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Agenda

for

124th OCC Meeting

Date: 23.08.2016

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Agenda for 124th OCC Meeting to be held on 23rd August, 2016 at ERPC, Kolkata

Item no. 1: Confirmation of minutes of 123rd OCC meeting of ERPC held on 26.07.2016

The minutes of 123rd OCC meeting were uploaded in ERPC website and circulated vide letter dated 11.08.2016 to all the constituents.

Members may confirm the minutes.

PART A

(List of Items to be discussed for which the details are given at "Part B")

B.1. Commissioning of new transmission elements in Eastern Region
B.2. Status of projects funded under PSDF schemes
B.3. Operational load flow study for Off-peak period
B.4. Oscillations on 26.07.16 in ER Grid
B.5. Interruption of real time data due to all control centres in ER
B.6. Installation of PMUs in Eastern Region under URTDSM project
B.7. Ratification of projected Demand and generation for POC transmission charges and loss calculations for Q3(2016-17)
B.8. Signing of O&M agreement between DVC and POWERGRID for O&M of 02 no. 220kV bays at Ranchi S/S for 220kV Ranchi-Gola line of DVC
B.9. Collapse of Tower in 400KV Patna-Kishengang D/C Line due to river encroachment
B.10. Status of UFRs healthiness installed in Eastern Region
B.11. Healthiness of SPS existing in Eastern Region
B.12. Status of Islanding Schemes of Eastern Region
B.13. Restoration of PLCC system of important lines
B.14. Status update of previous decisions/follow up actions
B.15. Third Party Protection Audit
B.16. Inspection of UFR relays
B.17. Preparation of crisis management plan for Cyber Security in Power Sector in line with CERT-IN
B.18. Certification through BIS as per IS 18001:2007 to all generating/ transmission units
B.19. Formulation of a Skill Plan for Power Sector based on the assessed skill gap in the sector
B.20. Energy Generation data management from Renewable Energy Sources
B.21. Compilation of data for meeting Renewable Energy targets of 175 GW by 2020 -- Reference from MNRE
B.22. Data of Peak Demand – Submission of hourly power cut data
B.23. Recovery Procedures of ER Constituents – ERLDC
B.24. Dynamic data of Generator Models required in PSSE for Simulations
B.25. Implementation of Automatic Demand Management Scheme (ADMS)
B.26. Long outage of important transmission lines
B.27. Transfer capability determination by the states -- Agenda by NPC
B.28. Reasons for demand –supply gap and its variation -- Agenda by NPC
B.29. Update on status of telemetry
B.30. Status of breaker operation at Malbase end during auto-reclose operation of 400 kV Malbase – Binaguri
B.31. Status of Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipment.
B.32. Status of Emergency Restoration System (ERS Towers) for Eastern Region constituents

B.33. Pollution mapping for Eastern Region
B.34. Mock Black start exercises in Eastern Region
B.35. Restricted Governor Mode of Operation
B.36. Reactive Power performance of Generators and GT tap position optimization
B.37. Erroneous recording/Non-receipt of data by Interface Meters
B.38. Auxiliary consumption of HVDC Sasaram under Deviation settlement Mechanism

PART B: ITEMS FOR DISCUSSION

(Items to be discussed as listed in "Part A")

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 **July, 2016** as informed by ERLDC is given below:

1. 500MVA, 400/220kV ICT-I at Pandiabili first time charged at 15:41hrs of 01/07/16 from 400kV side only.
2. 400kV Mendhasal-Pandiabili first time charged at 19:55hrs of 01/07/16.
3. 63MVAr L/R of 400kV New Duburi-Pandiabili at Pandiabili first time charged at 23:49hrs of 01/07/16.
4. 400kV Pandiabili-New Duburi charged first time at 22:48hrs of 01/07/16.
5. 400kV Ranchi-Chandwa -I and 400kV Bus -I at Chandwa first time charged at 20:45 hrs of 10/07/16.
6. 125MVAr B/R-I at Chandwa first time charged at 21:49 hrs of 10/07/16.
7. 400kV Bus-II at Chandwa first time charged at 22:26 hrs of 10/07/16.
8. 400kV Gaya-Chandwa -I first time charged at 22:32 hrs of 10/07/16.
9. 400kV Gaya-Chandwa -II first time charged at 23:05 hrs of 10/07/16.
10. 400kV new Ranchi-Chandwa -II first time charged at 23:11 hrs of 10/07/16.
11. 125MVAr B/R-II at Chandwa first time charged at 23:29 hrs of 10/07/16.
12. 500MVA ICT-II at Pandiabili first time charged at 16:06hrs of 11/07/16 from 400kV side only.
13. 7 no of 220kV GIS bays at Pandiabili (Bay nos 201,202,203,204,205,207 and 209), 220kV Bus-I and II at Pandiabili first time charged(on no load) at 18:23hrs of 18/07/16.
14. 400kV Biharsharif-Purneackt-I & II with 80MVAR line reactor at Biharshariff (after swapping of bays) first time charged at 13:00hrs and 13:18hrs of 19/07/16 respectively.
15. 400KV Biharsharif-Varansickt-I & II with 50MVAR line reactor at Biharshariff (after swapping of bays) first time charged at 21:05hrs and 21:38hrs of 19/07/16 respectively.
16. 400kV Sarnath – Sasaram line shift from NR Bus to ER Bus at Sasaram sub-station at 16:00hrs of 23/07/16.
17. 220kV Gaya-Sonenagar (through Bodhgaya-I bay at Gaya) first time charged at 16:52hrs of 27/07/16.
18. Bay No-208 i.e. 220kV Line-6 bay and Bay No-206 i.e. 220kV Bus Coupler bay(all on no load) at Pandiabili first time charged at 20:18hrs and 20:28hrs of 28/07/16 respectively.

Other constituents may update (if any).

Item No. B.2: Status of projects funded under PSDF schemes

In the PSDF review meeting held on 29.04.16 at N. Delhi, 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 by WBSETCL, OPTCL & 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 122nd 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 Improvement 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.	11.05.15	10.05.17	162.5 Cr.	4.91 Cr.	Erection work of the already procured equipment is going on. LOA for eight different types of Testing equipment already placed worth about Rs.4 Cr. Placement of LOA for balance equipment is under process. Tender for Sub-station automation will be floated in July-2016.
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 completed

Other constituents may update.

Item No. B.3: OPERATIONAL LOAD FLOW STUDY FOR OFF-PEAK PERIOD

Under PSDF funded project for Creation of protection database M/s PRDC have carried out an operational load flow study based on peak data of 26.05.2016. The report is available in ERPC website. During discussions on the study a need was felt for a similar study based on Off-peak conditions.

Members may please decide a date for Off-peak data collection.

Item No. B.4: Oscillations on 26.07.16 in ER Grid

At 16:30 hrs of 26.07.16, oscillations were observed in Durgapur and Farakka PMUs. Nearby gernerating stations where asked to submit data from their unit DCS. Till now ERLDC has received data from KhSTPP, BKTP, Mejia'B', DSTPS, RTPS, MPL, HEL, KTPS. It is requested that other Generating Stations viz. FSTPP, Sagardighi, PPSP, DPL, ANPL, Budge-Budge may also share the details i.r.o the above incidentalongwith unit DCS data.

ERLDC may update.

Item No. B.5: 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 is yet to be arrived and fixed. We always talking about the route redundancy in the communication links but it is noticed that redundancy to the communication equipment is also not available.

Presently, with the implementation of new SCADA systems at all the control centres, RTUs has to report to both the control centers i.e. Main as well as Backup control centre.
At a time, only one control centre will act as main and other will be on standby (Hot/Standby architecture)

All communication link i.e. RTU links as well as ICCP data link with constituents may be provided at backup control centre also at the earliest so that real time SCADA data could be available to Backup ERLDC in case of any communication / machine failure at Main Control centre.
It is being requested POWERGRID to provide the redundancy for communication equipment system / route diversity of communication link / redundancy at both the control centres.

POWERGRID may give the status.

Item No. B.6: 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.

POWERGRID may update the status.

Item No. B.7: Ratification of projected Demand and generation for POC transmission charges and loss calculations for Q3(2016-17)

The projected Demand and Generation of ER constituents to be considered in the base case for POC transmission charge and loss calculations for Q3(Oct,16-Dec,16) are attached at **Annexure-B.7** for ratification by the constituents.

Members may kindly go through and confirm the data.

Item No. B.8: Signing of O&M agreement between DVC and POWERGRID for O&M of 02 no. 220kV bays at Ranchi S/S for 220kV Ranchi-Gola line of DVC-- PGCIL

As informed by Powergrid vide letter dated 10.08.2016 two no. 220kV bays of DVC for 220kv Ranchi-Gola D/C Line of M/S DVC has been commissioned in March'2013 and POWERGRID is maintaining the bays since commissioning. Even after regular follow-up from our Ranchi site, O&M agreement for maintenance of 2 nos. 220 kV bays at Ranchi could not be finalized.

In spite of continuous persuasions and various correspondences made with DVC by POWERGRID regarding signing of O&M agreement of 2 nos. 220kV bays of DVC at POWERGRID Ranchi S/S, DVC has not signed the agreement so far. The said matter has also been discussed with number of times with various Officials of M/S DVC but the signing of O&M agreement has not been materialised.

Due to non availability of O&M agreement between DVC and POWERGRID, our Management/ Auditor has raised serious audit para for non receipt of payment for carrying out O&M of two no bays of M/S DVC at Ranchi (PG) S/S.

Signing of O&M agreement may be expedited for reliability and better service for maintaining two no. 220KV bays for 220KV Ranchi-Gola D/C line of DVC terminated at Ranchi S/S of POWERGRID

Powergrid and DVC may update.

Item No. B.9: Collapse of One no Tower in 400KV Patna-Kishengang D/C Line due to river encroachment-- PGCIL

As informed by Powergrid vide letter dated 10.08.2016 due to unprecedented flash flood in Kankai river, one no. Tower at location no. 51(DD+18) of 400 kV Patna - Kishangani D/c Line near village Simalbari. Dist- Kishanganj, Bihar had collapsed on 26.07.2016 at about 12.00 hrs. The site of collapsed tower is fully sub-merged with water and very difficult to reach at the affected site.

Further, the committee constituted to investigate the cause of collapse of tower and to suggest the remedial measures, consisting of expert members from POWERGRID and CEA, Delhi, they are not in a position to even visit the affected site due to severe flow of water in Kankai River. The entire area is inundated with water. The flood situation in that area is worsen due to incessant rain in Nepal. The restoration of the said line shall be taken immediately after receding the water at site.

In view of the above, the said outage period may be treated as force majeure condition i.e beyond the control of POWERGRID and the outage shall be excluded for the purpose of availability.

Members may discuss.

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

UFR Healthiness Certification for the month of June, 2016 has been received from West Bengal, CESC and DVC only.

Other constituents (JUSNL, BSPTCL & OPTCL) may submit.

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

CESC, JITPL, GMR & Chuzachen have submitted the healthiness certificate for the month of July, 2016.

Vedanta, Powergrid-Odisha & Powergrid ER-II & NTPC may submit the healthiness certificate for July, 2016.

Respective members may update.

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

B.12.1: 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 July, 2016 has been received from BkTPS, Tata Power, CESC and CTPS, DVC.

Members may note.

B.12.2: FSTPS Islanding Scheme, NTPC

In 118th OCC, NTPC informed that their part is ready for implementation.

Powergrid informed that the battery charger has been delivered and expected to complete the work by March, 2016.

In 119th OCC, Powergrid informed that the battery charger has been delivered to site and for commissioning with deputation of service engineer JUSNL has to ensure the supply of materials which are in the scope of JUSNL.

OCC advised JUSNL to coordinate with Powergrid and arrange the required materials/works which are in the scope of JUSNL. JUSNL agreed.

In 120th OCC, JUSNL informed that the required materials/works have been arranged, Powergrid may start the commissioning work.

In 121st OCC meeting, Powergrid informed that official confirmation for the readiness of site/material availability by JUSNL is still awaited.

OCC advised JUSNL to give official correspondence regarding their readiness and co-ordinate for early commissioning of the Islanding scheme.

In 122nd OCC, NTPC informed that cable laying completed and interfacing is pending.

JUSNL informed that the required materials/works will be completed within 20 days and Powergrid will be contacted accordingly.

In 33rd TCC, JUSNL informed that the required materials/works will be completed by 1st July 2016 and PGCIL will be informed accordingly.

TCC advised JUSNL to send an official letter to PGCIL confirming their readiness with a copy to ERPC.

PGCIL informed that they would mobilize the vendor within 10 days after receiving the official communication from JUSNL.

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.

NTPC/Powergrid may update.

B.12.3: Bandel Islanding Scheme, WBPDCL

In 120th OCC, WBPDCL informed that the islanding scheme will be implemented by December, 2016.

Subsequently, in the PSDF review meeting held on 29.04.16 in Delhi with Joint Secretary(OM), MOP, GOI in Chair, ERPC placed a proposal for funding the Bandel Islanding scheme from PSDF. The review committee informed that such type of islanding scheme is now being funded by PSDF and therefore Bandel Islanding Scheme also can be included.

Accordingly, WBPDCL was requested to place the detail proposal for PSDF funding to nodal agency NLDC witha a copy to ERPC at the earliest so that the road map is strictly adhered to.

In 121st OCC, WBPDCL informed that DPR for PSDF funding is under preparation.

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

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 –Ramchandrapur line auto-reclosure has been enabled and linked with PLCC panels on 09.03.16.
b) In 220 KV Chandil –Ranchi line auto-reclosure has been enabled and termination done in PLCC panels (Auto-reclosure will be in service after testing of PLCC scheduled on 22.03.16)
c) 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.
d) 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 33rdERPC Meeting, WBPDCL and OPTCL agreed to settle the issue bilaterally with JUSNL. JUSNL was advised to resolve the AMC related issues with West Bengal & Odissa. All are requested to inform the development to CERC .

However ERPC advised JUSNL, OPTCL and WBPDCL to get the PLCC system restored for both the lines by July 2016 positively.

Subsequently, a special meeting was convened by JUSNL on 11.07.2016 at Ranchi to resolve the issue at the earliest.

In 123rd OCC, OPTCL informed that they received the invoice from BPL and they are charging Rs. 1.8 lacs/year for AMC, which is not reasonable as the AMC charges for 5 years is more than the panel cost of Rs. 5.1 lacs.

WBPDCL informed that they will place the order for PLCC panel to BPL within 2 days.

OCC advised OPTCL to interact with WBPDCL and BPL.

JUSNL 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 121st OCC, IBEUL updated the status as follows:

- All the 125 towers foundations have been completed and 125 have been erected.
- Due to route alignment one tower (i.e. 126th tower) has been increased which is under construction.
- Stringing work of 36.81 km out of 39.74 km line has been completed.
- The bay work at 400 kV Jharsuguda (Kenapalli) S/s has also been completed.
- The line will be commissioned by end of June, 2016.

In 33rd TCC/ERPC it was decided that in line with the direction from CERC (in CERC vide order dated 07.I0.2015 on Petition No. 112/TT'/2013) the LILO may be removed if the target (i.e. July, 2016) is not adhered by Ind-Barath on and from 1st August, 2016 IBEUL will not be permitted to do any transaction—Infirm or firm through the LILO.

IBEUL vide mail dated 11.07.16 informed that they have lighted up Boiler #1 at 18.30 hrs on 11.07.16 and they are going to synchronise unit #1 at 04.00 Hrs on 12.07.16 and the tests to be performed along with the schedule of injection of infirm power in 15 min blocks were submitted.

Further, IBEUL vide mail dated 15.07.16, 16.07.16, 17.07.16 & 19.07.16 intimated that they have attained 353 MW at 20.56 hrs of 15.07.16 and are continuing for MCR test at 350 MW load from 15.07.16, to 19.07.16.

In 123rd OCC, Ind-Bharath informed that stringing of around 1 km line is pending due to ROW problem.

OPTCL informed that MCR test of Ind-Bharath generator was not satisfactory and they will communicate their observations.

OCC advised Ind-Bharath to commission the line by 31st July 2016 and the LILO will be removed from 1st August, 2016 as per CERC order.

Subsequently, IBEUL vide letter dated 10.08.16 declare COD of their unit based on the trial run from 15th July to 19th July, 2016 as mentioned above.

However, ERPC vide mail dated 10.08.2016 and letter dated 12.08.16 informed that ERPC will consider the COD of unit #1 of IBEUL only on full compliance of clause 5 of IEGC (4th amendment).

Ind-Bharath may update the latest status.

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

In 31st TCC/ERPC followed by 115th OCC Vedanta informed that out of 66 tower foundations, 21 have been completed and rest is expected to be completed by December, 2015. Commissioning of line is expected by 15 April, 2016.

32nd TCC advised Vedanta to strictly adhere to the schedule.

In 118th OCC, advised Vedenta to adhere the decision of 32nd TCC/ERPC and complete the line by April, 2016.

In 121st OCC, Vedanta updated that 46 out of 66 foundations and installation of seven towers have been completed. OCC referred the issue to 33rd TCC.

In 122nd OCC, Vedanta updated that 51 out of 66 foundations and installation of nine towers out of 64 have been completed.

33rd ERPC extended the dead line for removal of LILO till November, 2016 as a last extension.

As a final measure, ERPC decided that Vedanta should give an undertaking in affidavit form to CTU and ERPC stating that the dedicated line will be completed by 30.11.2016. Failing which, CTU/ERLDC is authorized to open the LILO with effect from 01.12.2016. No further discussion would be entertained in ERPC forum on extension/disconnection of LILO after 01.12.2016 and then onwards no power transaction will be allowed through LILO on commercial purpose.

In 123rd OCC, *Vedanta updated that 56 out of 66 foundations and installation of nine towers out of 64 have been completed.*

It was informed that a reminder letter was also issued to Vedanta regarding submission of Affidavit. by ERPC.

OCC noted that Vedanta failed to furnish the affidavit and advised Vedanta to submit the undertaking in affidavit form immediately as agreed in 33rd ERPC meeting.

Vedanta agreed to submit the affidavit within a week.

Vedanta may update.

Regarding charging of 400kV Meramundali-Vedanta line I&II through one main & tie CB from Vedanta end due to incomplete dia, TCC felt that this is violation of CEA regulations.

Vedanta informed that bay extension work is in progress and dia would complete by November, 2016. TCC advised the Secretariat to review the progress in monthly OCC meetings.

In 123rd OCC, Vedanta informed that the scheme was approved by CEA and bay extension work would be complete by November, 2016.

OCC advised Vedanta to submit a copy of the CEA Inspectorate's approval.

Vedanta vide mail dated 26.07.2016 submitted a copy of CEA approval but without the list of equipment for which the approval was granted.

Vedanta may update the latest status.

B.14.3. Status of construction of Chuzachen bay at Rangpo S/s.

In 32nd TCC, Sikkim informed that the cost estimate from Powergrid was received recently and therefore after studying the same tendering will be done tentatively within a month.

In 118th OCC, Sikkim informed that tender would be floated by March, 2016 and work award will be issued by April, 2016.

In 33rd TCC/ERPC, Sikkim placed the road map for construction of the bays as follows:

- Tender will be floated by July 2016
- Bid will be opened by August 2016
- Work will be awarded by September 2016
- Bay will be commissioned by December, 2017

ERPC advised Sikkim to strictly follow the schedule and update OCC forum on regular basis.

E&P Department, Sikkim vide mail dated 15.07.16 intimated that vide their letter dated 16/06/2016 had requested POWERGRID to change the format of the bid documents for e-tendering and to insert a clause in the qualifying requirements. Sikkim had also requested POWERGRID to depute their personnel to complete the work on urgent basis. But till dated there is no response from Powergrid.

In 123rd OCC, i*t was informed that Sikkim is facing problem in floating the e-tender and OCC therefore advised Powergrid to help Sikkim in this regard.*

Sikkim/Powergrid may update.

B.14.4. Non availability of both line Reactors of 400KV Malda-Purnea D/C

In 120th OCC, Powergrid informed that Reactor-2 has been charged and Reactor-1, will be brought into service by September, 2016.

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

Powergrid may update.

B.14.5. Status of Bus Splitting schemes in Eastern Region

A. Bus Splitting of Powergrid Sub-stations

In 11th SCM held on 20.09.2010 the bus-splitting arrangement with tie line breaker for the following 400kV substations in Eastern Region was agreed to contain the short circuit level below 40kA.

- Maithon
- Durgapur
- Biharshariff
- Kahalgaon

In 118th OCC, Powergrid updated the status as follows:

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

In 121st OCC, Powergrid informed that they are not getting shutdown to complete the work at 400kV Biharshariff S/s.

BSPTCL informed that shutdown for 400kV Biharshariff S/s is not possible before September, 2016.

In 33rd TCC, BSPTCL informed that shutdown for 400kV Biharshariff S/s will be given after availability of 220kV Tenughat-Biharshariff D/C line.

JUSNL informed that 220kV Tenughat-Biharshariff D/C line will be in service by 1st week of July 2016.

In 123rd OCC, JUSNL informed that 220kV Tenughat-Biharshariff D/C line has been restored and in service from 12th July 2016.

Powergrid/BSPTCL may update.

In 33rd TCC/ERPC, ERLDC informed that the bus splitting schemes were planned in 2011-12 considering 400kV Durgapur-Jamshedpur and 400kV Durgapur-Maithon connectivity but these lines are getting delayed.

On query, PGCIL informed that the implemented bus splitting schemes could be made operational with immediate effect.

ERLDC requested CTU to carryout detailed study on bus splitting schemes to verify operational constraint with the present connectivity.

TCC advised CTU to carry out a final study post bus-splitting and inform ERLDC and ERPC.

In 123rd OCC, PGCIL informed that the study as per the 33rd TCC/ERPC decision may be done as soon as minutes of 33rd TCC/ERPC meeting is issued.

CTU/Powergrid may update.

B. 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 33rd TCC, 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 August, 2016.
- Transformer package and Shunt reactor– Will be awarded by July, 2016.

In 123rd OCC, NTPC updated that transformer package and Shunt reactor will be awarded within 10 to 15 days.

NTPC 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 123rd 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 Dec, 2016.
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)	**September, 2016**

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 123rd 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	**September, 2016**
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 123rd 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 (HTLS)	*8 out of 25 towers erected. Line would complete by March, 2017.*
2.	**2x500MVA, 400/220kV Rajarhat West Bengal S/S- Expected by Oct, 2016**	
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

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. The tentative plan for August/September, 2016 is as given below:

Date of Audit	Substations	Lodging and Boarding	Transport
	PPSP (WBSETCL) & Maithon (PG)	Stay at Maithon PGCIL guest house	Transportation will be arranged by Powergrid
	Maithon RB (MPL) & Raghunathpur (DVC)	Stay at Santaldih(WBPDCL) guest house	
	Santaldih(WBPDCL) & Arambagh (WBSETCL)	If required, stay at Santaldih(WBPDCL) guest house	

Members may decide the schedule for Aug/Sept, 2016.

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

119th OCC advised to carry out the UFR audit for JUSNL & BSPTCL along with the Protection site visit which is scheduled in April, 2016.

The status for first quarter of 2016-17 is as given below:

Sl No	Proposed Date	Substation/feeder inspected by the sub-group	Status of audit
1	*May, 2016*	*132/33 KV Hatia of JUSNL*	*12.05.2016*
2		*132/33 KV Namkum of JUSNL*	*12.05.2016*
3	*May, 2016*	*132/33 KV Adityapur of JUSNL*	*11.05.2016*
4	*May, 2016*	*220/132/33 KV Ramgarh of DVC*	*13.05.2016*

In 121st OCC, the UFR audit report was presented before the house. It was informed that during UFR testing of Ramgarh (DVC) S/s it was found that the feeders were tripped at 48.52 Hz instead of 48.6 Hz (set frequency). Therefore, it was recommended that the present EM Under Frequency relays of Ramgarh (DVC) S/s should be replaced with Numerical UF relays to get the desired UFR load shedding at the set frequency (i.e. 48.6 Hz).

In 123rd OCC, *DVC informed that the procurement of numerical UFR relay is under process and the UFRs at 220/132/33 KV Ramgarh S/s will be replaced by next month.*

DVC may update the status.

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

Sl No	Proposed Date	Substation/feeder inspected by the sub-group
1	July/ August, 2016	132/33 KV Bari Pahari (Bihar Sharif) of BSPTCL
2		132/33 KV Purnea of BSPTCL
3		220/132/33 KV Sampatchak of BSPTCL
4	August, 2016	220/132/33 KV Kalyaneswari of DVC

5	September, 2016	220/132/33 KV New Bishnupur of WBSETCL
6		132/33 KV Old Bishnupur of WBSETCL
7	October, 2016	BRS (Liluah S/Stn.) of CESC
8		Ritchie D/S & Canal D/S of CESC

Members may decide the schedule for August/September, 2016.

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.

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).

123rd *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.

In 120th OCC, Concerned State Utilities /Generating companies are requested to submit data of their respective control areas by 1st week of May, 2016.

Members may update.

Item No. B.22: 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 July, 2016 data has been received from WBSETCL, CESC, & OPTCL.

BSPTCL, DVC, JUSNL may furnish the data.

Item No. B.23: 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 DVC, JUSNL and WBPDCL.

In 122nd OCC, ERLDC requested DVC & West Bengal to include restoration plan for priority loads mentioning quantum of load and restoration procedure.

In 123rd OCC, *West Bengal, OPTCL and BSPTCL agreed to submit the restoration procedure within 15 days.*

ERLDC may update.

Item No. B.24: Dynamic data of Generator Models required in PSSE for Simulations -- ERLDC

Requisite data received only from NTPC Kahalgaon & Barh, NHPC Teesta-V, GMR, CESC NTPC Farakka, WBPDCL, JITPL and Vedanta Ltd.

In 119th OCC, it was informed that DVC, JUSNL and OPTCL were yet to submit the data.

OCC advised the above constituents to submit the requisite data at the earliest.

Latest status is enclosed at **Annexure-B24**.

Other Generators may ensure submitting the data.

Item No. B.25: Implementation of Automatic Demand Management Scheme (ADMS)

Regulation 5.4.2 (d) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (Grid Code) provides for implementation of demand management schemes by State Load Despatch Centre through their respective State Electricity Boards/Distribution Licensees. This is a basic measure towards ensuring grid security. Due to non-implementation of this scheme so far, CERC vide order dated 31-12-15 on **Petition No. 5/SM/2014** had directed all constituents as follows:

*"However, considering the request of the respondents to grant time to implement ADMS, we grant time till **30.6.2016** to the respondents to implement ADMS, failing which they will be liable for action under Section 142 of the Act for noncompliance of the Regulation 5.4.2 (d) of the Grid Code and order of the Commission. RLDCs are directed to submit the report in this regard by 31.8.2016."*

In 120th OCC meeting, *Powergrid informed that it is possible to implement in new SCADA system. After detailed deliberation, OCC referred the issue to 7th PRM meeting for further course of action.*

In 7th PRM meeting, m*ember Secretary, ERPC briefed the members about the need for compliance of the CERC directive for implementing Automatic Demand Management scheme (ADMS) in their respective systems.*

While discussing the issue in detail, it emerged that this feature can be implemented in ER constituent systems (WB, DVC, BSPTCL, JUSNL and Sikkim), upto 33 kV side as the telemetry of 33kV side has also been included in the SCADA project just implemented.

Regarding implementation of the ADMS in OPTCL, OPTCL informed that they will discuss the matter with appropriate management and will intimate the same at the earliest.

In special PRM held on 7th June, 2016, Chemtrols provided the following status of DO implementation:

Constituent	Target by June end	Actual
Bihar	50	67
DVC	12	17
WBSETCL	10	65**
Jharkhand	2	2

(**As per the WB instruction, In all RTUs of WB the DO cable has been terminated in the C&R Panel TBs. WBSETCL testing Team to further extend the connections to the trip relays)

In 123rd OCC, *OPTCL informed that they are interacting with Gujarat and also contacted Chemtrol. Chemtrol is ready to provide hardware and software for additional cost.*

Members may update.

Item No. B.26: Long outage of important transmission elements

a) Prolonged shutdown of 220kV TTPS-Joda-I

220kv TTPS-Joda-I was taken under shutdown for replacement of old Sheep conductor by ACSR Zebra conductor w.e.f 13/02/16 to 15/04/16. However, the shutdown has not been returned till date. The above line is important specially in context of feeding Joda loads during s/d of 220kv Joda-Ramchandrapur during which redundancy of feed to Joda/Jindal/ Jamshedpur (DVC) is affected.

OPTCL may furnish the day wise schedule of the pending works indicating the completion time as there has already been significant time over-run.

In 123rd OCC, *OPTCL informed that the line was charged on 1st July 2016.*

OPTCL 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.*

OPTCL may update.

c) 400kV Sterlite-Meramundali D/c

Tower at Loc.No35 twisted(near Sterlite).

In 123rd OCC, *OPTCL informed that the line would be charged by 10th August, 2016.*

OPTCL may update.

d) 220kV Gaya-Dehri

Tower collapsed at loc. No275 from Gaya end.

In 122nd OCC, BSPTCL informed that the line will be in service after 4 months.

In 123rd OCC, *BSPTCL informed that the line will be in service by November 2016.*

BSPTCL may update.

e) 400kV Patna-Kishengunj D/C

Tower collapsed at Loc.51. Powergrid may update.

Powergrid may update.

Item No. B.27: 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.

ERLDC informed that, Import / Export TTC for DVC for April 2016 are available in the website of DVC. But the underlying assumptions, limiting constraints etc. are not mentioned. It is therefore suggested that all load-serving control areas in Eastern Region may please endeavor to publish their respective TTC/ATC figures as follows:

Format for TTC declaration:
Import TTC (example)

S.No	Control Area	TTC	RM	ATC	Limiting contingency & loading of the limiting equipment under that contingency
1	W. Bengal				
2	Odisha				
Etc.	Etc.				

Assumptions : W. Bengal (example)

Station-wise MW generation considered (132kV & above)	Injection(+)/Withdrawal(-) considered (MW) for each embedded IPP at 132kV and above (if any)	S/Stn-wise demand (MW) considered (132kV & above)	Lines / elements considered to be normally switched off or under forced outage (if any)	Generating units under forced outage (if any)	SPS considered (if any)

Export TTC (example)

S.No	Control Area	TTC	RM	ATC	Limiting contingency & loading of the limiting equipment under that contingency
1	W. Bengal				
2	Odisha				
3	Bihar				
4	Jharkhand				
5	DVC				

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.*

Members may note and update.

Item No. B.28: 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.

119th OCC advised all the constituents to comply.

Members 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.

It was informed that JUSNL, Sikkim and MPL have not yet replied to CERC on non-availability of telemetry.

OCC advised JUSNL, Sikkim and MPL to submit their reply to CERC at the earliest.

In 123rd OCC, ERLDC presented the updated telemetry status and informed that every month they were posting the updated status at ERLDC website. The updated status is enclosed at **Annexure-B.29**.

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

Members may update.

Item No. B.30: Status of breaker operation at Malbase end during auto-reclose operation of 400 kV Malbase – Binaguri at 18:40 hrs on 23-06-16

On 23rd June 2016 at 18:40 hrs, R-N fault occurred in 400 kV Malbase-Binaguri line and it was successfully auto reclosed at both ends. As per DR data provided by POWERGRID, only R phase breaker opened at Binaguri end during auto-reclose operation which is in line with practice followed throughout the grid. However from Binaguri PMU data, it is suspected all three phase breakers opened during auto-reclose operation at Malbase end. The matter was informed to Bhutan and as per information received from them, single phase auto reclose scheme has been configured at Malbase end although, current in Y & B phases was zero during pre-fault and post-fault condition. DR & EL data from Malbase are yet to be received.

In 123rd OCC, *Bhutan representative agreed to communicate the issue to respective division.*

Bhutan may explain the breaker operation at Malbase end.

Item No. B.31: 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.31**.

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.32: 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.32**.

Members may update the latest status.

Item No. B.33: 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.

In 123rd OCC, members updated the latest status as follows:

Utility	Scope	Installed Locations	Number of locations where 1st set of Measurements Completed	Number of locations where 2nd set of Measurements Completed
JUSNL	67	27	**21**	**19**
BSPTCL	59	52	**52**	**40**
WBSETCL	73	70	**43**	
OPTCL	164	102	**102**	**42**
Sikkim	12	9	**6**	**6**
Powergrid ER 1	99	99	**99**	**47**
Powergrid ER 2	40	40	**40**	**40**
Powergrid Odisha	42	42	**42**	**42**

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

Members may update.

Item No. B.34: 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	*July 2016*	1st Week of February 2017	
3	Rengali	2nd week of June 2016	*28th August 2016*	Last week of November 2016	
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		1st week of January 2017	
6	Balimela	3rd week of October 2016		1st week of March 2017	
7	Teesta-V	2nd week of Nov 2016		Last week of February 2017	
8	Chuzachen	Last Week of May 2016		January 2017	
9	Burla	Last Week of June 2016	*28th August 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		1st Week of February 2017	

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.35: 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 117th OCC, ERLDC informed that the performances of the governor response are being uploaded in the yahoo group. It was also informed that DVC, CESC and Odisha were already added in the web-group.

OCC advised other constituents to join the web group at the earliest by providing their e-mail ids (preferably yahoo ids).

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

OCC advised all the other constituents to join the web group at the earliest by providing their e-mail ids (preferably yahoo ids).

In 123rd OCC, ERLDC added that this is the best time to put all the generators in RGMO/FGMO mode as the grid frequency is stable and almost close to 50 Hz.

OCC decided that all the generators should put RGMO/FGMO in service from 15th August, 2016.

All generators agreed.

Members may update.

Item No. B.36: Reactive Power performance of Generators and GT tap position optimization

Generating stations have been monitored for sample dates in the month of July, 2016:

Power Plant	**Max and Min Voltage observed for** July, 16 **(KV)**	**Date for monitoring (**July, 16**)**
Farakka STPS	425,401	10,12
Khalgaon STPS	419,399	11,12
Talcher STPS	401,393	13,24
Teesta	418,402	12,22
Bakreshwar TPS	415,393	11,14
Kolaghat TPS	421,396	7,16
Sagardighi TPS	434,411	23,5
MPL	424,404	21,9
Mejia-B	426,412	11,12
DSTPS	423,410	13,20
Adhunik TPS	424,404	2,17
Sterlite	422,413	14,19
Barh	--	
JITPL	--	
GMR	414,396	9,24
HEL	--	
Kodarma	423,395	14,20

In 123rd OCC, ERLDC informed that the performance of DSTPS, Koderma, Mejia-B, GMR and APNRL need improvement.

ERLDC may update.

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
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.37: Erroneous recording/Non-receipt of data by Interface Meters

A. Erroneous recording of data by Interface Meters

i. Patratu(DVC)

SEM data received from Patratu(DVC)of 132 KV Patratu(DVC) – Patratu (JUVNL) line showing erroneous(around 50% recording Less as compared to JUVNL end) since charging of the line on 16.05.16. Accounting of DVC is being done by Standby meter at JUVNL end. The above matter was last discussed in 33rd TCC/ERPC. The said line is Idle charged since last one and half months and the necessary rectification if any done can't be checked until Power flow through the line.

In 123rd OCC, it was informed that appropriate correction has been done and meter will be checked when the line is in service.

Powergrid and DVC may update the status if any rectification done at their end.

ii. Joda(OPTCL)

SEM data received from Joda(OPTCL)endof 220 KV Joda(OPTCL) – Ramchandarpur (JUVNL) line is showing erroneous(15-20% Less recording as compared to Ramchandarpur end) since 14.01.16. Matter was intimated to official of Joda OPTCL. In 119th OCC, OPTCL informed that SEM at Joda end needs to be checked and corrected. OPTCL informed that there is no line CT, so 2 nos SEM for the bus-coupler at Joda end is required. In 121st OCC, ERLDC suggested to place one meter at B/C and to check healthiness of existing SEM at Joda end of Ramchandarpur Line. In the last Commercial Sub Committee meeting, PGCIL informed that SEMs have been arranged and the metering at B/C ofJoda would be completed subject to S/D allowed by OPTCL. OPTCL may confirm the S/D of 220 KV Joda-Jindal Line so that the meter of the said line may be shifted at B/C.

In 123rd OCC, OPTCL informed that they allowed the shutdown.

PGCIL and OPTCL may please respond.

B. By passing of SEMs of Tie Lines

i. Kendiposi at JUSNL

SEM is installed at both end of 132 KV Kendiposi(JUSNL)-Joda (OPTCL) Line. As per the SEM data received from 132 KV Kendiposi(JUSNL), readings of meter (Serial No. NP-6117-A) installed at Kendiposi end of 132 KV Kendiposi-Joda Line is not recording any flow compared to

Joda end since long. It was gathered from Kedniposi that line is feeding load to Naumundi (JUSNL) regularly through Transfer Bus of Kendiposi by passing the SEM at Kendiposi.

Further Power from Joda is occasionally received at Main Bus of Kendiposi. In that case Meter installed at Kendiposi end of Joda Line records the energy flow through the line. In absence of non-recording of data by SEM installed at Kendiposi end of the aforesaid Tie line, data validation and energy accounting is being affected. Presently energy accounting is being done considering Joda OPTCL end meter.

Bypassing of SEM installed at Tie line is violation of CEA metering regulation 2006 and the same is needed to be restored**.** One meter at Transfer Bus is required to be installed to record energy flow through the line. The above matter was last discussed in 33rd TCC/ERPC. Till now the details of SEM installed at Transfer Bus is not received by ERLDC.

In 123rd OCC, It was informed that one meter is to be installed at transfer bus and PGCIL informed that they will install the meter by 31st July 2016.

Powergrid/JUSNL may update the status.

C. Non Receipt of SEM data from Various Locations

i. Forbisganj at BSPTCL

Kishanganj(BSPTCL) end meter of 132 KV Purnea(PG) Line is not recording any flow compared to Purnea PGCIL end since 14:00 hrs of 29th June 2015. It was gathered that line is feeding load to Farbisganj at BSPTCL regularly through Transfer Bus of Kishanganj bypassing the SEM at Kishanganj. It was decided to place 02 nos of SEM at Forbesganj. In 31st CCM, BSPHCL representative informed that meter has been placed at Farbesgunj on 03.02.2016. In 121st OCC PGCIL informed that DCD for downloading the data has been handed over to BSPHCL. The matter was last discussed in 33rd TCC/ERPC and it was assured that the matter would be resolved at the earliest. However ERLDC has not received the SEM data till now.

In 123rd OCC, BSPHCL informed that software was not updated and they are not able to collect the meter data.

OCC advised PGCIL to look into.

BSPHCL may update.

Item No. B.38: Auxiliary consumption of HVDC Sasaram under Deviation settlement Mechanism

HVDC SASARAM has a share allocation of 0.15 % (i.e 1.26 MW) from NTPC Kahalgaon STG-I and the same is being scheduled by ERLDC as a separate entity. HVDC SASARAM is a user of ERLDC and pays Fees and Charges under Distribution Licensee / Buyer Category.The energy consumption of HVDC station at Sasaram is also considered in the REA from the month of April 2004 onwards and the same is borne by POWERGRID in addition to the corresponding capacity charge.

Each physical regional entity should be bounded by meter and separate schedule and DSM for each entity should be applicable. It is felt that the allocation towards auxiliary power consumption of HVDC stations may also be subjected to Deviation settlement mechanism like other regional entity. In NER, WR, SR and NR also, HVDC is a DSM Pool member.

In order to account for the Actual Drawl for HVDC Sasaram Auxiliary consumption, 04 nos of meter is required to be placed. The location where meter is required to be placed is as under:

1. HV side of 2.5 MVA 33/0.415 Transformer-1 & 2 (one SEM on HV side)
2. LV side of 2.5 MVA 33/0.415 Transformer -1 & 2 (one SEM on LV side)

In 123rd OCC, it was decided that HVDC Sasaram will be under the DSM mechanism and has to become a DSM pool member.

Member Secretary, ERPC informed that for becoming DSM pool member, HVDC Sasaram has to become a member of ERPC and has to pay participation fee for ERPC fund.

Subsequently, for HVDC accounting, Powergrid has installed total 02 nos of meter i.e 01 meter each on HV side of Transformer 1 & 2 and SEM data is also being received by ERLDC since 25.07.16

Members may please discuss.

PART C:: OPERATIONAL PLANNING

Item no. C.1: Shutdown proposal of transmission lines and generating units for the month of September'16

Members may finalize the Shutdown proposals of the generating stations for the month of September'16 as placed at **Annexure-C.1**.

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

Item no. C.2: Anticipated power supply position during September'16

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of September'16 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	CAP(MW)	REASONS FOR OUTAGE	OUTAGE DATE
STERLITE	2	600	SCARCITY OF WATER	23-Jun-16
MEJIA	4	210	LOW DEMAND	24-Mar-16
MEJIA	3	210	BOILER TUBE LEAKAGE	2-Aug-16
BOKARO B*	2	210	LOW DEMAND	3-Jul-16
BOKARO B*	3	210	LOW DEMAND	10-Aug-16
WARIA	4	210	ROTOR PROBLEM	30-Apr-16
RAGHUNATHPUR	2	600	ROTOR PROBLEM	14-Feb-16
RAGHUNATHPUR	1	600	COAL MILL PROBLEM	11-Aug-16
CHANDRAPURA	7	250	ROTOR EARTH FAULT	24-Jul-16

DPL	8	250	BOILER TUBE LEAKAGE	28-Jun-16
TENUGHAT	1	210	LOW VACUUM	9-Jul-16
MUZAFFARPUR	1	110	BOILER TUBE LEAKAGE	25-Jul-16
MUZAFFARPUR	2	110	COAL SHORTAGE	4-Aug-16
DSTPS(ANDAL)	1	500	OVER HAULING	30-Jul-16
KODERMA	2	500	BOILER TUBE LEAKAGE	26-Jul-16
SAGARDIGHI	3	500	FLAME FAILURE	7-Aug-16
TENUGHAT	2	210	TUBE LEAKAGE	10-Aug-16

(ii) Transmission elements

Name of the Line/Element	Outage	Reason
400 KV STERLITE-MERAMANDLI-II	25/05/16	TOWER NO 34 TWISTED (NEAR TO SEL
400 KV STERLITE-MERAMANDLI-I	27/05/16	TOWER NO 34 TWISTED (NEAR TO SEL
400 KV MEERAMANDALI-	23/05/16	TOWER COLLAPSED NEAR TO
220 KV GAYA-DEHRI-D/C	27/05/16	TOWER COLLAPSED AT LOC NO 275 FROM
400 KV PATNA-KISHANGANJ D/C	26/07/16	TOWER COLLAPSED AT LOC NO 51

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
1	Sagardighi Unit #3	500 MW	

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 July'16

System frequency touched a maximum of 50.35Hz at 07:59Hrs of 02/07/16 and a minimum of 49.69Hz at 21:42Hrs of 07/07/16. 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 July'16.

Members may note.

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

Sl no	Disturbance Place	Date	Time	Generation loss (MW)	Load loss (MW)	Remark	Category
1	Meramundali (OPTCL)	11-07-16	6:21	NIL	90	On 11-07-16 at 06:21 hrs, all 220kV feeders, 400/220kV ICTs and 220/132kV ATRs at Meramundali tripped due to bursting of 'Y' phase LA of 220kV Meramundali – Bhusan – II at Bhusan S/Y. The faulted line tripped on operation of Z-I protection and other elements tripped on bus bar protection	GI-1
2	Budhipadar (OPTCL)	14-07-16	16:33	623	142	At 16:33 hrs, 220kV Budhipadar – Tarkera – I tripped on D/P at both end. Simultaneously all the feeders connected to 220kV Budhipadar Bus II along with B/C tripped on Bus Bar differential protection. At the same time, 220/132kV ATR I & II, IBTPS U#1 & #2 tripped and Vedanta unit went to house load which resulted 220 kV bus dead at Budhipadar.	GD-I
3	Purnea (BSPTCL & PG)	31-07-16	9:45	NIL	210	At 09:45 hrs, 132KV Purnea(PG)-Kishanganj tripped from Purnea end only. At the same time, 132KV Madhepura-Supaul D/c tripped (On Earth Fault). Consequently, 132kVPurnea (BSEB)-Faurbisganj tripped due to operation of O/c relay. Power flow to Nepal got interrupted.	GD-I

Members may note.

Item no. D.4: Any other issues.

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Generation Projection (Oct'16 - Dec'16)

				Generation declared Commercial from 1st Jan '16 to 30th June '16					Generation declared/expected to be declared Commercial from 1st July'16 to 30th Sep'16								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
1	**West Bengal**	ER	4663											4663			4663
2	**Odisha**	**ER**	2659											2659	As per GRIDCO	3197	3197
3	**Bihar**	**ER**	153											153			153
4	**Jharkhand**	**ER**	503											503			503
5	**Sikkim**	**ER**	0											0			0
6	**Chujachan**	**ER**	110											110			110
7	**DVC**	**ER**	3144											3144			3144
8	**Durgapur Steel**	**ER**															
9	**Koderma TPP**	**ER**															
10	**MPL**	**ER**	1004											1004			1004
11	**Sterlite**	**ER**	777											777			777
12	**Teesta**	**ER**	533											533	As per NHPC	510	510
13	**Kahalgaon**	**ER**	2175											2175	As per NTPC	2298	2298
14	**Farakka**	**ER**	1920											1920		2075	2075
15	**Talcher**	**ER**	942											942			942
16	**Rangeet**	**ER**	72											72	As per NHPC	63	63
17	**Corporate Power**	ER												0			0
18	**Adhunik Power**	ER	420											420			420
19	**Barh**	ER	877	Barh	5	660	432	432						1309	As per NTPC	1308	1308
20	**Kamalanga TPP (GMR)**	ER	661											661			661
21	**JITPL**	ER	1050											1050			1050
22	**Jorethang**	ER	83											83			83
23	**Bhutan**	**ER**	814											814			814
24	**Raghunathpur**			Raghunathpur TPP	1	600	393	785						785			785
				Raghunathpur TPP	2	600	393										
25	**Bokaro TPS Extn.**	**ER**		Bokaro A TPS Extn	1	500	327	327						327			327
	TOTAL		**22561**					**1545**					**0**	**24106**			**24889**

Note:
1. Projections are based on monthly maximum injection in the last 3 years from actual metered data.
2. Generation forecast has been done based on the following criteria
(i) If there is an increasing trend then last year average generation has been considered
(ii) Otherwise average of past three year average generation has been considered
3. In case of new generators where past data was not available following has been assumed
(i) 0.8 plf for hydro generators
(ii) 0.7 plf for thermal generators.
(iii) 0.3 plf for gas stations
4. In case of the re-organized states of Andhra Pradesh and Telangana Generation is divided in the ratio 53.89% for Telangana and 46.11% for Andhra Pradesh for FY 2012-13 and 2013-14.
This is as per letter No.CE/COMML./APPCC/DE-COMML/POC-DATA-15-16/D.No/15 dtd. 09.10.15 as received from APTRANSCO.

DEMAND FORECAST USING PAST 3 YEARS DATA October 2016 - December 2016)

										1	2	3	4		
	2013-14			2014-15			2015-16							Data given by DICs	Comments
	Oct-13	Nov-13	Dec-13	Oct-14	Nov-14	Dec-14	Oct-15	Nov-15	Dec-15	2013-14 Average	2014-15 Average	2015-16 Average	Projected Demand for (October 2016 - Dec2016) before normalization		
Bihar	2,221	2,312	1,938	2,792	2,754	2,558	3,435	3,313	3,407	2,157	2,701	3,385	3,976		
DVC	2,390	2,253	2,303	2,443	2,483	2,142	2,324	2,310	2,321	2,315	2,356	2,318	2,333		
Jharkhand	995	986	936	1,035	1,055	1,047	1,103	1,127	1,101	972	1,046	1,110	1,181		
Odisha	3,586	3,319	3,130	3,707	3,620	3,504	4,015	3,884	3,759	3,345	3,610	3,886	4,155	4150	As per data submitted by GRIDCO
West Bengal	6,630	6,366	6,059	7,086	6,290	5,818	7,755	6,935	6,478	6,352	6,398	7,056	7,306		
Sikkim	90	85	80	82	78	78	95	95	108	85	79	99	102		
Bhutan															
Eastern Region	**14,870**	**14,318**	**13,501**	**16,566**	**15,684**	**14,593**	**17,972**	**17,068**	**16,592**						

Notes

1. Projections are based on the past 3 years' monthly Peak Demand Met data available on the website of CEA
2. The above projections are being done for financial year 2016-2017 (Q3) i.e Oct 2016 to Dec 2016
3. Projections are being done based on the forecast function available in MS Office Excel
4. In case of the re-organized states of Andhra Pradesh and Telangana Maximum Demand is divided in the ratio 53.89% for Telangana and 46.11% for Andhra Pradesh for FY 2012-13 and 2013-14.
This is as per letter No.CE/COMML./APPCC/DE-COMML/POC-DATA-15-16/D.No/15 dtd. 09.10.15 as received from APTRANSCO.
4. CEA Reports can be accessed from the following links:

http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-12.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-11.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-10.pdf
http://www.cea.nic.in/reports/monthly/gm_div_rep/power_supply_position_rep/peak/Peak_2014_12.pdf
http://www.cea.nic.in/reports/monthly/gm_div_rep/power_supply_position_rep/peak/Peak_2014_11.pdf
http://www.cea.nic.in/reports/monthly/gm_div_rep/power_supply_position_rep/peak/Peak_2014_10.pdf
http://www.cea.nic.in/reports/monthly/gm_div_rep/power_supply_position_rep/peak/Peak_2013_12.pdf
http://www.cea.nic.in/reports/monthly/gm_div_rep/power_supply_position_rep/peak/Peak_2013_11.pdf
http://www.cea.nic.in/reports/monthly/gm_div_rep/power_supply_position_rep/peak/Peak_2013_10.pdf

Annexure-B19

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-B20

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									

Annexure-B24

Dynamic data of Generator Models required in PSSE for Simulations

- **Data received from**
  - **NTPC Kahalgaon & Barh, Farakka, Talcher STPS, TTPS**
  - **NHPC Teesta-V,**
  - **WBPDCL, CESC**
  - **GMR, JITPL,MPL and Vedanta Ltd. Including Vedanta (135 MW units)**
  - **DVC**
  - **OHPC, OPGC**
  - **IMFA CPP Odisha**
- **Data not received from**
  - **Kanti TPS**
  - **NHPC Rangit**
  - **JUVNL,**
  - **DVC**
    - **Maithon, Panchet HEP**
  - **Adunik TPS**
  - **Jorthang HEP, Chujachen HEP**

Annexure-B29

Generating Station

- Nabinagar NTPC : No telemetry and voice communication.
- Sterlite IPP : No data from New switch yard since 3rd Feb 2016. No VOIP/Express voice. Alternate Data channel yet to be provided.
- MPL : Data is highly intermittent.
- TLDP (III) & (IV) : No telemetry data
- Haldia (2 x 300MW) : Bus Voltage, Isolator Status, SOE, LV side data.
- GMR (3 x 350 MW) :Express voice and VOIP integration with ERLDC.
- JITPL (2 x 600MW) – Express voice and VOIP yet to be provided. Alternate Data channel yet to be provided.

Contd…

Generating Station:

- IBEUL (2 x 350 MW) – VOIP/Express Voice. Alternate Channel. Unit Side data not available. Alternate Data channel yet to be provided.
- Farakka NTPC: Unit #4 and Unit # 6 LV side not available.
- Sagardighi : Unit 3 HV side (GT) data not available.
- Patratu and Tenughat : data is highly unstable due to communication link instability.
- TISCO: Highly intermittent.
- JSPL(Meeramundali) : CB and Isolator status not available since last 2 years.

Sub Station (data not avaiable at ERLDC):

- POWERGRID : Arrah 220 (not reporting since May 2016).
- NTPC: Lalmatia (No data since Jan 2016).
- BSPTCL : Sonenagar , Darbhanga, Valmikinagar and koshi (Connected with Nepal)
- JUSNL : Hatia New 220, Dumka 220.
- OPTCL : Paradeep and Bolangir (GR), Vedanta.

Sub Station (highly intermittent data):

- POWERGRID : RANCHI, Purnea 400, Baripada, Gaya, Biharshariff, Angul, Muzaffarpur.
- WBSETCL:Bantala ,Laxmikantapur ,New Town , Subhasgram.
- BSPHCL : Dumraon, Khagaul ,Darbhanga ,Dehri , sultangaunj , Lakhisarai, Karmanasa, Kahalgaon ,Jamaui ,Banka ,Gopalganj, Kisanganj, Arrah ,Rajgir ,Sipara ,Hajipur (New), Pusauli
- JUSNL : Entire data is highly intermittent due to communication link instability.
- DVC : Parulia , Barhi.

VOIP/Express Voice not available

- GMR
- JITPL
- Sterlite
- IBEUL
- Nabinagar
- Bolangir
- Indravati
- Jeypore
- Kalabadia
- Keonjhar
- Gazuwaka HVDC
- Unit Control of ISGS and IPP/MPP.

Details of Eastern Region

A. Telemetry not provided

A.1 Generating Stations

Sl. No.	User Name	Name of Generation Stations	Date of first sysnchonisation	Total Generation Capacity (in MW)	Remarks by constituentes / ERLDC 26.07.16
1	WBSETCL	Haldia (2 x 300)	Jan-15	600	ERLDC is not getting any real time ISOLATOR status ,SOE from HEL except Line, Unit site MW /MVAR. No response.
2		Sagardighi			Unit 3 HV side not available
1	IPP	400 KV GMR (3X 350 MW)	Apr-13	1050	As per ERLDC guidelines no express voice /VOIP phones.
2		400 JITPL (600 x 2)		1200	Data Are highly instable . No alternate data channel and express voice commuincation integrated with ERLDC New Exchange
3		IBEUL (2 x 350 MW)		700	No alternate data channel and as per ERLDC guidelines no express voice /VOIP phones provided . LV side data not available
		Total (Non-telemetered stations)	**4**	**3550**	

A.2 Sub - Stations (765 & 400 kV)

Sl. No.	User Name	Name of sub-Stations	Voltage level	Date of first sysnchonisation	Remarks by constituentes / ERLDC 26.07.16
1	OPTCL	JSPL (Meramundali -400)	400 kV	Sep'10	Status are not reporting.

A.3 Sub - Stations (220 kV & 132 kV)

Sl. No.	User Name	Name of sub-Stations	Voltage level	Target date as per User	Remarks by constituentes / ERLDC 26.07.16
1	OPTCL	OPTCL CPP : 220 KV BPSL,CONCAST,BSL,JSL,TSIL,VISSA	220 / 132 kV	Dec-13	CONCAST NO DATA , JSL NO KV/HZ. BSL NO HZ .BPSL NO Bus Kv .
1	WBSETCL	Foundary Park	220		data not integrated
2		Hura	220		data not integrated
1	BSEB	Darbhanga	220 kV		RTU under commissioning under upgradation project.
2		Jagdishpur	132 KV		RTU under commissioning under upgradation project.
1	JSEB	Hatia New	220 kV	No Time Schedule	No Data available .No response .
2		Japla	132 KV		No Data available .No response .
3		Dumka	220 KV		No Data available .No response .

B. Telemetry provided but not working / working intermittently

B.1 Generating Stations

Sl. No.	User Name	Name of Generation Stations	Total Generation Capacity (in MW)	Target date as per User	Remarks by constituentes / ERLDC 26.07.16
1	OPTCL	220 KV Vedanta (9X 135 MW)	1215	Dec-13	Some CB / Isolators and KV / HZ point yet to be provided.No response .
	WBSETCL	TLDP (III)			Data not available
		TLDP (IV)			Data not available
1	JSEB	220 KV Tenughat (2X 210 MW)	420	Time Schedule not submitted	Data highly intermittent
2		220 KV Patratu (4x 50 + 2x100 + 4x110)	840	Time Schedule not submitted	Data highly intermittent
1	NTPC	400 kV Farakka : (3x 200 + 2 x 500 MW + 600) Unit-6 and Unit -4 LV side MW/MVAR not available	2100	Time Schedule not submitted	No response .
2		BRBCL/Nabinagar TPP (4x250 MW)	1000	Time Schedule not submitted	No data available. As per ERLDC guidelines no express voice /VOIP phones provided .
1	Vedanta	SEL (4 x550 MW)	2200		All data stopped reporting since March 2016
			5575		

B.2 Sub - Stations

Remarks by constituentes / ERLDC 26.07.16

Sl. No.	User Name	Name of sub-Stations	Voltage level	Target date as per User	Data not reporting
1	BSPTCL	Barauni	132 kV		Under rennovation and modernization . Target July 2016
2		Dumraon	132 kV		Data stopped reporting
3		Khagaul	132 kV		Data intermittent
4		Darbhanga	220 kv &132 kV		RTU under commissioning under upgradation project.
5		Dehri	220 KV		presently not reporting due to RTU problem. M/s chemtrols RTU vendor directed to rectify problem. Target- May-16
6		Sonenagar	220 kV		Under rennovation and modernization . Target July 2016
7		sultangaunj	132 kV		Under rennovation and modernization . Target July 2016
8		Lakhisarai	132 KV		Data Intermittent
9		Karmanasa	132 KV		Under rennovation and modernization . Target July 2016
10		Kahalgaon	132 kV		Data Intermittent
11		Jamaui	132 KV		Data Intermittent
12		Banka	220 kv		Data Intermittent
13		Valmikinagar	132 kV		Under rennovation and modernization . Target July 2016
14		Koshi	132 kV		Under rennovation and modernization . Target July 2016
15		Gopalganj	220 kV		Data highly intermittent
16		Kisanganj	132 KV		Data highly intermittent
17		Arrah	132 KV		Data highly intermittent
18		Rajgir	132 KV		Data highly intermittent
19		Sipara	220 KV		Data highly intermittent
20		Hajipur (New)	220 KV		Data highly intermittent
21		Pusauli	220 KV		Data highly intermittent
1	GRIDCO	Paradeep	220		Data not Available
2		bolangir new	220		Data not Available
1	JSEB (COMMUNICATION link is highly instable)	Jamtara	132 kV	Time Schedule not submitted	Data not available
2		Deoghar	132 kV	Time Schedule not submitted	Data not available
3		Garwah	132 kV	Time Schedule not submitted	Data not available
4		Goelkera	132 kV	Time Schedule not submitted	Data not available
5		Jaduguda	132 kV	Time Schedule not submitted	Data not available
6		Kendposi	132 kV	Time Schedule not submitted	Highly Intermittent
7		Ramchandrapur	220 KV		Highly Intermittent
	WBSETCL	Asansol	220		Highly Intermittent
		Haldia NEW	220		Highly Intermittent
		bantala	220		Highly Intermittent
		Laxmikantapur	220		Highly Intermittent
		New Town	220		Highly Intermittent
		Subhasgram	220		Highly Intermittent
		EM Bypass(CESC)	220		Bus Voltage and Frequency Not Available
1	POWERGRID	RANCHI	400		Highly Intermittent
2		Purnea 400	400 kV		Highly Intermittent
3		Baripada	400 kV		Highly Intermittent
4		Gaya	765 kV		Highly Intermittent
5		Biharshariff	400 KV		Highly Intermittent
6		Angul	765 KV		Highly Intermittent
7		Muzaffarpur	400 KV		RTU is getting Hanged frequently
1	DVC	TISCO	400 KV		DATA HIGHLY INTERMITTENT
		Parulia	220 kV		Data Not available
1	IPP	MTHRB	400 KV		Data highly intermittent
1	NTPC	Lalmatia	220 kV		Data stoppped reporting since Jan 2016

A. Station

S. N	S/s Name	Orange Analog Phone	OrangeVOIP	Main ERLDC Kolkata data Link	Back Up ERLDC Delhi Data Link
1	Angul	Not Available	20330057	Available	Not Available
2	Ara	20330539	20330039	Available	Not Available
3	Baharampur	Not Available	20330031	Available	Not Available
4	Banka CS	Not Available	20330044	Available	Not Available
5	BARH NTPC	Not Available	20330051	Available	Not Available
6	Biharsarif 400kv	Not Available	20330034	Available	Not Available
7	Birpara	Not Available	20330053	Available	Not Available
8	Bolangir	Not Available	Not Available	Available	Not Available
9	Chaibasa CS	Not Available	20330041	Available	Not Available
10	Chandwa	20330559	20330059	Available	Not Available
11	Dalkhola	20330549	20330049	Available	Not Available
12	Daltonganj	Not Available	20330056	Available	Not Available
13	Durgapur	20330528	20330028	Available	Not Available
14	FSTPP	Not Available	20330054	Available	Not Available
15	Gangtok	Not Available	20330022	Available	Not Available
16	Gaya	Not Available	20330037	Available	Not Available
17	Indravati	Not Available	Not Available	Available	Not Available
18	Jamshedpur CS	20330533	20330033	Available	Not Available
19	Jeypore	Not Available	Not Available	Available	Not Available
20	Jharsugura	Not Available	20330040	Available	Not Available
21	Jorthang Power House	20330141		Available	Not Available
22	Kalabadia	Not Available	Not Available	Available	Not Available
23	Kahalgaon NTPC	Not Available	20330043	Available	Not Available
24	Keonjhar	Not Available	Not Available	Available	Not Available
25	Kishanganj	Not Available	20330061	Available	Not Available
26	Lakshisarai	Not Available	20330042	Available	Not Available
27	Maithon	Not Available	20330026	Available	Not Available
28	Malda	20330529	20330029	Available	Not Available
29	MTHRB	Not Available	20330027	Available	Not Available
30	Mujaferpur	Not Available	20330050	Available	Not Available
31	New Malli	Not Available	20330021	Available	Not Available
32	New Malli	20330140		Available	Not Available
33	Pandiavali	Not Available	20330067	Available	Not Available
34	Patna	Not Available	20330038	Available	Not Available
35	Purnia 220 KV	20330530	20330030	Available	Not Available
36	Purnia 400 KV	Not Available	20330025	Available	Not Available
37	Ranchi 400 KV	Not Available	20330032	Available	Not Available
38	Ranchi 765 KV	Not Available	20330035	Available	Not Available
39	Rangit	Not Available	20330058	Available	Not Available
40	Rangpo	20330139	20330020	Available	Not Available
41	Rengali	Not Available	20330045	Available	Not Available
42	Rourkela	20330536	20330036	Available	Not Available
43	Sasaram	Not Available	20330046	Available	Not Available
44	Siliguri 220	20330523	20330023	Available	Not Available
45	Siliguri 400/220 (Binaguri)	20330524	20330024	Available	Not Available
46	Subashgram	Not Available	20330015	Available	Not Available
47	Teesta NHPC	Not Available	20330062	Available	Not Available
48	TSTPP, Talcher NTPC	Not Available	20330052	Available	Not Available

Note :* Phone at Unit Control room is yet to provided.

B. SLDC /NLDC to ERLDC protection path not provided.

S.N.	Link	Main ERLDC Delhi		Backup ERLDC Delhi	
		Main Channel	Std By Channel (Route Diversity)	Main Channel	Std By Channel (Route Diversity)
1	OPTCL -ERLDC	Yes	Not Available	Not Available	Not Available
2	BSPTCL -ERLDC	Yes	Not Available	Not Available	Not Available
3	JUSNL -ERLDC	Yes	Not Available	Not Available	Not Available
4	WBSETCL -ERLDC	Yes	Not Available	Not Available	Not Available
5	DVC -ERLDC	Yes	Not Available	Not Available	Not Available
6	Sikkim -ERLDC	Yes	Not Available	Not Available	Not Available
7	NLDC -ERLDC	Yes	Not Available	Yes	Not Available

Annexure – B.31

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.

Annexure- C.1

Maintenance Schedule of Thermal Generating Units of ER for September-2016

System	Station	Unit	Size (MW	period		No. of Days	Reason
				From	To		
DVC	MTPS	5	210	14.09.16	29.09.16	16	Burner Replacement
IPP	GMR	3	350	06.09.16	30.09.16	25	Boiler Overhauling
	JITPL	1	600	16.09.16	28.09.16	13	Minor Overhauling

Annexure-C.2

Anticipated Power Supply Position for the month of
Sep-16

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	3700	2165
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	446	312
		- Central Sector	2353	1633
	iii)	SURPLUS(+)/DEFICIT(-)	-902	-219
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1200	750
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	522	349
		- Central Sector	575	340
	iii)	SURPLUS(+)/DEFICIT(-)	-103	-60
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2800	1680
	ii)	NET POWER AVAILABILITY- Own Source	4577	2404
		- Central Sector	421	293
		Long term Bi-lateral (Export)	1300	936
	iii)	SURPLUS(+)/DEFICIT(-)	898	81
4		**ORISSA**		
	i)	NET MAX DEMAND	4250	2530
	ii)	NET POWER AVAILABILITY- Own Source	3261	2174
		- Central Sector	1085	732
	iii)	SURPLUS(+)/DEFICIT(-)	96	376
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	6055	3632
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	6055	3632
	iv)	NET POWER AVAILABILITY- Own Source	3610	2007
		- Import from DPL	126	41
		- Central Sector	2079	1381
	v)	SURPLUS(+)/DEFICIT(-)	-240	-203
	vi)	EXPORT (TO B'DESH & SIKKIM)	10	7
5.2		**DPL**		
	i)	NET MAX DEMAND	300	209
	ii)	NET POWER AVAILABILITY	426	250
	iii)	SURPLUS(+)/DEFICIT(-)	126	41
5.3		**CESC**		
	i)	NET MAX DEMAND	1945	1015
	ii)	NET POWER AVAILABILITY - OWN SOURCE	860	589
		FROM HEL	546	320
		FROM CPL/PCBL	0	0
		Import Requirement	539	106
	iii)	TOTAL AVAILABILITY	1945	1015
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	8300	4856
	ii)	NET POWER AVAILABILITY- Own Source	4896	2846
		- Central Sector+Others	3164	1701
	iii)	SURPLUS(+)/DEFICIT(-)	-240	-309
7		**SIKKIM**		
	i)	NET MAX DEMAND	85	34
	ii)	NET POWER AVAILABILITY- Own Source	10	7
		- Central Sector+Others	142	96
	iii)	SURPLUS(+)/DEFICIT(-)	67	69
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	19743	12015
		Long term Bi-lateral by DVC	1300	936
		EXPORT BY WBSEDCL	10	7
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	21451	12888
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	399	-70