submitted the ATC/TTC figures for January, 2017.

DVC and JUSNL submitted the ATC/TTC figures for December, 2016.

WBSETCL is uploading the ATC/TCC figures in their website.

OCC advised DVC, JUSNL and Odisha to upload ATC/TTC figures along with the constraint details in their website.

OCC advised Bihar to compute ATC/TTC figures and submit to ERPC and ERLDC at the earliest.

Members may update.

Item No. B.26: Run-back scheme of Sasaram 500MW HVDC B-t-B converter -- ERLDC

It is understood that the following run–back schemes are functional for the 500 MW B-t-B HVDC converter at Sasaram:

1. Tripping of any circuit of 400kV Biharshariff-Sasaram D/C line – reduction of HVDC power order to 250 MW
2. Tripping of both circuits of 400kV Biharshariff-Sasaram D/C line – complete blocking of the HVDC converter.

In this connection it is stated that the above run-back conditions were relevant when 400kV Biharshariff-Sasaram D/C line was the only AC source on the East side bus. However, at present due to existence of 765kV Sasaram-Fatehpur 765kV line along with 765/400kV Sasaram ICT, there would be no loss of AC voltage of the 400kV East bus, even if both circuits of Biharshariff-Sasaram 400kV D/C line trip.

It is to mention that on 19-12-16, the HVDC Sasaram power order had to be reduced to 250MW when 400kV Biharshariff-Sasaram-I was taken under planned shutdown. Thereafter, at 12:43 Hrs, the other 400kV circuit Biharshariff-Sasaram-II tripped due to transmission of DT signal from Biharshariff to Sasaram leading to complete blocking of the converter. However, such blocking was unwarranted as the 765kV Sasaram-Fatehpur line together with the 765/400kV ICT at Sasaram was still in service.

It is therefore suggested that the existing run-back scheme may be activated only when Sasaram 765/400kV ICT or Sasaram-Fatehpur 765kV line is under outage and bypassed under normal conditions. The scheme may be further reviewed when at least two units of Nabinagar TPS commence firm generation.

ERLDC explained the scheme.

OCC decided to implement the revised scheme and advised Powergid to modify the scheme in coordination with CTU.

Powergrid/ERLDC may update.

Item No. B.27: Reasons for demand –supply gap and its variation -- Agenda by NPC

It was deliberated in the 4th NPC meeting that monthly power supply position prepared & published by CEA based on the data furnished by the states reflected shortages in almost all the states. However, a number of those states intimated adequate availability of power. This meant that the deficit / shortage in such states was actually not the deficit in true sense but demand - supply gap due to reasons other than shortage of power. The other reasons for the demand - supply gap could be inadequate availability of power, transmission constraint, distribution constraint, financial constraint etc. The reason for demand –supply gap needed to be clearly mentioned to reflect true picture of power supply position in different states and also to invite attention of various agencies including policy makers to the specific problem areas in the power sector for suitable solution.

It was agreed by all the RPCs to advise the states in their respective regions to intimate broad break-up of demand –supply gap due to various reasons, or at least, the main reason(s) for demand supply in each month.

Members may update.

Item No. B.28: Long outage of important transmission elements

a) Non availability of Line Reactor of 400KV Malda-Purnea-I

In 123rd OCC, Powergrid informed that order has been placed for Reactor-1 and it will be commissioned by September, 2016.

In 127th OCC, Powergrid informed that it will be commissioned by December, 2016.

In 128th OCC, Powergrid informed that the line reactor will be commissioned by January, 2017.

Powergrid may update.

b) 400kV Meramundali-Mendhasal S/C

Tower collapsed near Mendhasal at 3 Locs, viz.Locs.180,181 & 182.

In 123rd OCC, OPTCL informed that tower 181 and 182 were restored. Restoration of tower 180 will take time due to water logging and the tower would be restored by September, 2016.

In 124th OCC, OPTCL informed that restoration of tower 180 will take time due to water logging and the tower would be restored by December, 2016.

In 127th OCC, OPTCL informed that the line will be restored by December, 2016.

In 128th OCC, OPTCL informed that the line will be restored by January, 2017.

OPTCL may update.

c) 400kV Patna-Kishengunj D/C

Tower collapsed at Loc.51.

Powergrid informed that due to water logging problem the work is getting delayed however work is expected to be completed by 15th October, 2016.

In 125th OCC, Powergrid informed that line will be restored by 15th October, 2016.

In 127h OCC, Powergrid informed that line will be restored by July, 2017.

Powergrid may update.

d) 400kV Purnea-Biharshariff D/C(under outage wef 23/08/16)

Three Nos.Tower(mid river) collapsed.

In 126th OCC, ENICL informed that the final assessment is under progress. The same will be submitted to ERPC and ERLDC.

In 127th OCC, ENICL informed that line will be restored by June, 2017.

ENICL may update.

e) Main bay of 315MVA ICT at Farakka(Tie element-400kV FSTPP-Malda-I)

The main bay is under s/d for upgradation wef 06/05/16.Powergrid may update stating status of the upgradation.

In 125th OCC, Powergrid informed that Bus-I end is ready and will be charged, Bus-II end is bypassed and will be ready for charge after getting shutdown.

In 126th OCC, Powergrid informed that Bus-I has been charged, but Bus-II could not be completed due to non-availability of line shutdown.

In 127th OCC, Powergrid informed that they have completed their part of work.

NTPC informed that the bay will be in service by December, 2016.

In 128th OCC, NTPC informed that the bay will be in service by 2nd week of January, 2017.

Powergrid/NTPC may update.

f) 50MVAR Bus Reactor-I at Farakka (alongwith main and tie bays)

Under shutdown wef 31/05/16 for dismantling from old bay and re-installation in new bay in the dia of FSTPP GT#3.

In 125th OCC, Powergrid informed that reactor will be charged by end of October, 2016.

In 126th OCC, Powergrid informed that reactor will be charged by November, 2016.

In 127th OCC, Powergrid informed that they are waiting for shutdown. NTPC informed that the reactor will be charged by December, 2016.

In 128th OCC, Powergrid informed that the reactor will be charged by 2nd week of January, 2017.

Powergrid may update.

g) Tie bay of 125MVAR Bus reactor and 400kV Indravati-Indravati and Indravati(PG):

Under outage wef 18/03/16 due to R-Ph pole bursting of Tie CB. Due to non-availability of the tie bay, the Buses are coupled only via the tie bay of 400kV Rengali-Indravati and 400kVIndravati-Jeypore at Indravati and any outage of the lines would result in decoupling of the Buses.

In 125th OCC, Powergrid informed that main CB has some problem which will be taken care by OHPC/OPTCL.

In 126th OCC, OPTCL informed that a CB is being shifted from Mendhasal for replacement of the subjected CB. The installation work will be completed by November,2016.

In 128th OCC, OPTCL informed that the CB is yet to be transported to the site from Mendhasal.

Powergrid/OHPC may update.

h) 220 kV Waria – Bidhannagar-II

The line is under outage wef 20.08.16 due to collapse of one no of tower collapse.

In 128th OCC, DVC informed that the line restoration will take another 1 months.

DVC may update.

i) 315MVA ICT-I at Meramundali

The ICT is under outage wef 12/11/16 due to damage after B-ph LA blasting.

In 128th OCC, OPTCL informed that the ICT will be in service by February 2017.

OPTCL may update.

j) 220kV Meramundali-Bhanjanagar-I

The line is under outage w.e.f 25/11/16 for conductor replacement work. OPTCL may furnish the details of conductor replacement being done and the expected date of restoration.
In 128th OCC, OPTCL informed that the conductor replacement work will be completed by January 2017. OPTCL added that type of conductor is ACSR Zebra.

OPTCL may update.

Item No. B.29: 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.

In 120th OCC, ERLDC informed that every month they were updating the status and posting at ERLDC website.

In 126th OCC, ERLDC presented the updated telemetry status and informed that every month they were posting the updated status at ERLDC website.

OCC advised all the respective constituents to ensure the availability of telemetry data to ERLDC.

In 128th OCC, all the respective constituents were advised to ensure the availability of telemetry data to ERLDC. The updated status is enclosed at ***Annexure- B.29****.*

Members may update.

Item No. B.30: Interruption of real time data due to all control centres in ER

There was a total failure of real time SCADA data to all control centres from 05:53 Hrs of 08-August-16. As an interim arrangement, real time SCADA data was restored on 10-August-16 at 03:19Hrs. The root cause was yet to be arrived and fixed.

In 124th OCC, Powergrid informed that there was some problem in Patna SLDC due to which one ICCP link failed which caused the interruption of data.

OCC advised Powergrid to provide redundancy for communication equipment system / route diversity of communication link / redundancy at both the control centres. Powergrid was also advised to submit a report on the incident and action taken.

In 125th OCC, Powergrid submitted the report and OCC advised all the constituents to go through the report and give their feedback, if any.

In 126th OCC, it was raised that in case of failure of ICCP link/other communication equipment, the data availability needs to be assured at Back-up control centres.

OCC advised Powergrid to submit in 34th TCC their detail plan for data redundancy in case of failure of any one communication system at either of the control centres (Main & Back-up).

34th TCC felt that in case of failure of ICCP link/other communication equipment, the data availability needs to be assured at Main as well as Back-up control centres.

Powergrid informed that the alternate communication path was not available for SLDCs and ERLDC. Powergrid added that backup equipment is available and alternate communication path can be planned.

TCC advised to convene a special SCADA meeting to discuss the issue and report back.

Members may note.

Item No. B.31: 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.

In 124th OCC, it was informed that out of 247 PMUs 46 have been installed.

OCC advised Powergrid to submit a report on latest status of implementation and advised to update the status on every OCC.

*In 126th OCC, Powergrid submitted the latest status which is given at **Annexure- B.31**.*

OCC advised POWERGRID to share the future installation and substation visit schedule with the members.

POWERGRID may update the status.

Item No. B.32: 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-B.32**.

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

Members may update.

Item No. B.33: Status of Emergency Restoration System (ERS Towers) for Eastern Region constituents

The latest status of Emergency Restoration System (ERS towers) as well as the future plan of procurement was given at **Annexure- B.33**.

Members may update the latest status.

Item No. B.34: Non-commissioning of PLCC / OPGW and non-implementation of carrier aided tripping in 220kV and above lines.

According to CEA technical standard for construction of electric plants and electric lines -Clause 43(4) (c), transmission line of 220 KV and above should have single-phase auto-reclosing facility for improving the availability of the lines. However, from the tripping details attached June-August, 2016 it is evident that the some of 220kV above Inter & Intra-Regional lines do not having auto-reclose facility either at one end or at both ends. Out of these for some of the lines even PLCC/OPGW is not yet installed and carrier aided protection including Autorecloser facility is not yet implemented. Based on the trippings of June- August, 2016 and PMU analysis a list of such lines has been prepared and as given below:

List of line where auto reclose facility is not available(Information based on PMU data analysis)							
S. No	**Transmission Lines name**	**Date of Tripping**	**Reason of Tripping**	**Owner Detail**		**Present Status**	
				End-1	**End-2**	**OPGW/PLCC Link available**	**AR facility functional**
1	400 KV ANGUL -TALCHER	02.06.16	B-N FAULT	PGCIL	NTPC		

2	400 KV BIHARSARIFF-VARNASI-I	07.06.16	B-N FAULT	PGCIL	PGCIL		
3	400KV BIHARSARIFF - BANKA-II	12.06.16	Y - N FAULT	PGCIL	PGCIL		
4	220KV SASARAM-SAHUPURI	12.06.16	B - N FAULT	PGCIL	UPTCL		
5	400 KV TALA -BINAGURI -IV	13.06.16	B - N FAULT	Durk Green	PGCIL		Binaguri end AR is healthy. Tala end AR is disabled.
6	400 KV KODERMA-BOKARO-I	14.06.16	B-N FAULT	DVC	DVC		
7	400 KV FARAKKA-KAHALGAON-IV	15.06.16	R-N FAULT	NTPC	NTPC	Yes	Yes and operated last on dated 28.09.2016.
8	400 KV MUZAFFARPUR-BIHARSARIFF-II	17.06.16	Y-N FAULT	PGCIL	PGCIL		
9	400 KV MERAMUNDALI-NEWDUBRI - I	20.06.16	B-N FAULT	OPTCL	OPTCL	PLCC available	Yes
10	400KV PATNA-BALIA-II	21.06.16	B-N FAULT	PGCIL	PGCIL		
11	400KV PATNA-KISHANGANJ-II	21.06.16	Y-N FAULT	PGCIL	PGCIL		
12	400KV PATNA-BALIA-I	21.06.16	R-N FAULT	PGCIL	PGCIL		
13	220KV BUDIPADAR-KORBA-II	23.06.16	Y-N FAULT	OPTCL	CSEB	PLCC available	will be activated in consultation with Korba
14	400 KV ARAMBAGH - BIDHANNAGAR	02.07.16	Y-N FAULT	WBSETCL	WBSETCL		
15	400 KV FARAKKA-DURGAPUR-I	06.07.16	Y-N FAULT	NTPC	PGCIL	Yes	Yes and operated last on 19.07.2016 & 06.11.2016
16	400 KV NEW RANCHI - CHANDWA - I	13.07.16	B-N FAULT	PGCIL	PGCIL		
17	220 KV TSTPP-RENGALI	17.07.16	EARTH FAULT	NTPC	OPTCL		
18	220KV BUDIPADAR-RAIGARH	21.07.16	EARTH FAULT	OPTCL	PGCIL	PLCC defective	
19	400 KV KOLAGHAT-KHARAGPUR	03.08.16	Y-N FAULT	WBPDCL	WBSETCL		
20	220 KV FARAKKA-LALMATIA	03.08.16	B-N FAULT .	NTPC	JUNSL	Yes	Old Relay and not functional. 7-8 months required for auto re-close relay procurement

21	400 KV PURNEA-MUZAFARPUR-I	03.08.16	R-N FAULT	PGCIL	PGCIL		
22	400 KV GAYA - CHANDWA -II	04.08.16	B-N FAULT .	PGCIL	PGCIL		
23	220 KV MUZAFFARPUR - HAZIPUR - II	10.08.16	B-N FAULT	PGCIL	BSPTCL		
24	220 KV ROURKELA - TARKERA-II	11.08.16	B-N FAULT	PGCIL	OPTCL	OPGW available	Expected to install protection coupler by Jan 17
25	220 KV CHANDIL-SANTALDIH	25.08.16	R-N FAULT	JUSNL	WBPDCL		
26	400 KV MPL-RANCHI-II	02.09.16	R-N FAULT	MPL	PGCIL		
27	220 KV BIHARSARIF-TENUGHAT	07.09.16	B-N FAULT	BSPTCL	TVNL		
28	400KV MERAMANDALI-STERLITE-II	10.09.16	Y-N FAULT	OPTCL	SEL	OPGW not commissioned	
29	220 KV RAMCHANDRAPUR - CHANDIL	22.09.16	B-N FAULT	JUSNL	JUNSL		
30	400KV SEL - MERAMUNDALI-I	22.09.16	B-N FAULT	SEL	OPTCL	OPGW not commissioned	
31	400 KV KOLAGHAT - CHAIBASA	28.09.16	B-N FAULT	WBPDCL	PGCIL		

34th TCC advised all the respective members to update the above list along with the last tripping status in next PCC meeting.

TCC further advised all the constituents to give the latest status of PLCC of other 220kV and above lines under respective control area.

TCC advised to review the status of above in lower forums report back in next TCC.

In 128th OCC, Powergrid and OPTCL updated the status as mentioned in above table.

OCC advised all the respective members to update the above list along with the last tripping status.

Respective members may update the status.

Item No. B.35: Non-commissioning / non-functional status of bus-bar protection at important 220 kV Sub-stations

It has been observed that at many 220 kV substations particularly that of STU, bus-bar protection is either not commissioned or non-functional. The non-availability / non-functionality of bus bar protection, results in delayed, multiple and uncoordinated tripping, in the event of a bus fault.This in turn not only results in partial local black out but also jeopardises the security of interconnected national grid as a whole. The matter was also pointed out during the third party protection audit which is being carried out regularly. Constituents are required to meet the audit compliance and commission or made bus –bar protection functional where ever it is not available. A list of such important 220 kV sub-stations as per the first third party audit is placed in the meeting.

In 34th TCC, members updated the status as follows:

Bus Bar Protection not availble (reccord as per third party protection audit)

Bihar				
Sl No	**Name of Substation**	**Bus Bar protection status**	**Date of audit**	**Present Status**
1	220 kV Bodhgaya	Not available	28-Dec-12	*Single bus and there is no space available for busbar protection*
Jharkhand				
1	220 kV Chandil	Not available	29-Jan-13	*LBB available*
2	220 kV Ramchandrapur	Not available	29-Jan-13	*Functional from October 2013*
3	220 kV Tenughat	Not available	12-Apr-13	
DVC				
1	220 kV Jamsedpur	Not available	10-Apr-13	*Single bus. Bus bar will be commissioned under PSDF.*
Odisha				
1	220 kV Mermandali	Not functional	30-Dec-12	*Commissioned in Mar 2015*
West Bengal				
1	220 kV Arambah	Not available	24-Jan-13	Work is in progress
2	220 kV Jeerat	Not available	20-Dec-12	Work is in progress
3	220 kV Kolaghat	Not available	19-Dec-12	*Commissioned in May 2014*
4	220 kV Howrah	Not available	26-Mar-13	
Powergrid				
1	220 kV Silliguri	Not available	30-Mar-13	*Commissioned in Mar 2016*
2	220 kV Bolangir	Not available	31-Mar-13	*Commissioned in April 2013*

TCC further advised all the constituents to give the latest status of Bus Bar protection of other 220KV S/S under respective control area.

TCC advised to review the status of above in lower forums report back in next TCC.

128th OCC advised all the respective members to update the latest status.

Members may update.

Item No. B.36: Pollution mapping for Eastern Region

The Pollution Mapping work in ER was started with on-site measurement of ESDD and NSDD.

OCC advised all the respective constituents to coordinate with Powergrid for online filling of measurement data.

The updated status as updated by constituents & as intimated by Powergrid vide mail dated 19.10.16 is as given below:

	Scope (no. of locations)	Installed Locations	Number of locations where the results for 1st set of Measurements submitted	No. of locations where the results for 2nd set of Measurements submitted	Number of locations where the results for 3rd set of Measurements submitted	Number of locations where the results for 4th set of Measurements submitted
JUSNL	67	27	21	19	13	3
BSPTCL	59	52	52	40	4	0
WBSETCL	73	68	43	3	2	0
OPTCL	164	102	102	90	79	0
SIKKIM POWER	12	9	6	6	0	0
POWERGRID ER1	99	99	99	47	0	0
POWERGRID ER2	40	40	40	40	17	0
POWERGRID ODISHA	42	42	42	42	40	0

It is requested to submit the fourth and balance third set measurement result at the earliest.

Further, the schedule for measurement as informed vide letter dated 20.01.2016 & mail dated 21.01.2016 are as follows.

Measurement Schedule		
4th set	*5th set*	*6th set*
21st -30th Sep 2016	*21st -31st Jan 2017*	*21st -31st May 2017*

OCC advised all the constituents to complete the measurements as per the schedule.

Powergrid updated the latest status as follows:

	Scope (no. of locations)	Installed Locations	Number of locations where the results for 1st set of Measurements submitted	No. of locations where the results for 2nd set of Measurements submitted	Number of locations where the results for 3rd set of Measurements submitted	Number of locations where the results for 4th set of Measurements submitted
JUSNL	67	27	17	17	13	11
BSPTCL	59	52	40	29	4	3
WBSETCL	73	68	43	4	3	1
OPTCL	164	102	100	90	79	1
SIKKIM POWER	12	9	6	6	0	0
POWERGRID ER1	99	99	99	47	0	0
POWERGRID ER2	40	40	40	40	17	0
POWERGRID ODISHA	42	42	42	42	40	0

Powergrid informed that most of scheduled measurements till fourth set has not been completed yet, it is requested to complete the measurements and submit the results at the earliest.

Powergrid added that they prepared an online format to submit the details of measurements. Powergrid requested to fill the Google form(https://goo.gl/6375HJ) for onward submission of measurements for better analysis of results.

OCC advised all the constituents to complete the measurements as per the schedule.

Members may update.

Item No. B.37: Mock Black start exercises in Eastern Region – ERLDC

i) <u>The status of black start exercises</u>

The schedule of the proposed black-start exercises for F.Y 2016-17 is as follows:

Sl no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2016	*Completed on 16th July 2016*	Last Week of January 2017	
2	Maithon (To be tested in islanded mode)	1st week of June 2016		1st Week of February 2017	
3	Rengali	2nd week of June 2016	*Completed on 23rd Sept, 2016*	Last week of November 2016	January 2017
4	U. Indarvati	3rd week of June 2016	*Completed on 16th July 2016*	2nd week of February 2017	
5	Subarnarekha	1st week of October 2016	*Completed on 19.10.16*	1st week of January 2017	
6	Balimela	3rd week of October 2016	*Completed on* 29.11.16	1st week of March 2017	
7	Teesta-V	2nd week of Nov 2016		Last week of February 2017	February 2017
8	Chuzachen	Last Week of May 2016	***Mid Jan, 2017 (after consent from Sikkim)***	January 2017	
9	Burla	Last Week of June 2016	*Completed on 28.07. 2016*	Last week of February 2017	
10	TLDP-III	1st Week of June 2016		2nd Week of January 2017	
11	TLDP-IV	Last Week of June 2016	*Completed on 17.*11.16	1st Week of February 2017	

127th OCC advised OHPC and WB SLDC to submit a report on blackstart exercise of Balimela and TLDP-IV respectively.

Members may update.

ii) Testing of DG sets meant for Black start

Test run report of DG sets for blackstart has been received only from Odisha hydro units. The test run reports of other machines may be sent to erldc.cal@gmail.com and erldcoutage@gmail.com.

Constituents may kindly ensure compliance.

Item No. B.38: Restricted Governor /Free Governor Mode Operation of generators in ER

The latest status of units of ER under RGMO is available at ERPC website (http://www.erpc.gov.in/) under Operation>Important data.

In 108th OCC, ERLDC informed that the RGMO/FGMO response of the generators needs monitoring on continuous basis.

OCC advised ERLDC to intimate the event of sudden drop in frequency to the generators and requested all generators to provide the RGMO/FGMO response data to ERLDC during the said incidents.

In 115th OCC, ERLDC informed that for effective monitoring of unit wise governor response, ERLDC proposes to create a web-group wherein SCADA data recorded by ERLDC following an event of sudden load-generation imbalance would be posted within 2-3 days of occurrence of the event. The login id and password to access the web-group would be duly intimated by ERLDC to all concerned.

Coordinators from all the concerned generating stations would post the unit wise MW response as recorded at their respective ends, for a period +/- half-an-hour of the instant, within two days of posting by ERLDC. For the purpose of analysis, wherever significant variation would be observed w.r.t. to SCADA data, generator`s data would be adopted for detailed analysis.

In this connection, SLDCs of E. Region are requested to extend cooperation by coordinating with nodal officers of generators under their respective jurisdiction, in data collection and posting in webgroup.

OCC requested all the constituents to provide their respective e-mails which can be added to the web group.

E-mails can be provided by all SLDCs, Hydro generators of having capacity 10 MW & above and Thermal generators of having capacity 200 MW & above.

SLDCs will co-ordinate with their IPPs of 10 MW & above Hydro generation and 200 MW & above Thermal generation.

Thereafter, ERLDC informed that one web group was formed for sharing governor response of various generators in ER. The url of the group is

https://in.groups.yahoo.com/neo/groups/er_gov_respons/info

ERLDC requested to send email ids where invitation will be sent. Yahoo mail ids are preferable.

In 118th OCC, it was informed that WBSETCL, JUSNL, Bihar, NTPC and NHPC are yet to join the group.

*In 126thOCC requested all the generators to look into the matter and share their governor response with ERLDC in the group (**https://in.groups.yahoo.com/neo/groups/er_gov_respons/info**). Members may also send their request for joining the group to **erldcprotection@gmail.com**.*

ERLDC had uploaded the unit wise responses in the group "er_gov_respons@yahoogroups.co.in." i.r.o the following events for monitoring of RGMO response of generator:

a) *On 23.12.16 at 01:27 Hrs , Kashmir Valley system collapsed due to tripping of all 400 kV lines from Kishenpur substation except 400 kV Moga-Kishenpur-II;Generation loss of 250 MW ,load loss of 1200 MW occurred.*

ERLDC may update.

Item No. B.39: Reactive Power performance of Generators

In 125th OCC, ERLDC informed that the performance of Teesta-III, DSTPS, Mejia-B and APNRL need improvement.

Generating stations have been monitored for certain sample dates in the month of December,16.

Power Plant	Max and Min Voltage observed for Dec 16 (KV)	Date for monitoring (Dec 16)
Farakka STPS	421,407	3,12
Khalgaon STPS	417,406	3,12
Talcher STPS	410,400	12,15
Teesta	422,394	4,18
Bakreshwar TPS	416,402	5,16
Kolaghat TPS	420,399	11,23
Sagardighi TPS	--	--
MPL	421,410	10,19
Mejia-B	--	--
DSTPS	423,411	4,12
Adhunik TPS	424,407	6,17
Sterlite	424,410	3,12
Barh	--	--
JITPL	--	--
GMR	416,404	19,23
HEL	--	
Kodarma	422,406	23,16

ERLDC may present the reactive performance.

a) 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. DSTPS (Unit#2 only pending) – done
c. Koderma TPS Unit#1 -- done on 08.08.2016
d. JITPL(both units) – Procedure given. Not yet done
e. Barh TPS – In June 2016
f. Raghunatpur (both units)
g. GMR (Three units)
h. *Haldia TPS (Unit #4)*

Members may update.

Item No. B.40: Continuous tripping in 400kV Binaguri-Bongaigaon and 220kV CHPC-Birpara sections.

Repeated tripping of 400kV Binaguri-Bongaigaon sections and 220kV CHPC-Birpara-I & II have been observed in the recent past.

In 48th PCC, Powergrid explained that it is a lightening prone area and repeated faults are being occurred due to insulators failure.

Powergrid informed that they will replace the porcelain insulators with polymer insulators up to Bhutan boarder.

In 34th TCC, Bhutan representative informed that new insulators for Bhutan portion of 220kV CHPC-Birpara line have been purchased and replacement work will be completed within 4 to 5 months.

Powergrid also informed that the insulator replacement for 220kV CHPC-Birpara line will be completed by December 2016.

Powergrid also informed that insulator replacement for critical sections of 400kV Binaguri-Bongaigaon line-I & II will be done by February 2017 and complete replacement will be done by April, 2017.

ERLDC informed that ENCIL has to take appropriate action to minimise the trippings of 400kV Binaguri-Bongaigaon line-III & IV and ENCIL has been informed about the issue.

TCC advised to appraise the issue to ENCIL for taking necessary action to minimise the trippings.

127th OCC advised ENICL to take necessary action at the earliest and submit the their action plan for reducing the tripping in future.

ENICL agreed to submit their action plan at the earliest.

128th OCC advised ENICL to take necessary action at the earliest and submit the their action plan for reducing the tripping in future.

ENICL vide mail dated 13.12.16 submit their action plan to reduce the trippings which is enclosed at ***Annexure-B.40****.*

Members may discuss.

PART C:: OPERATIONAL PLANNING

Item no. C.1: Shutdown proposal of transmission lines and generating units for the month of February'17

Members may finalize the Shutdown proposals of the generating stations for the month of February'17 as placed at **Annexure-C.1**.

ERLDC may place the list of line shutdown. Members may confirm.

C.1A: Shutdown of 220 kV Birpara-Siliguri for modification work of line crossing.

Indian Railway vide letter dated 29.12.16 has placed a request for Shutdown proposals of 220 kV Birpara-Siliguri line for four (4) days during the first week of February, 2017 for the work of modification of one tower (location no. 178). The details of the shutdown is placed at **Annexure-C.1A**.

Members may discuss and approve.

Powergrid has also requested for shutdown of following lines to attend the hotspot:

i. 400 kV Malda- Purnea D/C- On daily basis for one day each ckt
ii. 400 kV Malda- Farakka D/C- On daily basis for two days each ckt

Members may discuss and approve.

Item no. C.2: Anticipated power supply position during February'17

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of February'17 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-C.2**.

Members may confirm.

Item no. C.3: Prolonged outage of Power System elements in Eastern Region

(i) Generating units:

Generating Station	UNIT NO	CAP(MW)	REASONS FOR OUTAGE	OUTAGE DATE
HALDIA	1	300	OVER HAULING	25-Dec-16
KAHALGAON	7	500	COAL SHORTAGE	03-Jan-17
RAGHUNATHPUR	1	600	PLANNED MAINTENENCE	7-Dec-16
BAKRESWAR	4	210	MAINT. WORK	27-Nov-16
JITPL	2	600	DUE TO LOW SCHEDULE	30-Nov-16
GMR	2	350	COAL SHORTAGE	09-Jan-17
MEJIA	1	210	BOILER TUBE LEAKAGE	03-Jan-17
MEJIA	2	210	BOILER TUBE LEAKAGE	30-Dec-16
BOKARO B	3	210	DESYNCHRONIZED DUE	10-Aug-16
BOKARO B	1	210	BOILER TUBE LEAKAGE	8-Nov-16
RAGHUNATHPUR	2	600	BOILER TUBE LEAKAGE	6-Nov-16
KODERMA	2	500	DESYNCHRONIZED DUE	31-Dec-16
BUDGE-BUDGE	1	250	HIGH TURBINE VIBRATION	27-Sep-16
KOLAGHAT	1	210	DESYNCHRONIZED DUE	7-Nov-16
KOLAGHAT	4	210	DESYNCHRONIZED DUE	27-Nov-16
BAKRESWAR	3	210	OVER HAULING	1-Nov-16
TENUGHAT	2	210	MAINT. WORK	7-Nov-16

(ii) Transmission elements

Name of the Line/Element	Outage	Reason
400 KV MEERAMANDALI- MENDHASAL S/C	23/05/16	TOWER COLLAPSED NEAR MENDHASAL,LOC NO 180,181,182.
400 KV PATNA-KISHANGANJ D/C	26/07/16	TOWER COLLAPSED AT LOC NO 51
400 KV BIHARSARIFF-PURNEA- I & II	23/08/16	Three numbers of tower badly damaged at location
220KV WARIA - BIDHANNAGAR-II	10/09/16	LINE UNDER B/D, TOWER COLLAPSED AT LOC NO 28
220 KV MERAMUNDALI – BHANJNAGAR-I	25/11/16	CONDUCTOR REPLACEMENT WORK
315 MVA ICT-I AT MEERAMUNDALI	12/11/16	UNDER B/D AS ICT GOT BURNT DUE TO B

Members may update.

Item no. C.4: Status of commissioning of generating station and transmission elements

New generating units:

S.No.	Power Plant	Plant Size	Expected date

New transmission elements:

Sl 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(2nd 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 D:: OTHER ISSUES

Item no. D.1: UFR operation during the month of December'16

System frequency touched a maximum of 50.31Hz at 06:04Hrs of 27/12/16and a minimum of 49.67 Hz at 09:24Hrs of 12/12/16. Accordingly, no report of operation of UFR has been received from any of the constituents.

Members may note.

Item no. D.2: 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 December'16.

Members may note.

Item no. D.3: Grid incidences during the month of December, 2016

Sl no	Disturbance Place	Date	Time	Generation loss (MW)	Load loss (MW)	Remark	Category
1	Budge Budge (CESC)	16-12-2016	09:18	230 MW	250 MW	At 09:18 hrs, GT – II, ST – I & II, ICT – I & II along with three 132 kV Chakmir circuits tripped due to bus zone protection operation at 132 kV Main bus – I at BBGS.	GD-I
2	Theruvali (OPTCL)	15-12-2016	07:22	Nil	126 MW	All 220 kV feeders emanating from Theruvali s/s tripped due to heavy flash over while opening isolator of 220 kV Theruvali - Jaynagar - U. Kolab - III with breaker closed condition.	GD-I
3	Arambag (WBSETCL)	17-12-2016	12:11	Nil	220 MW	All 400 kV feeders emanating from Arambag along with 220 kV bus II & 220 kV transfer bus at Arambag tripped from remote end due to bursting of R phase CT of transfer bus resulting load loss of 220 MW at Birsingh and Raina which were radially fed from Arambag.	GD-I

Members may note.

Item no. D.4: Any other issues.

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Annexure-B.3 (I)

Schemes of Eastern Region funded under PSDF

State / UT	Sr. No.	Details of the Scheme	Nos. of Schemes	Grant Sanctioned (in Rs Crores)	Date of Sanction	Funds released (in Rs Crores) as on 30.11.2016	% age of fund Disbursed against Grant sanctioned
West Bengal	1.	Renovation and Upgradation of protection system of substations	2	108.60	31/12/2014	11.04	10.16%
	2.	The Renovation and Modernization of 220/132 kV STPS switch yard and implementation of Substaion Automation System.		23.48	5/9/2016	0	0%
Bihar	3.	Renovation and Upgradation of protection system of substations	2	64.22	11/05/2015	18.68	29.09%
	4.	Installation of capacitor bank for Improvement of Voltage profile in BSPTCL, Bihar.		18.88		0	0%
Odisha	5.	Renovation and Upgradation of protection system of substations	1	162.50	11/05/2015	19.52	12.01%
Eastern Regional Power Committee (ERPC)	6.	Creation and Maintanance of Web based Protection Database Management System and Desktop based Protection Setting Calculation Tool for Eastern Regional Grid.	1	20.00	17/03/2016	4.94	24.7%
POWERGRID	7.	Installation of STATCOMs in ER at Ranchi-New,Rourkela, Kishanganj and Jeypore substation of POWERGRID.	1	630.28	5/1/2016	0	0%
		TOTAL	**7**	**1027.96**			

Annexure-~~B~~.3 (II)

Reporting Format to the PSDF Project Monitoring Group

1. Name of the Scheme	
1.1 Name of the substation and its Location	
1.2 Executing Agency	
1.3 State/Region	
2. Date of Sanction order	
2.1 Date of Agreement of Entity with State Govt./NLDC	
2.2 Total Approved Cost of the Scheme	
2.3 Approved Grant by Monitoring Committee (Rs. In Lakhs)	
2.4 Date of Requisition by the Entity	
2.4.a) date and Reference of LOA	
2.4.b) Amount of LOA	
2.5 Date of Disbursement and amount	
2.5.1 : Ist Installment	
2.5.2: IInd installment	
2.5.3: IIIrd installment	
2.6 Date of Scheduled completion of Work	
2.7 Date of handing over of Site to entity (in case of turnkey projects)	

Report for the Month of MM / YY

No.	Supply Description	Qty. AS PER LOA	Quantity Received during Month	CUMMULATIVE PROGRESS Till date		BALANCE	Remarks
				Sch.	Act.		
1	item Details						
1.1							
1.2							
....							

	Erection Description	works as per LOA	Progress During Month	CUMMULATIVE PROGRESS Till date		Balance	
2	work details						
2.1							
2.2							
....							
3	Others						

Signature with seal of the Nodal Officer

Annexure-B5

Utilization of Transmission line

WBSETCL lines

Sl	Name of Line	Percentage utilization to meet West Bengal Demand		
		Quarter 1 2016-17	Quarter 2 2016-17	Quarter 3 2016-17
1	132 kV Birpara(PG)-Birpara-I	99.2%	94.4%	99.3%
2	132 kV Birpara(PG)-Birpara-II	99.2%	94.4%	99.3%
3	132 kV NJP-NBU-I	98.6%	99.2%	98.1%
4	132 kV NJP-NBU-II	98.6%	99.2%	98.1%
5	132 kV Malda(PG)-Malda-I	99.9%	99.9%	99.9%
6	132 kV Malda(PG)-Malda-II	99.9%	99.9%	99.9%
7	400 kV Kharagpur-Baripada	Natural ISTS		
8	220 kV Santaldhi-Chandil	Natural ISTS		
9	220 kV Waria-Bidhannagar-I	Natural ISTS		
10	220 kV Waria-Bidhannagar-II	Natural ISTS		
11	132 kV Rangit-Rammam	75.0%	70.0%	72.7%
12	220 kV Subhasgram(PG)-Subhasgram-I	98.6%	98.0%	97.6%
13	220 kV Subhasgram(PG)-Subhasgram-II	98.6%	98.0%	97.6%
14	400 kV Parulia-Bidhannagar-I	74.2%	67.8%	59.2%
15	400 kV Parulia-Bidhannagar-II	74.2%	67.8%	59.2%
16	220 kV Dalkhola(PG)-Dalkhola-I	99.7%	99.8%	99.8%
17	220 kV Dalkhola(PG)-Dalkhola-II	99.7%	99.8%	99.8%
18	132 kV Kurseong-Rangit	Part of ISTS		
19	132 kV Kurseong-Silliguri	Part of ISTS		
20	220 kV Subhasgram(PG)-Bantala	98.5%	98.3%	98.0%
21	220 kV Subhasgram(PG)-New Town	96.8%	96.6%	96.0%

DVC lines

Sl	Name of Line	Percentage utilization to meet DVC Demand		
		Quarter 1 2016-17	Quarter 2 2016-17	Quarter 3 2016-17
1	Raghunathpur-DSTPS D/C	14.4%	20.4%	15.2%
2	Raghunathpur-Ranchi (quad) D/C	14.2%	10.7%	20.5%
3	LILO of Maithon(PG)-Ranchi(PG) line at RTPS	Part of ISTS		
4	Termination segment at DSTPS of Jamsedpur PG line	Part of ISTS		

Annexure-B5

OPTCL lines

Sl	Name of Line	Percentage utilization to meet Odisha Demand		
		Quarter 1 2016-17	Quarter 2 2016-17	Quarter 3 2016-17
1	400 kV Indravati-Indravati(PG)	34.4%	31.4%	35.7%
2	400 kV Regali-Keonjhar	15.2%	13.7%	18.2%
3	400 kV Keonjhar-Baripada	15.2%	13.7%	18.2%
4	400 kV Baripada-Khargpur	Natural ISTS		
5	220 kV Balimela-U.Sileru	Natural ISTS		
6	220 kV Jeypore-Jaynagar D/C	6.5%	5.3%	10.7%
7	220 kV Budhipadar-Korba D/C	Natural ISTS		
8	220 kV Tarkera-Bisra D/C	75.7%	71.1%	80.7%
9	220 kV Joda-Ramchandrapur	Natural ISTS		
10	220kV Joda-Jindal	0.2%	0.4%	0.5%
11	220 kV Jindal-Jamsedpur	Natural ISTS		
12	220 kV Rengali-Rengali(PG)	46.4%	38.8%	44.7%
13	220 kV Rengali PH- TSTPS	83.8%	79.9%	86.3%
14	220 kV TTPS-TSTPS	53.2%	44.5%	52.2%
15	220 kV TSTPS-Meramundali	42.2%	23.3%	33.1%
16	220 kV Baripada-Balasore	92.8%	91.3%	93.7%
17	132 kV Joda-Kendposi	Natural ISTS		
18	132 kV Baripada-Rairangpur	99.7%	99.8%	88.7%
19	132 kV Baripada-Baripada(PG)	99.4%	99.7%	99.5%

Bus Number	Bus Name	Pload (MW)	Qload (Mvar)	IPload (MW)	IQload (Mvar)	YPload (MW)	YQload (Mvar)	Distributed Gen (MW)	Distributed Gen (Mvar)
261000	MAHCHND 132.00	59.8497	8.75	0	0	0	0	0	0
261001	PURULIAW 132.00	70.2594	10.272	0	0	0	0	0	0
261002	SANTLDI 132.00	0	2.432	0	0	0	0	0	0
261003	HOWRAH 1 132.00	41.7392	21.36	0	0	0	0	0	0
261005	KOLAGHAT 132.00	50.7414	7.419	0	0	0	0	0	0
261006	BANDEL 1 132.00	0	0	0	0	0	0	0	0
261007	RISHRA 1 132.00	121.0008	17.689	0	0	0	0	0	0
261008	ADSPTGR 132.00	135.3123	19.782	0	0	0	0	0	0
261009	DHRMPUR 132.00	76.765	11.223	0	0	0	0	0	0
261010	KALYANI 132.00	53.3441	7.798	0	0	0	0	0	0
261011	RANGHT 1 132.00	78.0652	11.412	0	0	0	0	0	0
261012	ASOKNGR 132.00	75.4637	11.032	0	0	0	0	0	0
261013	SALTLAKE 132.00	87.1747	12.743	0	0	0	0	0	0
261014	KASBA 1 132.00	97.5821	14.266	0	0	0	0	0	0
261015	SONARPR 132.00	68.9569	10.082	0	0	0	0	0	0
261016	JOKA1_A 132.00	13.0101	1.901	0	0	0	0	0	0
261017	JEERAT1 132.00	100	50	0	0	0	0	0	0
261020	KHARAGPR 132.00	37.7313	5.516	0	0	0	0	0	0
261021	SAITHIA1 132.00	81.9681	11.982	0	0	0	0	0	0
261022	SATGCHA1 132.00	63.7515	9.319	0	0	0	0	0	0
261023	TITAGARH 132.00	118.3981	17.308	0	0	0	0	0	0
261024	KATWA 1 132.00	78.0652	11.412	0	0	0	0	0	0
261025	DBGRM 1 132.00	62.4524	9.13	0	0	0	0	0	0
261026	RGNTGNJ 132.00	81.9681	11.982	0	0	0	0	0	0
261027	DPL1 132.00	0	32.996	0	0	0	0	0	0
261028	LILUAH1 132.00	102.7864	15.026	0	0	0	0	0	0
261029	HINDMTR1 132.00	0	10.42	0	0	0	0	0	0
261030	BRHMPR1 132.00	111.8924	16.357	0	0	0	0	0	0
261031	BOLPUR1 132.00	93.6769	13.695	0	0	0	0	0	0
261032	FALTA 1 132.00	76.765	11.223	0	0	0	0	0	0
261033	HIJLI 132.00	63.7515	9.319	0	0	0	0	0	0
261034	HIJLITRN 132.00	27.91	9.174	0	0	0	0	0	0
261035	RAIGUNJ 132.00	63.7515	9.319	0	0	0	0	0	0
261036	ARAMBAG1 132.00	70.2594	10.272	0	0	0	0	0	0
261037	UKHRA 132.00	65.054	9.51	0	0	0	0	0	0
261038	MALDAW1 132.00	110.5922	16.168	0	0	0	0	0	0
261039	DALKOLA1 132.00	32.5281	4.757	0	0	0	0	0	0
261040	NBU1 132.00	102.7864	15.026	0	0	0	0	0	0
261041	BIRPRAW1 132.00	16.913	2.474	0	0	0	0	0	0
261042	HALDIA1 132.00	44.2358	6.466	0	0	0	0	0	0
261043	MONGURI1 132.00	85.8711	12.555	0	0	0	0	0	0
261044	GOKARN1 132.00	61.1511	8.94	0	0	0	0	0	0
261045	BISNUPUR 132.00	46.8396	6.847	0	0	0	0	0	0
261046	CKROAD 132.00	83.2695	12.174	0	0	0	0	0	0
261047	BANKURA 132.00	48.1398	7.038	0	0	0	0	0	0
261048	EGRA 132.00	88.4749	12.935	0	0	0	0	0	0
261049	LKNTAPUR 132.00	105.3879	15.407	0	0	0	0	0	0
261051	MIDNAPR 132.00	83.2695	12.174	0	0	0	0	0	0
261052	BALICHK1 132.00	46.8396	6.847	0	0	0	0	0	0
261053	PINGLA1 132.00	117.0979	17.119	0	0	0	0	0	0

261054	RAINA1 132.00	78.0652	11.412	0	0	0	0	0	0
261055	TRKSWR1 132.00	49.4412	7.228	0	0	0	0	0	0
261056	ULBRIA1 132.00	93.6769	13.695	0	0	0	0	0	0
261057	BSRHAT1 132.00	80.6657	11.793	0	0	0	0	0	0
261058	BONGA1 132.00	61.1511	8.94	0	0	0	0	0	0
261059	KRSNGR1 132.00	104.0866	15.217	0	0	0	0	0	0
261060	BARASAT1 132.00	147.0221	21.494	0	0	0	0	0	0
261061	MANKAD1 132.00	58.5484	8.559	0	0	0	0	0	0
261062	RAMPUR1 132.00	68.9569	10.082	0	0	0	0	0	0
261063	KHNYAN1 132.00	33.8261	4.945	0	0	0	0	0	0
261064	CHNDTLA1 132.00	48.1398	7.038	0	0	0	0	0	0
261065	BANTALA1 132.00	106.687	15.597	0	0	0	0	0	0
261066	DOMJUR1 132.00	101.4839	14.837	0	0	0	0	0	0
261067	FCI 132.00	2.791	0.917	0	0	0	0	0	0
261068	TAMLUK1 132.00	58.5484	8.559	0	0	0	0	0	0
261069	DHTRIGRM 132.00	40.3351	5.897	0	0	0	0	0	0
261070	FRAKKA1 132.00	37.2666	0	0	0	0	0	0	0
261071	DHULIAN1 132.00	39.0315	5.706	0	0	0	0	0	0
261072	KHJURIA1 132.00	37.2666	0	0	0	0	0	0	0
261073	SAMSI1 132.00	62.4524	9.13	0	0	0	0	0	0
261074	BLURGHT1 132.00	35.1286	5.136	0	0	0	0	0	0
261078	NJP1(W) 132.00	58.5484	8.559	0	0	0	0	0	0
261079	ALIPRDR1 132.00	45.5371	6.658	0	0	0	0	0	0
261080	2ND MILE 132.00	18.606	6.115	0	0	0	0	0	0
261081	AMTALA 132.00	63.7515	9.319	0	0	0	0	0	0
261082	ASANSL1 132.00	88.0526	25.712	0	0	0	0	0	0
261083	NBSNPR1 132.00	33.8261	4.945	0	0	0	0	0	0
261084	NHALDIA1 132.00	66.3565	9.702	0	0	0	0	0	0
261085	JNGIPARA 132.00	20.8182	3.044	0	0	0	0	0	0
261086	BRSINGHA 132.00	59.8497	8.75	0	0	0	0	0	0
261087	BARJORA 132.00	25.5956	7.671	0	0	0	0	0	0
261088	BELMRWB 132.00	19.5169	2.853	0	0	0	0	0	0
261089	N TOWN1 132.00	62.4524	9.13	0	0	0	0	0	0
261090	COCHBHR 132.00	104.0866	15.217	0	0	0	0	0	0
261091	GANGRPR 132.00	48.1398	7.038	0	0	0	0	0	0
261092	BIGHATI 132.00	31.2268	4.565	0	0	0	0	0	0
261093	CHALSA 132.00	24.72	3.614	0	0	0	0	0	0
261094	CONTAI 132.00	76.765	11.223	0	0	0	0	0	0
261097	LEBONG 132.00	26.0214	3.805	0	0	0	0	0	0
261098	LALGOLA 132.00	28.6218	4.184	0	0	0	0	0	0
261100	JHARGRM 132.00	67.6567	9.891	0	0	0	0	0	0
261101	RAGNTHPR 132.00	16.913	2.474	0	0	0	0	0	0
261103	NJP 1 132.00	61.1511	8.94	0	0	0	0	0	0
261107	SALTLAKE_GIS132.00	70.2594	10.272	0	0	0	0	0	0
262011	GOKORNO2 220.00	0	23.51	0	0	0	0	0	0
262020	BANTALA 220.00	67.6567	22.349	0	0	0	0	0	0
264007	PPSP 400.00	0	0	0	0	0	0	0	0
271000	PRKST GI 132.00	94.5057	26.786	0	0	0	0	0	0
271001	PRKLN GI 132.00	26.8775	7.864	0	0	0	0	0	0
271002	BBD BAG 132.00	74.563	21.132	0	0	0	0	0	0
271004	CHAKMIR 132.00	34.6811	9.828	0	0	0	0	0	0
271006	MAJERHAT 132.00	93.6392	25.227	0	0	0	0	0	0
271007	JADVPUR 132.00	78.0333	22.934	0	0	0	0	0	0

271008	SRS 132.00	194.3206	55.075	0	0	0	0	0	0
271009	BOT GDN 132.00	59.8257	16.954	0	0	0	0	0	0
271010	EST CAL 132.00	45.0839	12.777	0	0	0	0	0	0
271012	TRS 132.00	34.6811	9.828	0	0	0	0	0	0
271013	NCGS 132.00	204.8262	58.051	0	0	0	0	0	0
271014	BRS 132.00	75.4294	21.297	0	0	0	0	0	0
271014	BRS 132.00	16.4735	4.668	0	0	0	0	0	0
271015	PRKLN 1 132.00	39.0166	11.14	0	0	0	0	0	0
271016	TRS 1 132.00	127.358	36.816	0	0	0	0	0	0
271016	TRS 1 132.00	43.4424	21.211	0	0	0	0	0	0
271017	EST CAL1 132.00	30.3489	8.601	0	0	0	0	0	0
271019	KASB CES 132.00	147.3966	42.593	0	0	0	0	0	0
271020	RIS_CESC 132.00	20.7874	2.482	0	0	0	0	0	0
272000	EM_CESC 220.00	194.4736	30.624	0	0	0	0	0	0

Odisha

Bus Number	Bus Name	Pload (MW)	Qload (Mvar)	IPload (MW)	IQload (Mvar)	YPload (MW)	YQload (Mvar)	Distributed Gen (MW)	Distributed Gen (Mvar)
251000	JEYNGAR1 132.00	156.9662	8.538	0	0	0	0	0	0
251001	THRUVLI1 132.00	0	3.594	0	0	106.1646	0	0	0
251002	BHNGAR1 132.00	71.3489	3.981	0	0	0	0	0	0
251003	ASKA1 132.00	31.152	6.036	0	0	0	0	0	0
251004	BRHMPUR1 132.00	82.7281	5.393	0	0	0	0	0	0
251005	CHTRSPLT 132.00	49.6364	1.019	0	0	0	0	0	0
251006	CHTRPUR1 132.00	41.363	3.981	0	0	0	0	0	0
251007	CHODWAR1 132.00	169.8633	12.604	0	0	0	0	0	0
251008	CHAIPAL1 132.00	44.4528	3.981	0	0	0	0	0	0
251009	RSP1 132.00	47.748	15.694	0	0	0	0	0	0
251010	TALCHER1 132.00	2.9673	0	0	0	0	0	0	0
251011	ANGUL 132.00	93.3762	4.643	0	0	0	0	0	0
251012	HIRAKUD1 132.00	0	0	0	0	0	0	0	0
251013	BRHMPR-T 132.00	0	0	0	0	0	0	0	0
251014	CHIPLIMA 132.00	29.5655	1.733	0	0	0	0	0	0
251015	JHRSGDA1 132.00	50.6822	3.032	0	0	0	0	0	0
251016	TARKERA1 132.00	130.6078	12.561	0	0	0	0	0	0
251017	JODA1 132.00	153.496	6.498	0	0	0	0	0	0
251018	ROURKELA 132.00	72.4771	7.362	0	0	0	0	0	0
251019	CHANDKA1 132.00	21.2329	5.97	0	0	0	0	0	0
251020	CHNDK(T) 132.00	33	10	0	0	0	0	0	0
251021	DHENKNL1 132.00	42.8102	5.307	0	0	0	0	0	0
251023	TARKESPT 132.00	68.227	22.425	0	0	0	0	0	0
251024	BHADRAK1 132.00	0	9.949	0	0	171.2376	0	0	0
251025	DUBURI 1 132.00	169.8633	15.92	0	0	0	0	0	0
251026	BLANGIR 132.00	116.1483	6.929	0	0	0	0	0	0
251027	BALASOR1 132.00	0	21.889	0	0	53.0833	0	0	0
251028	RAYGADA 132.00	31.1236	0.898	0	0	0	0	0	0
251029	MOHANA 1 132.00	31.1236	1.348	0	0	0	0	0	0
251030	BHBNSWR 132.00	95.5481	9.288	0	0	0	0	0	0
251031	JAJPURD1 132.00	0	8.625	0	0	157.1838	0	0	0
251032	CUTTACK1 132.00	74.4568	7.298	0	0	0	0	0	0
251034	BIDANASI 132.00	74.3141	7.961	0	0	0	0	0	0
251035	NIMAPARA 132.00	74.0891	3.316	0	0	0	0	0	0
251036	PURI 132.00	42.4658	4.643	0	0	0	0	0	0
251037	KURDA(T) 132.00	53.413	17.556	0	0	0	0	0	0
251038	BUDIPATR1 132.00	156.2721	9.095	0	0	0	0	0	0
251039	RJGNGPR 132.00	141.4915	8.662	0	0	0	0	0	0
251040	SMBLPUR 132.00	78.1382	4.765	0	0	0	0	0	0
251041	BROJNAGR 132.00	63.458	20.858	0	0	0	0	0	0
251042	BARGARH 132.00	14.7849	0.867	0	0	0	0	0	0
251043	SANTHLA 132.00	3.78	0.623	0	0	0	0	0	0
251044	KESINGA 132.00	0	4.494	0	0	96.3171	0	0	0
251045	KNDRPRA 132.00	106.1646	5.97	0	0	0	0	0	0
251046	PARADIP 132.00	106.1646	5.97	0	0	0	0	0	0
251047	PLSPONA 132.00	63.3522	3.899	0	0	0	0	0	0
251048	RRNGPUR 132.00	57.0785	1.733	0	0	0	0	0	0
251049	BARIPDA 132.00	44.664	4.271	0	0	0	0	0	0
251050	JALESWR 132.00	28	8	0	0	0	0	0	0
251051	GANJAM 1 132.00	37.0456	1.328	0	0	0	0	0	0
251052	BLUGAON 132.00	96.3171	5.307	0	0	0	0	0	0
251053	KHURDAH 132.00	63.6987	5.97	0	0	0	0	0	0
251054	NRNPUR1 132.00	42.8102	3.594	0	0	0	0	0	0

Odisha

251055	SORO1 132.00	44.4528	3.981	0	0	0	0	0	0
251056	JSINPUR1 132.00	27.794	9.135	0	0	0	0	0	0
251057	RSINPUR1 132.00	106.7244	6.633	0	0	0	0	0	0
251058	NOPATNA1 132.00	30.241	4.267	0	0	0	0	0	0
251059	KHARIAR 132.00	37.2463	2.246	0	0	0	0	0	0
251060	BALSWR(T 132.00	7	2	0	0	0	0	0	0
251062	RGANGPU 132.00	47	14	0	0	0	0	0	0
251063	KATPLI1 132.00	0	8.662	0	0	165.4551	0	0	0
251065	HINDLCO 132.00	25.3443	1.299	0	0	0	0	0	0
251066	NBVLBSSL 132.00	88.9068	3.316	0	0	0	0	0	0
251067	MRMNDL1 132.00	84.9317	8.625	0	0	0	0	0	0
252001	BALIMELA 220.00	9.6921	0.373	0	0	0	0	0	0
252008	JODA2 220.00	29.929	2.848	0	0	0	0	0	0
252010	RENGALI2 220.00	40	2.15	0	0	0	0	0	0
252014	BALASOR2 220.00	40.845	4.25	0	0	0	0	0	0
252017	NAYAGARH 220.00	71.3489	3.834	0	0	0	0	0	0
252018	RENGLPS 220.00	5	2	0	0	0	0	0	0
252019	NRNPUR2 220.00	71.3489	5.274	0	0	0	0	0	0
252020	BARKOT2 220.00	24.368	2.535	0	0	0	0	0	0
252021	CHNDPOS2 220.00	31.618	5.152	0	0	0	0	0	0
252029	JINDAL 220.00	20	4.389	0	0	0	0	0	0
252032	BSSL 220.00	77.8815	9.095	0	0	0	0	0	0

Bihar

Bus Number	Bus Name	Pload (MW)	Qload (Mvar)	IPload (MW)	IQload (Mvar)	YPload (MW)	YQload (Mvar)	Distributed Gen (MW)	Distributed Gen (Mvar)
211000	BODGAYA1 132.00	72.8496	24.465	0	0	0	0	0	0
211001	BHRSHRF 132.00	222.9515	2.777	0	0	0	0	0	0
211002	BARAUNI 132.00	71.1141	8.328	0	0	0	0	0	0
211003	SAMSTPR 132.00	61.4671	18.047	0	0	0	0	0	0
211004	PANDOUL 132.00	136.4232	20.823	0	0	0	0	0	0
211005	MUZZAFARPUR1132.00	104.0184	29.15	0	0	0	0	0	0
211007	CHAPRA 1 132.00	44.9217	12.493	0	0	0	0	0	0
211008	PURNEA 1 132.00	117.8906	58.301	0	0	0	0	0	0
211009	SAHARS 1 132.00	56.7384	15.271	0	0	0	0	0	0
211010	HAZIPUR1 132.00	40.19	11.102	0	0	0	0	0	0
211011	RAFIGNJ 132.00	33.0928	9.717	0	0	0	0	0	0
211012	DUMRAON 132.00	45.3304	13.879	0	0	0	0	0	0
211013	JEHNABD 132.00	42.5512	12.493	0	0	0	0	0	0
211014	JAMALPR 132.00	52.0087	15.271	0	0	0	0	0	0
211015	HATIDAH 132.00	59.1048	16.657	0	0	0	0	0	0
211016	FATUAH 1 132.00	89.0404	14.82	0	0	0	0	0	0
211017	SULTNGJ 132.00	33.0928	9.717	0	0	0	0	0	0
211018	SABOUR 1 132.00	29.1641	5.755	0	0	0	0	0	0
211019	KHAGAUL 132.00	145.7013	77.283	0	0	0	0	0	0
211020	PATNA B 132.00	129.5116	99.946	0	0	0	0	0	0
211021	DEHRI 1 132.00	56.7384	16.657	0	0	0	0	0	0
211022	PATNA 1 132.00	0	0	0	0	0	0	0	0
211023	SONNGAR 132.00	75.6543	35.511	0	0	0	0	0	0
211024	KHLGN_B1 132.00	14.668	6.568	0	0	0	0	0	0
211025	MOTIHRI 132.00	86.8758	22.594	0	0	0	0	0	0
211026	SITAMRI 132.00	89.638	18.561	0	0	0	0	0	0
211027	ARRA(BS) 132.00	56.6609	15.271	0	0	0	0	0	0
211028	RAJGIR 132.00	33.0928	9.717	0	0	0	0	0	0
211030	SIWAN 132.00	40.19	11.102	0	0	0	0	0	0
211031	BETTIA 132.00	70.2988	11.225	0	0	0	0	0	0
211032	RAMNAGAR 132.00	23.6405	6.941	0	0	0	0	0	0
211033	KATIHAR 132.00	40.19	11.102	0	0	0	0	0	0
211034	FORBISGANJ 132.00	50.002	10.773	0	0	0	0	0	0
211035	LAKHISAR 132.00	56.7384	16.657	0	0	0	0	0	0
211036	JAMUI 132.00	35.4623	9.717	0	0	0	0	0	0
211037	BARIPHRI 132.00	134.0956	26.371	0	0	0	0	0	0
211038	GAIGHAT 132.00	96.9294	27.762	0	0	0	0	0	0
211039	KUDRA 132.00	40.562	13.332	0	0	0	0	0	0
211040	KRMNASA 132.00	63.0457	30.051	0	0	0	0	0	0
211042	SIPRA_1 132.00	48.0728	11.508	0	0	0	0	0	0
211045	GPLGNJ1 132.00	98.4193	16.981	0	0	0	0	0	0
211046	DRBHNG1 132.00	82.2632	25.475	0	0	0	0	0	0
211047	SASARAM 132.00	37.8246	11.102	0	0	0	0	0	0
211048	PUSAULI 132.00	4.7277	1.39	0	0	0	0	0	0
211049	MOHANIA 132.00	44.9217	12.493	0	0	0	0	0	0
211050	BARH 132.00	26.0048	6.941	0	0	0	0	0	0
211051	EKANGSR 132.00	7.089	1.39	0	0	0	0	0	0

Bihar

211052	BIKRMGNJ 132.00	33.0928	9.717	0	0	0	0	0	0
211053	WAZIRGN 132.00	47.4135	1.39	0	0	0	0	0	0
211054	CHANDAUT 132.00	55.1924	18.853	0	0	0	0	0	0
211055	BELAGUN 132.00	11.8208	2.777	0	0	0	0	0	0
211056	TEKARI 132.00	4.7277	1.39	0	0	0	0	0	0
211057	SHETLPR 132.00	9.4533	2.777	0	0	0	0	0	0
211058	KISHNGJ 132.00	98.1717	9.717	0	0	0	0	0	0
211059	BANJARI 132.00	23.6405	6.941	0	0	0	0	0	0
211060	BUXAR 132.00	37.8246	11.102	0	0	0	0	0	0
211061	HULASGN 132.00	4.7277	1.39	0	0	0	0	0	0
211062	SHEKAPR 132.00	30.7356	8.328	0	0	0	0	0	0
211064	VAISHALI 132.00	35.4623	9.717	0	0	0	0	0	0
211065	BANKA 132.00	21.2751	5.552	0	0	0	0	0	0
211073	KATAIYAA 132.00	34.0936	7.347	0	0	0	0	0	0
211074	SUPOUL 132.00	50.002	10.773	0	0	0	0	0	0
212000	BODGAY2 220.00	131.892	27.311	0	0	0	0	0	0
212006	KHAGL2 220.00	150.553	49.484	0	0	0	0	0	0
212010	BEGUSAR 220.00	111.2663	19.435	0	0	0	0	0	0

DVC

Bus Number	Bus Name	Pload (MW)	Qload (Mvar)	IPload (MW)	IQload (Mvar)	YPload (MW)	YQload (Mvar)	Distributed Gen (MW)	Distributed Gen (Mvar)
231000	WARIA 1 132.00	50.025	11.286	0	0	0	0	0	0
231001	PURULIAD 132.00	8.1913	1.847	0	0	0	0	0	0
231003	KOLGHTD 132.00	12.2875	2.775	0	0	0	0	0	0
231004	HOWRAHD 132.00	0	0	0	0	0	0	0	0
231005	BELMURI 132.00	51.2086	11.092	0	0	0	0	0	0
231006	BURDWAN 132.00	93.4702	29.569	0	0	0	0	0	0
231007	PANCHET 132.00	0	0	0	0	0	0	0	0
231008	KALPHRI 132.00	93.4702	22.558	0	0	0	0	0	0
231009	ASP 132.00	61.4452	13.866	0	0	0	0	0	0
232000	WARIA 2 220.00	155.7826	48.231	0	0	0	0	0	0
232002	PARLIAD 220.00	32.9154	3.89	0	0	0	0	0	0
232003	BORJRA2 220.00	153.6182	33.277	0	0	0	0	0	0
232004	BURNPR2 220.00	36.8663	8.32	0	0	0	0	0	0
232006	MEJIA LOAD 220.00	75.9442	16.128	0	0	0	0	0	0
241000	BARHI 1 132.00	50.8115	3.697	0	0	0	0	0	0
241001	BOKARO 1 132.00	0	0	0	0	0	0	0	0
241002	CHNPUR 1 132.00	0	0	0	0	0	0	0	0
241004	MANIQUE 132.00	0	0	0	0	0	0	0	0
241005	JMSDPRD1 132.00	54.6625	32.353	0	0	0	0	0	0
241006	MAITHON 132.00	0	0	0	0	0	0	0	0
241007	PATHRDI 132.00	192.5345	42.522	0	0	0	0	0	0
241009	KLNSWRI 132.00	77.8932	34.201	0	0	0	0	0	0
241010	KUMRDBI 132.00	62.3115	24.96	0	0	0	0	0	0
241011	MOSABNI 132.00	28.6769	6.47	0	0	0	0	0	0
241012	RAMKNLI 132.00	71.6875	17.563	0	0	0	0	0	0
241013	RAMGARH 132.00	186.3893	40.672	0	0	0	0	0	0
241015	PUTKI 132.00	163.8576	36.05	0	0	0	0	0	0
241016	JAM_DV2 132.00	179.8778	43.634	0	0	0	0	0	0
241017	KONAR 132.00	22.5317	4.621	0	0	0	0	0	0
241018	KODARMA 132.00	108.5595	30.504	0	0	0	0	0	0
241019	HAZARIB 132.00	36.8663	7.395	0	0	0	0	0	0
241020	NKARNPU 132.00	55.3019	12.017	0	0	0	0	0	0
241021	NIMAGHT 132.00	30.724	6.47	0	0	0	0	0	0
241022	SINDRI 132.00	32.7711	7.395	0	0	0	0	0	0
241023	GRIDIH 132.00	151.572	33.277	0	0	0	0	0	0
241031	JOJOBE_1 132.00	139.0692	24.678	0	0	0	0	0	0
242007	RAMGAR2 220.00	28.6769	6.47	0	0	0	0	0	0

Jharkhand

Bus Number	Bus Name	Pload (MW)	Qload (Mvar)	IPload (MW)	IQload (Mvar)	YPload (MW)	YQload (Mvar)	Distributed Gen (MW)	Distributed Gen (Mvar)
221000	JAPLA 132.00	14.6456	4.511	0	0	0	0	0	0
221001	CHANDIL1 132.00	114.002	37.471	0	0	0	0	0	0
221002	ADITPUR 132.00	139.1387	41.507	0	0	0	0	0	0
221003	RAJKSWN 132.00	19.0401	5.414	0	0	0	0	0	0
221004	CHNDLJS 132.00	61.5129	18.046	0	0	0	0	0	0
221005	PATRTU 1 132.00	0	0	0	0	0	0	0	0
221006	HATIAOLD 132.00	121.127	39.812	0	0	0	0	0	0
221008	GOELKRA 132.00	19.0401	5.414	0	0	0	0	0	0
221010	KNDPOSI 132.00	38.0817	11.729	0	0	0	0	0	0
221011	GOLMURI 132.00	61.5129	18.046	0	0	0	0	0	0
221012	JADUGRA 132.00	30.7545	9.023	0	0	0	0	0	0
221013	NOAMNDI 132.00	30.7545	9.023	0	0	0	0	0	0
221014	LALMATIA 132.00	38.0817	11.729	0	0	0	0	0	0
221015	DEOGHAR 132.00	20.6729	6.917	0	0	0	0	0	0
221016	NAMKUM 132.00	117.1683	35.191	0	0	0	0	0	0
221017	KAMDARA 132.00	43.9401	12.633	0	0	0	0	0	0
221018	JAMTARA 132.00	30.7545	9.023	0	0	0	0	0	0
221019	GRWARD 132.00	18.1264	5.189	0	0	0	0	0	0
221021	HATIA1 132.00	161.1084	47.823	0	0	0	0	0	0
221024	HEC1 132.00	30.7545	9.023	0	0	0	0	0	0
221027	DUMKA 132.00	51.6825	9.023	0	0	0	0	0	0
221028	SAHBGNJ 132.00	19.0401	5.414	0	0	0	0	0	0
221029	CHAKRDP 132.00	21.9681	6.317	0	0	0	0	0	0
222006	LOHARDG 220.00	32.2217	9.926	0	0	0	0	0	0

Annexure- B.8

(+) means receivable, (-) means payable

DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION
FROM THE PERIOD 14.11.2016 TO 20.11.2016			**FROM THE PERIOD 14.11.2016 TO 20.11.2016**			**FROM THE PERIOD 14.11.2016 TO 20.11.2016**		
BIHAR			TALA			CHUKHA		
14.11	4735521.55	286250.3	14.11	-6282246	0	14.11	3198728	0
15.11	1619476.13	446427.5	15.11	-6538307.84	0	15.11	3502562	0
16.11	1688070.84	172775.2	16.11	-5945495.93	0	16.11	3047359	0
17.11	1742629.03	151121.4	17.11	-7410927.48	0	17.11	4584929	0
18.11	-822636.5	156318.6	18.11	-5324392.72	0	18.11	3430551	0
19.11	1828384.23	25675.52	19.11	-524940.88	0	19.11	4262087	0
20.11	-1009805.99	136234.2	20.11	-5533393.49	0	20.11	4312400	0
TOTAL	**9781639.29**	**1374803**		**-37559704.34**	**0**		**26338615**	**0**
AMOUNT CLAIMED FROM BSEB	**7005483.61**	**-1374803**		-9577724.607			7806766	
ADJUSTMENT CHARGES	**2776155.68**	**0**						

DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION
FROM THE PERIOD 07.11.2016 TO 13.11.2016			**FROM THE PERIOD 07.11.2016 TO 13.11.2016**			**FROM THE PERIOD 07.11.2016 TO 13.11.2016**		
BIHAR			TALA			CHUKHA		
7.11	2548035.3	-43812.8	7.11	-8644641.76	0	7.11	5358086	0
8.11	-2798237.5	-389993	8.11	-7007811.89	0	8.11	5076075	0
9.11	-1169907.73	-481567	9.11	-4446199.57	0	9.11	3812120	0
10.11	1854689.92	-141483	10.11	-5550834.64	0	10.11	3848966	0
11.11	569281.1	-113574	11.11	-7143622.08	0	11.11	3973494	0
12.11	995190.98	-59692.1	12.11	-6924014.78	0	12.11	3874722	0
13.11	-310669.75	-90358.3	13.11	-5788365.62	0	13.11	3552514	0
TOTAL	**1688382.32**	**-1320480**		**-45505490.34**	**0**		**29495978**	**0**
AMOUNT CLAIMED FROM BSEB	**-953933**	**-1320480**		-11603900.04			8742608	
ADJUSTMENT CHARGES	**-2642315.32**	**0**						

(-) MEANS PAYABLE, (+) MEANS RECIEVABLE

DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION
FROM THE PERIOD 31.10.2016 TO 06.11.2016			**FROM THE PERIOD 31.10.2016 TO 06.11.2016**			**FROM THE PERIOD 31.10.2016 TO 06.11.2016**		
BIHAR			TALA			CHUKHA		
31.10	2432859.37	126806.6	31.10	-7205937.02	0	31.10	5503201	0
1.11	-3391101.46	949067.2	1.11	-10252843.59	0	1.11	7111770	0
2.11	-148517.6	351615.8	2.11	-9124072.94	0	2.11	5918657	0
3.11	-2202276.62	469652.8	3.11	-9590760.87	0	3.11	5769728	0
4.11	3953495.32	3679.74	4.11	-11621103.65	0	4.11	4880253	0
5.11	-3278612.59	239996.9	5.11	-7286740.93	0	5.11	4933344	0
6.11	2097717.55	369681.8	6.11	-7403412.03	0	6.11	4387459	0
TOTAL	**-536436.03**	**2510501**		**-62484871.03**	**0**		**38504412**	**0**
AMOUNT CLAIMED FROM BSEB	**-3817514.47**	**-2510501**		-15933642.11			11412708	
ADJUSTMENT CHARGES	**-3281078.44**	**-0.08**						

DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION	DATE	DEVIATION	ADDITIONAL DEVIATION
FROM THE PERIOD 24.10.2016 TO 30.10.2016			**FROM THE PERIOD 24.10.2016 TO 30.10.2016**			**FROM THE PERIOD 24.10.2016 TO 30.10.2016**		
BIHAR			TALA			CHUKHA		
24.10	2354632.86	-115310	24.10	-12473194.27	0	24.10	9050850	0
25.10	171315.9	-228921	25.10	-10392714.22	0	25.10	7347471	0
26.10	-2956295.7	-146698	26.10	-10242509.34	0	26.10	6524947	0
27.10	-4498087.28	-674798	27.10	-10960256.81	0	27.10	6090168	0
28.10	-1334074.28	-118959	28.10	-10671237.24	0	28.10	4679040	0
29.10	823913.46	-53995.1	29.10	-10992903.75	0	29.10	4932213	0
30.10	2906453.25	-45205.2	30.10	-10983995.88	0	30.10	6218480	0
TOTAL	**-2532141.79**	**-1383886**		**-76716811.51**	**0**		**44843169**	**0**
AMOUNT CLAIMED FROM BSEB	**-6878070**	**-1383886**		-19562786.94			13291515	

ADJUSTMENT CHARGES	**-4345928.21**	**0**

FROM THE PERIOD 17.10.2016 TO 23.10.2016			**FROM THE PERIOD 17.10.2016 TO 23.10.2016**			**FROM THE PERIOD 17.10.2016 TO 23.10.2016**		
	BIHAR			TALA			CHUKHA	
17.10	-255353.27	-84950.6	17.10	-12388409.04	0	17.10	12711256	0
18.10	-3787656.24	-45126.5	18.10	-11961607.89	0	18.10	12795554	0
19.10	-4067265.09	-338556	19.10	-11672736.02	0	19.10	13174330	0
20.10	-7822438.3	-715435	20.10	-14926676.79	0	20.10	9995305	0
21.10	2681188.94	-21485.3	21.10	-10902747.51	0	21.10	9765672	0
22.10	1247125.66	-2553.63	22.10	-15565051.61	0	22.10	11927224	0
23.10	-3542795.51	-1674954	23.10	-13001818.17	0	23.10	9252210	0
TOTAL	**-15547193.81**	**-2883061**		**-90419047.03**	**0**		**79621552**	**0**
AMOUNT CLAIMED FROM BSEB	**-15845522**	**-2883061**		-23056856.99			23599828	
ADJUSTMENT CHARGES	-298328.19	-0.01						

FROM THE PERIOD 10.10.2016 TO 16.10.2016			**FROM THE PERIOD 10.10.2016 TO 16.10.2016**			**FROM THE PERIOD 10.10.2016 TO 16.10.2016**		
	BIHAR			TALA			CHUKHA	
10.10	1000433.42	-47270.1	10.10	-6723675.1	0	10.10	13914299	0
11.10	3691425.75	0	11.10	-10108688.28	0	11.10	13338147	0
12.10	4186567.91	-99827.6	12.10	-12084003.32	0	12.10	12284387	0
13.10	4302738.04	0	13.10	-11315121.9	0	13.10	13247566	0
14.10	2857098.62	-517016	14.10	-10475312.88	0	14.10	15056385	0
15.10	4875234.82	-65316.7	15.10	-7443478.96	0	15.10	14471407	0
16.10	1781327.06	-36639.7	16.10	-12081303.09	0	16.10	12934349	0
TOTAL	**22694825.62**	**-766070**		**-70231583.53**	**0**		**95246540**	**0**
AMOUNT CLAIMED FROM BSEB	**32532731**	**-766070**		-17909053.8			28231074	
ADJUSTMENT CHARGES	9837905.38	0						

FROM THE PERIOD 03.10.2016 TO 09.10.2016			**FROM THE PERIOD 03.10.2016 TO 09.10.2016**			**FROM THE PERIOD 03.10.2016 TO 09.10.2016**		
	BIHAR			TALA			CHUKHA	
03.10	-1382519.18	-145555	03.10	-13388309.49	0	03.10	11930054	0
04.10	-1442753.1	-80554.2	04.10	-12889226.23	0	04.10	11518219	0
05.10	-2437953.01	-71850	05.10	-11183640.39	0	05.10	9377425	0
06.10	1445031.33	-70289	06.10	-13203217.5	0	06.10	10282373	0
07.10	1980762.9	-3554.59	07.10	-11211405.9	0	07.10	10316683	0
08.10	4425489.53	-76871.6	08.10	-13115306.34	0	08.10	9766795	0
09.10	4307406.61	-428176	09.10	-12918741.47	0	09.10	8616651	0
TOTAL	**6895465.08**	**-876850**		**-87909847.32**	**0**		**71808201**	**0**
AMOUNT CLAIMED FROM BSEB	**7272885**	**-876850**		-22417011.07			21283951	
ADJUSTMENT CHARGES	377419.92	-0.01						

FROM THE PERIOD 26.09.2016 TO 02.10.2016			**FROM THE PERIOD 03.10.2016 TO 09.10.2016**			**FROM THE PERIOD 03.10.2016 TO 09.10.2016**		
	BIHAR			TALA			CHUKHA	
26.09	-2474853.71	-1352505	26.09	-8239263.27	0	26.09	6849355	0
27.09	-3516933.73	-1063716	27.09	-8491704.93	0	27.09	6152982	0
28.09	-8509099.04	-2119274	28.09	-8258789.48	0	28.09	6313465	0
29.09	2292585.66	-305057	29.09	-8395872.38	0	29.09	5645608	0
30.09	3902814.07	-151549	30.09	-9082339.28	0	30.09	4720578	0
01.10	-6844252.56	-663667	01.10	-13435126.96	0	01.10	11930205	0
02.10	-3998469.32	-261149	02.10	-13180881.52	0	02.10	12080737	0
TOTAL	**-19148208.63**	**-5916917**		**-69083977.82**	**0**		**53692930**	**0**
AMOUNT CLAIMED FROM BSEB	**-17852910**	**-5916917**		-17616414.34			15914584	
ADJUSTMENT CHARGES	1295298.63	0						

Annexure- B.14.2

Weekly Progress report on Construction of Dedicated Transmission Line:

As on dt.02nd January, 2017

Name of Applicant: Vedanta Ltd

1.	Dedicated Connectivity Line	Vedanta Switchyard to PGCIL Pooling station Sundargarh. 400KV D/c Line
2.	Length of Dedicated Connectivity Line	20.345 KM
3.	Type of Conductor	AL 59
4.	Conductor configuration	Twin Conductor
5.	Total Nos. of Transmission line towers	64 Nos.
6.	Tower Foundations Completed	60 Nos.
7.	Tower Erection Completed	49Nos.
8.	Stringing Completed	Stringing completed 1.069Km. Stringing in progress in between 17/0 & 19/0 i.e.0.830Km
9.	Completion Schedule of Dedicted transmission line along with the associated bay at Both ends.	28th Feb, 2017

Annexure-B.19

Manpower Engaged in Power Sector (Separately for Central, State and Private sector)

As on 31st March	Regular						Non-Regular				Grand Total (Regular+ Non Regular)
	Managerial and higher executive	Technical/ scientific officers	Technical Supervisory Staff	Technicians & operating Staff	Non-Technical	Total (Regular) {col 2 to 6}	Technical Trainees and apprentices	Work charged staff	Casual/ Temporary/ Out sourced	Total (Non-Regular) {col 8 to 10}	
1	2	3	4	5	6	7	8	9	10	11	
Actual											
2012											
2013											
2014											
2015											
2016											
Projected/ Estimated											
2017											
2018											
2019											
2020											
2021											
2022											
2023											
2024											
2025											
2026											
2027											

Details Regarding No. of Consumers and Connected Load etc.

(A) Utilities

As On 31st March of Financial year end	No. of Consumers	Connected Load (kW)	Consumption (MU)	Energy Available for Supply	T&D losses(%)	Per Capita Electricity Consumption(kWh)
1	2	3	4	5	6	7
2011-12						
2012-13						
2013-14						
2014-15						
2015-16						
2016-17						
2017-18						
2018-19						
2019-20						
2020-21						
2021-22						
2022-23						
2023-24						
2024-25						
2025-26						
2026-27						

(B) Non Utilities

As On 31st March of Financial year end	No. of Consumers	Connected Load (kW)	Consumption (MU)	Energy Available for Supply	T&D losses(%)	Per Capita Electricity Consumption(kWh)
1	2	3	4	5	6	7
2011-12						
2012-13						
2013-14						
2014-15						
2015-16						
2016-17						
2017-18						
2018-19						
2019-20						
2020-21						
2021-22						
2022-23						
2023-24						
2024-25						
2025-26						
2026-27						

(C) Utilities + Non Utilities

As On 31st March of Financial year end	No. of Consumers	Connected Load (kW)	Consumption (MU)	Energy Available for Supply	T&D losses(%)	Per Capita Electricity Consumption(kWh)
1	2	3	4	5	6	7
2011-12						
2012-13						
2013-14						
2014-15						
2015-16						
2016-17						
2017-18						
2018-19						
2019-20						
2020-21						
2021-22						
2022-23						
2023-24						
2024-25						
2025-26						
2026-27						

Details Regarding Installed Capacity, No. of Consumers and Connected Load etc.

(A) Installed Capacity (MW) - Utilities

As On 31st March	Hydro	Thermal				Nuclear	Renewable					Grand Total
		Steam	Gas	Diesel	Total (Thermal)		Wind	Solar	Biomass etc	Mini/Micro Hydel	Total (Renewable)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2012												
2013												
2014												
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												
2026												
2027												

(B) Installed Capacity (MW) - Non Utilities

As On 31st March	Hydro	Thermal				Nuclear	Renewable					Grand Total
		Steam	Gas	Diesel	Total (Thermal)		Wind	Solar	Biomass etc	Mini/Micro Hydel	Total (Renewable)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2012												
2013												
2014												
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												
2026												
2027												

(C) Installed Capacity (MW) - (Utilities + Non Utilities)

As On 31st March	Hydro	Thermal				Nuclear	Renewable					Grand Total
		Steam	Gas	Diesel	Total (Thermal)		Wind	Solar	Biomass etc	Mini/Micro Hydel	Total (Renewable)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2012												
2013												
2014												
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												
2026												
2027												

Annexure-B.20

Installed Capacity (MW) and Generation (MU) from renewable Resources (Injected into the Grid)

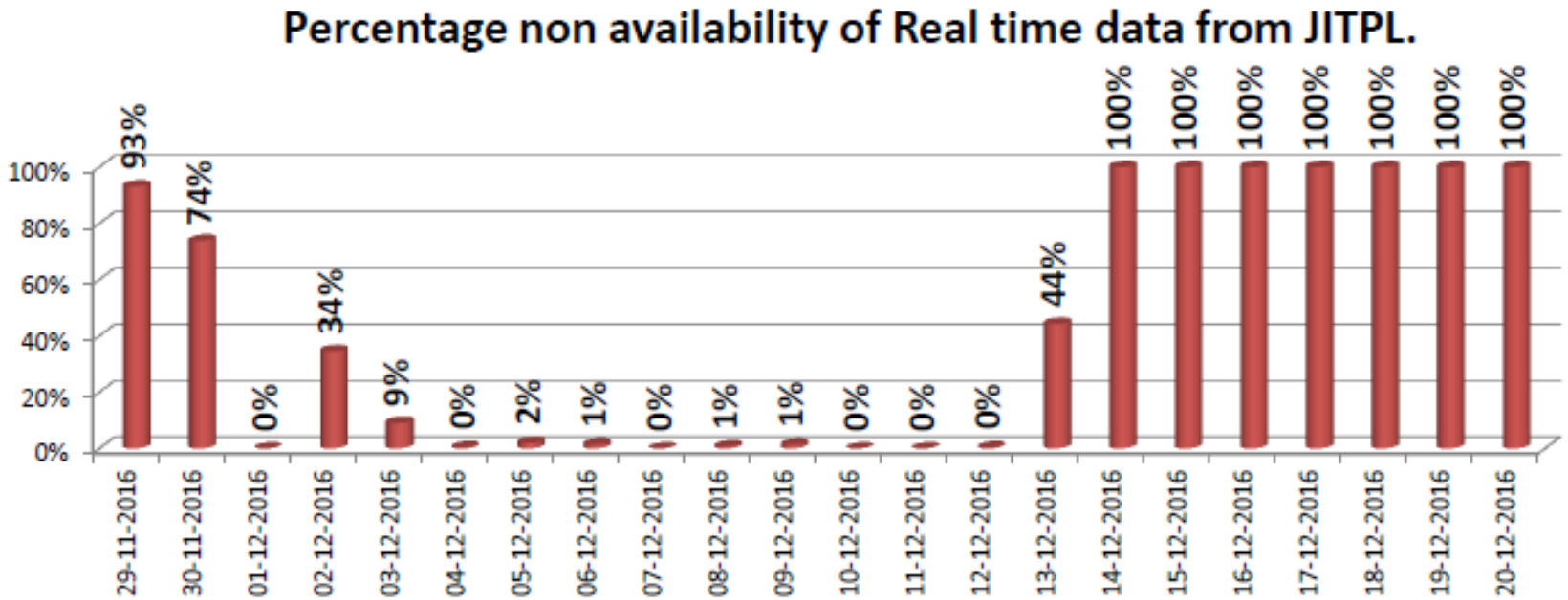
1. State/Centre :
2. Month :
3. Year :

Renewable Resources/Organizations	Installed Capacity (MW) as on last date of the month			Generation (MU) during the month : ~~January~~			Cumulative Generation (MU) during the 1st April ~~2015~~ to end of month		
Renewable Energy Resources	Central Sector	State Sector	Private Sector	Central Sector	State Sector	Private Sector	Central Sector	State Sector	Private Sector
1. Wind									
2 a. Solar (1 MW & above)									
2 b. Solar (Less than 1 MW)									
3. Biomass									
4. Bagasse									
5. Small Hydro (1 MW to 25 MW)									
6. Any Other (Please Specify the resources)									
Total									

IPP

Annexure-B29

- JITPL (2 x 600MW) –
  - Data is highly unstable. Frequent failure of data.
  - Express voice and **VOIP** yet to be provided. Alternate Data channel yet to be provided.



IPP

- GMR (3 x 350 MW) :
  - Express voice and **VOIP integration** with ERLDC. Stand by channel.
- KBUNL –
  - Most of analog and status data is not available.

- IBEUL (2 x 350 MW) –
  - Unit Side data not available. **VOIP/Express** Voice. Alternate Channel. Alternate Data channel yet to be provided.
  - Data highly intermittent.
- MPL:
  - Data is highly intermittent. Alternate Data channel yet to be provided.

OLTC

1. 1500 MVA 765/400 kV ICT 2 @ GAYA
2. 1500 MVA 765/400 kV ICT 1 @ ANGUL
3. 1500 MVA 765/400 kV ICT 3 @ ANGUL
4. 1500 MVA 765/400 kV ICT 4 @ ANGUL
5. 1500 MVA 765/400 kV ICT 1 @ JHARSUGUDA
6. 1500 MVA 765/400 kV ICT 2 @ JHARSUGUDA
7. 315 MVA 400/220 kV ICT 1 @ BOLANGIR
8. 315 MVA 400/220 kV ICT 1 @ BIHARSHARIF
9. 315 MVA 400/220 kV ICT 3 @ BIHARSHARIF
10. 500 MVA 400/220 kV ICT 1 @ GAYA
11. 315 MVA 400/220 kV ICT 2 @ GAYA
12. 315 MVA 400/220 kV ICT 1 @ KEONJHAR
13. 315 MVA 400/220 kV ICT 2 @ KEONJHAR
14. 315 MVA 400/220 kV ICT 1 @ MAITHON
15. 315 MVA 400/220 kV ICT 1 @ MALDA
16. 500 MVA 400/220 kV ICT 1 @ MUZAFFARPUR
17. 315 MVA 400/220 kV ICT 1 @ DURGAPUR
18. 315 MVA 400/220 kV ICT 2 @ DURGAPUR

OLTC

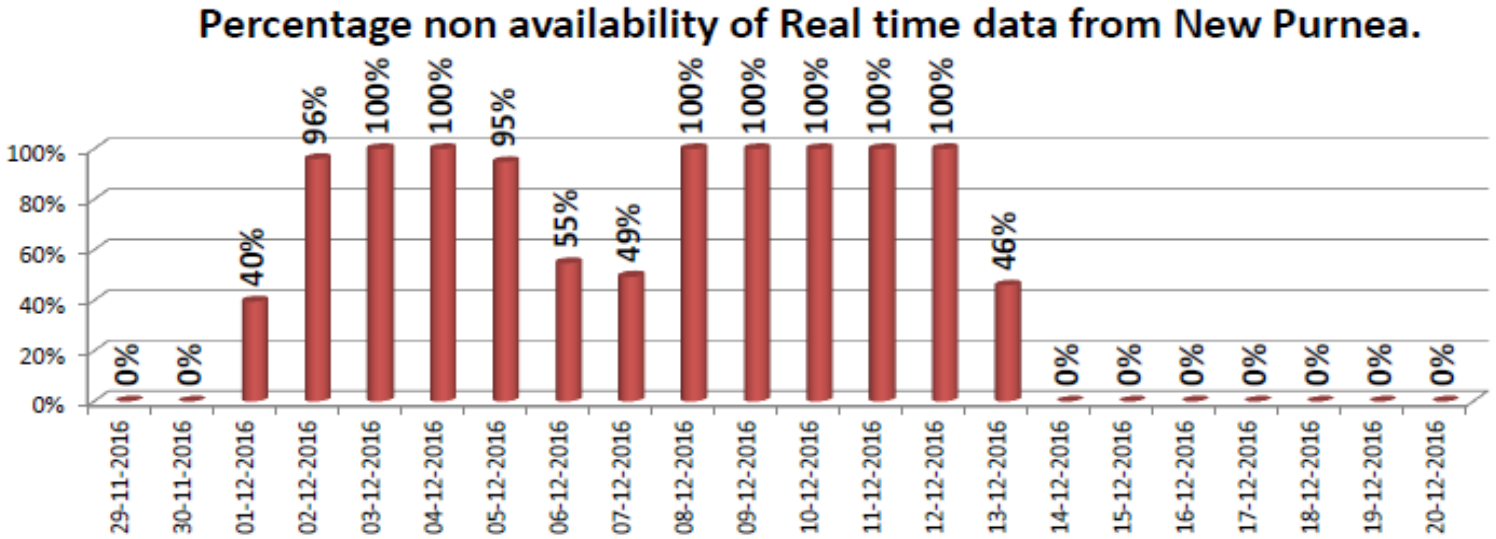
19. 315 MVA 400/220 kV ICT 1 @ RANCHI
20. 315 MVA 400/220 kV ICT 2 @ RANCHI
21. 315 MVA 400/220 kV ICT 2 @ RENGALI
22. 315 MVA 400/220 kV ICT 1 @ CHAIBASA
23. 315 MVA 400/220 kV ICT 2 @ CHAIBASA
24. 315 MVA 400/220 kV ICT 3 @ SUBHASGRAM
25. 500 MVA 400/220 kV ICT 1 @ KISHANGUNJ
26. 500 MVA 400/220 kV ICT 3 @ KISHANGUNJ
27. 100 MVA 220/132 kV ICT 1 @ ARRAH
28. 100 MVA 220/132 kV ICT 2 @ ARRAH
29. 160 MVA 220/132 kV ICT 2 @ MALDA
30. 160 MVA 220/132 kV ICT 3 @ MALDA
31. 160 MVA 220/132 kV ICT 1 @ PURNEA
32. 160 MVA 220/132 kV ICT 2 @ PURNEA
33. 50 MVA 132/66 kV ICT 1 @ GANGTOK
34. 50 MVA 132/66 kV ICT 2 @ GANGTOK

NTPC

- Lalmatia: (No data since Jan 2016).
  - **12 month passed but no improvements. NTPC May update.**
- Farakka NTPC:
  - Unit #5 MW and MVAr data not matching with site data, Unit # 6 LV side not available.
- Nabinagar NTPC :
  - Alternet Data channel.
  - Unit HV side data, OLTC of all ICTs
  - **No VOIP.**

POWERGRID

- **Data Intermittent /not available:**
  - Purnea 400kV (Frequent Failure of RTU)



  - Ranchi 400kV , Baripada, Gaya, Angul, Chaibasa
- **VOIP for following station not yet provided:**
  - Bolangir , Indravati , Jeypore ,Kalabadia, Keonjhar

WBSETCL

- Following station data not available:
  - TLDP 4 (since 06-12-16),
  - Gokarna 400kV (400/220 kV ICT was first charged on 15th Sept'16),
  - Dharampur 220,
  - Krishnanagar 220,
  - Hura 220,
  - Foundry Park 220.
  - Dalkhola
  - Bantala
  - Lakshmikantapur
  - New Town
- Haldia (2 x 300MW) :
  - Bus Voltage of Bus 1, LV side data not yet provided.
- Sagardighi :
  - Unit 3 LV side (Unit) data not available.
  - Bus voltage is not updating at ERLDC.
- **Kolaghat TPS** : Kharagpur #1 MW/MVAR flow not available.

BSPHCL

- Data Not provided:
  - Sonenagar ,
  - Darbhanga,
  - Valmikinagar and koshi (Connected with Nepal)
- Data Intermittent /not available:
  - Dumraon, Khagaul ,Darbhanga ,Dehri , sultangaunj , Lakhisarai, Karmanasa, Kahalgaon ,Jamaui ,Banka ,Gopalganj, Kisanganj, Arrah ,Rajgir ,Sipara ,Hajipur (New), Pusauli

JSUNL

- **Data Intermittent /not available:**
  - Hatia New 220,
  - Dumka 220.
  - Patratu(Intermittent)
  - DEOGHAR
  - DUMKA
  - GARHW
  - GOELKERA
  - JAMTARA
  - JAPLA
  - KENDOPOSI

DVC

- Data Not provided:
  - Giridhi 220, Barjora 220,Purulia 132 kV.
- Durgapur TPS (DSTPS): Highly intermittent.

23-12-2016

EASTERN REGION LOAD DESPATCH CENTRE

Summary of Data Availability of 765/400/220 kV ISGS/ISTS/IPPs Stations

Sl. No.	Region	NAME OF THE SUB / GEN STN	Voltage Level (kV)	Analogs Status				Digital Status								Remarks
								CB				ISO				
				Total	Avl.	Not Avl.	% of Non-Avl.	Total	Avl.	Not Avl.	% of Non-Aval.	Total	Avl.	Not Avl.	% of Non-Aval.	
1	ERTS - I	Arrah	220/132	29	27	2	7%	16	1	15	94%	47	0	47	100%	
2		Banka	400/220	26	25	1	4%	18	17	1	6%	34	33	1	3%	
3		Gaya	765/400/220	53	50	3	6%	49	22	27	55%	127	62	65	51%	
4		Biharshariff	400/220	54	49	5	9%	41	31	10	24%	81	79	2	2%	
5		Chaibasa	400/220	30	25	5	17%	21	19	2	10%	45	42	3	7%	
6		Chandwa	400/220	13	12	1	8%	6	6	0	0%	12	12	0	0%	
7		LAKHISARAI	400/132	41	35	6	15%	22	17	5	23%	46	39	7	15%	
8		Jamshedpur	400/220	34	34	0	0%	24	23	1	4%	48	48	0	0%	
9		Muzaffarpur	400/220	45	43	2	4%	26	8	18	69%	69	16	53	77%	
10		Patna	400/220	51	45	6	12%	34	30	4	12%	76	62	14	18%	
11		Purnea-220	220/132	33	29	4	12%	17	17	0	0%	49	49	0	0%	
12		Purnea-400	400/220	52	48	4	8%	34	33	1	3%	83	81	2	2%	
13		Ranchi	400/220	50	46	4	8%	43	33	10	23%	100	81	19	19%	
14		Sasaram	765/400/220	76	75	1	1%	54	49	5	9%	117	111	6	5%	
15		New Ranchi	765/400	27	26	1	4%	24	23	1	4%	50	45	5	10%	
		TOTAL		**614**	**569**	**45**	**7%**	**429**	**329**	**100**	**23%**	**984**	**760**	**224**	**23%**	
16	ERTS - II	Angul	400	47	29	18	38%	41	18	23	56%	73	14	59	81%	
17		Alipurduar HVDC	400	37	31	6	16%	18	17	1	6%	48	45	3	6%	
18		Baharampur	400	18	18	0	0%	10	10	0	0%	20	20	0	0%	
19		Baripada	400/220/132	43	40	3	7%	26	25	1	4%	61	60	1	2%	
20		Binaguri	400/220	59	55	4	7%	39	37	2	5%	87	87	0	0%	
21		Birpara	220/132	30	30	0	0%	16	16	0	0%	47	47	0	0%	
22		BHVDC	220/132	35	35	0	0%	32	23	9	28%	52	52	0	0%	
23		Bolangir (n)	400	17	17	0	0%	10	10	0	0%	18	18	0	0%	
24		Dalkhola	220	20	18	2	10%	10	10	0	0%	36	36	0	0%	
25		Durgapur	400/220	46	39	7	15%	32	27	5	16%	68	68	0	0%	
26		Jharsuguda	400	28	24	4	14%	29	19	10	34%	58	43	15	26%	
27		Indravati	400	13	13	0	0%	6	6	0	0%	14	14	0	0%	
28		Gangtok	132/66	12	10	2	17%	5	5	0	0%	9	9	0	0%	
29		Jeypore	400/220	30	27	3	10%	17	14	3	18%	41	37	4	10%	
30		Keonjhar	400/220	15	13	2	13%	7	7	0	0%	14	14	0	0%	
31		Kishanganj	400/220	47	40	7	15%	33	17	16	48%	66	58	8	12%	
32		Maithon	400/220	59	57	2	3%	42	25	17	40%	98	98	0	0%	
33		Malda	400/220	44	41	3	7%	23	23	0	0%	70	70	0	0%	
34		New Melli	400/220	11	10	1	9%	7	6	1	14%	14	12	2	14%	
35		Pandiabili		36	35	1	3%	21	21	0	0%	49	49	0	0%	
36		RANGPO	400/220/132	58	58	0	0%	32	32	0	0%	90	90	0	0%	
37		Rengali	400/220	28	27	1	4%	16	16	0	0%	41	40	1	2%	
38		Rourkela	400/220	56	51	5	9%	38	19	19	50%	86	63	23	27%	
39		Siliguri	220/132	27	27	0	0%	15	15	0	0%	46	46	0	0%	
40		Subhasgram	400/220	37	35	2	5%	24	24	0	0%	59	59	0	0%	
41		Talcher HVDC		23	23	0	0%	27	27	0	0%	45	45	0	0%	
		TOTAL		**876**	**803**	**73**	**8%**	**576**	**469**	**107**	**19%**	**1310**	**1194**	**116**	**9%**	
42	SRTS - I	Gazuwaka HVDC		22	0	22	100%	34	0	34	100%	53	0	53	100%	
43	ISGS	Farakka	400/220/21	67	53	14	21%	40	34	6	15%	77	43	34	44%	
44		Barh	400/220/21	37	31	6	16%	36	33	3	8%	71	71	0	0%	
45		Kahalgaon	400/132/21	82	43	39	48%	52	32	20	38%	105	62	43	41%	
46		Lalmatia	220/132	17	0	17	100%	9	0	9	100%	17	0	17	100%	
47		Rangit	132 /66	29	22	7	24%	13	12	1	8%	34	4	30	88%	
48		Talcher	400/220/21	81	75	6	7%	44	43	1	2%	91	86	5	5%	
49		Teesta	400/21	14	12	2	14%	6	6	0	0%	16	16	0	0%	
		TOTAL		**349**	**236**	**113**	**32%**	**234**	**160**	**74**	**32%**	**464**	**282**	**182**	**39%**	
50	Sterlite	Sterlite	400/21	52	40	12	23%	27	13	14	52%	54	24	30	56%	
51	KBUNL	MTPS	400/21	32	10	22	69%	12	5	7	58%	24	10	14	58%	
52	IBEUL	IBEUL	400/21	20	16	4	20%	9	9	0	0%	18	18	0	0%	
53	MPL	Maithon RT Bank	400/220/21	32	32	0	0%	17	17	0	0%	41	41	0	0%	
54	APNRL	ADHUNIK	400/21	16	16	0	0%	6	6	0	0%	12	12	0	0%	
55	GATI	Chuzachen HPS	132/21	12	12	0	0%	4	4	0	0%	8	8	0	0%	
56	JITPL	JINDAL	400	8	0	8	100%	11	0	11	100%	22	0	22	100%	
		TOTAL		**172**	**126**	**46**	**27%**	**86**	**54**	**32**	**37%**	**179**	**113**	**66**	**37%**	
		TOTAL		**2011**	**1734**	**277**	**14%**	**1325**	**1012**	**313**	**24%**	**2937**	**2349**	**588**	**20%**	

Note:

29-12-16

EASTERN REGION LOAD DESPATCH CENTRE

Detailed Data Availability Status of 765/400/220 kV ISGS/ISTS/IPPs Stations

Sl. No.	STATION NAME	ELEMENTS NAME	ANALOG					STATUS					
			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
								Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
1	Arrah	**220Kv System**											
		Bus-1			Yes	yes							
		Bus-2			yes	yes							
		ICT (220/132) -1					no	3	0	3	1	0	1
		ICT (220/132) -2					no	3	0	3	1	0	1
		ICT (220/132) -3					yes	3	0	3	1	1	0
		Sasaram-1	yes	yes				4	0	4	1	0	1
		Sasaram-2	yes	yes				4	0	4	1	0	1
		Kahgaul -1	yes	yes				4	0	4	1	0	1
		Kahgaul -2	yes	yes				4	0	4	1	0	1
		Bus Coupler						2	0	2	1	0	1
		TBC						3	0	3	1	0	1
		132 Kv System								0			0
		ICT (220/132) -1	yes	yes				2	0	2	1	0	1
		ICT (220/132) -2	yes	yes				2	0	2	1	0	1
		ICT (220/132) -3	yes	yes				2	0	2	1	0	1
		Dumraon	yes	yes				3	0	3	1	0	1
		Arrah	yes	yes				3	0	3	1	0	1
		Jagdishpur	yes	yes				3	0	3	1	0	1
		Bus Coupler						2	0	2	1	0	
		Bus			yes	yes				0			0
		Sub-Total	10	10	3	3	3	47	0	47	16	1	15
		Total Measurents			29						63		
		Total Available Measurents			27						1		
		Total Non-Available Measurents			2						62		
		% of Non-Availability			**7%**						**98%**		
								ISO			CB		
2	Banka		MW	MVAR	VOL	FREQ	OLTC	Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		400 Kv System											
		Bus-1			Yes	Yes							
		Bus-2			Yes	Yes							
		Line Biharshariff -I	Yes	Yes				2	2	0	1	1	0
		Tie Dia of Biharshariff -I						2	2	0	1	1	0
		400/132 kV 200 MVA ICT - 1					yes	2	2	0	1	1	0
		50 MVAR LR with Biharshariff -I		Yes				1	1	0	1	1	0
		Line Biharshariff -II	Yes	Yes				2	2	0	1	1	0
		Tie Dia of Biharshariff -II						2	2	0	1	1	0
		400/132 kV 200 MVA ICT - 2					yes	2	2	0	1	1	0
		50 MVAR LR with Biharshariff -II		Yes				1	1	0	1	1	0
		Line Kahalgaon -I	Yes	Yes				2	2	0	1	1	0
		Tie Dia of Kahalgaon -I						2	2	0	1	1	0
		Bus Reactor : 80 MVAR		Yes				2	2	0	1	1	0
		Line Kahalgaon -II	Yes	Yes				2	2	0	1	1	0
		Tie Dia of Kahalgaon -II						2	2	0	1	1	0
		ICT - 3					no	2	1	1	1	0	1
		132 Kv System											
		Bus-1			Yes	Yes							
		ICT - 3	Yes	Yes				2	2	0	1	1	0
		Sabour (BSEB)	Yes	Yes				2	2	0	1	1	0
		Banka (BSEB)	Yes	Yes				2	2	0	1	1	0
		Bus Coupler						2	2	0	1	1	0
		Sub-Total	7	10	3	3	3	34	33	1	18	17	1
		Total Measurents			26						52		
		Total Available Measurents			25						50		
		Total Non-Available Measurents			1						2		
		% of Non-Availability			**4%**						**4%**		
Sl. No.	STATION NAME	ELEMENTS NAME	ANALOG					STATUS					
			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
								Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
3	GAYA	**765 Kv System**								**0**			**0**
		BUS -1			Yes	Yes				0			0
		BUS -2			Yes	Yes				0			0
		Bus Reactor -1		Yes				3	3	0	1	1	0
		Tie of Bus Reactor -1						2	2	0	1	1	0
		ICT -1 (765/400): 1500					Yes	3	3	0	1	1	0
										0			0
		Bus Reactor -2		Yes				3	3	0	1	1	0
		Tie of Bus Reactor -2						2	2	0	1	1	0
		ICT -2 (765/400) : 1500					no	3	3	0	1	1	0
										0			0
		Balia Line						3	2	1	1	1	0
		Tie of Balia Line						2	2	0	1	1	0
		ICT -3 (765/400) : 1500					yes	3	3	0	1	1	0
										0			0
		Varanasi -1 Line	Yes	Yes				3	3	0	1	1	0

		Varanasi -2Line	yes	yes				3	3	0	1	1	0
		Tie of Fatehpur Line						2	2	0	1	1	0
		Future						2	1	1	1	0	1
		Line Reactor with Varanasi1		yes				1	1	0	1	0	1
		Line Reactor with Varanasi2		yes				1	0	1	1	1	0
		400 Kv System											
		BUS -1			Yes	Yes							
		BUS -2			Yes	Yes							
		ICT -1 (765/400): 1500	Yes	Yes				3	0	3	1	0	1
		Tie of ICT 1 (765/400)						2	0	2	1	0	1
		Koderma-2						2	0	2	1	0	1
		ICT -2 (765/400): 1500	Yes	Yes				3	0	3	1	0	1
		Tie of ICT 2 (765/400)						2	0	2	1	0	1
		Koderma-1 (Bihashariff)	Yes	Yes				3	0	3	1	0	1
		ICT -3(765/400): 1500	Yes	Yes				2	0	2	1	0	1
		Tie of ICT 3 (765/400)						2	0	2	1	0	1
		Maithon -1						2	0	2	1	0	1
		LR with Maithon 1		Yes				1	0	1			
		Maithon -2						2	0	2	1	0	1
		LR with Maithon 2		Yes				1	0	1			
		Tie of Maithon 2						4	0	4	2	0	2
		Bus Reactor -1		Yes				3	0	3	1	0	1
		Tie of Bus Reactor -1						4	0	4	2	0	2
		Bus Reactor -2		Yes				3	0	3	1	0	1
		Tie of Bus Reactor -2						4	0	4	2	0	2
		ICT -1 (400/ 220)					no	3	0	3	1	0	1
		Tie of ICT -1						4	0	4	2	0	2
		ICT -2 (400/ 220)					no	3	0	3	1	0	1
		Tie of ICT -2						4	0	4	2	0	2
		220 Kv System											
		BUS-1			Yes	Yes							
		BUS-2			Yes	Yes							
		Dehri -1	Yes	Yes				4	4	0	1	1	0
		Dehri -2	Yes	Yes				4	4	0	1	1	0
		ICT -2 (400/ 220)	Yes	Yes				3	3	0	1	1	0
		ICT -1 (400/ 220)	Yes	Yes				3	0	3	1	0	1
		Bodhgaya -1	Yes	Yes				4	4	0	1	1	0
		Bodhgaya -2	Yes	Yes				4	4	0	1	1	0
		Sonenagar-1	yes	yes				4	3	1	1	1	0
		Sonenagar-2	yes	yes				4	3	1	1	1	0
		BC						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
		Sub-Total	14	22	6	6	5	127	62	65	49	22	27
		Total Measurents			53			176					
		Total Available Measurents			50			84					
		Total Non-Available Measurents			3			92					
		% of Non-Availability			**6%**			**52%**					

								ISO			CB		
4	**Bihasrhariff**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		Bus 1			Yes	Yes				0			0
		Bus 2			Yes	Yes				0			0
		Banka -1	Yes	yes				2	2	0	1	1	0
		Banka -2	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Banka 1 & 2						2	2	0	1	1	0
		Lakhisarai Line 1	Yes	Yes				2	2	0	1	0	1
		ICT-1With Lakhisarai Line 1	yes	Yes				2	1	1	1	0	1
		Tie Line of lakhisarai Line 1 & ICT-1						2	2	0	1	0	1
		Bus Reactor With Tie Line		Yes				2	2	0	1	1	0
										0			0
		lakhisarai Line 2	Yes	Yes				2	2	0	1	0	1
		Reactor With Lakhisarai Line 2		Yes				1	1	0	1	1	0
		Tie Line Between Lakhisarai Line 2 & Bus 2						3	3	0	1	1	0
										0			0
		Sasaram Line 2	yes	yes				2	2	0	1	1	0
		Balia Line 2	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Sasaram Line 2 & Balia Line 2						2	2	0	1	1	0
										0			0
		balia Line 1	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Balia Line 1 & Purnea-2						2	2	0	1	1	0
		Purnea-2 line	Yes	Yes				2	2	0	1	1	0
		Reactor With Purnea-2		Yes				1	1	0	1	1	0
										0			0
		Koderma 2	Yes	Yes				2	2	0	1	1	0
		Tie Dia with Koderma -2						2	2	0	1	0	1
										0			0
		Varanasi-2	Yes	Yes				2	2	0	1	0	1
		Line Reactor with Varanasi-2		Yes				1	1	0	1	1	0
		Tie of Varanasi-2						3	3	0	1	1	0
		ICT-2 (400 /220)	Yes	no			Yes	2	2	0	1	1	0
		Tie of ICT-2						2	2	0	1	1	0

		ICT-1 (400 /220)	Yes	Yes			no	2	2	0	1	0	1
		Tie of ICT-1 & Sasarm 1						2	1	1	1	1	0
		Lakhisarai 1	Yes	Yes				2	2	0	1	0	1
		Line Reactor With Lakhisarai Line 1								0			0
		Bus Reactor 3		Yes				2	2	0	1	0	1
		Tie of ICT-3 & Bus Reactor						2	2	0	1	1	0
		ICT-3 (400 /220)	Yes	Yes			no	2	2	0	1	1	0
										0			0
		Muzaffarpur Line 1	Yes	no				2	2	0	1	1	0
		Tie Line Between Muzaffarpur Line 1&2						2	2	0	1	1	0
		Muzaffarpur Line 2	Yes	no				2	2	0	1	1	0
		Koderma 1	Yes	Yes				2	2	0	1	1	0
		Tie with Koderma1						2	2	0	1	0	1
		Purnea -1	Yes	Yes				2	2	0	1	1	0
		Tie Purnea -1						3	3	0	1	1	0
		LR with Purnea -1		Yes				1	1	0	1	1	0
		Purnea -2	Yes	Yes				2	2	0	1	1	0
		Tie Purnea -2						3	3	0	1	1	0
		LR with Purnea -2		Yes				1	1	0	1	1	0
		Sub-Total	20	27	2	2	3	81	79	2	41	31	10
		Total Measurents			54			122					
		Total Available Measurents			49			110					
		Total Non-Available Measurents			5			12					
		% of Non-Availability			**9%**			**10%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
5	**CHAIBASA**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		BUS1			YES	YES							
		BUS2			YES	YES							
		JAMSHEDPUR 2	yes	yes				2	2		1	1	
		TIE & JAMSHEDPUR 1						2	2		1	1	
		Bus Reactor -1 (80)		yes				2	2		1	1	
		ROURKELA 2	yes	yes				3	3		1	1	
		TIE OF ROURKELA 2						2	2		1	1	
		400/ 220 KV ICT 3	no	no			no	2	1		1	0	
		JAMSHEDPUR 1	YES	YES				2	2	0	1	1	0
		TIE & JAMSHEDPUR 1						2	2	0	1	1	0
		400/ 220 KV ICT 2	yes	yes			no	2	2	0	1	1	0
		ROURKELA 1	YES	YES				3	3	0	1	1	0
		TIE OF ROURKELA 1						2	2	0	1	1	0
		400/ 220 KV ICT 1	yes	yes			no	2	2	0	1	1	0
		220KV											
		BUS1			YES	YES							
		BUS2			yes	yes							
		LOAD1	yes	yes				2	2		1	1	
		LOAD2	yes	yes				2	2		1	1	
		400/ 220 KV ICT 3						2	0		1	0	
		400/ 220 KV ICT 2						2	2		1	1	
		TBC						3	3		1	1	
		400/ 220 KV ICT 1						2	2		1	1	
		LOAD3	yes	yes				2	2		1	1	
		LOAD4	yes	yes				2	2		1	1	
		BC						2	2		1	1	
		Sub-Total	11	12	2	2	3	45	42	3	21	19	2
		Total Measurents			30			66					
		Total Available Measurents			25			61					
		Total Non-Available Measurents			5			5					
		% of Non-Availability			**17%**			**8%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
6	**LAKHISARAI**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		BUS 1			yes	yes							
		BUS 2			yes	yes							
		Line Biharshariff -I	yes	yes				2	2	0	1	1	0
		Tie Dia of Biharshariff -I						2	2	0	1	1	0
		400/132 KV ICT 1	yes	yes			yes	2	2	0	1	0	1
		Line Biharshariff -II	yes	yes				2	2	0	1	1	0
		Tie Dia of Biharshariff -II						2	2	0	1	1	0
		ICT 2	yes	yes			yes	2	2	0	1	1	0
		ICT 3	no	no			no	2	0	2	1	0	1
		Tie Dia of Kahalgaon -II						2	2	0	1	1	0
		KAHALGAON II	yes	yes				2	2	0	1	1	0
		L/R OF KAHALGAON II	yes	yes				1	1	0	1	1	0
		Line Kahalgaon -I	yes	yes				2	2	0	1	1	0
		Tie Dia of Kahalgaon -I						2	2	0	1	1	0
		L/R OF KAHALGAON I		yes				1	0	1	1	0	1
		BUS REACTOR		yes				2	2	0	1	1	0
		132 Kv System											
		Bus-1			yes	no							
		ICT 1	no	no				2	0	2	1	0	1
		ICT 2	yes	yes				2	0	2	1	0	1
		ICT 3	yes	yes				2	2	0	1	1	0
		LAKHISARAI -1 (BSEB)	yes	yes				3	3	0	1	1	0
		LAKHISARAI -2 (BSEB)	yes	yes				3	3	0	1	1	0
		LAKHISARAI -3 (BSEB)	yes	yes				3	3	0	1	1	0
		LAKHISARAI -4 (BSEB)	yes	yes				3	3	0	1	1	0

		Bus Coupler						2	2	0	1	1	0
		Sub-Total	15	17	3	3	3	46	39	7	22	17	5
		Total Measurents			41			68					
		Total Available Measurents			35			56					
		Total Non-Available Measurents			6			12					
		% of Non-Availability			**15%**			**18%**					
								ISO			**CB**		
7	**Jamshedpur**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		Bus 1			Yes	Yes				0			0
		Bus 2			Yes	Yes				0			0
		Bay For Rourkela Line 2	Yes	Yes				2	2	0	1	1	0
		Bay For DSTPS 1	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Rourkela Line 2 & DSTPS 1						2	2	0	1	1	0
		Bay For Chaibasa Line 1	Yes	Yes				2	2	0	1	1	0
		Bay For Maithon	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Chaibasa Line 1 & Mailthon						2	2	0	1	1	0
		Kakabadia -2	Yes	Yes				2	2	0	1	1	0
		Tie of Kakabadia -2						2	2	0	1	1	0
		DSTPS-2	yes	yes				2	2	0	1	1	0
		TISCO	Yes	Yes				2	2	0	1	1	0
		Tie of TISCO						2	2	0	1	1	0
		Bay For Mejia-B	Yes	Yes				2	2	0	1	1	0
		Bay For Durgapur Line 1	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Mejia B & Durgapur 1						2	2	0	1	1	0
		Bus Reactor - 1 -80 MVAR		Yes				2	2	0	1	1	0
		ICT -1 (400 /220)	Yes	Yes			Yes	2	2	0	1	1	0
		Tie Line Between ICT-1 & Bus Recator						2	2	0	1	1	0
		ICT -2 (400 /220)	Yes	Yes			Yes	2	2	0	1	1	0
		Bus Reactor - 2 -80 MVAR		Yes				2	2	0	1	1	0
		Tie Line Between ICT-2 & Bus Recator						2	2	0	1	1	0
		Apnrl 2	Yes	Yes				2	2	0	1	1	0
		Tie Line of APNRL2						2	2	0	1	0	1
		Apnrl 1	Yes	Yes				2	2	0	1	1	0
		Tie Line of APNRL1						2	2	0	1	1	0
		Sub-Total	13	15	2	2	2	48	48	0	24	23	1
		Total Measurents			34			72					
		Total Available Measurents			34			71					
		Total Non-Available Measurents			0			1					
		% of Non-Availability			**0%**			**1%**					

								ISO			**CB**		
8	**Muzaffarpur**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			Yes	Yes							
		Bus-2			Yes	Yes							
		ICT (400/220)- 2	yes	yes			Yes	2	0	2	1	0	1
		Tie of ICT- 2						2	0	2	1	0	1
		Future						1	0	1	1	0	1
		ICT (400/220)- 1	yes	yes			yes	2	0	2	1	0	1
		Tie of ICT- 1						2	0	2	1	1	0
		Bus Reactor -1		Yes				2	1	1	1	1	0
		Bus Reactor -2						2	0		1	1	
		Tie											
		darbhanga 1											
		Purnea -1	Yes	Yes				2	0	2	1	0	1
		Tie of Purnea -1						2	2	0	1	1	0
		Gorakhpur -1	Yes	Yes				2	0	2	1	0	1
		LR with Purnea -1		no				1	0	1			
		LR with Gorakhpur -1		Yes				1	0	1			
		Purnea -2	Yes	Yes				2	0	2	1	0	1
		Tie of Purnea -2						2	2	0	1	1	0
		Gorakhpur -2	Yes	Yes				2	0	2	1	0	1
		LR with Purnea -2		Yes				1	0	1			
		LR with Gorakhpur -2		Yes				1	0	1			
		Biharshariff -1	Yes	Yes				2	0	2	1	0	1
		Tie of Biharshariff -1						3	3	0	1	1	0
										0			0
		Biharshariff -2	Yes	Yes				2	0	2	1	0	1
		Tie of Biharshariff -2						3	3	0	1	1	0
		220 Kv System											
		Bus-1			Yes	no							
		Bus-2			Yes	Yes							
		ICT (400/220) -1	Yes	Yes				3	0	3	1	0	1
		ICT (400/220) -2	Yes	Yes				3	0	3	1	0	1
		ICT (400/220) -3	yes	yes				3	0		1	0	
		Muzaffarpur -1	Yes	Yes				4	0	4	1	0	1
		Muzaffarpur -2	Yes	Yes				4	0	4	1	0	1
		Bus Coupler						2	1	1	1	0	1
		TBC						3	0	3	1	0	1
		Hazipur -1	Yes	Yes				4	0	4	1	0	1
		Hazipur -2	Yes	Yes				4	4	0	1	1	0
		Nepal-1	Yes	Yes				2	0	2	1	0	
		Sub-Total	15	20	4	4	2	69	16	53	26	8	18
		Total Measurents			45			95					
		Total Available Measurents			43			24					

		Total Non-Available Measurents			2			71						
		% of Non-Availability			**4%**			**75%**						

									ISO			CB		
9	**Patna -400**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400KV System											
		Bus 1			Yes	Yes							
		Bus 2			Yes	Yes							
		Bay Of Balia -1	Yes	Yes				2	1	1	1	1	0
		Tie of Balia 1& Barh 2						2	2	0	1	1	0
		Bay Of Barh 2	NO	NO				2	0	2	1	0	1
		Line Reactor with Barh 2		no				1	0	1	1	0	1
		Bay Of Balia -2	Yes	Yes				2	1	1	1	1	0
		Tie of Balia 2 & Barh 2						2	2	0	1	1	0
		Bay Of Barh1	Yes	Yes				2	2	0	1	1	0
		Line Reactor with Barh 1		no				1	0	1	1	0	1
		Bay Of Balia -3	Yes	Yes				2	2	0	1	1	0
		Tie of Balia 3 & Barh 4						2	2	0	1	1	0
		Bay Of Barh4	Yes	Yes				2	2	0	1	1	0
		Bay Of Balia -4	Yes	Yes				2	2	0	1	1	0
		Tie of Balia 4 & Barh 3						2	2	0	1	1	0
		Bay Of Barh 3	Yes	Yes				2	2	0	1	1	0
		Bus Reactor - 80		Yes				2	2	0	1	1	0
		Tie of Bus Reactor & ICT -1						2	2	0	1	1	0
		ICT -1 (400 /220)					yes	2	2	0	1	1	0
		ICT -2(400 /220)					yes	2	2	0	1	1	0
		Tie of ICT -2						2	2	0	1	1	0
		Bus Reactor -125 1		Yes				2	2	0	1	1	0
		TIE of kishangaunj 2 & reactor 1						2	0	2	1	1	0
		kishangaunj 2	yes	Yes				2	2	0	1	1	0
		L/R of kishangaunj 2		Yes				1	1	0			
		kishangaunj 1	Yes	Yes				2	2	0	1	1	0
		L/R of kishangaunj 1		Yes				1	1	0			
		TIE of kishangaunj 1 & reactor 1						2	2	0	1	1	0
		Bus Reactor -125 2		Yes				2	2	0	1	1	0
		220 Kv System											
		ICT -1 (400 /220)	Yes	Yes				3	1	2	1	1	0
		Bay Of Fathwa	Yes	Yes				3	3	0	1	1	0
		Bay Of Khagaul	Yes	Yes				3	3	0	1	1	0
		ICT -2 (400 /220)	Yes	Yes				3	2	1	1	1	0
		Sipara line -1	Yes	Yes				3	3	0	1	1	0
		Sipara line -2	Yes	Yes				3	3	0	1	1	0
		Sipara line -3	no	no				3	0	3	1	0	1
		TBC						3	3	0	1	1	0
		BC						2	2	0	1	1	0
		BUS 1			YES	YES							
		BUS 2			YES	yes							
		Sub-Total	17	24	4	4	2	76	62	14	34	30	4
		Total Measurents			51			110					
		Total Available Measurents			45			92					
		Total Non-Available Measurents			6			18					
		% of Non-Availability			**12%**			**16%**					

									ISO			CB		
10	**Purnea-220**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		220 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		ICT (220/132) -1					yes	3	3	0	1	1	0
		ICT (220/132) -2					yes	3	3	0	1	1	0
		ICT (220/132) -3					yes	3	3	0	1	1	0
		Purnea -1	Yes	Yes				4	4	0	1	1	0
		Purnea -2	Yes	Yes				4	4	0	1	1	0
		Dalkhola -1	Yes	Yes				4	4	0	1	1	0
		Dalkhola -2	Yes	Yes				4	4	0	1	1	0
		Bus Coupler						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
		132 Kv System											
		ICT (220/132) -1	Yes	yes			no	2	2	0	1	1	0
		ICT (220/132) -2	yes	Yes			no	2	2	0	1	1	0
		ICT (220/132) -3	Yes	Yes				2	2	0	1	1	0
		Purnea -1	Yes	Yes				3	3	0	1	1	0
		Purnea -2	Yes	no				3	3	0	1	1	0
		Purnea -3	Yes	no				3	3	0	1	1	0
		Bus Coupler						2	2	0	1	1	0
		Kishanganj (Dal)	Yes	Yes				3	3	0	1	1	0
		Bus			Yes	Yes							
		Sub-Total	11	11	3	3	5	49	49	0	17	17	0
		Total Measurents			33			66					
		Total Available Measurents			29			66					
		Total Non-Available Measurents			4			0					
		% of Non-Availability			**12%**			**0%**					

									ISO			CB		
11	**Purnea -400**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		Bus-1			Yes	no							
		Bus-2			Yes	Yes							
		ICT (400/220)- 2					Yes	2	2	0	1	1	0
		Tie of ICT- 2						2	2	0	1	1	0
		Si400 - 1	Yes	Yes				2	2	0	1	1	0
		LR with Si400 - 1		Yes				1	1	0			

		ICT (400/220)- 1					Yes	2	2	0	1	1	0
		Tie of ICT- 1						2	2	0	1	0	1
		Si400 - 1	Yes	Yes				2	2	0	1	1	0
		Si400 -3	Yes	Yes				2	1	1	1	1	0
		Tie of Si400 -3						2	2	0	1	1	0
		Muzaffarpur-1	Yes	Yes				2	2	0	1	1	0
		TCSC & FSC		no				3	3	0			
		LR with Muzaff -1		Yes				1	1	0	1	1	1
		Si400 -4	Yes	Yes				2	2	0	1	1	0
		Tie of Si400 -4						2	2	0	1	1	0
		Muzaffarpur-2	Yes	Yes				2	2	0	1	1	0
		TCSC & FSC						3	3	0			
		LR with Muzaff -2		Yes				1	1	0	1	1	0
		Malda -2	Yes	Yes				2	2	0	1	1	0
		Tie of Malda -2						2	2	0	1	1	0
		Bus Recator -1		Yes				2	2	0	1	1	0
		Malda -1	YES	Yes				2	2	0	1	1	0
		Tie of Malda -1						2	2	0	1	1	0
		Bus Recator -2		Yes				2	2	0	1	1	0
		Binaguri-1	yes	no				2	2	0	1	1	0
		Binaguri-2	yes	yes				2	2	0	1	1	0
		Biharshariff -1	Yes	Yes				2	2	0	1	1	0
		Tie of Biharshariff -1						2	1	1	1	1	0
		Biharshariff -2	Yes	Yes				2	2	0	1	1	0
		Tie of Biharshariff -2						2	2	0	1	1	0
		220 Kv System											
		Bus-1			Yes	Yes							
		Bus-2			Yes	Yes							
		ICT (400/220) -1	Yes	Yes				3	3	0	1	1	0
		ICT (400/220) -2	Yes	Yes				3	3	0	1	1	0
		Purnea -1	Yes	no				4	4	0	1	1	0
		Purnea -2	Yes	Yes				4	4	0	1	1	0
		Bus Coupler						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
		Madhepura -1	Yes	Yes				4	4	0	1	1	0
		Madhepura -2	Yes	Yes				4	4	0	1	1	0
		Sub-Total	18	24	4	4	2	83	81	2	34	33	1
		Total Measurents			52			117					
		Total Available Measurents			48			114					
		Total Non-Available Measurents			4			3					
		% of Non-Availability			**8%**			**3%**					

								ISO			CB		
12	**Ranchi**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400KV System											
		Bus 1			Yes	Yes							
		Bus 2			Yes	Yes							
		Bay Of Rourkela 2	Yes	Yes				3	3	0	1	1	0
		Tie of Rourkela 2 & Maithon Right Bank 2						2	2	0	1	1	0
		Bay Of Maithon Right Bank 2	Yes	Yes				3	3	0	1	1	0
		Line Reactor with Maithon Right Bank 2		no				1	1	0			
		Bay Of Maithon Right Bank 1	Yes	Yes				3	0	3	1	0	1
		Line Reactor with Maithon Right Bank 1		no				1	0	1	1	0	
		Tie of Maithon Right Bank 1						2	0	2	1	0	1
		125 MVAR Bus Recator		Yes				3	0	3	1	0	1
		Bay Of Sipat 2	Yes	Yes				2	2	0	1	1	0
		Line Reactor with Sipat 2		Yes				1	1	0			
		Tie of Sipat 2						2	2	0	1	1	0
		Future						1	1	0	1	1	0
		FSC with Bay Of Sipat 2						3	2	1	1	1	0
		Bay Of Sipat 1	Yes	Yes				3	3	0	1	1	0
		Line Reactor with Sipat 1		Yes				1	1	0			
		Tie of Sipat 1						2	2	0	1	1	0
		Future						1	1	0	1	1	0
		FSC with Bay Of Sipat 1						3	2	1	1	0	1
		Bus Reactor -80		Yes				2	2	0	1	1	0
		Tie of Bus Reactor						2	2	0	1	1	0
		Future						2	1	1	1	0	1
		Bay Of Rourkela 1	Yes	Yes				2	2	0	1	1	0
		Tie of Rourkela 1						2	2	0	1	1	0
		future						2	2	0	1	0	1
		Maithon 2 (LILO at RGHPR 1)	Yes	Yes				2	2	0	1	1	0
		Tie of Maithon 2 & ICT-2						2	2	0	1	1	0
		ICT -2 (400 /220)					no	2	2	0	1	1	0
		Maithon 1	Yes	Yes				2	2	0	1	1	0
		Tie of Maithon 1& ICT-1						2	1	1	1	1	0
		ICT -1 (400 /220)					no	2	2	0	1	1	0
		New Ranchi 1	Yes	Yes				2	2	0	1	1	0
		TIE OF NEW RANCHI 1						2	0	2	1	0	1
		FUTURE											
		New Ranchi 2	Yes	Yes				2	2	0	1	1	0
		TIE OF NEW RANCHI 2						2	0	2	1	0	1

		FUTURE											
		New Ranchi 3	Yes	Yes				2	2	0	1	1	0
		TIE OF NEW RANCHI 3						2	2	0	1	1	0
		FUTURE											
		New Ranchi 4	Yes	Yes				2	0	2	1	0	1
		TIE OF NEW RANCHI 4						2	2	0	1	1	0
		FUTURE											
		220 Kv System											
		ICT -2 (400 /220)	Yes	Yes				3	3	0	1	1	0
		TBC						3	3	0	1	1	0
		Bay Of Hatia -1 (N)	Yes	Yes				3	3	0	1	1	0
		ICT -1 (400 /220)	Yes	Yes				3	3	0	1	1	0
		Bay Of Chandil 2	Yes	Yes				3	3	0	1	1	0
		BC						2	2	0	1	1	0
		Bay Of Chandil 1	Yes	Yes				3	3	0	1	1	0
		Bay Of Hatia -1 (N)	Yes	Yes				3	3	0	1	1	0
		Bus 1											
		Bus 2			Yes	Yes							
		Sub-Total	18	24	3	3	2	100	81	19	43	33	10
		Total Measurents			50			143					
		Total Available Measurents			46			114					
		Total Non-Available Measurents			4			29					
		% of Non-Availability			**8%**			**20%**					

								ISO			CB		
13	**Sasaram**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1 (North)			yes	Yes							
		Bus-2 (North)			Yes	Yes							
		ICT (76 5/ 400)	Yes	Yes				1	1	0	1	1	0
		Alahabad	Yes	Yes				2	2	0	1	1	0
		Tie of Alahabad						3	3	0	1	1	0
		LR with Alahabad		Yes				1	1	0			
		Sarnad	Yes	Yes				2	2	0	1	1	0
		Tie of Sarnad						3	3	0	1	1	0
		LR with Sarnad		Yes				1	1	0			0
		HVDC B to B(east)	Yes	Yes				1	1	0	1	1	0
		HVDC B to B (north)	Yes	Yes				1	0	1	1	1	0
		AC By pass -East	yes	yes				1	1	0			
		AC By pass -North	Yes	Yes				1	1	0			
		Filter Dia North Bus						6	6	0	5	5	0
		TIE EAST And NORTH						4	4	0	2	2	0
		Filter Dia East Bus						6	6	0	5	5	0
		Bus-1 (East)			Yes	Yes							
		Bus-2(East)			Yes	Yes							
		ICT (400/220)- 1					Yes	2	2	0	1	1	0
		Tie of ICT- 1						3	3	0	1	1	0
		ICT (400/220)- 2					Yes	2	2	0	1	1	0
		Tie of ICT- 2						2	2	0	1	1	0
		Biharsff -1	Yes	Yes				2	2	0	1	1	0
		LR with Biharsff -1		Yes				1	1	0			
		Bus Reactor -1 (125 MVAR)		Yes				2	2	0	1	1	0
		Tie of Bus Reactor -1						2	2	0	1	1	0
		Biharsff -2	Yes	Yes				2	2	0	1	1	0
		LR with Biharsff -2 (63 MVAR)		Yes				1	1	0			
		Bus Reactor -2 (125 MVAR)		Yes				2	2	0	1	1	0
		Tie of Bus Reactor -2						2	2	0	1	1	0
		Biharsff -3	Yes	Yes				2	2	0	1	1	0
		LR with Biharsff -3 (50 MVAR)		Yes				1	1	0	1	1	0
		Nabinagar 1						1	1	0	1	1	0
		Balia	Yes	Yes				2	2	0	1	1	0
		LR with Balia (50 MVAR)		Yes				1	1	0	1	1	0
		Tie of Balia						2	2	0	1	1	0
		220 Kv System											
		Bus-1			Yes	Yes							
		Bus-2			Yes	Yes							
		ICT (400/220) -1	Yes	Yes				3	3	0	1	0	1
		ICT (400/220) -2	Yes	Yes				3	3	0	1	0	1
		Arrah -1	Yes	Yes				4	4	0	1	0	1
		Arrah -2	Yes	Yes				4	4	0	1	1	0
		Bus Coupler						2	2	0	1	1	0
		TBC						3	3	0	1	1	0
		Sahupuri	Yes	Yes				4	4	0	1	0	1
		Dehri	Yes	Yes				4	4	0	1	0	1
		132 Kv System											
		Bus Coupler						2	2	0	1	1	0
		Dehri	Yes	Yes				3	0	3	1	1	0
		Karmnasha	Yes	Yes				3	3	0	1	1	0
		Station Xmr (132/11) -1	Yes	Yes			yes	2	1	1	1	1	0
		Station Xmr (132/11) -2	Yes	Yes			yes	2	2	0	1	1	0
		765 Kv System											
		Fathehpur Line	YES	Yes				3	3	0	1	1	0
		Bus-1			YES	YES							
		Bus-2			yes	Yes							
		Midpoint Reactor (Shunt) of Gaya-Fathepur		Yes				1	1	0	1	1	0
		ICT (765/400) KV					no	3	3	0	1	1	0
		LINE REACTOR : 330		YES				1	1	0	1	1	0
		BUS REACTOR : 330		YES				3	2	1	1	1	0

		ICT tie DIA						2	2	0	1	1	0
		Sub-Total	22	33	8	8	5	117	111	6	54	49	5
		Total Measurents			76			171					
		Total Available Measurents			75			160					
		Total Non-Available Measurents			1			11					
		% of Non-Availability			**1%**			**6%**					

								ISO			CB		
14	**New Ranchi**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		765 Kv System											
		Bus -1			yes	no							
		Bus 2			yes	no							
		Bus Recator1 - 240		yes				2	1	1	1	1	0
		Tie of Bus Recator 1- 240						3	0	3	1	0	1
		Bus Recator 2- 240		yes				2	1	1	1	1	0
		Tie of Bus Recator 2- 240						3	3	0	1	1	0
		765/400 ICT 1					No	2	2	0	1	1	0
		tie of ict 1						3	3	0	1	1	0
		765/400 ICT 2					no	2	2	0	1	1	0
		tie of ICT 2						2	2	0	1	1	0
		Dharamjoygarh	yes	yes				2	2	0	1	1	0
		L/R with Dharamjoyarh		no				1	1	0	1	1	0
		400 Kv System											
		Bus -1			yes	yes							
		Bus 2			yes	yes							
		Ranchi Line -1	yes	yes				2	2	0	1	1	0
		Tie of Ranchi Line -1						2	2	0	1	1	0
		BUS REACTOR 2		yes				2	2	0	1	1	0
		Bus Rector 2 -125		yes				2	2	0	1	1	0
		Tie of Bus Rector 2 -125						2	2	0	1	1	0
		RANCHI Line -3	yes	yes				2	2	0	1	1	0
		RANCHI 2		yes				2	2	0	1	1	0
		Tie of RANCHI 2						2	2	0	1	1	0
		ICT 2	yes	yes				2	2	0	1	1	0
		ICT 1		yes				2	2	0	1	1	0
		Tie of ICT1						2	2	0	1	1	0
		RANCHI 4	yes	yes				2	2	0	1	1	0
		Chandwa-1	yes	yes				2	2	0	1	1	0
		Chandwa-1	yes	yes				2	2	0	1	1	0
		Sub-Total	7	14	2	2	2	50	45	5	24	23	1
		Total Measurents			27			74					
		Total Available Measurents			26			68					
		Total Non-Available Measurents			5			6					
		% of Non-Availability			**19%**			**8%**					

								ISO			CB		
15	**Angul**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
	DATA INTERITTENT	**400 Kv System**											
		Bus -1			yes	yes							
		Bus -2			yes	yes							
		JITPL line1	no	no				2	0	2	1	1	0
		Tie of JITPL line						3	0	3	2	1	1
		JITPL line2	no	no				2	1	1	1	0	1
		Tie of JITPL line						3	0	3	2	1	1
		765/400kV ICT 3	yes	yes				2	2	0	1	1	0
		Tie of 765/400kV ICT 3						3	3	0	2	0	2
		765/400kV ICT 4	no	no				2	2	0	1	1	0
		Tie of 765/400kV ICT 4						3	0	3	2	0	2
		Bolangir	yes	yes				2	0	2	1	1	0
		Tie of bolangir						2	0	2	1	1	0
		765/400kV ICT 1	no	no				2	0	2	1	1	0
		Meeramundali1	yes	yes				2	0	2	1	1	0
		Tie of Meeramundali						2	0	2	1	1	0
		Bus Rector 1 -50		yes				2	0	2	1	1	0

		Talcher	yes	yes				2	0	2	1	1	0
		Tie of Talcher						2	0	2	1	0	1
		765/400kV ICT 1	yes	yes				2	0	2	1	0	1
		Meeramundali2	yes	yes				2	0	2	1	1	0
		Tie of Meeramundali						2	0	2	1	0	1
		Bus Rector 2-50		yes				2	0	2	1	1	0
									0				
		Bus Rector 3 -50		yes				2	0	2	1	1	0
		Tie of Bus Rector 3 -50						3	0	3	2	0	2
		765 KV											
		765/400kV ICT 4	yes	yes			no	2	0	2	1	0	1
		Tie of 765/400kV ICT 4						2	0	2	1	0	1
		Bus Reactor 2		no				2	0	2	1	0	1
		765/400kV ICT 3	yes	yes			no	2	0	2	1	0	1
		Tie of 765/400kV ICT 3						2	0	2	1	0	1
		Bus Reactor 1		no				2	0	2	1	0	1
		765/400kV ICT 2	no	no			yes	2	2	0	1	1	0
		Tie of 765/400kV ICT 2						2	0	2	1	0	1
		Jharsuguda 2	no	no				2	0	2	1	0	1
		L/R of Jharsuguda 2		no							1	0	1
		765/400kV ICT 1	yes	yes			no	2	2	0	1	1	0
		Tie of 765/400kV ICT 1						2	2	0	1	1	0
		Jharsuguda 1	yes	yes				2	0	2	1	0	1
		L/R of Jharsuguda 1		yes							1	0	1
		Sub-Total	16	23	2	2	4	73	14	59	41	18	23
		Total Measurents			47			114					
		Total Available Measurents			29			32					
		Total Non-Available Measurents			18			82					
		% of Non-Availability			**38%**			**72%**					

								ISO			CB		
16	**Baripada**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			YES	YES							
		Bus-2			YES	YES							
		Keonjhar line	YES	YES				2	2	0	1	1	0
		ICT-1 (400/220)					YES	2	2	0	1	1	0
		Tie of Rengali & ICT-1						2	2	0	1	1	0
		Line Reactor with Keonjhar line		no				1	1	0	1	1	0
		Kharagapur	YES	YES				2	2	0	1	1	0
		ICT-2 (400/220)					YES	2	2	0	1	1	0
		Tie of Kolaghat & ICT-2						2	2	0	1	1	0
		Mendhasal line -1	YES	YES				2	2	0	1	1	0
		Tie of Mendhasal line -1						2	2	0	1	1	0
		Jamshedpur	YES	no				2	2	0	1	1	0
		Mendhasal line -2	YES	YES				2	2	0	1	1	0
		Tie of Mendhasal line -2						2	2	0	1	1	0
		Tisco -1	YES	YES				2	2	0	1	1	0
		220 Kv System											
		Bus-1			YES	YES							
		Bus-2			YES	YES							
		Balasore Line -1	YES	YES				4	4	0	1	1	0
		Bus Coupler						2	1	1	1	1	0
		ICT (400/220) -2	YES	YES				3	3	0	1	1	0
		TBC						3	3	0	1	1	0
		ICT (400/220) -1	YES	YES				3	3	0	1	1	0
		ICT (220 /132) -4					YES	3	3	0	1	1	0
		ICT (220/132) -3					YES	3	3	0	1	1	0
		Balasore Line -2	YES	YES				4	4	0	1	1	0
		132 Kv System											
		Bus-1			YES	YES							
		ICT (220 /132) -4	YES	YES				2	2	0	1	1	0
		Baripada Line	YES	YES				3	3	0	1	1	0
		ICT (220/132) -3	YES	YES				2	2	0	1	1	0
		Bus Coupler						1	1	0	1	1	0
		Rairangpur Line	no	YES				3	3	0	1	0	1
		Sub-Total	14	15	5	5	4	61	60	1	26	25	1
		Total Measurents			43			87					
		Total Available Measurents			40			85					
		Total Non-Available Measurents			3			2					
		% of Non-Availability			**7%**			**2%**					

								ISO			CB		
17	**Binaguri**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System								0			0
		Bus-1			Yes	Yes				0			0
		Bus-2			Yes	no				0			0
		Purnea -1	Yes	Yes				2	2	0	1	1	0
		Tie of Purnea -1						2	2	0	1	1	0
		Purnea -2	Yes	Yes				2	2	0	1	1	0
		Tie of Purnea -2						2	2	0	1	1	0

		LR -80 with Bonga -4		Yes				1	1	0	1	1	0
		LR -80 with Bonga -3		Yes				1	1	0	1	1	0
		Purnea -4	Yes	Yes				2	2	0	1	1	0
		Tie of Purnea -4						2	2	0	1	1	0
		Bus Recator -2 : 125		Yes				2	2	0	1	1	0
		Purnea -3	Yes	Yes				2	2	0	1	1	0
		Tie of Purnea -3						2	2	0	1	1	0
		Bus Recator -1 : 125		Yes				2	2	0	1	1	0
										0			0
		Teesta-2	Yes	Yes				2	2	0	1	1	0
		Tie of Teesta-2						2	2	0	1	1	0
		Bongaigaon 2	Yes	Yes				2	2	0	1	1	0
		Tie of Bongaigaon 2						2	2	0	1	0	1
		Teesta-1	Yes	Yes				2	2	0	1	1	0
		Tie of Teesta-1						2	2	0	1	1	0
		Bongaigaon 1	Yes	Yes				2	2	0	1	1	0
		Bongaigaon 3	yes	yes				2	2	0	1	0	1
		ICT (400/220)- 1					Yes	2	2	0	1	1	0
		Tie of ICT- 1						2	2	0	1	1	0
		Tala 1	Yes	Yes				2	2	0	1	1	0
		LR with Tala-1		Yes				1	1	0			0
										0			0
		ICT (400/220)- 2					Yes	2	2	0	1	1	0
		Tie of ICT- 2						2	2	0	1	1	0
		Tala 2	Yes	Yes				2	2	0	1	1	0
		LR with Tala-2		Yes				1	1	0			0
										0			0
		Tala 4	Yes	Yes				2	2	0	1	1	0
		Tie of Tala 4						2	2	0	1	1	0
		Malbase	Yes	Yes				2	2	0	1	1	0
		LR with Tala-4		Yes				1	1	0			0
										0			0
		220 Kv System								0			0
		Bus-1			Yes	no				0			0
		Bus-2			no	no				0			0
		ICT (400/220) -1	Yes	Yes				3	3	0	1	1	0
		ICT (400/220) -2	Yes	Yes				3	3	0	1	1	0
		Si220 -1	Yes	Yes				4	4	0	1	1	0
		Si220 -2	Yes	Yes				4	4	0	1	1	0
		Brpara 1	Yes	Yes				4	4	0	1	1	0
		Brpara 2	Yes	Yes				4	4	0	1	1	0
		Bus Section -1	Yes	Yes				1	1	0	1	1	0
		Bus Section -2	Yes	Yes				1	1	0	1	1	0
		Bus Coupler						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
										0			0
		Sub-Total	21	28	4	4	2	87	87	0	39	37	2
		Total Measurents			59			126					
		Total Available Measurents			55			124					
		Total Non-Available Measurents			4			2					
		% of Non-Availability			**7%**			**2%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
18	**Birpara**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		220 Kv System											
		Bus-1			Yes	Yes							
		Bus-2			Yes	Yes							
		ICT 2 (220/132)					Yes	3	3	0	1	1	0
		Bay For Silliguri Line 2	Yes	Yes				4	4	0	1	1	0
		Bay For Silliguri Line 1	Yes	Yes				4	4	0	1	1	0
		ICT -1 (220/132)					Yes	3	3	0	1	1	0
		Bay For Chukha HEP Line 2	Yes	Yes				4	4	0	1	1	0
		Bay For Chukha HEP Line 1	Yes	Yes				4	4	0	1	1	0
		Bay For Bongaigaon Line 2	Yes	Yes				4	4	0	1	1	0
		Bay For Bongaigaon Line 1	Yes	Yes				4	4	0	1	1	0
		Bay For Malbase	Yes	Yes				4	4	0	1	1	0
		Bus Coupler Between Bus 1 & Bus 2						1	1	0	1	1	0
		Transfer Bus Coupler						3	3	0	1	1	0
		132 KV System								0			0
		ICT 2 (220/132)	Yes	Yes				2	2	0	1	1	0
		Bus Coupler Between Bus 1 & Bus 2						1	1	0	1	1	0
		Birpara Line 1	Yes	Yes				2	2	0	1	1	0
		Birpara Line 2	Yes	Yes				2	2	0	1	1	0
		ICT 1 (220/132)	Yes	Yes				2	2	0	1	1	0
		Bus			Yes	Yes							
		Sub-Total	11	11	3	3	2	47	47	0	16	16	0
		Total Measurents			30			63					
		Total Available Measurents			30			63					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
19	**Bolangir (n)**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System								0			0
		Bus 1			Yes	yes							
		Bus 2			yes	yes							
		Bay Of Jeypore	yes	yes				2	2	0	1	1	0
		Line Recator with Jeypore		yes				1	1	0	1	1	0
		Tie dia of Jeypore						2	2	0	1	1	0
		ICT 2	yes	yes			yes	2	2	0	1	1	0
		Bay Of Angul	yes	yes				2	2	0	1	1	0

		Line Recator with Angul		yes				1	1	0	1	1	0
		Tie of Angul						2	2	0	1	1	0
		ICT - I (400/220) -I	yes	yes			yes	2	2	0	1	1	0
		Bus Reactor - 80 MVAR		yes				2	2	0	1	1	0
		Tie Dia Bus Reactor - 80 MVAR						2	2	0	1	1	0
		Sub-Total	4	7	2	2	2	18	18	0	10	10	0
		Total Measurents			17			28					
		Total Available Measurents			17			28					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

								ISO			CB		
20	**Dalkhola**	**220 Kv System**	**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		Bus-1			Yes	Yes							
		Bus-2			no	no							
		Dalkhola WB - 1	Yes	Yes				4	4	0	1	1	0
		Dalkhola WB - 2	Yes	Yes				4	4	0	1	1	0
		Transfer Bus Coupler						3	3	0	1	1	0
		Bay For Purnea Line 1	Yes	Yes				4	4	0	1	1	0
		Bay For Purnea Line 2	Yes	Yes				4	4	0	1	1	0
		Bus Coupler						1	1	0	1	1	0
		Bay For Malda Line 1	Yes	Yes				4	4	0	1	1	0
		Bay For Malda Line 2	Yes	Yes				4	4	0	1	1	0
		Bay For Silliguri Line 1	Yes	Yes				4	4	0	1	1	0
		Bay For Silliguri Line 2	Yes	Yes				4	4	0	1	1	0
		Sub-Total	8	8	2	2	0	36	36	0	10	10	0
		Total Measurents			20			46					
		Total Available Measurents			18			46					
		Total Non-Available Measurents			2			0					
		% of Non-Availability			**10%**			**0%**					

								ISO			CB		
21	**Durgapur**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
										0			0
		400 Kv System								0			0
		Bus-1			Yes	no				0			0
		Bus-2			Yes	Yes				0			0
										0			0
		MAITHON-2	Yes	Yes				2	2	0	1	1	0
		Tie of MAITHON-2						3	3	0	2	2	0
										0			0
		MAITHON-1	Yes	Yes				2	2	0	1	1	0
		FARAKKA-2	Yes	Yes				2	2	0	1	1	0
		Tie of MAITHON-1 & FARAKKA-2						2	2	0	1	1	0
										0			0
		FARAKKA-1	Yes	Yes				2	2	0	1	1	0
		Tie of FARAKKA-1						2	2	0	1	1	0
		sagardighi-2						2	2	0	1	1	0
										0			0
		Sagardighi-1	Yes	Yes				2	2	0	1	1	0
		Tie of Sagardighi-1						2	2	0	1	0	1
		bidhan nagar 2	Yes	Yes				2	2	0	1	1	0
		Tie of Bidhan Nagar-2						2	2	0	1	1	0
		ICT-2 (400/220)	yes	yes			no	2	2	0	1	1	0
		Tie of ICT-2 (400/220)						3	3	0	1	1	0
										0			0
		ICT-1 (400/220)	yes	yes			no	2	2	0	1	0	1
		Bidhannagar -1	Yes	Yes				2	2	0	1	1	0
		Tie of ICT-1 (400/220) & Bidhannagar -1						2	2	0	1	1	0
		Line Reactor -1 with Bidhannagar -1		Yes				1	1	0			0
										0			0
		Jamshedpur line	Yes	Yes				2	2	0	1	1	0
		Jamshedpur line Tie						2	2	0	1	0	
		Jamshedpur line -2	no	no				2	2	0	1	0	
		Jamshedpur line -3	yes	yes				2	2	0	1	1	
		Tie of Jamshedpur line & Bus Reactor						2	2	0	1	1	0
		Bus Reactor		Yes				2	2	0	1	1	0
										0			0
		220 Kv System								0			0
		BUS-1			Yes	no				0			0
		BUS-2			Yes	no				0			0
		Bus Coupler						2	2	0	1	0	1
		ICT-2 (400/220)	Yes	Yes				2	2	0	1	1	0
		Parulia - DV1	Yes	Yes				3	3	0	1	1	0
		Bus Sectionaliser						2	2	0	1	1	0
		Parulia - DV2	Yes	Yes				3	3	0	1	1	0
		Durgapur :WB	Yes	Yes				3	3	0	1	1	0
		Bus Coupler (E_7)						2	2	0	1	1	0
		ICT-1 (400/220)	Yes	Yes				2	2	0	1	1	0
		Sub-Total	17	19	4	4	2	68	68	0	32	27	5

		Total Measurents			46			100					
		Total Available Measurents			39			95					
		Total Non-Available Measurents			7			5					
		% of Non-Availability			**15%**			**5%**					

								ISO			CB		
22	**Jharsuguda**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		Bus 1			YES	YES							
	DATA INTERMITTENT	Bus 2			YES	YES							
		Raigarh Line -2	YES	YES				2	2	0	1	1	0
		Tie of Raigarh Line 2						2	2	0	1	1	0
		765/400 kv ICT1	YES	YES			no	2	2	0	1	1	0
		Rouerkela Line -2						2	0	2	1	0	1
		TIE						2	0	2	1	0	1
		765/400 kv ICT2	YES	YES			no	2	0	2	1	0	1
		Bus Reactor-1		YES				2	2	0	1	0	0
		Tie						2	0	2	1	0	0
		Bus Reactor-2		YES				2	2	0	1	1	0
		Tie						2	0	2	1	0	0
		IBEUL Line -1	YES	YES				2	2	0	1	1	0
		Tie of IBEUL Line 1						3	1	2	1	0	0
		Rouerkela Line -2	YES	YES				2	2	0	1	1	0
		TIE						3	1	2	1	0	1
		765kV											
		Bus Reactor-3		YES				2	2	0	1	1	0
		Tie bay						2	2	0	1	1	0
		765/400 kv ICT1					NO	2	2	0	1	1	0
									0				
		Bus Reactor-2		YES				2	2	0	1	1	0
		tie bay						2	2	0	1	1	0
		765/400 kv ICT2					NO	2	2	0	1	1	0
		dharamjaigarh 1	YES	YES				2	2	0	1	1	0
		Tie of dharamjaigarh1						3	3	0	1	1	0
		dharamjaigarh 2	YES	YES				2	2	0	1	1	0
		Tie of dharamjaigarh2						3	3	0	1	1	0
		Angul1						2	1	1	1	1	0
		Tie of angul1						2	2	0	1	1	0
		line reactor of angul1		YES							1	0	1
		Angul2						2	2	0	1	1	0
		Tie of angul2						2	2	0	1	1	0
		line reactor of angul2		YES							1	0	1
		Sub-Total	7	13	2	2	4	58	43	15	29	19	10
		Total Measurents			28			87					
		Total Available Measurents			24			62					
		Total Non-Available Measurents			4			25					
		% of Non-Availability			**14%**			**29%**					

								ISO			CB		
23	**Indravati**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
										0			0
		Bus 1			Yes	Yes				0			0
		Bus 2			Yes	Yes				0			0
		Bay Of Jeypore	Yes	Yes				3	3	0	1	1	0
		Bay Of Rengali	Yes	Yes				3	3	0	1	1	0
		Reactor with Rengali		Yes				1	1	0			0
		Tie Line Between Jeypore & Rengali						2	2	0	1	1	0
										0			0
										0			0
		Bay Of Indravati HPS Line 1	Yes	Yes				2	2	0	1	1	0
		Bay Of Indravati HPS Line 12	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Indravati HPS Line 1						1	1	0	1	1	0
										0			0
		Sub-Total	4	5	2	2	0	14	14	0	6	6	0
		Total Measurents			13			20					
		Total Available Measurents			13			20					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

								ISO			CB		
24	**Gangtok**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		132 Kv System											
		Bus-1			YES	YES							
		Bus Coupler						1	1	0	1	1	0
		Melli	YES	YES				2	2	0	1	1	0
		Gangtok	YES	YES				2	2	0	1	1	0
		ICT 132/66 -I	YES	YES			no	2	2	0	1	1	0
		ICT 132/66 -II	YES	YES			no	2	2	0	1	1	0
										0			0

		Sub-Total	4	4	1	1	2	9	9	0	5	5	0
		Total Measurents			12			14					
		Total Available Measurents			10			14					
		Total Non-Available Measurents			2			0					
		% of Non-Availability			**17%**			**0%**					

								ISO			CB		
25	**Jeypore**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
										0			0
		400 Kv System								0			0
		BUS -1			no	no				0			0
		BUS -2			Yes	Yes				0			0
		BOLANGIR	Yes	Yes				2	2	0	1	1	0
		GAJUA-2	Yes	Yes				2	2	0	1	1	0
		Tie of BOLANGIR & GAJUA-2						2	2	0	1	1	0
		Line Rector with BOLANGIR		Yes				1	1	0			0
										0			0
		GAJUWAKA -1	Yes	Yes				2	2	0	1	1	0
		INDRA	Yes	Yes				2	2	0	1	0	1
		Tie of Indravati & GAJUA-1						2	0	2	1	0	1
										0			0
		ICT -2 (400/220)	Yes	no			Yes	2	2	0	1	1	0
		Bus Reactor		Yes				2	2	0	1	1	0
		Tie of ICT -2 &Bus Reactor						2	2	0	1	1	0
										0			0
		ICT -1 (400/220)					Yes	2	2	0	1	1	0
		Tie of ICT -1						2	0	2	1	1	0
										0			0
										0			0
		220 Kv System								0			0
										0			0
		JAYAN-1	Yes	Yes				4	4	0	1	0	1
		JAYAN-2	Yes	Yes				4	4	0	1	1	0
		ICT -2	Yes	Yes				3	3	0	1	1	0
		ICT -1	Yes	Yes				3	3	0	1	1	0
										0			0
		BUS-1			Yes	Yes				0			0
		BUS-2			Yes	Yes				0			0
										0			0
		BC						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
										0			0
		Sub-Total	9	11	4	4	2	41	37	4	17	14	3
		Total Measurents			30			58					
		Total Available Measurents			27			51					
		Total Non-Available Measurents			3			7					
		% of Non-Availability			**10%**			**12%**					

								ISO			CB		
26	**Keonjhar**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus 1			yes	yes							
		Bus 2			yes	yes							
		Bay Of Baripda	yes	yes				2	2	0	1	1	0
		Tie of Baripda						2	2	0	1	1	0
		ICT -1	yes	yes			NO	2	2	0	1	1	0
		ICT -2	yes	yes			NO	2	2	0	1	1	0
		Bay Of Rengali	yes	yes				2	2	0	1	1	0
		Tie of Rengali						2	2	0	1	1	0
		Bus Reactor - 80 MVAR		yes				2	2	0	1	1	0
		Sub-Total	4	5	2	2	2	14	14	0	7	7	0
		Total Measurents			15			21					
		Total Available Measurents			13			21					
		Total Non-Available Measurents			2			0					
		% of Non-Availability			**13%**			**0%**					

								ISO			CB		
27	**Maithon**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		ICT (400/220)- 2					yes	2	2	0	1	0	1
		Tie of ICT- 2						3	3	0	1	0	1
		Kahal -2	yes	yes				2	2	0	1	1	0
		Tie of Kahal -2						2	2	0	1	1	0
		LR with Kahal -2		yes				1	1	0			
		Kodarama -1	yes	yes				2	2	0	1	1	0
		LR with Kodarama -1		yes				1	1	0			
		Bus Reactor-1						3	3	0	1	0	
		MTHRB -2	yes	yes				2	2	0	1	0	1
		Tie of MTHRB -2						2	2	0	1	1	0
		Kahal-1	yes	yes				2	2	0	1	0	1
		Kahal-1 Tie						2	2	0	1	0	
		Kahal-2	yes	no				2	2	0	1	0	
		LR with Kahal-1		yes				1	1	0			
		MTHRB -1	yes	yes				2	2	0	1	1	0
		Tie of MTHRB -1						2	2	0	1	1	0

		Durgapur -1	yes	yes				2	2	0	1	1	0
		Gaya -1	yes	yes				2	2	0	1	0	1
		Gaya -1 Tie						2	2	0	1	0	1
		Gaya -2	yes	yes				2	2	0	1	1	0
		Tie of Gaya-2						3	3	0	2	2	0
		LR with Gaya -2		yes				1	1	0			
		ICT (400/220)- 1					yes	2	2	0	1	1	0
		Tie of ICT- 1						2	2	0	1	1	0
		Mejia -B- 2	yes	yes				2	2	0	1	1	0
		Jamshepur -1	yes	no				2	2	0	1	1	0
		Tie of Jamshepur -1						2	2	0	1	0	1
		Lline Mejia -B- 1	yes	yes				2	2	0	1	0	1
		Tie Mejia -B- 1						2	2	0	1	0	1
		Lline Reactor Mejia -B- 1		yes				1	1	0	1	1	0
		Mejia -B-3	yes	yes				2	2	0	1	0	1
		Tie of Mejia -B-3						2	2	0	1	0	1
		Raghunathpur	yes	yes				2	2	0	1	0	1
		Ranchi 1	yes	yes				2	2	0	1	1	0
		Tie of Ranchi 1						2	2	0	1	1	0
		Durgapur-2	yes	yes				2	2	0	1	1	0
		Bus Sectionalizer(Bus1 & Bus3)						2	2	0	1	0	1
		220 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		ICT (400/220) -1	yes	yes				3	3	0	1	1	0
		ICT (400/220) -2	yes	yes				3	3	0	1	0	1
		Dhanbad -1	yes	yes				4	4	0	1	1	0
		Dhanbad -2	yes	yes				4	4	0	1	1	0
		Kalyaneswari -3	yes	yes				4	4	0	1	1	0
		Kalyaneswari -4	yes	yes				4	4	0	1	1	0
		Bus Coupler						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
										0			0
		Sub-Total	22	27	4	4	2	98	98	0	42	25	17
		Total Measurents			59			140					
		Total Available Measurents			57			123					
		Total Non-Available Measurents			2			17					
		% of Non-Availability			**3%**			**12%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
28	**Malda**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System								0			0
										0			0
		Bus-1			Yes	Yes				0			0
		Bus-2			Yes	Yes				0			0
		ICT (400 /220)-1					no	3	3	0	1	1	0
										0			0
		Farakka-2	Yes	Yes				4	4	0	1	1	0
		ICT (400 /220)-2					yes	3	3	0	1	1	0
		TBC						3	3	0	1	1	0
		Purnia-2	Yes	Yes				4	4	0	1	1	0
		Line Reactor with Purnia -2		Yes				1	1	0			0
										0			0
		Purnia-1	Yes	Yes				4	4	0	1	1	0
		Line Reactor with Purnia -1		Yes				1	1	0			
		BC						1	1	0	1	1	0
										0			0
		Farakka-1	**Yes**	**Yes**				4	4	0	1	1	0
		220 KV								0			0
		ICT (400/220) -1	Yes	Yes				**3**	3	0	**1**	**1**	0
		ICT (400/220) -2	Yes	Yes				**3**	3	0	**1**	**1**	0
		BUS-1			Yes	Yes				0			0
		BUS-2			Yes	Yes				0			0
										0			0
		DALKH-1	Yes	Yes				**4**	**4**	0	**1**	**1**	0
		DALKH-2	Yes	Yes				**4**	**4**	0	**1**	**1**	0
										0			0
		ICT (220/ 132) -5					yes	**3**	3	0	**1**	**1**	0
		BC						**2**	2	0	**1**	**1**	0
		ICT (220/ 132) -4					yes	**3**	3	0	**1**	**1**	0
		TBC						**3**	**3**	0	**1**	**1**	0
		ICT (220/ 132) -3					NO	**3**	**3**	0	**1**	**1**	0
										0			0
		132 KV								0			0
		Bus-1			Yes	Yes				0			0
										0			0
		ICT (220/ 132) -5	Yes	Yes			no	2	2	0	1	1	0
		BC						2	2	0	1	1	0
		ICT (220/ 132) -4	Yes	Yes				2	2	0	1	1	0
										0			0
		CS WB-1	Yes	Yes				3	3	0	1	1	0
		CS WB-2	Yes	Yes				3	3	0	1	1	0
		ICT (220/ 132) -3	Yes	Yes				2	2	0	1	1	0
										0			0
		Sub-Total	13	15	5	5	6	70	70	0	23	23	0
		Total Measurents			44			93					
		Total Available Measurents			41			93					
		Total Non-Available Measurents			3			0					
		% of Non-Availability			**7%**			**0%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
29	**RANGPO**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**

		132 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		Bus-3			yes	yes							
		Bus-4			yes	yes							
		CHUZACHEN	yes	yes				3	3	0	1	1	0
		GANTK 1	yes	yes				3	3	0	1	1	0
		RANGIT	yes	yes				3	3	0	1	1	0
		GANTAK 2	yes	yes				3	3	0	1	1	0
		BC 1						2	2	0	1	1	0
		BC2						2	2	0	1	1	0
		BUS SECTIONALISER 1						2	2	0	1	1	0
		BUS SECTIONALISER 2						2	2	0	1	1	0
		220/132 KV ICT 1	yes	yes				3	3	0	1	1	0
		220/132 KV ICT 2	yes	yes				3	3	0	1	1	0
		220/132 KV ICT 3	yes	yes				3	3	0	1	1	0
		220 Kv System											
		Bus 1			yes	yes							
		Bus 2			yes	yes							
		220/132 kV ICT 1					yes	3	3	0	1	1	0
		220/132 kV ICT 2					yes	3	3	0	1	1	0
		220/132 kV ICT 3					yes	3	3	0	1	1	0
		400/220 kV ICT 1	yes	yes				3	3	0	1	1	0
		400/220 kV ICT 2	yes	yes				3	3	0	1	1	0
		400/220 kV ICT 3	yes	yes				3	3	0	1	1	0
		400/220 kV ICT 4	yes	yes				3	3	0	1	1	0
		400/220 kV ICT 5	yes	yes				3	3	0	1	1	0
		BC						2	2	0	1	1	0
		400 Kv System											
		Bus 1			yes	yes							
		Bus 2			yes	yes							
		Binaguri 2	yes	yes				3	3	0	1	1	0
		Teesta 2	yes	yes				3	3	0	1	1	0
		Binaguri 1	yes	yes				3	3	0	1	1	0
		Teesta 1	yes	yes				3	3	0	1	1	0
		400/220 kV ICT 5					yes	3	3	0	1	1	0
		400/220 kV ICT 4					yes	3	3	0	1	1	0
		400/220 kV ICT 3					yes	3	3	0	1	1	0
		400/220 kV ICT 2					yes	3	3	0	1	1	0
		400/220 kV ICT 1					yes	3	3	0	1	1	0
		Bus Reactor 1		yes				3	3	0	1	1	0
		Bus Reactor 2		yes				3	3	0	1	1	0
		Bus Coupler						2	2	0	1	1	0
		Sub-Total	16	18	8	8	8	90	90	0	32	32	0
		Total Measurents			58			122					
		Total Available Measurents			58			122					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

								ISO			**CB**		
30	**Rengali**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			Yes	Yes							
		Bus-2			Yes	Yes							
										0			0
		Tie of BUS 2 & Indravati						3	3	0	1	1	0
		Reactor With Indravati Line		Yes				1	1	0			0
		Bay of Indravati Line	Yes	Yes				2	2	0	1	1	0
										0			0
		ICT (400/220) -2					Yes	2	2	0	1	1	0
		ICT (400/220) -1					Yes	2	2	0	1	1	0
		Tie of ICT-2 & 1						2	2	0	1	1	0
										0			0
		TSTPS Line 1	Yes	Yes				2	2	0	1	1	0
		Tie Line Between Bus 1 & TSTPS Line 1						2	2	0	1	1	0
										0			0
		TSTPS Line 2	Yes	Yes				2	2	0	1	1	0
		Keonjhar Line	Yes	Yes				2	2	0	1	1	0
		Tie Line Between TSTPS Line 2 & KeonjharLine						2	2	0	1	1	0
		Reactor - Keonjhar Line		Yes				1	1	0			0
		220 Kv System								0			0
		Bus 1			Yes	Yes				0			0
		Bus2			no	Yes				0			0
		ICT (400/220) -2	Yes	YES				3	3	0	1	1	0
		ICT (400/220) -1	Yes	Yes				3	3	0	1	1	0
		Transfer Bus Coupler						3	3	0	1	1	0
		Bus Coupler Between Bus 1 & Bus 2						1	0	1	1	1	0
										0			0
		Rengali Line 2	Yes	Yes				4	4	0	1	1	0
		Rengali Line 1	Yes	Yes				4	4	0	1	1	0
										0			0
		Sub-Total	8	10	4	4	2	41	40	1	16	16	0
		Total Measurents			28			57					
		Total Available Measurents			27			56					
		Total Non-Available Measurents			1			1					
		% of Non-Availability			**4%**			**2%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
31	Rourkela							Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		400 Kv System								0			0
		Bus-1			Yes	Yes				0			0
		Bus-2 (Value shows incorrcet value)			Yes	Yes				0			0
										0			0
		ICT (400/220)- 1					Yes	2	2	0	1	1	0
		Tie of ICT- 1						2	2	0	1	1	0
		Bus Reactor -1		Yes				2	2	0	1	1	0
		Bus Reactor -2		no				2	0	2	1	0	1
		ICT (400/220)- 2					no	2	2	0	1	0	1
		Tie of ICT- 2						1	1	0	1	0	1
		ICT (400/220)- 3								0	1	0	1
		Tie of ICT- 3					no				1	0	1
		Jharsugura (Raigarh-3)	Yes	Yes				2	2	0	1	1	0
		Tie of Raigarh-3						2	2	0	1	1	0
		Ranchi -1	Yes	Yes				2	2	0	1	1	0
										0			0
		Sterlite (Raigarh-4)	Yes	Yes				2	2	0	1	1	0
		Tie of Sterlite (Raigarh-4)						2	2	0	1	1	0
										0			0
		Ranchi-2	Yes	Yes				2	2	0	1	1	0
		Tie of Ranchi-2						2	2	0	1	1	0
		Sterlite-2	Yes	Yes				2	2	0	1	0	1
		LR with Sterlite-2		Yes				1	1	0			0
										0			0
		Jhasruguda -1	Yes	Yes				2	2	0	1	1	0
		Tie of jharsuguda -1						2	2	0	1	1	0
		Chaibasa -1	Yes	Yes				2	2	0	1	0	1
		LR with jharsuguda1		Yes				1	1	0			0
		LR with Chaibasa -1		Yes				1	1	0	1	1	0
										0			0
		chaibasa-2	Yes	Yes				2	2	0	1	0	1
		Tie of chaibasa-2						2	2	0	1	0	1
		TSTPS -2	Yes	Yes				2	2	0	1	0	1
		LR with chaibasa -2		Yes				1	1	0	1	0	1
										0			0
		TSTPS -1	Yes	Yes				2	2	0	1	0	1
		Tie of TSTPS -1						2	2	0	1	0	1
										0			0
1		**220Kv System**											
		Bus-1			No	Yes							
		Bus-2			No	Yes							
		Salakathi-1	Yes	Yes				4	0	4	1	0	1
		Salakathi-2	Yes	Yes				4	0	4	1	0	1
		Birpara-1	Yes	Yes				4	0	4	1	0	1
		Birpara-2	Yes	Yes				4	0	4	1	0	1
		Bus Coupler						2	0	2	1	0	1
		TBC						3	0	3	1	0	1
										0			0
		220 Kv System								0			0
		Bus-1			Yes	Yes				0			0
		Bus-2			Yes					0			0
		ICT (400/220) -1	Yes	Yes				3	3	0	1	1	0
		ICT (400/220) -2	Yes	Yes				3	3	0	1	1	0
		Tarkera -1	Yes	Yes				4	4	0	1	1	0
		Tarkera -2	Yes	Yes				4	4	0	1	1	0
		Bus Coupler						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
										0			0
		Sub-Total	18	24	6	5	3	86	63	23	38	19	19
		Total Measurents			56			124					
		Total Available Measurents			51			82					
		Total Non-Available Measurents			5			42					
		% of Non-Availability			**9%**			**34%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
32	Siliguri -220							Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		220 Kv System											
		Bus 1			Yes	Yes							
		Bus 2			Yes								
		ICT-1 (220/132) 50 MVA					Yes	3	3	0	1	1	0
		ICT-2(220/132) 160 MVA					Yes	3	3	0	1	1	0
		Bay For Silliguri 400 Line 2	Yes	Yes				4	4	0	1	1	0
		Bay For Silliguri 400 Line 1	Yes	Yes				4	4	0	1	1	0
		TBC						3	3	0	1	1	0
		Bus Coupler Between Bus 1 & Bus 2						1	1	0	1	1	0
		Bay For Dalkhola Line 1	Yes	Yes				4	4	0	1	1	0
		Bay For dalkhola Line 2	Yes	Yes				4	4	0	1	1	0
		132 KV System											
		Bus 1			Yes	Yes							
		ICT-1 (220/132) : 50 MVA	Yes	Yes				3	3	0	1	1	0
		ICT-2(220/132) : 160 MVA	Yes	Yes				3	3	0	1	1	0
		Bus Coupler Between						2	2	0	1	1	0
		Bay Of Rangit (Karseong)	Yes	Yes				3	3	0	1	1	0
		Bay Of Melli	Yes	Yes				3	3	0	1	1	0
		Bay Of NBU Line 1	Yes	Yes				3	3	0	1	1	0
		Bay Of NBU Line 2	Yes	Yes				3	3	0	1	1	0
		Sub-Total	10	10	3	2	2	46	46	0	15	15	0
		Total Measurents			27			61					
		Total Available Measurents			27			61					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
33	Subhasgram							Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		400 Kv System											
		Bus -1 (Not matching with C. room)			Yes	Yes							
		Bus -2			Yes	Yes							
		Sagardighi line	Yes	Yes				2	2	0	1	1	0
		Tie of ICT-1 & Sagardighi						2	2	0	1	1	0
		400 /220 KV ICT -1					yes	2	2	0	1	1	0
		Jeerat line	Yes	Yes				2	2	0	1	1	0
		Tie of ICT-2 & Jeerat						2	2	0	1	1	0
		400 /220 KV ICT -2					no	2	2	0	1	1	0
		400 /220 KV ICT -4					Yes	2	2	0	1	1	0
		tie ICT 4						2	2	0	1	1	0
		LINE RECTOR OF SAGARDIGHI		Yes				1	1	0			0
		400 /220 KV ICT -3					no	2	2	0	1	1	0
		tie ICT 3						2	2	0	1	1	0
		HALDIA 1	YES	YES				2	2	0	1	1	0
		TIE OF HALDIA 1						2	2	0	1	1	0
		HALDIA 2	YES	YES				2	2	0	1	1	0
		TIE OF HALDIA 2						2	2	0	1	1	0
		220 Kv System											
		Bus -1			Yes	Yes							
		Bus -2			Yes	Yes							
		BC						1	1	0	1	1	0
		TBC						3	3	0	1	1	0
		WB 1	Yes	Yes				4	4	0	1	1	0
		WB 1	Yes	Yes				4	4	0	1	1	0
		400 /220 KV ICT -1	Yes	Yes				3	3	0	1	1	0
		load-1	Yes	Yes				4	4	0	1	1	0
		load-2	Yes	Yes				4	4	0	1	1	0
		400 /220 KV ICT -2	Yes	Yes				3	3	0	1	1	0
		400 /220 KV ICT -3	Yes	Yes				2	2	0	1	1	0
		400 /220 KV ICT -4	Yes	Yes				2	2	0	1	1	0
		Sub-Total	12	13	4	4	4	59	59	0	24	24	0
		Total Measurents			37			83					
		Total Available Measurents			35			83					
		Total Non-Available Measurents			2			0					
		% of Non-Availability			**5%**			**0%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
34	Talcher HVDC							Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		400Kv System								0			0
		Bus-1			YES	YES				0			0
		Bus-2			YES	YES				0			0
		Bus-3			YES	YES				0			0
		Bus-4			YES	YES				0			0
										0			0
		Bus section -1						2	2	0	1	1	0
		Bus section -2						2	2	0	1	1	0
										0			0
		Pole -1	YES		YES			3	3	0	1	1	0
		Tie of pole-1						2	2	0	1	1	0
		Filter bank -3 with Pole -1		YES				6	6	0	5	5	0
										0			0
		Pole -2	YES		YES			3	3	0	1	1	0
		Tie of pole-2						2	2	0	1	1	0
		Filter bank -2 with Pole -2		YES				5	5	0	6	6	0
										0			0
		Line NTPC1	YES	YES				3	3	0	1	1	0
		Line NTPC2	YES	YES				3	3	0	1	1	0
		Line NTPC3	YES	YES				3	3	0	1	1	0
		Line NTPC4	YES	YES				3	3	0	1	1	0
										0			0
		AC Filter Bank -1		YES				8	8	0	6	6	0
										0			0
		Sub-Total	6	7	6	4	0	45	45	0	27	27	0
		Total Measurents			23			72					
		Total Available Measurents			23			72					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
35	Gazuwaka HVDC							Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		Bus-1			No	No				0			0
		Bus-2			No	No				0			0
		Bus-3			No	No				0			0
		Bus-4			No	No				0			0
		Bus-5			No	No				0			0
		Bus-6			No	No				0			0
										0			0
		Bus section -1						2	0	2	1	0	1
		Bus section -2						2	0	2	1	0	1
										0			0
		Jeypore-3	No	No				3	0	3	1		1
		Line Reactor -1 with Jeypore-3		No				1	0	1	1		1
		Tie of Jeypore-3						2	0	2	1		1
		Filter bank with Jeypore-3		No				1	0	1	4		4
										0			0

		Jeypore-4	No	No				3	0	3	1		1
		Line Reactor -2 with Jeypore-4		No				1	0	1	1		1
		Tie of Jeypore- 4						2	0	2	1		1
		Pole 1 (East) with Jeypore-4						3	0	3	1		1
										0			0
		Pole 2(East)						3	0	3	1	0	1
		Tie of Pole -2						2	0	2	1	0	1
		Filter bank with Pole -2		No				6	0	6	5	0	5
										0			0
		Pole 2 (South)						3	0	3	1	0	1
		Tie of Pole -2						2	0	2	1	0	1
		Filter bank with Pole -2		No				6	0	6	5	0	5
										0			0
		Pole 1(South)						3	0	3	1	0	1
		Tie of Pole -1						2	0	2	1		1
		Filter bank with Pole -1		No				6	0	6	5	0	5
										0			0
		Sub-Total	2	8	6	6	0	53	0	53	34	0	34
		Total Measurents			22			87					
		Total Available Measurents			0			0					
		Total Non-Available Measurents			22			87					
		% of Non-Availability			**100%**			**100%**					

								ISO			CB		
36	**Farakka**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System								0			0
		Bus 1			Yes	Yes				0			0
		Bus 2			Yes	Yes				0			0
		Line Malda -2	Yes	Yes				2	0	2	1	1	0
		Tie of Malda 2						3	1	2	1	1	0
										0			0
		Line Malda -1	Yes	Yes				2	0	2	1	1	0
		Tie of Malda 1						2	0	2	1	1	0
		400/220 ICT					No	2	0	2	1	1	0
										0			0
		Bus -Rector -1		Yes				2	0	2	1	1	0
		Tie of Bus -Rector -1						2	0	2	1	1	0
		Line Sagardighi	Yes	Yes				2	0	2	1	0	1
										0			0
		Line BAHARAMPUR	Yes	Yes				2	0	2	1	1	0
		Tie of BAHARAMPUR						2	1	1	1	1	0
		Line Durgapur	Yes	Yes				2	2	0	1	0	1
		Line Reactor with DGP		Yes				1	1	0			
										0			0
		Line Kahal2	Yes	Yes				2	2	0	1	1	0
		Tie of Kahal2						2	2	0	1	1	0
		Line Durgapur2	Yes	Yes				2	2	0	1	1	0
										0			0
		Line Kahalgaon 1	Yes	Yes				2	2	0	1	1	0
		Tie of Kahalgaon 1						2	2	0	1	1	0
		Bus -Rector -2		Yes				2	2	0	1	1	0
										0			0
		Line Kahalgaon 3	YES	YES				2	2	0	1	1	0
		Tie of Kahalgaon 3						3	3	0	2	2	0
										0			0
		Line Kahalgaon 4	YES	YES				2	2	0	1	1	0
		Tie of Kahalgaon 4						3	3	0	2	2	0
										0			0
										0			0
		UNIT-3 HV	YES	yes				3	2	1	2	2	0
										0			0
		UNIT-2 HV	yes	no				2	2	0	1	1	0
		Tie of UNIT-2 HV						2	1	1	1	1	0
		400/11 KV Stn Xfmr -2	Yes	Yes			No	2	2	0	1	1	0
										0			0
		UNIT-1 HV	Yes	Yes				2	2	0	1	1	0
		Tie of UNIT-1 HV						2	2	0	1	1	0
		400/11 KV Stn Xfmr -1	Yes	Yes			No	2	1	1	1	1	0
										0			0
		UNIT-4 HV	Yes	Yes				2	0	2	1	1	0
		Tie of UNIT-4 HV						2	0	2	1	0	1
		400/11 KV Stn Xfmr -3	Yes	Yes			No	2	0	2	1	0	1
										0			0
		UNIT-5 HV	yes	yes				3	0	3	2	2	0
										0			0
		UNIT-6 HV	yes	yes				1	1	0	1	1	0
		Tie of UNIT-6 HV						3	3	0	1	1	0
										0			0
		220 Kv System								0			0
		220/400 KV ICT	No	No				1	0	1	1	0	1
		Line Lalmatia	Yes	Yes				2	0	2	1	0	1
		Bus 1			**Yes**	**Yes**				0			0
										0			0
		21 Kv System								0			0
		UNIT- 1 LV	Yes	Yes						0			0
		UNIT- 2 LV	Yes	Yes						0			0
		UNIT-3 LV	Yes	Yes						0			0
		UNIT-4 LV	Yes	Yes						0			0
		UNIT-5 LV	no	Yes						0			0
		UNIT-6 LV	No	No						0			0
										0			0
		Sub-Total	27	30	3	3	4	77	43	34	40	34	6
		Total Measurents			67			117					

		Total Available Measurents	53	77	
		Total Non-Available Measurents	10	40	
		% of Non-Availability	**15%**	**34%**	

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
37	**Kahalgaon**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System								0			0
		Bus -1			no	no				0			0
		Bus-2			no	no				0			0
		Line Barh 2	yes	yes				2	0	2	1	0	1
		Tie of Barh 2						2	0	2	1	0	1
		Line Farak -1	yes	yes				2	0	2	1	0	1
										0			0
		Line Farak 2	yes	yes				2	2	0	1	1	0
		Tie of Farak 2						2	2	0	1	1	0
		Line Maithon -1	yes	yes				2	2	0	1	0	1
										0			0
		ICT (400/132) - 3	yes	yes				2	2	0	1	0	1
										0			0
		Line Maithon-2	yes	yes				2	2	0	1	0	1
		Tie of Maithon-2						2	2	0	1	1	0
		Line Farak4	yes	yes				2	2	0	1	1	0
										0			0
		Line Farak -3	yes	yes				2	0	2	1	1	0
		Tie of Farak -3						2	0	2	1	1	0
		Line Banka -2	yes	yes				2	0	2	1	1	0
										0			0
		Line Banka 1	yes	yes				2	0	2	1	1	0
		Tie of Banka 1						2	0	2	1	0	1
		Line LAKHISARAIf- 2	yes	yes				2	2	0	1	0	1
										0			0
		Line LAKHISARAI -1	yes	yes				2	0	2	1	0	1
		Tie of LAKHISARAI-1						2	1	1	1	1	0
		ICT (400/132) - I I					yes	2	2	0	1	1	0
										0			0
		Line Barh -1	yes	yes				2	0	2	1	1	0
		Tie of Barh-1						3	0	3	2	1	1
										0			0
		UNIT-4 HV	yes	yes				3	1	2	2	2	0
										0			0
		UNIT-3 HV	no	no				2	2	0	1	1	0
		Tie of UNIT-3 HV						2	2	0	1	1	0
		Bus Reactor-2		no				2	2	0	1	0	1
		Bus Reactor-2 Tie						2	2	0	1	0	1
		UNIT-2 HV	no	no				2	2	0	1	1	0
		Tie of UNIT-2 HV						2	2	0	1	0	1
		Bus Reactor-1		no				2	2	0	1	0	1
										0			0
		UNIT-1 HV	no	no				2	2	0	1	1	0
		Tie of UNIT-1 HV						2	2	0	1	1	0
		ICT (400/132) - I					yes	2	1	1	1	1	0
										0			0
		UNIT-5 HV	no	no				3	0	3	2	0	2
										0			0
		UNIT-6 HV	no	no				3	0	3	2	0	2
										0			0
		UNIT-7 HV	no	no				3	0	3	2	0	2
										0			0
										0			0
		21 Kv System								0			0
		UNIT- 1 LV	yes	yes						0			0
		UNIT- 2 LV	yes	yes						0			0
		UNIT-3 LV	yes	yes						0			0
		UNIT-4 LV	yes	yes						0			0
		UNIT-5 LV	yes	yes						0			0
		UNIT-6 LV	no	yes						0			0
		UNIT-7 LV	yes	yes						0			0
										0			0
		132 Kv System								0			0
		132 /11 KV Xfmr -1	no	no			No	2	2	0	1	1	0
		132 /11 KV Xfmr -2	no	no			No	2	2	0	1	1	0
		132 /11 KV Xfmr 3	no	no			No	2	2	0	1	1	0
		132 /11 KV Xfmr 4	no	no			No	2	0	2	1	1	0
		400/132 KV ICT -1	no	no				2	2	0	1	1	0
		400/132 KV ICT -2	no	no				2	2	0	1	1	0
		bus coupler 1						3	2	1	1	1	0
		bus coupler 2						3	2	1	1	1	0
		bus sectionaliser						3	3	0	1	1	0
		Lalmatia line	No	no				3	3	0	1	1	0
		Sabour line	no	no				3	0	3	1	1	0
		Kahalgaon Line	no	no				3	3	0	1	1	0
		Bus			no	no							
										0			0
		Sub-Total	36	38	1	1	6	105	62	43	52	32	20
		Total Measurents			82			157					
		Total Available Measurents			43			94					
		Total Non-Available Measurents			39			63					
		% of Non-Availability			**48%**			**40%**					
								ISO			**CB**		

38	Lalmatia		MW	MVAR	VOL	FREQ	OLTC	Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		220 Kv System											
		BUS-1			no	no			0			0	
		Bus Coupler						2	0	2	1	0	1
		220/132 KV Xfmr -1					No	2	0	2	1	0	1
		Line Farkka	no	no				3	0	3	1	0	1
		220/132 KV Xfmr -2					No	2	0	2	1	0	1
		132 Kv System							0			0	
		BUS-1			no	no			0			0	
		220/132 KV Xfmr-1	no	no				2	0	2	1	0	1
		220/132 KV Xfmr-2	no						0			0	
		Station Xfmr-1 (132 /11)	no	no			No	2	0	2	1	0	1
		Station Xfmr- 2(132 /11)	no	no			No	2	0	2	1	0	1
		Bus Coupler						1	0	1	1	0	1
		JSEB BC	no	no				1	0	1	1	0	1
		Sub-Total	6	5	1	1	4	17	0	17	9	0	9
		Total Measurents			17			26					
		Total Available Measurents			0			0					
		Total Non-Available Measurents			17			26					
		% of Non-Availability			**100%**			**100%**					

39	Rangit		MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
								Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		132 Kv System											
		Bus-1			yes	yes							
		Bus-2			NO	NO							
		Bus Coupler						1	0	1	1	1	0
		Gangtok	yes	yes				4	4	0	1	1	0
		Rammam- II	yes	yes				4	0	4	1	1	0
		Si-220	yes	yes				4	0	4	1	1	0
		Melli	yes	yes				4	0	4	1	1	0
		Rchoutak	no	no				4	0	4	1	0	1
		Unit-1	yes	yes				2	0	2	1	1	0
		Unit-2	no	no				2	0	2	1	1	0
		Unit-3	yes	yes				2	0	2	1	1	0
		ICT 132/66	yes	yes			no	3	0	3	1	1	0
		66 Kv System											
		ICT 132/66						1	0	1	1	1	0
		Rohotak	yes	yes				2	0	2	1	1	0
		Station Xfmr	yes	yes				1	0	1	1	1	0
		Bus-1			yes	yes							
		Sub-Total	11	11	3	3	1	34	4	30	13	12	1
		Total Measurents			29			47					
		Total Available Measurents			22			16					
		Total Non-Available Measurents			7			31					
		% of Non-Availability			**24%**			**66%**					

40	Talcher		MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
								Total	Avl.	Not Avl.	Total	Avl.	Not Avl.
		400 Kv System								0			0
		Bus -1			**Yes**	**Yes**				0			0
		Bus-2			**Yes**	**Yes**				0			0
										0			0
		ICT (400/ 220) -1					**yes**	**2**	**2**	0	**1**	**1**	0
		Tie of ICT -1						**2**	**2**	0	**1**	**1**	0
		Line Rourk -1	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		LR with Rourk -1		**Yes**				**1**	**1**	0			0
										0			0
		Line Rourk -2	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		Tie of Rourk -2						**2**	**2**	0	**1**	**1**	0
		Line Rengali -1	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		LR with Rourk -2		**Yes**				**1**	**1**	0			0
										0			0
		Line Rengali 2	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		Tie of Rengali 2						**2**	**2**	0	**1**	**1**	0
		Line GMR	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
										0			0
		Line ANGUL	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		Tie of ANGUL						**3**	**2**	1	**1**	**1**	0
										0			0
		UNIT-1HV	**Yes**	**Yes**				**3**	**3**	0	**2**	**2**	0
										0			0
		UNIT-2 HV	**Yes**	**Yes**				**3**	**3**	0	**2**	**2**	0
										0			0
		ICT (400/ 220) -II					**yes**	**2**	**2**	0	**1**	**1**	0
		Tie of ICT - II						**3**	**2**	1	**1**	**0**	1
										0			0
		Bus Section -I	**Yes**	**Yes**				**1**	**0**	1	**1**	**1**	0
		Bus Section -II	**Yes**	**Yes**				**1**	**1**	0	**1**	**1**	0
										0			0
		Line HVDC -1	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		Line HVDC -2	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		Line HVDC -3	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
		Line HVDC -4	**Yes**	**Yes**				**2**	**2**	0	**1**	**1**	0
										0			0
		Bus Section -III						**1**	**1**	0	**1**	**1**	0
		Bus Section -IV						**1**	**1**	0	**1**	**1**	0
										0			0
		UNIT-3 HV	**Yes**	**Yes**				**1**	**1**	0	**1**	**1**	0

		Tie of UNIT-3 HV						2	2	0	1	1	0
		Stn Xfmr (400/11)-III	Yes	Yes			No	2	2	0	1	1	0
										0			0
		UNIT-4 HV	Yes	Yes				1	1	0	1	1	0
		Tie of UNIT-4 HV						1	0	1	1	1	0
		UNIT-5 HV	Yes	Yes				1	1	0	1	1	0
		Tie of UNIT-5 HV						1	1	0	1	1	0
		UNIT-6 HV	Yes	Yes				1	1	0	1	1	0
		Tie of UNIT-6 HV						2	2	0	1	1	0
		Stn Xfmr (400/11)-IV	Yes	Yes			No	2	2	0	1	1	0
										0			0
		220 KV								0			0
										0			0
		ICT (400/220) - I	Yes	Yes				3	3	0	1	1	0
		ICT (400/220) - II	Yes	Yes				3	3	0	1	1	0
										0			0
		Bus -1			Yes	Yes				0			0
		Bus-2			Yes	no				0			0
										0			0
		Meeram -1	Yes	Yes				4	4	0	1	1	0
		Meeram -2	Yes	Yes				4	4	0	1	1	0
		BC						1	0	1	1	1	0
		TBC						3	3	0	1	1	0
		TTPS	Yes	Yes				4	4	0	1	1	0
		Rengali HPS	Yes	Yes				4	4	0	1	1	0
		Stn Xfmr (220 /11)-IV	Yes	Yes			No	3	3	0	1	1	0
										0			0
		21 Kv System								0			0
		UNIT- 1 LV	Yes	Yes						0			0
		UNIT- 2 LV	yes	yes						0			0
		UNIT-3 LV	Yes	Yes						0			0
		UNIT-4 LV	no	no						0			0
		UNIT-5 LV	Yes	Yes						0			0
		UNIT-6 LV	Yes	Yes						0			0
										0			0
		Sub-Total	33	35	4	4	5	91	86	5	44	43	1
		Total Measurents			81			135					
		Total Available Measurents			75			129					
		Total Non-Available Measurents			6			6					
		% of Non-Availability			**7%**			**4%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
41	**Teesta NHPC**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System								0			0
		Bus -1			Yes	Yes				0			0
		Bus-2			Yes	yes				0			0
										0			0
		Line siliguri 400 -1 (RANGPO 1)	Yes	Yes				3	3	0	1	1	0
		Line siliguri 400 -2 (RANGPO 2)	Yes	Yes				3	3	0	1	1	0
										0			0
		Bus Coupler						1	1	0	1	1	0
										0			0
		Unit-1	Yes	Yes				3	3	0	1	1	0
		Unit-2	Yes	Yes				3	3	0	1	1	0
		Unit-3	no	no				3	3	0	1	1	0
										0			0
		Sub-Total	5	5	2	2	0	16	16	0	6	6	0
		Total Measurents			14			22					
		Total Available Measurents			12			22					
		Total Non-Available Measurents			2			0					
		% of Non-Availability			**14%**			**0%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
42	**Sterlite**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			YES	YES							
		Bus-2			YES	YES							
		rourkela 2	YES	YES				2	2	0	1	1	0
		tie dia						2	2	0	1	1	0
		Raigarh Line 2	YES	YES				2	2	0	1	1	0
		rourkela 4	YES	YES				2	2	0	1	1	0
		tie dia						2	2	0	1	1	0
		Raigarh Line 4	YES	YES				2	2	0	1	1	0
		BUS SECTIONALISER 1						2	2	0	1	1	0
		BUS SECTIONALISER 2						2	2	0	1	1	0
		meeramundali 1	YES	YES				2	2	0	1	1	0
		tie dia						2	2	0	1	1	0
		meeramundali 2						2	2	0	1	1	0
		SMLTR-1	yes	yes									
		SMLTR-1 Tie											
		SMLTR-2	yes	yes									
		SMLTR-2 Tie											
		SMLTR-3	yes	yes									
		SMLTR-3 Tie											
		Station Xformer -3	YES	YES			No	2	0	2	1	0	1
		TIE DIA						2	0	2	1	0	1
		Station Xformer -4	YES	YES			No	2	0	2	1	0	1
									0			0	
									0			0	
									0			0	
		400/220 ICT 2					NO	2	0	2	1	0	1

		TIE DIA						2	0	2	1	0	1
		UNIT- 1HV						2	0	2	1	0	1
		UNIT- 2HV						2	0	2	1	0	1
		UNIT- 3HV						2	0	2	1	0	1
		UNIT- 4HV						2	0	2	1	0	1
		400/220 ICT 1					NO	2	0	2	1	0	1
		TIE DIA						4	0	4	2	0	2
		UNIT 1 HV TIE DIA						4	0	4	2	0	2
		GT-1	yes	yes								0	
		GT-2	yes	yes									
		GT-3	yes	yes									
		GT-4	yes	yes									
		UNIT- 1 LV	yes	yes									
		UNIT- 2 LV	yes	yes									
		UNIT-3 LV	yes	yes									
		UNIT-4 LV	yes	yes									
										0			0
		220 Kv System								0			0
		Line Vedanta -1	no	no				1	1	0	1	1	0
		Line Vedanta -2	NO	NO				1	1	0	1	1	0
		400/220 Xfmr -1	NO	NO				1	0	1			
		400/220 Xfmr -1	no	no				1	0	1			
		Sub-Total	22	22	2	2	4	54	24	30	27	13	14
		Total Measurents			52			81					
		Total Available Measurents			40			37					
		Total Non-Available Measurents			12			44					
		% of Non-Availability			**23%**			**54%**					

								ISO			CB		
43	**Maithon RT Bank**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		UNIT- 1 HV(GT)	yes	yes			yes	3	3	0	1	1	0
		Line Maithon -1	yes	yes				3	3	0	1	1	0
		Tie Dia of Maithon 1						2	2	0	1	1	0
		UNIT-2 HV(GT)	yes	yes			yes	3	3	0	1	1	0
		Line Ranchi -1	yes	yes				2	2	0	1	1	0
		Tie Dia of Ranch1						2	2	0	1	1	0
		Line Reactor with Ranchi 1		yes				1	1	0	1	1	0
		Line Maithon -2	yes	yes				3	3	0	1	1	0
		400/11 KV Stn Xfmr -1	yes	yes			yes	3	3	0	1	1	0
		Tie Dia of Maithon 2						2	2	0	1	1	0
		Bus Reactor -1		yes				3	3	0	1	1	0
		Bus Reactor -2		yes				3	3	0	1	1	0
		Tie Dia of Bus Reactor						2	2	0	1	1	0
		Line Ranchi -2	yes	yes				3	3	0	1	1	0
		Tie Dia of Ranch 2 & St X-2						2	2	0	1	1	0
		400/11 KV Stn Xfmr -2	yes	yes			yes	3	3	0	1	1	0
		Line Reactor - 2 with Ranch-2		yes				1	1	0	1	1	0
		21 Kv System											
		UNIT- 1 LV	yes	yes									
		UNIT-2 LV	yes	yes									
		Sub-Total	10	14	2	2	4	41	41	0	17	17	0
		Total Measurents			32			58					
		Total Available Measurents			32			58					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

								ISO			CB		
44	**APNRL**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			Yes	Yes				0			0
		Bus-2			Yes	Yes				0			0
		UNIT- 1 HV	Yes	Yes				2	2	0	1	1	0
		Tie Dia of Unit 1&2						2	2	0	1	1	0
		UNIT- 2 HV	Yes	Yes				2	2	0	1	1	0
		Line Jamshepur -1	Yes	Yes				2	2	0	1	1	0
		Tie Dia of Jamshedpur 1						2	2	0	1	1	0
		Line Jamshepur -2	Yes	Yes				2	2	0	1	1	0
										0			0
		21 Kv System											
		UNIT- 1 LV	Yes	Yes									
		UNIT-2 LV	Yes	Yes									
		Sub-Total	6	6	2	2	0	12	12	0	6	6	0
		Total Measurents			16			18					
		Total Available Measurents			16			18					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

								ISO			CB		
45	**CHUZACHEN HPS**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		132 Kv System											
		Bus-1			Yes	Yes				0			0
		Bus-2			Yes	Yes				0			0
		GT- 1 HV	Yes	Yes				2	2	0	1	1	0
		GT- 2 HV	Yes	Yes				2	2	0	1	1	0

		GT- 3 HV	Yes	Yes									
		Rangpo	Yes	Yes				2	2	0	1	1	0
		Gangtok											
		Bus Coupler						2	2	0	1	1	0
		Sub-Total	4	4	2	2	0	8	8	0	4	4	0
		Total Measurents			12			12					
		Total Available Measurents			12			12					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					
46	**JITPL**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**ISO**			**CB**		
								Total	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			no	no							
		Bus-2			no	no							
		ANGUL 1	no	no				2	0	2	1	0	1
		ANGUL 1 Tie						2	0	2	1	0	1
		ANGUL 2	no	no									
		ANGUL 2 Tie											
		Tie Bolangir Line		no				2	0	2	1	0	1
		Bus Reactor -1 (50)		no				2	0	2	1	0	1
		Bus Reactor -2(50)						2	0	2	1	0	1
X		GT 1	no	no				2	0	2	1	0	1
		GT2						2	0	2	1	0	1
		Tie dia of B/R-1						2	0	2	1	0	1
		Tie dia of GT-2						2	0	2	1	0	1
		UNIT #1 21 KV						2	0	2	1	0	1
		UNIT #2 21KV						2	0	2	1	0	1
		Sub-Total	3	5	0	0	0	22	0	22	11	0	11
		Total Measurents			8			33					
		Total Available Measurents			0			0					
		Total Non-Available Measurents			12			33					
		% of Non-Availability			**150%**			**100%**					

			MW	**MVAR**	**VOL**	**FREQ**	**OLTC**	**ISO**			**CB**		
47	**Alipurduar HVDC**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1											
		Bus-2											
		ICT 2					no						
		Tie Bay of ICT 2 and ICT 3											
		ICT 3					no						
		Filter 1											
		Tie bay of Filter 1 Bus Reactor 1											
		Bus Reactor 1											
		ICT 1					yes						
		Tie bay of ICT 1 Future Bay											
		Future Bay											
		Fliter 2											
		Tie bay of Fliter 2 Bus Reactor #2											
		Bus Reactor #2											
		Bus Sectionaliser of Bus #1 and Bus #3											
		Bus Sectionaliser of Bus #2 and Bus #4											
		Bus 3			Yes	Yes							
		Bus 4			Yes	Yes							
		Future						2	2	0	1	1	0
		Tie bay of Future Siliguri#1						2	2	0	1	1	0
		Siliguri#1	Yes	Yes				2	2	0	1	1	0
		Siliguri#2	Yes	Yes				2	2	0	1	1	0
		Tie bay of Siliguri#2 Bongaigaon#2						2	2	0	1	1	0
		Bongaigaon#2	Yes	Yes				2	2	0	1	1	0
		Bongaigaon#1	Yes	Yes				2	2	0	1	1	0
		Tie bay of Bongaigaon#1 Future						2	2	0	1	1	0
		Future						2	2	0	1	1	0
		220Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		Transfer Bus											
		Salakathi-1	yes	yes				4	4	0	1	1	0
		Salakathi-2	yes	yes				4	4	0	1	1	0
		Birapara-1	yes	yes				4	4	0	1	1	0
		Birapara-2	yes	yes				4	4	0	1	1	0
		Bus Coupler	yes	yes				2	2	0	1	1	0
		TBC	yes	yes				3	3	0	1	1	0
		400/220 kV ICT 1	yes	yes				3	3	0	1	1	0
		400/220 kV ICT 2	no	no				3	3	0	1	1	0
		400/220 kV ICT 3	no	no				3	0	3	1	0	1

		Sub-Total	13	13	4	4	3	48	45	3	18	17	1
		Total Measurents	37					66					
		Total Available Measurents	31					62					
		Total Non-Available Measurents	6					4					
		% of Non-Availability	**16%**					**6%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
48	**Kishangunj**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1	**yes**	**yes**									
		Bus-2	**yes**	**yes**									
		Patna-1	yes	yes				2	2	0	1	0	1
		Patna-1 Tie						2	0	0	1	0	0
		Patna-1 line reactor		yes				2	0		1	0	0
		Bus reactor-2(125Mvar)		yes				2	2	0	1	1	0
		Patna-2	yes	yes				2	2	0	1	0	1
		Patna-2 Tie						2	2	0	1	1	1
		Patna-2 line reactor		yes				2	2	0	1	0	1
		ICT-3					no	2	2	0	1	0	1
		Teesta-1	yes	yes				2	0	2	1	0	1
		Teesta-1 Tie						2	2		1	0	
		ICT-2					yes	2	2		1	1	
		Teesta-2	yes	yes				2	2	0	1	0	1
		Teesta-2 Tie						2	2	0	1	1	1
		Purnea-3	yes	yes				2	2	0	1	0	1
		Purnea-3 Tie						2	2	0	1	0	1
		Purnea-4	yes	yes				2	2	0	1	0	1
		Binaguri-3	yes	yes				2	2	0	1	0	1
		Binaguri-3 Tie						2	2	0	1	0	1
		Binaguri-4	yes	yes				2	2	0	1	1	0
		ICT-1					no	2	2		1	1	
		Tie of ICT 1 and Bus Reactor 1											
		Bus reactor-1(125Mvar)		yes				2	2	0	1	0	1
		220Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	no							
		dalkhola-1	yes	yes				2	2	0	1	1	0
		dalkhola-2	yes	yes				2	2	0	1	1	0
		Siliguri-1	yes	yes				2	2	0	1	1	0
		Siliguri-2	yes	yes				2	2	0	1	1	0
		Kishn_bh-1	no	no				2	0	2	1	0	1
		Kishn_bh-2	no	no				2	2	0	1	1	0
		Kishn_bh-3	yes	yes				2	2	0	1	1	0
		Bus Coupler						2	2	0	1	1	0
		Kishn_bh-4						2	2	0	1	1	0
		ICT-1	yes	yes				2	2	0	1	1	0
		ICT-2	yes	yes				2	2	0	1	1	0
		ICT-3	yes	yes				2	2	0	1	1	0
		Sub-Total	18	22	2	2	3	66	58	8	33	17	16
		Total Measurents	47					99					
		Total Available Measurents	40					75					
		Total Non-Available Measurents	7					24					
		% of Non-Availability	**15%**					**24%**					

			MW	MVAR	VOL	FREQ	OLTC	ISO			CB		
49	**Barh**							**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		Bus-3			yes	yes							
		Bus-4			yes	yes							
		Patna-1	yes	yes				2	2	0	1	1	0
		Patna-1 Tie						2	2	0	1	1	0
		Patna-2	yes	yes				2	2	0	1	1	0
		Patna-2 Tie						2	2	0	1	1	0
		Patna-3	yes	yes				2	2	0	1	0	1
		Patna-3Tie						2	2	0	1	1	0
		Patna-4	yes	yes				2	2	0	1	0	1
		Patna-4 Tie	yes	yes				2	2	0	1	0	1
		Kahelgaon-1	yes	yes				2	2	0	1	1	0
		Kahelgaon-2	yes	yes				2	2	0	1	1	0
		Gorakpur-1	yes	yes				2	2	0	1	1	0
		Gorakpur-1 Tie											
		Gorakpur-2	yes	yes				2	2	0	1	1	0

		Gorakpur-2 Tie						2	2	0	1	1	0
		L/R Gorakpur-1						3	3	0	2	2	0
		L/R Gorakpur-2						2	2	0	1	1	0
		Bus sectionalizer1(bus1 &3)	yes	yes				2	2	0	1	1	0
		Bus sectionalizer1(bus2 &4)	yes	yes				2	2	0	1	1	0
		ICT-1	No	No			No	2	2	0	1	1	0
		ICT-2 Tie						2	2	0	1	1	0
		ICT-2	No	No			No	2	2	0	1	1	0
		ICT-2 Tie						2	2	0	1	1	0
		Unit-1						2	2	0	1	1	0
		Unit-2					yes	2	2	0	1	1	0
		Unit-3						2	2	0	1	1	0
		Unit-4	yes	yes				2	2	0	1	1	0
		Unit-5	yes	yes				2	2	0	1	1	0
		GT-1						2	2	0	1	1	0
		GT-2						2	2	0	1	1	0
		GT-3						2	2	0	1	1	0
		GT-4						2	2	0	1	1	0
		GT-5						2	2	0	1	1	0
		Tie GT-2						2	2	0	1	1	0
		Tie GT-4	yes	yes				2	2	0	1	1	0
		Tie GT-5	yes	yes				2	2	0	1	1	0
		B/R 80 Mvar						2	2	0	1	1	0
		Sub-Total	17	17	0	0	3	71	71	0	36	33	3
		Total Measurents			37			107					
		Total Available Measurents			31			104					
		Total Non-Available Measurents			6			3					
		% of Non-Availability			**16%**			**3%**					

								ISO			CB		
50	**Baharampur**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1				yes	yes						
		Bus-2				yes	yes						
		Sagardighi-1	yes	yes				2	2	0	1	1	0
		Sagardighi-1 Tie						2	2	0	1	1	0
		Sagardighi-2	yes	yes				2	2	0	1	1	0
		Sagardighi-2 Tie						2	2	0	1	1	0
		50 Mvar B/R-2		yes				2	2	0	1	1	0
		BHVDC-1	yes	yes				2	2	0	1	1	0
		BHVDC-1 Tie											
		Farakka	yes	yes				2	2	0	1	1	0
		BHVDC-2	yes	yes				2	2	0	1	1	0
		BHVDC-2 Tie											
		Jeerat	yes	yes				2	2	0	1	1	0
		80 Mvar B/R-1		yes				2	2	0	1	1	0
		Sub-Total	6	8	0	2	2	20	20	0	10	10	0
		Total Measurents			18			30					
		Total Available Measurents			18			30					
		Total Non-Available Measurents			0			0					
		% of Non-Availability			**0%**			**0%**					

								ISO			CB		
51	**BHVDC**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System			yes	yes							
		Bus-1			yes	yes		2	2	0	1	0	1
		Bus-2						2	2	0	1	0	1
		Baharampur-1	yes	yes				2	2	0	1	0	1
		Baharampur-1 Tie						3	3	0	1	0	1
		Baharampur-2	yes	yes				2	2	0	1	0	1
		Baharampur-2 Tie						3	3	0	1	0	1
		HVDC Pole Main Bay	yes	yes				2	2	0	1	0	1
		Tie Bay						2	2	0	1	0	1
		Capacitor Bank Main Bay						2	2	0	1	0	1
		Capacitor bank-1		yes							1	1	0
		Capacitor bank-2		yes							1	1	0
		Capacitor bank-3		yes							1	1	0
		Capacitor bank-4		yes							1	1	0
		L/R-1(63 Mvar)		yes							1	1	0
		L/R-2(63 Mvar)		yes									
		220Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		HVDC B/B Pole Main Bay	Yes	Yes				2	2	0	1	1	0
		Tie Bay						2	2	0	1	1	0
		Filter Bank Main Bay						2	2	0	1	1	0
		L/R -3		yes				1	1	0	1	1	0
		Capacitor bank-5		yes				1	1	0	1	1	0

		Capacitor bank-6		yes				1	1	0	1	1	0
		Capacitor bank-7		yes				1	1	0	1	1	0
		Khulna-1	yes	yes				2	2	0	1	1	0
		Khulna-1 Tie						2	2	0	1	1	0
		Shunt Compensator Bay						2	2	0	1	1	0
		Shunt capacitor 1		yes				2	2	0	1	1	0
		Shunt capacitor 2		yes				2	2	0	1	1	0
		Shunt Reactor		yes				2	2	0	1	1	0
		Khulna-2	yes	yes				2	2	0	1	1	0
		Khulna-2 Tie						2	2	0	1	1	0
		Ishurdi-1	yes	yes				2	2	0	1	1	0
		Tie of Isurdi 1 and Isurdi 2						2	2	0	1	1	0
		Ishurdi-2	yes	yes				2	2	0	1	1	0
		Sub-Total	8	21	3	3	0	52	52	0	32	23	9
		Total Measurents			35			84					
		Total Available Measurents			35			75					
		Total Non-Available Measurents			0			9					
		% of Non-Availability			**0%**			**11%**					

								ISO			CB		
52	**TALA**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1	no	no				2	0	2	1	0	1
		Bus-2						2	0	2	1	0	1
		Bus Coupler		no				2	0	2	1	0	1
		Siliguri-1	no	no				2	0	2	1	0	1
		Siliguri-2						2	0	2	1	0	1
		Siliguri-4	no	no				2	0	2	1	0	1
		Malbase			no	no							
		Bus Reactor			no	no							
		Unit-1		no				2	0	2	1	0	1
		Unit-2						2	0	2	1	0	1
		Unit-3	no	no				2	0	2	1	0	1
		Unit-4						2	0	2	1	0	1
		Unit-5	no	no				2	0	2	1	0	1
		Unit-6	no	no			no	2	0	2	1	0	1
		ICT-1	no	no			no						
		ICT-2	no	no			no						
		ICT-3	no	no			no						
		ICT-4	no	no			no						
		ICT-5	no	no			no						
		ICT-6	no	no			no						
		Sub-Total	6	8	2	2	1	24	0	24	12	0	12
		Total Measurents			19			36					
		Total Available Measurents			0			0					
		Total Non-Available Measurents			19			36					
		% of Non-Availability			**100%**			**100%**					

								ISO			CB		
53	**IBEUL**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		jharsguda	yes	yes				2	2	0	1	1	0
		jharsguda Tie						2	2	0	1	1	0
		UNIT-2	yes	yes				2	2	0	1	1	0
		Stn XFMR 2	yes	yes				2	2	0	1	1	0
		Tie Raigarh and Stn XFMR 2											
		Raigarh	yes	yes				2	2	0	1	1	0
		Stn XFMR 1	yes	yes				2	2	0	1	1	0
		Tie Stn XFMR 1 and future						2	2	0	1	1	0
		UNIT-1	yes	yes				2	2	0	1	1	0
		Tie Unit 1 and future						2	2	0	1	1	0
		GT-1	No	No									
		GT-2	No	No									
		Sub-Total	8	8	2	2	0	18	18	0	9	9	0
		Total Measurents			20			27					
		Total Available Measurents			16			27					
		Total Non-Available Measurents			4			0					
		% of Non-Availability			**20%**			**0%**					

								ISO			CB		
54	**KBUNL Stage 2**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		220 Kv System											
		Bus 1			No	No							
		Bus 2			No	No							
		Gopalganj 1	No	No				2	0	2	1	0	1
		Gopalganj 2	No	No				2	0	2	1	0	1
		Muzaffarpur (PG) 1	Yes	Yes				2	2	0	1	1	0
		Muzaffarpur (PG) 2	Yes	Yes				2	2	0	1	1	0

		Dharbanga 1	Yes	Yes				2	2	0	1	1	0
		Dharbanga 2	No	No				2	0	2	1	0	1
		Begusarai 1	No	No				2	0	2	1	0	1
		Begusarai 2	Yes	Yes				2	2	0	1	1	0
		Stn XFMR 3	Yes	Yes				2	2	0	1	1	0
		Unit 3	No	No				2	0	2	1	0	1
		GT 3	No	No									
		Unit 4	No	No				2	0	2	1	0	1
		GT 4	No	No									
		Station XFMR 4	No	No				2	0	2	1	0	1
		Sub-Total	14	14	2	2	0	24	10	14	12	5	7
		Total Measurents			32			36					
		Total Available Measurents			10			15					
		Total Non-Available Measurents			22			21					
		% of Non-Availability			**69%**			**58%**					

								ISO			CB		
55	**NEW MELLI**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		220Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		Jorethang-1	yes	yes				2	2	0	1	1	0
		Jorethang-2	yes	yes				2	2	0	1	1	0
		Rangpoo-1	yes	yes				2	2	0	1	1	0
		Rangpoo-2	yes	yes				2	2	0	1	1	0
		Bus Coupler		yes				2	2	0	1	1	0
		31.5 Mvar B/R-1		yes				2	2	0	1	1	0
		31.5 Mvar B/R-2		no				2	0	2	1	0	1
		Sub-Total	4	7	0	0	0	14	12	2	7	6	1
		Total Measurents			11			21					
		Total Available Measurents			10			18					
		Total Non-Available Measurents			1			3					
		% of Non-Availability			**9%**			**14%**					

								ISO			CB		
56	**Pandiabelli**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		Mendhasal 1	yes	yes				2	2	0	1	1	0
		Tie Mendhasal 1						2	2	0	1	1	0
		Future						1	1	0	1	1	0
		Baripada	yes	yes				2	2	0	1	1	0
		baripada Tie						2	2	0	1	1	0
		Bus Reactor -(80)		yes				2	2	0	1	1	0
		Line Reactor(125Mvar)											
		Mendasal-2	yes	yes				2	2	0	1	1	0
		Mendasal-2 Tie						2	2	0	1	1	0
		ICT-2					no	2	2	0	1	1	0
		Duburi	yes	yes				2	2	0	1	1	0
		L/R 63 Mvar		yes				1	1	0			
		Duburi tie						2	2	0	1	1	0
		ICT-1					yes	2	2	0	1	1	0
		220 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	yes							
		ICT 1	yes	yes				3	3	0	1	1	0
		ICT 2	yes	yes				3	3	0	1	1	0
		Line 1	yes	yes				3	3	0	1	1	0
		Line 2	yes	yes				3	3	0	1	1	0
		Line 3	yes	yes				3	3	0	1	1	0
		Line 4	yes	yes				3	3	0	1	1	0
		Line 5	yes	yes				3	3	0	1	1	0
		Line 6	yes	yes				2	2	0	1	1	0
		Bus Coupler						2	2	0	1	1	0
		Sub-Total	12	14	4	4	2	49	49	0	21	21	0
		Total Measurents			36			70					
		Total Available Measurents			35			70					
		Total Non-Available Measurents	100%	5	0	0	2	0					
		% of Non-Availability			**3%**			**0%**					

								ISO			CB		
57	**Chandwa**		**MW**	**MVAR**	**VOL**	**FREQ**	**OLTC**	**Total**	**Avl.**	**Not Avl.**	**Total**	**Avl.**	**Not Avl.**
		400 Kv System											
		Bus-1			yes	yes							
		Bus-2			yes	no							
		New Ranchi-1	yes	yes				2	2	0	1	1	0
		New Ranchi-2	yes	yes				2	2	0	1	1	0
		Gaya-1	yes	yes				2	2	0	1	1	0
		Gaya-1	yes	yes				2	2	0	1	1	0
		Bus Coupler						2	2	0	1	1	0
		Essar-1											

		Essar-2											
		Bus Reactor -1 (125Mvar)		yes				2	2	0	1	1	0
		Bus Reactor -2 (125Mvar)											
		CPL-1											
		CPL-2											
		Sub-Total	4	5	2	2	0	12	12	0	6	6	0
		Total Measurents	13					18					
		Total Available Measurents	12					18					
		Total Non-Available Measurents	1					0					
		% of Non-Availability	**8%**					**0%**					

Annexure- B.31

PMU Installation and commissioning status of ER as on 19.10.2016

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
			83			229	152	26	23	20	20	20	20	11	20	
1	ER-II	West Bengal	Arambagh	WBSETCL	CR	3	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
2	ER-II	West Bengal	BAKRESHWAR TPS	WBSETCL	CR	4	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
3	ER-II	West Bengal	Bidhannagar	WBSETCL	CR	3	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
4	ER-II	West Bengal	JEERAT	WBSETCL	CR	2	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
5	ER-II	West Bengal	Kolaghat TPS	WBSETCL	CR	4	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	**PMU panel couldn't be delivered due to permission issue.**
6	ER-II	West Bengal	KASBA	WBSETCL	CR	3	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
7	ER-II	DVC	DSTPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	**Communication Link not available.**
8	ER-II	DVC	Kodarma TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	Pending	done	**Communication panel does not exist.**
9	ER-II	DVC	MEJIA-B	DVC	CR	2	1	Yes	Yes	No	No	No	No	No	No	Work not started yet.
10	ER-II	DVC	Maithon RB TPS	DVC	CR	2	1	Yes	Yes	pending	pending	pending	pending	Pending	pending	**Work started on 04.07.2016. Panel shifted. Team demobilised due to access issue and panel location issue.**
11	ER-II	DVC	Raghunathpur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	Pending	done	**Communication link not available.**
12	ER-II	DVC	MEJIA	DVC	CR	5	2	Yes	Yes	No	No	No	No	No	No	Work not started yet.
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. Amendment for FO cable is awaiting.**
15	Odisha	Orissa	Budhipadar	OPTCL	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
16	Odisha	Orissa	MENDHASAL	OPTCL	CR	2	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
17	Odisha	Orissa	MERAMANDALI	OPTCL	CR	6	2	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
18	Odisha	Orissa	RENGALI	OPTCL	CR	2	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
19	Odisha	Orissa	U.KOLAB	OPTCL	CR	2	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
20	Odisha	Orissa	BALIMELA(H)	OPTCL	CR	3	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
21	ER-II	West Bengal	Durgapur	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	**PMU integrated on 30.05.2016.**
22	ER-II	West Bengal	FARRAKA	NTPC	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
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	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
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**
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	No	No	N/A	N/A	N/A	N/A	N/A	N/A	
33	Odisha	Orissa	Bolangir	Powergrid	CR+Kiosk	2	3	Yes	Yes	done	done	done	done	Pending	done	**Communication Link not available.**
34	Odisha	Orissa	ANGUL	Powergrid	Kiosk	10	11	No	No	N/A	N/A	N/A	N/A	N/A	N/A	Road Permit not available.
35	Odisha	Orissa	Keonjhar	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	Pending	done	**Comminication link not available.**
36	Odisha	Orissa	Jharsuguda	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	**PMU integrated on 29.07.2016**

PMU Installation and commissioning status of ER as on 19.10.2016

37	Odisha	Orissa	GMR	GMR	CR	3	4	No	No	N/A	N/A	N/A	N/A	N/A	N/A	Road Permit not available.
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. Amendment for FO cable is awaiting.**
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	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
42	ER-II	DVC	KALYANESWARI	DVC	CR	4	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
43	ER-II	DVC	PARULIA	DVC	CR	5	2	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
44	ER-II	West Bengal	Bidhannagar 220	WBSETCL		0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
45	ER-II	West Bengal	Purulia PSP	WBSETCL	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
46	ER-II	Jharkhand	Bokaro TPS	DVC	CR	1	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
47	ER-II	West Bengal	Durgapur TPS	DVC	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
48	Odisha	Orissa	TTPS(Talcher)	OPTCL	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
49	Odisha	Orissa	TALCHER	NTPC	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
50	ER-II	Sikkim	TEESTA	Powergrid	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
51	Odisha	Orissa	Uttara	Powergrid	CR	2	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	
52	Odisha	Orissa	Jindal	JITPL	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
53	Odisha	Orissa	Monnet	Monnet	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
54	Odisha	Orissa	Lanco	Lanco	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
55	Odisha	Orissa	Navbharat	Navbharat	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
56	Odisha	Orissa	Strelite	Strelite	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
57	Odisha	Orissa	Ind barath	Ind barath	Kiosk	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
58	ER-II	Sikkim	New Melli	Powergrid	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
59	ER-II	Sikkim	Mangan	Powergrid	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
60	ER-II	Sikkim	TT Pool	Powergrid	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
61	ER-II	West Bengal	Alipurduar	Powergrid	CR	6	7	No	No	N/A	N/A	N/A	N/A	N/A	N/A	
62	ER-II	West Bengal	Rajarhat	Powergrid	CR	2	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
63	ER-I	Jharkhand	JAMSHEDPUR	Powergrid	CR	6	2	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
64	ER-I	BIHAR	Kahalgaon(KHSTPP)	NTPC	CR	6	2	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
65	ER-I	BIHAR	Purnea	Powergrid	CR	6	2	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
66	ER-I	BIHAR	PATNA	Powergrid	Kiosk	6	7	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
67	ER-I	Jharkhand	RANCHI	Powergrid	Kiosk	12	13	No	No	N/A	N/A	N/A	N/A	N/A	N/A	
68	ER-I	BIHAR	SASARAM(Pusauli)	Powergrid	CR+Kiosk	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
69	ER-I	BIHAR	BARH	NTPC	CR	4	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
70	ER-I	BIHAR	LakhiSarai	Powergrid	Kiosk	4	5	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
71	ER-I	BIHAR	BANKA	Powergrid	Kiosk	4	5	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
72	ER-I	Jharkhand	Chaibasa	Powergrid	Kiosk	4	5	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
73	ER-I	BIHAR	765kv Gaya	Powergrid	Kiosk	11	12	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
74	ER-I	Jharkhand	765/400kV Ranchi (N)	Powergrid	Kiosk	8	9	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
75	ER-I	Bihar	Biharshariff	Powergrid	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
76	ER-I	Bihar	MUZAFFAPUR	Powergrid	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
77	ER-I	Jharkhand	Daltonganj	Powergrid	Kiosk	2	3	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
78	ER-I	Bihar	Kishanganj (karandeghi)	Powergrid	CR	4	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
79	ER-I	Jharkhand	Jharkhand Pool (Chandwa)	Powergrid	Kiosk	4	1	No	No	N/A	N/A	N/A	N/A	N/A	N/A	PMU panel dispatched.
80	ER-I	Jharkhand	Patratu	Jharkhand	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
81	ER-I	Jharkhand	Tenughat	Jharkhand	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
82	ER-I	Bihar	Muzaffarpur	Bihar	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
83	ER-I	Bihar	Barauni PP	Bihar	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.

PMU Installation and commissioning status of ER as on 19.10.2016

ER PMU site activity Summary:

Sl. No.	Region	Utility	As per approved BOQ		Dispatched		Installed		Commissioned		Integrated to ERLDC/ SLDC		Integrated to NTAMC	
			No. of Substations	No. of PMU	S/S	PMU	S/S	PMU	S/S	PMU	S/S	PMU	S/S	PMU
1	ER-I	Powergrid	15	71	11	59	0	0	0	0	0	0	0	0
2	ER-I	NTPC	2	10	2	10	0	0	0	0	0	0	N/A	N/A
3	ER-I	Jharkhand	2	0	0	0	0	0	0	0	0	0	N/A	N/A
4	ER-I	Bihar	2	0	0	0	0	0	0	0	0	0	N/A	N/A
	ER-I	**Total**	**21**	**81**	**13**	**69**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1	ER-II	Powergrid	14	41	9	35	8	33	8	33	7	29	0	0
2	ER-II	NTPC	1	0	0	0	0	0	0	0	0	0	N/A	N/A
3	ER-II	DVC	13	31	11	31	5	12	5	12	1	2	N/A	N/A
4	ER-II	WBSETCL	8	19	6	19	0	0	0	0	0	0	N/A	N/A
	ER-II	**Total**	**36**	**91**	**26**	**85**	**13**	**45**	**13**	**45**	**8**	**31**	**0**	**0**
1	Odisha	Powergrid	10	38	9	28	7	23	7	23	3	15	0	0
2	Odisha	OPTCL	8	16	6	16	0	0	0	0	0	0	N/A	N/A
3	Odisha	NTPC	1	0	0	0	0	0	0	0	0	0	N/A	N/A
4	Odisha	IPP	7	3	0	0	0	0	0	0	0	0	N/A	N/A
	Odisha	**Total**	**26**	**57**	**15**	**44**	**7**	**23**	**7**	**23**	**3**	**15**	**0**	**0**
	ER	**Total**	**83**	**229**	**54**	**198**	**20**	**68**	**20**	**68**	**11**	**46**	**0**	**0**

Status of PDS system Installation and commissioning at ER as on 19.10.2016

Sl. No.	Site Name	Work Progress
1	ERLDC	Installed, powered up, functioning and integrated with DVC and OPTCL PDS system.
2	Backup-NLDC	POSOCO did not provide space for PDS system installation.
3	SLDC, Maithon	Installed, powered up, functioning and integrated with ERLDC PDS system.
4	SLDC, Bhubaneswar	Installed, powered up, functioning and integrated with ERLDC PDS system.
5	SLDC, Howrah (WBSETCL)	Installed, Powered up and functioning. Communication links for Control centre integration (SLDC Howrah to ERLDC) and for PMU integration are not available.

Annexure – B.32

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 submitted during ERS meeting held on 10.11.14 taken by Member (Power System), CEA is given below:

1) As per 100th OCC meeting held on 22.08.2014, the status of ERS towers as available in Powergrid 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) As informed by OPTCL, 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 approved by Board of Director for procurement in the current financial year. Purchase order has been placed.
- Another, 16 nos of 400 kV towers accompanied with 6 sets of T&P are required.

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) Bihar informed that they have 10 sets of 220 kV ERS towers and 2 sets are under process of procurements.

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

Action Plan to Reduce Tripping of Bongaigaon – Siliguri Lines

This is to inform you that ***400kV Bongaigaon-siliuguri Ckt-1&2*** line tripping's occurred due to heavy wind storm which lead to conductor snapping.

From the month July to Oct-2016, total 6nos of tripping occurred due to conductor snapping because of heavy wind storm during the monsoon.

After the incidents, ***(multiple tripping in continuous month)*** we have carried out thermo vision test for all the dead end joint & mid span joint, and during the opportunity outage like line outage due to voltage regulation we are providing additional strengthening to dead end clamp by providing ***helical grips*** at vulnerable locations and wherever we observed abnormality during the thermo vision test.

Also we would like to bring to your notice that for the month of **Nov-2016** there we not have any single tripping occurred due to conductor snapping because the climate condition for the month was normal & because of providing addition strength to dead end clamp.

We will provide additional strength to dead end & mid span joint for the remaining identified location during opportunity based shutdown.

Annexure- C.1

Maintenance Schedule of Thermal Generating Units of ER for February-2017

System	Station	Unit	Size (MW)	period		No. of Days	Reason
				From	To		
JUSNL	PTPS	9	110	Feb-17	Feb-17	28	Maintenance
DVC	CTPS	7	250	22.02.17	14.03.17	21	AOH
	DTPS	4	210	14.02.17	26.03.17	41	COH
HEL	HALDIA	2	300	01.02.17	15.02.17	15	Annual Overhauling / Boiler Overhauling

Annexure- C.1A

Po- Bhaktinagar, Dist: Jalpaiguri, Pin: 734007

To,

Date 29.12.2016. The

The Member Secretary,ERPC, Kolkata.

SUB: Arrangement of electric shutdown of Birpara-Siliguri, 220 KV transmission line (crossing the Belakoba-Raninagar Jalpaiguri Railway Line at Railway chainage of 23/2-3 Km,Tower Location 178) to finalize the work of modification of this crossing.

Ref- Work of tower modification being performed by M/S Manish Roy & Co.

Sir,

With reference to aforesaid subject and matter the work of modification of one tower is to be done on priority basis. The supervision charges of approximately Rs 84 lakh towards this modification work has already been submitted and for this erection of modified tower the work of foundation of one tower along with procurement all required materials have been done, moreover the part erection possible without shutdown has also been done but the further work of erection of said tower can be performed only after availing electric shutdown because this to be erected directly under wire. All required man, materials, tools and plants have already been mobilized to the site of work and are waiting for the shutdown. The schedule of work planned during 4 day shutdown is as under-

Timing	Main Activity	Remarks
Day 1	**Erection of tower above ground truss**	**All efforts shall be done to complete work before fourth day to minimize downtime.**
Day 2	**Erection of top portion of tower**	
Day 3	**Erection of the hardware fittings and insulators and ACSR cutting and laying**	
Day 4	**Wire stringing and final commissioning works**	

Hence kindly sanction this **shutdown period in the first week of the February 2017** and issue the letter of sanction of the shutdown at the earliest please

(P.K.Rai)
Dy.Chief Electrical Engineer/C/NJP,
Construction/ New Jalpaiguri

Copy to- AGM/PGCIL/Siliguri.

Annexure-C.2

Anticipated Power Supply Position for the month of
Feb-17

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	3900	2116
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	436	325
		- Central Sector	2322	1448
	iii)	SURPLUS(+)/DEFICIT(-)	-1142	-343
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1200	730
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	420	315
		- Central Sector	488	272
	iii)	SURPLUS(+)/DEFICIT(-)	-292	-143
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2848	1595
	ii)	NET POWER AVAILABILITY- Own Source	4667	2347
		- Central Sector	434	260
		Long term Bi-lateral (Export)	1300	874
	iii)	SURPLUS(+)/DEFICIT(-)	953	137
4		**ORISSA**		
	i)	NET MAX DEMAND	4100	2184
	ii)	NET POWER AVAILABILITY- Own Source	3137	1639
		- Central Sector	1060	632
	iii)	SURPLUS(+)/DEFICIT(-)	97	87
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	5505	2943
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	5505	2943
	iv)	NET POWER AVAILABILITY- Own Source	3828	2176
		- Import from DPL	139	36
		- Central Sector	1604	834
	v)	SURPLUS(+)/DEFICIT(-)	66	104
	vi)	EXPORT (TO B'DESH & SIKKIM)	5	3
5.2		**DPL**		
	i)	NET MAX DEMAND	310	195
	ii)	NET POWER AVAILABILITY	449	231
	iii)	SURPLUS(+)/DEFICIT(-)	139	36
5.3		**CESC**		
	i)	NET MAX DEMAND	1670	640
	ii)	NET POWER AVAILABILITY - OWN SOURCE	780	375
		FROM HEL	546	234
		FROM CPL/PCBL	0	0
		Import Requirement	344	31
	iii)	TOTAL AVAILABILITY	1670	640
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	7485	3778
	ii)	NET POWER AVAILABILITY- Own Source	5057	2782
		- Central Sector+Others	2494	1068
	iii)	SURPLUS(+)/DEFICIT(-)	66	73
7		**SIKKIM**		
	i)	NET MAX DEMAND	90	35
	ii)	NET POWER AVAILABILITY- Own Source	3	2
		- Central Sector+Others	103	53
	iii)	SURPLUS(+)/DEFICIT(-)	16	20
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	19052	10438
		Long term Bi-lateral by DVC	1300	874
		EXPORT BY WBSEDCL	5	3
	ii)	**NET TOTAL POWER AVAILABILITY OF ER** **(INCLUDING C/S ALLOCATION)**	20621	11144
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER** **(ii)-(i)**	264	-171