



भारत सरकार
विद्युत मंत्रालय
पूर्वी क्षेत्रीय विद्युत समिति

GOVERNMENT OF INDIA
MINISTRY OF POWER
EASTERN REGIONAL POWER COMMITTEE



No. ERPC/TCC&Committee/14/2018/ 4885

Date: 28.03.2018

To:

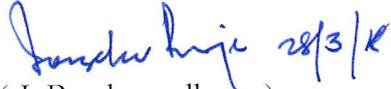
1. Members of Eastern Regional Power Committee.
2. Members of TCC.

Subject: Minutes of 37th ERPC & TCC Meetings.

Sir,

The minutes of the 37th TCC & ERPC meetings held on 16th & 17th March 2018 respectively in Goa have been issued and uploaded on www.erpcc.gov.in. As per the decision of ERPC distribution of hard copies of the Minutes of Meeting has been discontinued as a Go Green initiative.

Yours faithfully,


(J. Bandyopadhyay)
Member Secretary

Attach.: As above.

ERPC Members :

1. Chairperson, ERPC & Chairman-cum-Managing Director, Jharkhand Urja Vikas Nigam Limited , Engineering Building, HEC, Dhurwa, Ranchi-834004.
2. Managing Director, Jharkhand Urja Sancharan Nigam Limited , Engineering Building, HEC, Dhurwa, Ranchi-834004.
3. Managing Director, Jharkhand Bijli Vitaran Nigam Limited , Engineering Building, HEC, Dhurwa, Ranchi-834004.
4. Managing Director, Tenughat Vidyut Nigam Ltd., Hinoo, Doranda, Ranchi – 834002
5. Chairman-cum- Managing Director, Bihar State Power Holding Company Ltd., Vidyut Bhavan , Bailey Road, Patna-800021.
6. Managing Director, Bihar State Power Transmission Company Limited, Vidyut Bhavan , Bailey Road, Patna-800021.
7. Managing Director, North Bihar Power Distribution Company Limited, Vidyut Bhavan , Bailey Road, Patna-800021.
8. Chairman & Managing Director, West Bengal State Electricity Distribution Company Ltd., Vidyut Bhavan, 7th Floor, Block-DJ, Sector-II, Bidhannagar,Kolkata-700091.
9. Managing Director, West Bengal State Electricity Transmission Company Ltd., Vidyut Bhavan, 8th Floor, Block-DJ, Sector-II, Bidhannagar,Kolkata-700091.
10. Chairman & Managing Director, West Bengal Power Development Corporation Ltd., Bidyut Unnayan Bhavan, 3/C, Block LA , Sector-III, Bidhannagar, Kolkata-700098.
11. Managing Director, Durgapur Projects Ltd., Administrative Building, Durgapur-713201, West Bengal.
12. Principal Chief Engineer-cum-Secretary, Energy & Power Department, Govt. of Sikkim, Kazi Road, Gangtok – 737101, Sikkim.
13. Chairman-cum-Managing Director, Odisha Power Transmission Corporation Ltd., Janpath, Bhubaneswar - 751022.
14. Chairman-cum-Managing Director, GRIDCO Ltd., Janpath, Bhubaneswar-751022.
15. Chairman-cum-Managing Director, OHPC Ltd., Orissa State Police Housing & Welfare Corporation Bldg. Vanivihar, Janpath, Bhubaneswar- 751022.
16. Managing Director, OPGC Ltd., Zone-A, 7th Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023.
17. Chairman, Damodar Valley Corporation, DVC Towers, VIP Road, Kolkata -700054.
18. Member (GO&D), Central Electricity Authority, Sewa Bhawan , R.K. Puram, New Delhi-110066.
19. Director (Commercial), NTPC Ltd., Core-7, SCOPE Complex, Lodhi Road, New Delhi -110003.
20. Director (Finance), NHPC Ltd., NHPC Office Complex, Sector-33, Faridabad, Haryana-121003.
21. Director (Operations), Power Grid Corporation of India Ltd., Saudamini, Plot No. 2, Sector-29, Gurgaon-122001.
22. Executive Director, ERLDC, POSOCO, 14 Golf Club Road, Tollygunge, Kolkata – 700033.
23. Chief Executive Officer, POSOCO, National Load Dispatch Center, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016.
24. Director (C&O), PTC India Ltd., 2nd floor, NBCC Tower, 15 Bhikaji Cama Place, New Delhi-110066.
25. Chief Executive Officer, NTPC Vidyut Vyapar Nigam Limited, SCOPE Complex, Core-5, 1st & 2nd Floor, Lodhi Road, New Delhi-110003.
26. Managing Director, Tata Power Trading Company Limited, B12/13, 2nd Floor, Shatabdi Bhavan, Sector-4, Noida-201301, Uttar Pradesh.
27. Managing Director, CESC Ltd., CESC House, 1 Chowringhee Square, Kolkata-700001.
28. Chief Executive Officer, Maithon Power Ltd., Village-Dambhui, P.O. Barbindia, Dist.-Dhanbad, Jharkhand-828205.
29. Managing Director, Adhunik Power & Natural Resources Ltd., Lansdowne Towers, 5th Floor, 2/1A Sarat Bose Road, Kolkata-700020.
30. Chief Operating Officer, GMR Kamalanga Energy Ltd., AT/PO-Kamalanga, PS-Kantabania, Via-Meramundali, Dist.-Dhenkanal, Odisha-759121.
31. Chief Executive Officer, Jindal India Thermal Power Limited, Plot No-12, Sector-B1, Local Shopping Complex, Vasant Kunj, New Delhi-110070.
32. Managing Director, Teesta Urja Limited, 2nd Floor, Vijaya Building, 17 Barakhamba Road, New Delhi-110001.

TCC Members :

1. Chairperson, TCC & Director (Project), Jharkhand Urja Sancharan Nigam Limited , Engineering Building, HEC, Dhurwa, Ranchi-834004.
2. Chief Engineer (S&D-JBVNL), Jharkhand Urja Vikas Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi-834004.
3. Chief Engineer (S&D), Jharkhand Bijli Vitaran Nigam Limited , Engineering Building, HEC, Dhurwa, Ranchi-834004.
4. General Manager, Tenughat TPS, Lalpania, Dist- Bokaro, Jharkhand-829149.
5. Director (Project), Bihar State Power Transmission Company Limited, Vidyut Bhavan , Bailey Road, Patna-800021.
6. Chief Engineer (Commercial), Bihar State Power Holding Company Ltd., Vidyut Bhavan , Bailey Road, Patna-800021.
7. Director (Project), North Bihar Power Distribution Company Limited , Vidyut Bhavan , Bailey Road, Patna-800021.
8. Director (Operations), West Bengal State Electricity Transmission Company Ltd., Vidyut Bhavan, 8th Floor, Block-DJ, Sector-II, Bidhannagar, Kolkata-700091.
9. Director (R&T), West Bengal State Electricity Distribution Company Ltd., Vidyut Bhavan, 7th Floor, Block-DJ, Sector-II, Bidhannagar, Kolkata-700091.-
10. Director (O&M), WBPDC, Bidyut Unnayan Bhavan, 3C, Block-LA, Sector-III, Bidhannagar, Kolkata-700098.
11. General Manager I/C (Corporate Technical), Durgapur Projects Ltd., Administrative Building, Durgapur-713201, West Bengal.
12. Chief Engineer (HQ), Energy & Power Dept., Govt. of Sikkim, Kazi Road, Gangtok-737101.
13. Director (Operation), Odisha Power Transmission Corporation Ltd., Janpath, Bhubaneswar - 751022.
14. Director (Commercial), GRIDCO Ltd., Janpath, Bhubaneswar-751022.
15. Director (Operation), Orissa Power Generation Corporation Ltd, Zone-A, 7th floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023.
16. Director (Operation), Orissa Hydro Power Corporation Ltd, Orissa State Police Housing & Welfare Corporation Building, Vanivihar Chowk, Janpath, Bhubaneswar-751022.
17. Executive Director (Commercial), Damodar Valley Corporation, DVC Tower, VIP Road, Kolkata-700054.
18. Chief Engineer (GM), CEA, Sewa Bhawan, R.K. Puram , New Delhi-110066.
19. Regional Executive Director (ER-I), NTPC Ltd., 2nd floor, Lok Nayak Jai Prakash Bhawan, Dak Bunglow Chowk, Patna-800001.
20. Regional Executive Director (ER-II), NTPC Ltd., 3rd Floor, OLIC Building, Plot No.N-17/2, Nayapalli, Bhubaneswar-751012.
21. Executive Director (O&M), NHPC Ltd., NHPC Office Complex, Sector-33, Faridabad-121003, Haryana.
22. Executive Director (ER-I), Power Grid Corporation of India Ltd, Board Colony, Shastri Nagar, Patna-800023.
23. Executive Director (ER-II), Power Grid Corporation of India Ltd, CF-17, Action Area-I, Newtown, Rajarhat, Near Axis Mall, Kolkata-700091.
24. Executive Director, ERLDC, POSOCO, 14 Golf Club Road, Kolkata -700 033.
25. Chief Executive Officer, POSOCO, National Load Dispatch Center, B-9 Qutab Institutional Area, Katwaria Sarai, New Delhi-110016.
26. Executive Director (Marketing), PTC India Ltd., NBCC Tower, 15 Bhikaji Cama Place, New Delhi-110066.
27. General Manager (BD), NTPC Vidyut Vyapar Nigam Limited, SCOPE Complex, Core-5, 1st & 2nd Floor, Lodhi Road, New Delhi-110003.
28. The Head (Marketing), Tata Power Trading Company Limited, B-12/13, 2nd Floor, Shatabdi Bhavan, Sector-4, Noida-201301, Uttar Pradesh.
29. Executive Director (Generation), CESC Ltd, CESC House, 1 Chowringhee Square, Kolkata-700001.
30. Station Head & General Manager (O&M), Maithon Power Ltd., Village-Dambhui, P.O. Barbindia, Dist.-Dhanbad, Jharkhand-828205.
31. Director, Adhunik Power & Natural Resources Ltd., Lansdowne Towers, 5th Floor, 2/1A Sarat Bose Road, Kolkata-700020.
32. AVP & Head (O&M), GMR Kamalanga Energy Ltd., AT/PO-Kamalanga, PS-Kantabania, Via-Meramundali, Dist.-Dhenkanal, Odisha-759121.
33. Chief Executive Officer, Jindal India Thermal Power Limited, Plot No-12, Sector-B1, Local Shopping Complex, Vasant Kunj, New Delhi-110070.
34. Managing Director, Teesta Urja Limited, 2nd Floor, Vijaya Building, 17 Barakhamba Road, New Delhi-110001.



Minutes
of
37th ERPC Meeting
of
EASTERN REGIONAL POWER COMMITTEE

Date: 17th March, 2018

Venue: Goa

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EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 37TH ERPC MEETING

Date: 17th March, 2018

Place: Goa

In Chair: Dr. N. M. Kulkarni, IAS, Chairperson, ERPC & Secretary, Energy Department, Govt. of Jharkhand and CMD, JUVNL

Host: POWERGRID

List of participants is at **Annexure-A**

Dr. N. M. Kulkarni, IAS, Chairperson, ERPC & Secretary, Energy Department, Govt. of Jharkhand and CMD, JUVNL welcomed the members of ERPC, TCC, guests from Bhutan and all other participants. He informed that it was a great privilege to chair this august forum. He thanked POWERGRID for making the best possible arrangements. He highlighted the following points in his address:

- Power sector is very dynamic in nature. Every day, new things are coming up. A new system is needed to be developed that can actually anticipate the things likely to come in future and be ready to match the speed of innovations.
- Govt. of India has already taken great initiatives to provide “Power For All” by March 2019 where every consumer is entitled for 24 x 7, reliable, consistent and quality power. To ensure the same, the Power Sector especially the DISCOMs should prepare accordingly.
- Huge capacity addition of RES and its integration to the Grid are going to pose many operational, technical and regulatory challenges. Ministry of Power has already published a paper about hybrid operation of renewable and thermal power. New stringent environmental norms are needed to be complied without any negotiations. Some of the existing thermal plants/units where retrofitting is not feasible would be phased out.
- He informed that implementation of Automatic Demand Management by states needs special attention and he hoped that it would be implemented at the earliest.
- IT sector plays a crucial role in Power Sector and it should be utilized in best possible ways for smooth and reliable operation of Power Sector.
- He pointed out that by 2030, all the vehicles would be replaced with electrical vehicles and this would increase the demand. We should all be ready to develop the required infrastructure and meet the demand.
- He lauded the efforts of ERPC Secretariat for organising a number of interactive workshops/seminars in the recent past with wide participation from all the constituents. He added that we should also learn some good international practices.

- He informed that Eastern Region should try to implement new practices and set an example to the other regions.
- He noted that TCC has discussed number of issues on the previous day. A few of these have been referred to ERPC for further deliberation and decision. He said he was looking forward to the valued opinions of members on the agenda items.

In conclusion, he once again thanked POWERGRID for hosting the meeting and wished the meeting a grand success.

Shri J. Bandyopadhyay, Member Secretary, ERPC welcomed Dr. N. M. Kulkarni, IAS, Chairperson, ERPC and Secretary, Energy, Government of Jharkhand & CMD, JUVNL and other distinguished members of ERPC and participants in the 37th ERPC Meeting at Fort Aguada, Goa. He also profusely thanked POWERGRID for organizing the meeting at Goa and making all arrangements in an excellent manner to make the stay of the participants very comfortable. He highlighted the following points in his address:

- He informed that the last ERPC Meeting was held on 14.09.2017. During the intervening period, the Eastern Regional grid ran very smoothly for which the credit goes to all the constituents of the Eastern Region including ERLDC, who is the apex body for integration of the Eastern Grid. He noted that the summer load had already started picking up. He requested all the utility constituents to meticulously make generation planning to meet the demand.
- He drew attention of the members regarding non-commissioning of 400 kV Rangpo – Kisanganj D/C. Delay in the completion of the above line would put severe constraint in evacuating hydro power from Sikkim. He also advised the coal based generators to adequately stop coal, so that operation of the coal based plant does not get affected due to shortage of coal.
- He informed that in the 37th TCC Meeting held on previous day, a number of important issues like Review of SPS, Implementation of AGC & ADMS etc. were discussed in details. Some of the issues have been referred to ERPC for approval / advice.
- He observed that, on the national front, Government of India has taken up an ambitious plan of capacity addition from RES. The installed capacity of RES is expected to touch 175 GW by March, 2022. The infusion of huge quantum of RES in to the grid shall pose many technical, operational and regulatory challenges. CEA has been invited to give a presentation on National Electricity Plan (NEP), which captures the generation scenario in future.
- Providing defense against cyber-attack is an area of major concern. A time bound programme is required to be implemented to ensure security of the integrated grid in the Eastern Region. A presentation on the Cyber Security aspect would be made by CEA in the meeting.

While concluding he again thanked POWERGRID for hosting the 37th TCC & ERPC meeting at Goa.

ITEM NO. 1:	CONFIRMATION OF THE MINUTES OF 36TH ERPC MEETING
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The minutes of the 36th ERPC meeting held on 14th September, 2017 at Bhubaneswar were circulated vide letter no. ERPC/TCC&Committee/14/2017/2692-2757 dated 30th October, 2017.

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

Members may confirm the minutes of 36th ERPC meeting.

Deliberation in the ERPC meeting

Members confirmed the minutes of 36th ERPC meeting held on 14.09.2017.

ITEM NO. 2:	REVIEW OF PERFORMANCE OF THE EASTERN REGIONAL GRID
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ERLDC would give a brief presentation on the performance of the grid during 2017-18 including the challenges ahead.

Deliberation in the ERPC meeting

*Executive Director, ERLDC gave a presentation highlighting the operational aspects of the ER Grid including the achievements made during 2017 – 18 (till February, 2018). The presentation is enclosed at **Annexure-2**.*

PART 3: ITEMS FOR DISCUSSION

ISSUES REFERRED TO ERPC BY TCC IN ITS 37th MEETING HELD YESTERDAY

ITEM NO. 3.1:	Web based Protection Database and Desktop based Protection setting calculation tool for Eastern Regional Grid, under PSDF Funding
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After grid disturbances in 2012, Ministry of Power had constituted a ‘Task Force on Power System Analysis under Contingencies’ in December 2012. Task Force strongly recommended creation & maintenance of protection data base under RPCs.

After detailed deliberations in PCC meetings, the issue was placed in 29th ERPC Meeting.

29th ERPC decided to implement the above scheme and authorised Member Secretary, ERPC to:

- i) Proceed for tendering etc. and to do the needful for final implementation of the scheme

- ii) Place application to PSDF funding

The funding of the work on Creation of Protection Database in Eastern Region from PSDF has been approved by PSDF Appraisal Committee on 17th March 2017.

The project has been implemented by PRDC and declared **Go Live** on 31st October 2017. Training on PDMS organised at ERPC, Odisha, Bihar, WBSETCL, Jharkhand, Sikkim and DVC. The following activities have been completed after declaring the project Go Live:

- Data Collection of Newly Commissioned Stations in Eastern Region
- Training on Protection Database (MiP-PDMS) and Protection Setting Calculation Tool at Sikkim from 8th January 2018 to 10th January 2018.
- Third Phase of MiP-PSCT Training Program at ERPC Kolkata from 5th February 2018 to 9th February 2018
- Network and Database updation of Eastern Region Substations in MiP-PDMS and MiP-PSCT.
- Support for MiP-PSCT and MiP-PDMS users of ERPC Constituents

As per the current payment disbursement status the partial payment is pending under following milestones:

1. Milestone 6 : Populating all ERPC constituent data along with SLD : This activity is completed on 31/10/2017 for which ten percent payment is pending that amounts to Rs.13,29,916 (without TDS).

2. Milestone 8 : Completion of Training Program : As per tender document the project scope includes 35 days of training schedule out of which 33 days have been covered by February 2018. Fifty percent payment is pending under this milestone which amounts to Rs.33,24,789 (without TDS).

In 64th PCC, members approved and referred to TCC for further concurrence.

TCC may approve.

Deliberation in the TCC meeting

TCC recommended ERPC to approve the payment of Rs.13,29,916 (without TDS) against Milestone 6 and Rs.33,24,789 (without TDS) against Milestone 8 to PRDC from PSDF as the payment of the balance for the implementation of the project.

ERPC may approve.

Deliberation in the ERPC meeting

As recommended by TCC, ERPC approved the payment of Rs. 13,29,916 (without TDS) against Milestone 6 and Rs. 33,24,789/- (without TDS) against Milestone 8 to PRDC from PSDF as the payment of the balance for implementation of the project.

ITEM NO. 3.2:

Replacement of old RTUs in Eastern Region for reporting of RTU/SAS to backup control centres- POWERGRID

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

In 36th TCC/ERPC meeting, ERPC approved the proposal of replacement of RTU as submitted by the Committee constituted as per advice of ERPC. The scope of Replacement of RTUs in Eastern Region is enclosed at **Annexure-B27**.

It is proposed to implement the above as ‘Upgradation of SCADA/RTUs/SAS in Central Sector stations and strengthening of OPGW network in Eastern Region’ through tariff basis. **Investment made by POWERGRID on this project shall be recovered through tariff.**

In 142nd OCC, POWERGRID informed that they are going to use the same technical specification of RTU as mentioned in the approved report. In the meeting, POWERGRID confirmed that with the completion of replacement/up-gradation of RTU / SAS, the existing problem of inability of dual reporting of each sub-station to both the control Centre (ERLDC main as well as ERLDC backup located at New Delhi) and multiple RTU / SAS in a single sub-station will be resolved.

In 142nd OCC, members approved the proposal and referred to TCC for further concurrence.

TCC may approve.

Deliberation in the TCC meeting

TCC recommended to ERPC for authorizing POWERGRID to undertake the replacement of old RTUs for Eastern Region. Investment made by POWERGRID on this project shall be recovered through tariff. However, the subsequent O&M will be the responsibility of the concerned constituents.

ERPC may approve.

Deliberation in the ERPC meeting

As recommended in TCC, ERPC authorised POWERGRID to undertake works related to replacement of the old RTUs of the Eastern Region. It was also decided by the ERPC that the investment made in this regard shall be recovered by POWERGRID through tariff. However, subsequent O&M shall be the responsibility of the concerned constituents.

ITEM NO. 3.3:**Additional 0.5% ROE for early completion of 400 kV D/C(Quad) Nabinagar II – Gaya Transmission line along with bays**

In the 36th CCM, POWERGRID had informed that 400 kV D/C(Quad) Nabinagar II – Gaya Transmission line along with 2 nos. associated bays at Gaya substations under “Associated Transmission System for Nabinagar-II TPS(3x660MW) is going to be charged on **28.02.2018**.

As per the Investment Approval, the commissioning schedule of the project is **38 months** from the date of Investment Approval. The date of Investment Approval is **02.04.2016**. Hence the assets are to be commissioned in the progressive manner upto June 2019 and put under commercial operation w.e.f. 01.06.2019 against which the above asset is anticipated to be commissioned and put under commercial operation by **28.02.2018**.

There is no time overrun from schedule date of commissioning as given in the investment approval. As the asset is commissioned within time frame of CERC Regulation 2014-19 additional **ROE 0.5 % may be allowed**.

In 36th CCM, POWERGRID elaborated the issue to members. POWERGRID explained that the Commissioning of 400 kV D/C(Quad) Nabinagar II – Gaya Transmission line along with bays is satisfying the various clauses of tariff order 2014-19.

As per clause 24 (iii) (which was reproduced below):

‘additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid’

After detailed deliberation, no consensus could be arrived regarding additional ROE of 0.5% .

It was decided to refer the issue to the TCC.

TCC may guide.

Deliberation in the TCC meeting

In the meeting, no consensus could be arrived at, regarding additional ROE of 0.5%. The issue was referred to ERPC Meeting.

ERPC may guide.

Deliberation in the ERPC meeting

Members of ERPC highly appreciated the special efforts made by POWERGRID in completing 400 kV D/C (quad) Nabinagar II – Gaya transmission line along with two nos. associated Bays at Gaya Sub-station, well in advance of the permissible timeline. Members noted that, in the context of present scenarios of the country, constructing a transmission line is considered very

challenging due to issues like ROWs etc. Therefore, the efforts made by Powergrid in this regard is highly praiseworthy. Members of ERPC felt that such effort needs to be incentivised.

Members also noted that the tariff order for 2014-19 of CERC also provides for additional 0.5% ROE for completion of any transmission element within specified timeline provided it is certified by the RPCs / NPCs that the commissioning of the particular element would benefit the system operation in Regional / National grid. There was no consensus regarding the aspects of benefits accruing to the regional or national grid operation system due to early commissioning of the line when the Nabinagar plant has not been commissioned. ERLDC emphasised that the early commissioning of the 400 kV D/C (quad) Nabinagar II – Gaya transmission line would help Nabinagar to draw start up power easily, which, in turn, would help the Plant to commission early and would consequently help the beneficiaries of this plant. However compliance of clause 24 (iii) could not be ascertained.

Members expressed that, while deciding on the issue of granting 0.5% of ROE for early completion of the line by CERC, the aspect of suitably rewarding POWERGRID for special effort made may be considered.

ITEM NO. 3.4:	Implementation of 4th Phase AMR in Eastern Region
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Already 249 Meters were integrated under 3rd Phase of AMR system across Eastern Region as per LOA placed upon M/S. TCS. Now certain new locations and few new feeders at existing locations, also came within this period which need to be integrated now. Accordingly ERLDC has provided the list of SEM's against location wise (Attached as **Annexure-B36.1**). In total approx. 150 SEM's need to be integrated under 4th phase of integration.

Going by the previous LOA and standard escalation of component price on Year to Year basis a tentative cost estimate prepared which is attached as **Annexure-B36.2** for reference. Total cost estimate comes to **Rs. 93,56,948/- (Rs. Ninety three lacs fifty six thousand nine hundred forty eight only)**.

Considering the implementation of 4th phase AMR, it is proposed to finalize the contract with M/S. TCS on Single Tender basis. However, exact value will be intimated afterwards when negotiation will be completed with TCS.

In addition to above, discussion is already going on with M/S TCS regarding quantity variation of the existing contract for execution of at least few meters immediately with same rate of existing LOA. On finalization of the issue, exact quantities of SEM & cost implication for quantity variation will be intimated.

In 142nd OCC, members approved the procurement and decided to apportion the cost among the beneficiaries in the ratio of central sector allocation.

OCC has referred to TCC for further concurrence.

TCC may approve.

Deliberation in the TCC meeting

TCC recommended to ERPC for placement of order to M/s TCS on single tender basis for implementation of 4th Phase of AMR for an estimated cost of Rs. 93,56,948/- (Rs. Ninety three lacs fifty six thousand nine hundred forty eight only). The cost would be apportioned among the beneficiaries of the Central Sector and from the IPPs in the ratio of Central Sector allocation and LTAs entered respectively.

ERPC may approve.

Deliberation in the ERPC meeting

ERLDC emphasised the need of placing the order associated with the implementation of the 4th phase AMR in the Eastern Region on M/S TCS on a single tender basis due to operational expediency, addressing compatibility issue and squeezing the time for early completion etc.

After detailed deliberation, it was decided by ERPC that the order for implementation of 4th phase AMR in the Eastern Region be placed on M/S TCS in a single tender basis at an estimated cost of Rs. 93,56,948/-. The cost incurred therein shall be apportioned among the beneficiaries of central sector generating stations and the IPP's in the ratio of Central Sector Allocation & Installed Capacity of IPPs respectively.

ITEM NO.4: NATIONAL ELECTRICITY PLAN – PRESENTATION BY CEA

As per the Electricity Act,2003, CEA has prepared the 3rd National Electricity Plan covering a time horizon of 2017-22 and 2022-27. The approved Plan is likely to be gazetted soon. The Government has drawn up an ambitious plan for capacity addition from Renewable Energy Sources (RES). The Installed Capacity of RES is programmed to touch 175 GW by March,2022. The infusion of huge RES capacity and consequent integration into the grid would pose a number of challenges and opportunities.

CEA has been invited to give a presentation on the National Electricity Plan.

Deliberation in the ERPC meeting

*Shri Praveen Gupta, Chief Engineer, IRP, CEA gave a detailed presentation on National Electricity Plan (generation) covering a time horizon of 2017 -22 and 2022 – 27. The presentation is enclosed at **Annexure-4**. The presentation captured the generation scenario of future taking into consideration infusion of RES to the tune of 175 GW by March, 2022.*

The presentation was highly appreciated by ERPC. It was suggested that similar presentation might be arranged at ERPC office, Kolkata with wider participation from the constituents of Eastern Region. This would help in creating awareness about the future generation scenario.

ITEM NO.5: CYBER SECURITY – PRESENTATION BY CEA

Cyber security has become an area of key concern across the economy especially in areas of critical infrastructure and essential services such as the energy and power sectors. IT Division, CEA is conducting Region-wise meetings with power utilities to create awareness on how to identify Critical Information Infrastructure (CII) and prepare organizational Cyber Crisis Management Plan (CCMP).

CEA has been invited to give a presentation on the Cyber Security.

Deliberation in the ERPC meeting

A presentation on Cyber Security was given by Mr. VIJAY MENGHANI, Chief Engineer, IT, CEA. The presentation is enclosed at Annexure-5. Members appreciated the efforts made by CEA in creating awareness about the need to provide security against cyber-attack.

Member emphasised that a definite time schedule should be drawn up by each constituent in Eastern Region for providing security against cyber-attack. Members requested CEA to organise a workshop at ERPC, Kolkata to help the constituents of Eastern Region to develop the awareness and also to provide necessary technical assistance in developing defence plan against cyber-attack. CEA agreed to organise the workshop at ERPC, Kolkata. Director (MO), POSOCO was also requested to provide necessary technical guidance in this respect.

It was decided that the preparedness against cyber-attack shall be reviewed in the next TCC & ERPC Meeting.

ITEM NO.6: ERPC ESTABLISHMENT FUND FOR THE YEAR 2017-18

For the year 2017-18, contribution of Rs.15 Lakh per member was approved by ERPC in its 35th meeting held on 25th February 2017. Contributions from the following member organisations are still due:

- i) GRIDCO Ltd.
- ii) Energy & Power Department, Govt. of Sikkim (EPD, Sikkim)

ERPC Secretariat has received two nos. e-payments one on 18.05.2017 and the other on 28.08.2017 but in the bank statement name of the payer organisations are not shown.

GRIDCO and EPD,Sikkim are requested to confirm whether they have made payment. If so, may please confirm the transaction ref no. and date, else they are requested to make payment and inform the ERPC Secretariat.

Deliberation in the ERPC meeting

ERPC requested the constituents to make timely payments towards ERPC Establishment Fund.

ITEM NO.7: ERPC FUND FOR THE YEAR 2017-18

For the year 2017-18 contribution of Rs.1 Lakh per member was approved by ERPC in its 35th meeting held on 25th February 2017. Contributions from the following member organisations are still due:

- i) GRIDCO Ltd.
- ii) Energy & Power Department, Govt. of Sikkim (EPD, Sikkim)

ERPC Secretariat has received two nos. e-payments one on 18.05.2017 and the other on 28.08.2017 but in the bank statement name of the payer organisations are not shown.

GRIDCO and EPD,Sikkim are requested to confirm whether they have made payment. If so, may please confirm the transaction ref no. and date,. else they are requested to make payment and inform the ERPC Secretariat.

Deliberation in the ERPC meeting

ERPC requested the constituents to make timely payments towards ERPC Fund.

ITEM NO.8: CONTRIBUTIONS OUTSTANDING FROM GATI INFRASTRUCTURE PRIVATE LIMITED

Gati Infrastructure Private Limited (GIPL) was a member of ERPC for the year 2016-17. The following payments are outstanding from GIPL as a member of ERPC for the year 2016-17:

ERPC Establishment Fund: Rs. 15 lakh

ERPC Fund: Rs. 1 lakh

GIPL has been requested to liquidate the outstanding amount through several letters (5), the latest being dated 20.02.2018. But GIPL is yet to respond.

Members may decide next course of action.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to take up the issue of outstanding contribution with the highest authority of GATI Infrastructure Private Limited.

ITEM NO.9: CONTRIBUTION OF PARTICIPATION FEE FOR THE YEAR 2016-17 & 2017-2018

In the 33rd ERPC meeting held on 25th June 2016 it was decided apart from Members, all other Users/Utilities intending to avail services of ERPC have to pay 'Participation Fee' by contributing to 'ERPC Establishment Fund' and ' ERPC Fund' at an equal yearly contribution fixed for ERPC Members. Accordingly, letters were issued to Users/Utilities from time to time for payment of 'Participation Fee'. Contributions from the following organisations are still due:

- i) Ind-Barath Energy (Utkal) Ltd. (IBEUL) : Rs.32 lakh (for 2016-17 & 2017-18)

- ii) Darbhaga Motihari Transmission Company Ltd. (DMTCL) : Rs. 16 lakh (for 2017-18)
- iii) Teestavalley Power Transmission Ltd. (TVPTL): Rs.16 lakh (for 2017-18)
- iv) Gati Infrastructure Private Ltd. (GIPL): Rs.16 lakh (for 2017-18)

Several letters were issued from ERPC Secretariat to the above organisations requesting payments and informing that in case of non-payment necessary action as decided by ERPC would be initiated. But there has been no response so far.

Members may decide next course of action.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to take up the issue of non-payment of participation fees for the year 2016-17 & 2017-18 with the authorities of the concerned organisations.

ITEM NO.10: ERPC ESTABLISHMENT FUND FOR THE YEAR 2018-19

For the year 2017-18 contribution of Rs.15 Lakh per member was approved by ERPC. It is proposed to keep the contribution unchanged for the year 2018-19 i.e. Rs 15 Lakh per member. The fund is utilised for reimbursement of ERPC Secretariat expenditures to the Govt. of India and any other expenditures as per the approval of ERPC.

Members may approve contribution of Rs. 15 Lakh per member for the year 2018-19.

Deliberation in the ERPC meeting

ERPC decided that the contribution towards ERPC Establishment Fund for the year 2018-19 shall remain unchanged at Rs. 15, 00,000/- per member.

ITEM NO.11: ERPC FUND FOR THE YEAR 2018-19

For the year 2017-18 contribution of Rs.1 Lakh per member was approved by ERPC. It is proposed to keep the contribution unchanged for the year 2018-19 i.e. Rs. 1 Lakh per member. The fund is utilised for holding various meetings, workshops, seminars etc. at the Secretariat and any other expenditures as per the approval of ERPC.

Members may approve contribution of Rs. 1 Lakh per member for the year 2018-19.

Deliberation in the ERPC meeting

ERPC decided that the contribution towards ERPC Fund for the year 2018-19 shall remain unchanged at Rs. 1, 00,000/- per member.

ITEM NO.12: REPORTING OF EXPENDITURES FROM ERPC FUNDS

12.1: The following expenditure has been incurred from 'ERPC Establishment Fund' :

Progressive payment to CPWD for R&M work of ERPC Office & Staff Quarters: Rs 26,99,000/-

12.2: The following expenditure has been incurred from ‘ERPC Fund’:

Payment towards airfare for official journey of Member Secretary: Rs.13,963/-

Members may approve.

Deliberation in the ERPC meeting

Members noted and approved.

ITEM NO.13: PROPOSALS FOR EXPENDITURES FROM ERPC ESTABLISHMENT FUND

13.1: ENGAGEMENT OF CONSULTANTS

Secretariat of the Eastern Regional Power Committee is, at present, having acute shortage of manpower particularly in the grade of engineers. Of the 14 nos. of sanctioned strength of engineers, 6 are lying vacant. All the 3 posts of Superintending Engineers are lying vacant. Vacancy of these important posts have been creating impediment for smooth functioning of ERPC Secretariat. There is acute shortage of manpower at CEA Head Quarters also. Therefore, there is little likelihood that the vacant posts would be filled- up in imminent future.

ERPC plays a vital role in planning and control of the Eastern Regional Power System. Many of the works assigned to ERPC are extremely important and requires to be done in a time bound manner. In order that the functionality of the Secretariat does not get adversely affected, it is proposed to engage the following retired personnel of CEA as consultant:

1. Shri B.Sarkhel, Ex – Chief Engineer, CEA.
2. Shri S.M.Jha, Ex - Superintending Engineer, CEA.
3. Shri Dipak Kumar Santra, Ex – Steno Grade – II, CEA.

Shri B.Sarkhel, Ex – Chief Engineer, has 30+ years of experience in protection and operation aspects of Eastern Regional Grid. He is considered to be an expert on Eastern Regional power system including the protection system. His engagement as consultant of ERPC shall immensely benefit the Eastern Regional constituents. It is proposed to give a monthly honorarium of Rs. 50,000/-.

Shri S.M.Jha, Ex - Superintending Engineer, is having an all round experience of 30+ years in the commercial, administrative and operational aspects of Eastern Regional Grid. His engagement as consultant shall help the office to smoothly carry out the operational and commercial aspects associated with the Eastern Regional Grid. It is proposed to give a monthly honorarium of Rs.50,000/-.

Shri Dipak Kumar Santra, Ex – Steno Grade – II, is having 30+ years experience as Stenographer and also worked as Personal Assistant. At present ERPC is not having any Stenographer / Personal Assistant even the Member Secretary, ERPC is not having any Private Secretary. Absence of Private Secretary / Personal Assistant / Stenographer has been creating problems for smooth discharge of the functions. It is proposed to engage Shri Dipak Kumar Santra as Stenographer with a monthly honorarium of Rs.25, 000/-.

The above consultants would be engaged till they attain the age of 65 years or the vacant posts are filled up by CEA whichever is earlier. Periodic review of the performance of the consultants would also be carried out. During the review, if it is found out that the performance of any consultant is not satisfactory, he shall be removed by giving one month notice. Further, the consultants may also be removed by giving them 1 month's advance notice or 1 month's honorarium in lieu of advance notice. They would be entitled for 8 days of casual leave per year.

At present, ERPC is having 1 consultant viz. Shri Sumit Kumar Chatterjee. He has been working for last three years and gets a monthly honorarium of Rs. 20,000/-. It is proposed to increase the honorarium to Rs. 25,000/- per month.

Further, the consultants may have to travel outside Kolkata to attend different meetings etc. The expenditure incurred in this respect may be booked against ERPC Establishment Fund.

ERPC may approve.

Deliberation in the ERPC meeting

ERPC approved the proposal of ERPC Secretariat for engagement of 3 consultants viz. B.Sarkhel, Ex – Chief Engineer, CEA, Shri S. M. Jha, Ex- Superintending Engineer, CEA and Shri Deepak Kumar Santra, Ex – Steno Grade – II, CEA at ERPC Secretariat with monthly honorarium of Rs. 50,000/- , Rs. 50,000/- & Rs. 25,000/- respectively. Also, ERPC approved the proposal of increasing the honorarium in respect of Shri Sumit Kumar Chatterjee from the present level of Rs. 20,000/- per month to Rs. 25,000/- per month. It was also decided that the travelling expenses of consultants for undertaking official tours shall be reimbursed from ERPC Establishment Fund.

13.2: EXPENDITURES FOR DOMESTIC TRAVEL EXPENSES (DTE)

As per existing practice, normal office expenditure for the manpower of ERPC Secretariat is made from the Govt. Budget Allocation. Subsequently, the same is reimbursed to Govt. Account from ERPC Establishment Fund.

In the last few years, it is being observed that allocations by Govt. Of India in various Head particularly under Domestic Travel Expenses are being reduced gradually. The problem gets compounded by the fact that the number of meetings officers ERPC have to attend outside the State (particularly Delhi) has been steadily increasing and the cost of tickets for flight in AIR INDIA (in which the Central Government officers are required to travel) has also been increasing. As a result, much before the end of the financial year, the fund allocated by Govt. Of India for domestic travel gets exhausted. Therefore, officers of ERPC are not able to attend many important meetings particularly in Delhi and the views of Eastern Regional constituents are not properly represented in the meeting. There is little likelihood of increased allocation by Govt. of India to the Domestic Travel Fund in imminent future.

To overcome this severe financial constraints, it is proposed that Member Secretary, ERPC may be empowered to use fund from ERPC Establishment Fund, if required, for undertaking

official tours of the ERPC Officers and staff after full utilisation of allocated fund under DTE Head of Government Budget of any particular year.

Put up for consideration of the members of ERPC and necessary approval.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to use fund from ERPC Establishment Fund, if required, for undertaking official tours of ERPC officers & staff after full utilisation of allocated fund under DTE head of Government Budget.

13.3: ENGAGEMENT OF AGENCY FOR MAINTENANCE OF ERPC GUEST HOUSE

ERPC holds a number of meetings every month. Representatives from the constituents from Eastern Region attend the meetings. There is huge demand for accommodation in the ERPC Guest House. Keeping this in mind, while undertaking the Renovation and Modernisation work of ERPC Office and Residential Building, it was decided to increase the number of rooms in ERPC Guest House. The total number of rooms available in the Guest House after completion of R&M work would be 23. Now, R&M works are in full swing. It is expected that the Guest House would be ready for occupation within a few months. Operationalisation of the Guest House at ERPC would immensely benefit the outstation participants who come to attend the meetings and find it difficult to have a decent accommodation at a convenient place at reasonable rate.

Now ERPC is having acute shortage of manpower. With the existing skeleton manpower available with ERPC Secretariat at present, maintaining a Guest House with 23 rooms would be quite difficult. NTPC, NHPC, PGCIL etc. operate and maintain their Guest Houses through suitable agency selected through tendering/negotiation. So it is proposed that Guest House at ERPC, Kolkata may be operated and maintained in line with the practice followed by NTPC, NHPC, Powergrid etc. It is also proposed that the expenditure to be incurred for such operation and maintenance to be made from the “ERPC Establishment Fund”.

Put up for consideration of the members of ERPC and necessary approval.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to carry out the O&M of ERPC Guest House in line with the practice followed by the other power sector PSUs like NTPC, NHPC, Power grid etc. The expenditure incurred therein shall be borne by ERPC Establishment Fund.

13.4: PROCUREMENT OF LAPTOPS / TABLETS FOR ERPC SECRETARIAT

ERPC Secretariat plays a vital role in the Eastern Region and has been entrusted with many important works like Operation Co-ordination, Formulation of Protection Scheme and Islanding Scheme, Protection audit, Maintenance of protection Database, finalization of Load Generation Balance Report, Commercial Accounting (Regional Energy Accounting, Bi Lateral Accounting, Regional Transmission Accounting, Regional Transmission Deviation Accounting, Deviation Settlement Mechanism Accounting, Compensation Accounting, Reserve Regulation Ancillary Services Accounting etc.), holding different meetings (Operation

Co-ordination Committee Meeting, Protection Co-ordination Committee Meeting, Commercial Committee Meeting, TCC Meeting , ERPC Meeting and other issue based meetings). Further, ERPC officers have to regularly attend different meetings outside the Secretariat Office at Kolkata. During the meetings, ERPC Secretariat has to give presentations and also to answer questions for which ready access to the data/information and documents is required. Further, because of the shortage of officers at ERPC Secretariat, works needed to be performed at home also. At times, constituents of Eastern Region also interact with the officers beyond office hours for which access to data and documents is needed.

Keeping in view all these things, it is felt that availability of Laptop / Tablet would help the officers of ERPC to discharge the functions more effectively. So, it is proposed to purchase a few numbers of Laptops / Tablets for use of the officers of ERPC Secretariat.

ERPC is requested to sanction a sum of Rs.3,00,000/- (Rupees Three Lakh only) from ERPC Establishment Fund for this purpose.

Put up for consideration of the members of ERPC and necessary approval.

Deliberation in the ERPC meeting

ERPC sanctioned an amount of Rs. 3,00,000/- from ERPC Establishment Fund for procurement of suitable Laptops / Tablets to be used by ERPC officers.

13.5: HOLDING OF WORKSHOP / SEMINAR / TRAINING

For last few months, ERPC Secretariat has been organizing interactive Workshops / Seminars on important topics like GNA, DSM, IEGC, Black Start & Restoration Procedure etc. These are attended widely by the participants from the Eastern Region. The interactive sessions have proved to be very useful for the constituents. Requests have been received from the constituents of the Eastern Region to hold interactive sessions at ERPC / different states on different emerging issues. For this, ERPC intends to organize Workshop / Seminar on Power Exchange, Balancing of Renewable Energy, POC Tariff etc. For this, eminent experts in this field are proposed to be invited. Some of the programs are proposed to be organized at different states in the Eastern Region.

It is proposed that an amount of Rs. 10,00,000/- (Rupees Ten lakh only) may be sanctioned from ERPC Establishment Fund for organizing the programmes during 2018-19.

ERPC may please approve.

Deliberation in the ERPC meeting

ERPC sanctioned an amount of Rs. 10,00,000/- from ERPC Establishment Fund for organising workshops, seminars, trainings etc. for the constituents of the Eastern Region for the year 2018-19.

13.6: EXPENDITURES FOR UPKEEPMENT OF ASSETS

With the approval of ERPC two nos. vehicles (Mahindra Xylo & Tata Hexa) were procured for day to day official work, outstation visits for attending meetings, UFR audit etc. out of ERPC Establishment Fund. At present the expenditure for fuel is met from Govt. Fund. Maintenance and insurance costs are met from ERPC Establishment Fund. To avoid the mix up of expenditures, since the vehicles were purchased from ERPC Establishment Fund, it is proposed that henceforth all expenditures towards fuel, maintenance, insurance etc. be met from ERPC Establishment Fund.

It also proposed that expenditures for maintenance / upkeepment of all assets created out of ERPC Establishment Fund be met from the same fund.

Members may approve.

Deliberation in the ERPC meeting

It was decided by ERPC that all the expenditure in connection with the up-keep of the Assets created out of ERPC Establishment Fund / ERPC Fund shall be maintained by utilising the fund available in ERPC Establishment Fund.

ITEM NO.14: MEMBERSHIP OF ERPC ON ANNUAL BASIS FOR THE YEAR 2018-19

14.1 Membership of Private Distribution Company: As per GoI Resolution on ERPC one distribution company by alphabetical rotation out of the private distribution companies functioning in the region is eligible to become new member on yearly basis. The private distribution companies functioning in the region are IPCL in West Bengal, NESCO, SOUTHCO & WESCO in Odisha and JUSCO in Jharkhand. The names of the private distribution companies in alphabetical order are IPCL (formerly DPSC), JUSCO, NESCO, SOUTHCO & WESCO. In the past none of the private distribution companies showed interest to become member of ERPC and agree to contribute in ERPC Funds at par with other members. In view of the non-response, in the 35th ERPC meeting held on 25.02.2017 it was decided that all the Discoms would be approached for membership of ERPC vis-a-vis payment to ERPC Funds. Discoms willing to become member will be nominated by alphabetical order on yearly basis.

Accordingly, ERPC may authorise Member Secretary to write to the Discoms for membership for the year 2018-19.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to write to the DISCOMS for membership for the year 2018-19.

14.2 Membership of Private Generating Company (I.C.1000 MW & less): As per GoI Resolution on ERPC one generating company having installed capacity 1000 MW & less out of the GENCOs functioning in the region (other than central & state generating companies and

IPPs having installed capacity more than 1000 MW) is eligible by alphabetical rotation to become member on yearly basis.

In the above category the following IPPs are operating in the region:

- i) Dans Energy Private Limited (Jorthang Loop HEP, 2X48 MW, Tashiding HEP, 2x48.5 MW)
- ii) Gati Infrastructure Private Limited (Chuzachen HEP, 2X55MW)
- iii) Haldia Energy Limited (2x300 MW)
- iv) Ind-Bharath Energy (Utkal) Limited (2X350MW)
- v) India Power Company Limited (3x150 MW)
- vi) Sneha Kinetic Power Projects Private Limited (Dikchu HEP, 3x32 MW)
- vii) Tata Power Haldia (2X45 MW & 1x30 MW)
- viii) Vedanta Limited (1X600 MW)

In the 35th ERPC meeting held on 25.02.2017 it was decided that the concerned IPPs (except Gati Infra) would be approached for membership of ERPC vis-a-vis payment to ERPC Funds. IPPs willing to become member will be nominated by alphabetical order on yearly basis.

Accordingly, ERPC may authorise Member Secretary to write to the IPPs for membership for the year 2018-19.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to write to the IPPs for membership for the year 2018-19.

14.3 Membership of Electricity Trader: As per GoI Resolution on ERPC one electricity trader is eligible to become member of ERPC representing electricity traders in the region on yearly basis. As per existing practice, CEA recommends the name of the trader. Recommendation from CEA is awaited. On receipt of the recommendation from CEA the nominated trader will be asked to apply for membership together with its contributions to ERPC Funds.

Members may approve the above proposal.

Deliberation in the ERPC meeting

CEA informed that the necessary recommendation of CEA would be issued shortly.

ITEM NO.15: NOMINATION OF CHAIRPERSON, ERPC FOR THE YEAR 2018-19

The incumbent Chairperson, ERPC i.e. Chairman-cum-Managing Director, JUVNL, will complete his term on 31st March 2018.

As per GoI Resolution “*Chairperson of ERPC would represent the States of the region by rotation in alphabetical order. Members of ERPC from the particular State would nominate the Chairperson of ERPC from amongst themselves. Term of Chairperson would be for a period of one year.*”

The names of the States in alphabetical order are Bihar, Jharkhand, Odisha, Sikkim & West Bengal. Now it is the turn of Odisha. The following designated officers are the member of ERPC from Odisha :

1. Chairman-cum-Managing Director, GRIDCO Limited
2. Chairman-cum-Managing Director, Odisha Power Transmission Corporation Limited
3. Chairman-cum-Managing Director, Odisha Hydropower Corporation Limited
4. Managing Director, Odisha Power Generation Corporation Limited

Therefore, the members of ERPC from Odisha are requested to nominate the Chairperson, ERPC for the year 2018-19.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to write to Government of Orissa for necessary nomination for the Chairperson, ERPC for the year 2018-19.

ITEM NO.16: NOMINATION OF CHAIRPERSON, TCC FOR THE YEAR 2018-19

The incumbent Chairperson, TCC i.e. Director (Project), JUSNL, will complete his term on 31st March 2018.

As per TCC regulations, Chairperson, ERPC shall nominate the Chairperson, TCC from the TCC members from the same State for a period of one year. TCC members from Odisha are as under :

1. Director (Commercial), GRIDCO
2. Director (Operation), OPTCL
3. Director (Operation), OHPC
4. Director (Operation), OPGC

Accordingly, the new Chairperson, ERPC, nominated for the year 2018-19 as above, may nominate the Chairperson, TCC for the year 2018-19.

Deliberation in the ERPC meeting

ERPC authorised Member Secretary to write to Government of Orissa for necessary nomination for the Chairperson, TCC for the year 2018-19.

ITEM NO.17: Finalisation of dates and venue for the next ERPC & TCC meetings

The roster for hosting of ERPC meetings is given below :

Sl. No.	Host Organisation
1.	WEST BENGAL - hosted 26 th ERPC Mtg. on 18.01.2014
2.	DVC - hosted 22 nd ERPC Mtg. on 25.08.2012

3.	NHPC - hosted 27 th ERPC Mtg. on 31.05.2014
4.	POWERGRID - hosted 25 th ERPC Mtg. on 21.09.2013
5.	SIKKIM - hosted 29 th ERPC Mtg. on 14.02.2015
6.	PTC - hosted 28 th ERPC Mtg. on 13.09.2014
7.	ODISHA - hosted 31 st ERPC Mtg. on 14.11.2015
8.	JHARKHAND - hosted 32 nd ERPC Mtg. on 20.02.2016
9.	BIHAR - hosted 33 rd ERPC Mtg. on 25.06.2016
10.	NTPC - hosted 30 th ERPC Mtg. on 20.06.2015
11.	CESC - hosted 34 th ERPC Mtg. on 19.11.2016
12.	APNRL - hosted 23 rd ERPC Mtg. on 22.12.2012
13.	MPL - hosted 35 th ERPC Mtg. jointly on 25.02.2017
14.	GMRKEL – hosted 36 th ERPC Mtg.
15.	NVVN - yet to host ERPC Mtg.
16.	TPTCL - hosted 35 th ERPC Mtg. jointly on 25.02.2017
17.	JITPL - yet to host ERPC Mtg.
18.	Teesta Urja Ltd. - yet to host ERPC Mtg.

In the 36th ERPC meetings DVC was requested to host the next (37th) TCC & ERPC meetings. DVC subsequently informed their inability to host the 37th TCC & ERPC meetings due to unavoidable circumstances. POWERGRID responded to the request for hosting the 37th TCC & ERPC meetings.

In the last (35th) ERPC meeting APNRL had cited financial constraints to host the TCC & ERPC meetings (as per roster APNRL was to host 36th TCC & ERPC meetings) but agreed to host meetings at a later date jointly with any other member organisation.

Member Secretary, ERPC vide letter dated 16.02.2018 requested DVC to convey their willingness to host the next (38th) TCC & ERPC meetings. But, response from DVC is awaited.

In view of above, Members may discuss and decide on the host, the dates and the venue for the next TCC & ERPC meetings.

Deliberation in the ERPC meeting

Chairperson, DVC consented to host the next TCC & ERPC Meeting tentatively in the month of July, 2018. The date and the venue shall be finalised in consultation with Chairperson ERPC and DVC.

ITEM NO.18: Any other item with the permission of the Chair

The meeting ended with a vote of thanks to the chair

PART B: ITEMS FOR INFORMATION

The following items were noted by ERPC members:

ITEM NO. B1:	Status of projects funded under PSDF schemes
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In the PSDF review meeting, it was advised to RPCs to monitor the status of all the projects funded by PSDF. Therefore, constituents are requested to update the status of projects which are being funded by PSDF in the desired format.

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (in Rs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018	108.6 Cr	18.26 Cr.	100 % Supply is Completed 92% Erection is completed
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	19 months from date of release of 1 st instalment	43.37	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	25 months from date of release of 1 st instalment	70.13	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
4	WBPDC	Implementation of Islanding scheme at Bandel Thermal Power Station	10.04.17	March 2018	1.39 Cr		<i>Award placed to ABB. The material reached the site and installation is in progress. The scheme would be implemented by April 2018.</i>
5		Upgradation of Protection and SAS			23.48		Approved by Ministry of Power. Fresh tendering is in progress.
6	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	10.05.15	10.05.17	162.5 Cr.	37.79 Cr	Total contract awarded for Rs. 51.35 Cr
7		Implementation of OPGW based reliable communication at 132kV and above substations	15.11.2017		25.61 Cr.		Agreement signed on 03.01.2018
8	OHPC	Renovation and up-gradation of protection and control system of 4 nos. OHPC substations.		<i>U.Kolab-March 19 Balimela-Feb 2019 U.Indravati-Jan 19 Burla-Nov 2018, Chiplima Dec 2018</i>	22.35 Cr.		Tendering under progress.
9	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sona & 132/33 kV GSS Kataiya	11/5/2015	31.03.2018	64.02 crore	56.04 crore	75% of work has been completed. Contract awarded for Rs.71.37 Cr till date.

10		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	12 th March 2019	18.88 crore	Nil	Work awarded for 9 nos of GSS.
11		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.17	31 st March 2018	49.22 Cr.		75% work completed for seven no. GSS as part of R & M work. Revised DPR is to be submitted for rest 5 no. GSS.
12	JUSNL	Renovation and up-gradation of protection system	September 2017	138.13 crores			LOA will be issued to PRDC in March 2018.
13	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.17	01.06.2019	25.96 Cr	2.596 Crore on 01.06.2017	Work awarded for 28.07 Cr.
14		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.17	24 Months from the date of release of fund.	140.5 Cr.	1 st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 6.45 Cr.
15	POWERGRID	Installation of STATCOM in ER		June 2018	630.28 Cr	63.028 Cr	Work is in progress, expected to complete by June 2018. STATCOM at Rourkela has been commissioned.
16	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16	Project is alive from 30 th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Protection Database Project has been declared 'Go live' w.e.f. 31.10.17. 2) Pending training on PDMS at Sikkim and 3 rd training on PSCT has been also completed at ERPC Kolkata.
17a	ERPC	Training for Power System Engineers					The proposal was approved by Appraisal Committee. The proposal was sent to CERC. CERC has sought some queries from the Appraisal Committee. The matter shall be taken up by the Appraisal Committee during its next meeting.
17b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					

B. Projects under process of approval:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	Sikkim	Renovation & Upgradation of Protection System of Energy and Power Department, Sikkim.	09-08-17	68.95 Cr	Scheme was examined by TSEG. Inputs sought from entity.
2		Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim	09-08-17	25.36 Cr	Scheme was examined by TSEG. Inputs sought from entity.
3	JUSNL	Reliable Communication & Data Acquisition System upto 132kV Substations.	23-08-17	102.31 Cr	Scheme was examined by TSEG. Inputs sought from entity. Scheme has been revised as suggested by TSEG and it would

					be submitted within a week.
4	OPTCL	Installation of 125 MVAR Bus Reactor along with construction of associated bay each at 400kV Grid S/S of Mendhasal, Meramundali & New Duburi for VAR control & stabilisation of system voltage	28-08-17	31.94 Cr	Scheme was examined by TSEG. Inputs sought from entity. OPTCL submitted the relevant information.

C. Projects recently submitted:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	WBSETCL	Implementation of Integrated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal	22-12-17	25.96 Cr	
2	OPTCL	Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	
3	OPTCL	Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir & Paradeep).	20.02.2018	41.1 Cr.	

TCC may note.

Deliberation in the TCC meeting

Respective members updated the status.

BSPTCL informed that Technical Audit by PSDF Monitoring Committee is yet to be done for SI no. 9 and as a result, release of payment was getting delayed.

Member Secretary, ERPC informed that PSDF review meeting to be chaired by Chairperson, CEA would be held in April 2018 to remove the bottlenecks for implementation of projects funded under PSDF.

TCC advised all the constituents to communicate the PSDF related issues to ERPC Secretariat for detailed deliberation in the PSDF meeting.

ITEM NO. B2:	Performance of Hydro Power Stations in ER including Hydro Power Stations in Bhutan
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CEA vide letter dated 18.07.17 informed that POSOCO had carried out operational analysis of various hydro stations in the country and observed that despite 40.6 GW of peaking hydro capacity, only about 33 GW peak generation is available on all India basis. According to POSOCO, this is on account of a number of hydro stations, particularly in state sector, not being operated in peaking mode. In order to examine the above observation, a Sub-committee has been constituted by the MoP under Chairperson, CEA with Heads of POSOCO, NHPC, SJVN & THDC as members and Director (H), MoP as the Member Convenor. The Sub-Committee has held three meetings with the concerned hydro generating stations and

concluded that there is scope for about 2000 MW additional power generation from hydro stations during peak hours.

It has been desired by the Chairperson that the matter of utilization of hydro stations in peaking mode be made a regular agenda item for discussion at the monthly OCC meetings while discussing operational planning for the month ahead and analyzing the operation in the previous month.

ERLDC has been regularly presenting the performance of hydro generators of Eastern Region in monthly OCC meetings.

ERLDC may elaborate.

Members may please discuss.

Deliberation in the TCC meeting

ERLDC gave a detailed presentation highlighting the availability of peaking power from Hydro Stations of Eastern Region. From the presentation, it was emerged that out of 1900 MW hydro capacity of OHPC only 1400 MW (approx.) is available in peak hours. So there is a scope of further enhancement of availability of peaking power.

However, OHPC clarified that 320 MW capacity is under R&M. They are also having irrigation and drinking water supply obligations which limits the availability of peaking power of Odisha.

MS, ERPC suggested that separate peaking tariff for hydro stations may be thought of for inducing maximum hydro power during peak hours.

MS, ERPC also informed that a separate meeting with Bhutan is scheduled to be held on 27.03.2018 to discuss the issue related to maximize the hydro power support during peak hours from Bhutan.

ITEM NO. B3:	Restricted Governor /Free Governor Mode Operation of generators in ER
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Vide CERC order dated 31st July 2017 in Petition No. 84/MP/2015, the Commission directed the following:

Section 23 “

- a) Considering the fact that further measures have been put in place to facilitate desirable primary response, the Commission, starting from the month of September, 2017 shall be closely watching the primary response of ISGSs as reported by POSOCO/NLDCs. At the State level, SLDCs shall report the frequency response of intra-State generators to the concerned SERCs.
- b) NLDCs and SLDCs through the assistance of POSOCO shall start the process of selecting independent third parties capable of undertaking periodic checkups to monitor the RGMO/FGMO response. To start with, selected independent third parties shall be

sent to the generating stations which are not providing the desired RGMO/FGMO response. Independent Third Parties shall ensure that the generator has not, in any way, prevented/disabled the governor from providing the desired response. In case, even after enabling the governors, units are not able to provide the desired response as per the provisions of the Grid Code, third parties, based on the submissions of the generators, shall bring out the technical constraints, if any, which limit the primary response of the units.

- c) All ISGSs are directed to provide primary response compulsorily in terms of Regulation 5.2 (f), (g), (h) and (i) of the Grid Code failing which we would not hesitate in initiating action under Section 142 of Electricity Act, 2003 for not providing desired RGMO/FGMO response without any valid reasons. ”

Section 24

“..... The Committee (on implementation of FGMO / primary response) has also recommended that there is no requirement for granting any exemption even to LMZ units from operation under RGMO/FGMO with manual intervention.”

“... has the option of either expediting the R&M of old units which shall include installation of new EHG governors capable of providing adequate primary response or to go in for retrofit of mechanical governors for adopting RGMO features or to operate on FGMO with manual intervention...”

The latest status of the RGMO/FGMO of ER generators is enclosed in **Annexure-B3**.

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

The issue was discussed in OCC meetings, OCC advised SLDCs to monitor performance of the intra-State generators and send the report to the concerned SERCs.

TCC may note.

A. RGMO/FGMO performance of ISGS/IPPs in the Eastern Region

Governor responses for following events were discussed in OCCs during the month of Aug-2017 to Jan-2018.

- On 16.08.17, at 12:18 Hrs, 400 kV Rangpo-Teesta (III) line tripped on B-N fault resulting in generation loss of 879 MW and 100 MW in Teesta and Dikchu stations respectively.
- On 25.10.2017, at 19:33 hrs, Due to loss of evacuation lines, Unit-I & II at TPCIL(660 MW each) in southern region got tripped.
- On 30.10.17, at 21:37 Hrs, 400 KV TPCIL-Nellore PS ckt-1 tripped due to failure of Station transformer LA, Ckt-2 was under maintenance, Due to Loss of evacuation path generation loss of 1260 MW occurred
- On 12.11.17 at 07:14 Hrs, All lines from Talwandi Sabo tripped, Due to Loss of Evacuation path at Talwandi Sabo generation loss of 1097 Mw.

- On 09-12-17, 12:58 Hrs, TBC breaker blasted at 400 kV Padghe S/S. All emanating feeders from Padghe tripped and about 1400MW load was thrown off.
- On 10.01.2018 at 17:34Hrs, Due to Loss of Evacuation path 1050 MW Generation loss occurred at Teesta-III, Dikchu,Tashding. Frequency changed from 50.02 Hz to 49.96 Hz.
- On 30.01.2018 at 10:46Hrs, Due to Fault at Korderma S/s , Generation loss of 1250 Mw & Load Loss of 350 Mw occurred at Koderma & Bokaro S/S. Frequency changed from 49.90 Hz to 49.84 Hz.

Response of most of the units is unsatisfactory, except Teesta-V and Balimela.

ERLDC may elaborate. TCC may discuss.

Deliberation in the TCC meeting

ERLDC gave a detailed presentation highlighting the performance of ER units. From the presentation, it emerged that FGMO/RGMO response is very poor for almost all the units except few hydro units. In ER, out of 35 nos. ISGS units that are covered under the scope of monitoring, only 2-3 units are responding satisfactorily.

Member Secretary, ERPC stressed that a detailed roadmap is required to be drawn for implementation in time bound manner.

ITEM NO. B4:	Implementation of Automatic Demand Management Scheme (ADMS)
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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.”

The issue was discussed in OCC & Project Review Meetings and decided to include ADMS in the new SCADA system project under ULDC. 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.

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 25 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	3 months Feeders identified. Communication healthiness needs to be checked.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	9 Months RTU installation is in progress	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months Sent for PSDF approval.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			No information furnished by Sikkim

In 142nd OCC, members opined that uniform logic should be implemented for all the states. OCC decided to review the logic of ADMS after implementation of the scheme by all the states.

TCC may discuss.

Deliberation in the TCC meeting

Bihar informed that the Scheme would be implemented after commissioning of communication scheme which is being executed by PGCIL.

PGCIL informed that the communication scheme would be commissioned by June 2018.

Bihar added that PGCIL has agreed to commission the communication scheme by April 2018 and requested to adhere the schedule.

Jharkhand informed that they would implement the scheme by May 2018.

Sikkim informed that they have submitted a proposal to PSDF Committee for installation of OPGW cables which is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW.

ITEM NO. B5:	Implementation of Automatic Generation Control
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For better frequency control by utilisation of spinning reserves, CERC vide order no 11/SM/2015 dated 13-10-2015 has approved introduction of AGC in the country. A pilot implementation at Dadri TPS in NR is already operating successfully. However, it is now required to introduce AGC on regional basis considering each region as a control area.

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

In 142nd OCC meeting, NTPC informed that they are in the process of formulating a plan to implement AGC at recently commissioned station Barh STPS-II. Unit #4 & 5 of Barh STPS are being considered for AGC implementation. However, the work involved would require 6-7 months for implementation. Moreover, at present complete wideband communication with Barh STPS-II is not yet established.

NTPC may elaborate. Members may discuss.

Deliberation in the TCC meeting

NLDC has given a brief presentation on pilot project at Dadri TPS elaborating the implementation, operation and commercial issues. It was appreciated by TCC members.

For implementation of AGC at Barh STPS-II, NTPC informed that all the process related to procurement would be completed in next 6-7 months. Thereafter, the implementation of the scheme would take 1 month.

ITEM NO. B6:	Reliable evacuation of power from hydro stations in Sikkim
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In the coming monsoon, the total hydropower that would be generated from the hydro stations in Sikkim would be of the order of 2100MW (excluding overload capacity of 110%). Unless 400kV Rangpo-Kishanganj D/C line is commissioned by end of April-2018, it would not be possible to evacuate the power through the existing 400kV Rangpo-Binaguri D/C line, which has a limit of 1700MW.

In 2017, due to non-availability of 400kV Rangpo-Kishanganj D/C line, the total power has to be evacuated through 400kV Rangpo-Binaguri D/C line. As a result, hydro generation of all Sikkim IPPs was curtailed.

The latest status of 400kV Rangpo-Kishanganj D/C line as on 22nd February 2018 as received from TPTL is as follows:

Items	Total Qty (a)	Cumulative Progress till 15.02.18 (b)	Progress made during the week (16.02.18-22.02.18) (c)	Balance Qty as on 22.02.2018 (d) =a-b-c	Target date for completion of the balance Qty	ROW issue, if any, with location
Foundation	590 Locs.	565 nos.		25 nos.	6 nos. by Mar' 18	19 locations under ROW / Forest
Tower Erection	590 Nos.	545 nos.	3	42 nos.	23 nos. by Apr' 18	
Stringing	213.5 Km	169.25 Km	1.76	42.49 Km	34.09 km by Jun' 18	8.4 km under ROW/ Forest

It seems 400kV Rangpo-Kishanganj D/C line would not likely be available for evacuation of hydro power during coming monsoon.

This is for information and necessary advice.

TCC may discuss.

Deliberation in the TCC meeting

TCC decided that the existing methodology of prioritising in scheduling of hydro generators in Sikkim would continue till commissioning of 400kV Rangpo-Kishanganj D/C line.

PGCIL informed that the reconductoring work of 400kV Rangpo-Binaguri D/C line is getting delayed due to non-commissioning of 400kV Rangpo-Kishanganj D/C line.

PGCIL added that the reconductoring work of 400kV Rangpo-Binaguri D/C line would start after commissioning of 400kV Rangpo-Kishanganj D/C line.

A. Status of 400kV Dikchu- Rangpo S/C line

TPTL informed that 400kV Dikchu- Rangpo line-I is completed but could not be charged due to ROW near tower no. AP 36A in vicinity of church.

Due to the unavailability of statutory electrical clearance, some part of the Elim Church in East Sikkim at tower no. 36A needs to be dismantled. An agreement has been reached with Church authorities for demolition of part of church on 18.11.2017 with the help of Government of Sikkim. Government of Sikkim has given the letter ref no 317/DCE/2018 regarding settlement of claims of ELIM Church, on 13.01.2018. Based on Demand note issued by District Collector

- East Sikkim, TPTL has deposited compensation amount on 24.01.2018 with DC- East Sikkim.

Demolition of 41 nos. houses coming under ROW of Transmission Line is to be done by District Authority for which payment has been made.

TCC may note.

Deliberation in the TCC meeting

Sikkim informed that related ROW issues have been resolved and TPTL has to commission the line.

ITEM NO. B7:	PSS tuning of Eastern Region generators
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In 2007, based on a system study by IIT Mumbai, it was proposed that the following units to be equipped with PSS devices:

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

Thereafter, PSS tuning of all units were carried out with the help of BHEL Service Manager, Shri K. Partha Sarathi in the presence of Prof. Kulkarni, IIT Mumbai except Budge Budge units.

PSS tuning of Budge-Budge unit 1&2 of CESC had been subsequently carried out on 28th & 29th July, 2015.

In 142nd OCC, members opined that ER system has grown considerably since and a number of generating stations has been added to the grid. The system study needs to be carried at prevailing system conditions and PSS tuning should be done accordingly. It was informed that this also one of the recommendations of the Enquiry Committee of 2012 Grid Disturbance.

TCC may decide.

Deliberation in the TCC meeting

TCC authorised Member Secretary, ERPC to contact different IITs including IISc for the study and advised to place a comprehensive proposal in next TCC Meeting.

ITEM NO. B8:	Persistent over drawl by West Bengal and Odisha
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It has been observed that since October 2017, Odisha and West Bengal have been over-drawing from grid which, at times, exceeded 500 MW. The issue was discussed a number of times in monthly OCC meetings and both the constituents were requested to adhere to the drawal schedule from the grid.

Continuous over-drawal by both Odisha and West Bengal showed that there is deficit in their respective system. It was suggested that they should meticulously balance the demand and supply in their respective system, if necessary, by entering into bilateral contract or other mode of procurement of power. They should not lean on the regional grid to bridge the difference between demand and supply. It would be in the interest of both of these constituents that they exercise strict control over their drawl and adhere to the grid norms.

With the onset of summer, system demands of Odisha and West Bengal system are expected to increase further. The problem would be compounded with the planned and unplanned outage of thermal units and depleting water reservoir level of Odisha. If the present trend of over-drawal continues, this would further aggravate the situation.

ERLDC may elaborate. TCC may discuss.

Deliberation in the TCC meeting

ERLDC informed that the overdrawal pattern of West Bengal and Odisha had been improved in recent months.

TCC advised West Bengal and Odisha to meticulously plan their generation to balance the load by maximizing the availability of their internal generation and arranging procurement of power through STOA/ MTOA/ Power Exchange. They should not lean on the grid for bridging the gap between demand and supply.

ITEM NO. B9:	Flexible Operation of thermal power stations- Identification of pilot projects
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Central Electricity Authority vide letter dated 16th February 2018 informed that a special Task Force was constituted under IGEF Sub-Group-I for enhancing the flexible operation of existing coal-fired power plants. The Committee has recommended for implementation of measures for 50%, 40% and 25% minimum load in thermal power stations. The measures for 50% minimum load operation requires no investment or minimal investment. (Report is available on CEA website under TRM division)

Subsequently, a meeting was held under the Chairmanship of Member (Thermal) on 8th February 2018 where in it was decided that 55% minimum load operation would be implemented nationwide in first phase. Further, six units, comprising of two units of NTPC and one unit each from DVC, GSECL, APGENCO, MSPGCL, would be taken up for 55% minimum load operation on pilot basis as 55% minimum load operation in line with the CERC notification dated 6th April 2016 and 5th May 2017 (IEGC 4th Amendment).

In 142nd OCC Meeting, NTPC informed all the units of NTPC were capable of 55% minimum load operation.

DVC informed that they were planning to implement at DSTPS.

DVC may update.

TCC may note.

Deliberation in the TCC meeting

DVC informed that they would demonstrate the capability of 55% minimum load operation for one unit of DSTPS by March 2018.

ITEM NO. B10:	Issues of SPS associated with tripping of any pole of HVDC Talcher-Kolar
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During synchronization of NEW grid with SR grid, to limit the surplus power likely to be wheeled to SR through ER and WR, in the event of single or bi-pole outage of 500 kV Talcher-Kolar HVDC, arrangement for 600 MW generation reduction in ER (200 MW each at SEL, GMR and JITPL) by sending digital signals from Talcher STPS was made, apart from the pre-existing reduction/tripping of TSTPS-II generation.

To implement this SPS, signal is transmitted from Talcher to the concerned generating stations.

The SPS needs to be reviewed in view of the following:

- A. Availability of new high capacity AC transmission elements in ER, SR and WR:** A number of new high capacity transmission elements have been commissioned in ER, SR and WR after implementation of the SPS. Since 765kV Angul-Srikakulam D/c line is available, the chances of wheeling of surplus power from ER to SR via WR are limited.
- B. Sending SPS signal to Vedanta (SEL):** after removing LILO of Rourkela-Jharsuguda at SEL, this link is no more available. In view of removal of 400kV Rourkela-Jharsuguda LILO at SEL, PLCC link for sending SPS signal to Vedanta/Sterlite may be re-established either via Jharsuguda or via Meramandali or via Angul.
- C. Continuous receipt of generation back down signal on shutdown of HVDC Talcher-Kolar single pole:** The SPS could not be taken back into service as there was continuous receipt of backing down signal at the respective generator ends. Hence, the SPS had to be kept by-passed throughout the shutdown period even though Pole-II was in service.

In 63rd PCC, Talcher, NTPC has raised several issues related to SPS at Talcher.

PCC advised Talcher, NTPC to send the details to ERLDC and ERPC. PCC decided to discuss the SPS related issues in a special meeting with NLDC, ERLDC, NTPC and POWERGRID.

TCC may discuss.

Deliberation in the TCC meeting

TCC advised Member Secretary, ERPC to convene a separate meeting with the concerned stakeholders to have a review of the existing 600 MW generation reduction SPS in ER.

ITEM NO. B11:	Reactive Power Capability Testing of Power Plants
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Reactive performances of the units are being regularly monitored in every OCC of Eastern Region. Performance of many power plants has improved over the time which helped in maintaining better voltage profile throughout the grid.

However, the testing of reactive power capability of many units has been pending for a long time and the response from concerned units is very poor in this regards. It is high time that the reactive tests on pending units are done in time bound manner, so that the reactive capability of units, particularly the leading p.f. zone, can be known and utilized to the maximum extent for maintaining better voltage profile.

To start with, the testing schedule of following units/plants which are located in high voltage prone area may be finalized.

- Adhunik TPS(both units) –Yet to be confirmed by Adhunik
- JITPL(both units) – After the emergent inspection of OEM(BHEL). In 142nd OCC meeting JITPL informed that testing of U-1 had already been done in 2017. JITPL is requested to share the results of the test.
- Barh TPS – Planned in November 2017 (yet to be done, due to vibration problem)
- Raghunathpur – Planned in December 2017 (yet to be done)
- GMR (Three units) – yet to be tested

ERLDC may elaborate.

TCC may discuss.

Deliberation in the TCC meeting

Members updated the status and informed the schedule as follows:

- Adhunik TPS(both units) –Not available in the meeting for discussion
- JITPL(both units) – After the emergent inspection of OEM(BHEL). Testing would be done in June 2018
- Barh TPS – Vibration problems will be attended during overhauling. The testing would be done after overhauling.
- Raghunathpur – In March 2018 with partial loading because of coal shortage issues
- GMR (Three units) – It was informed that Grid Conditions are not supporting for testing of the units. TCC advised GMR to discuss the issues in 143rd OCC Meeting scheduled to be held on 26th March 2018.

ITEM NO. B12:	Cyber Security in Power Sector.
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Cyber security has become an area of key concern across the economy especially in areas of critical infrastructure and essential services such as the energy and power sectors. IT Division, CEA is conducting Region-wise meetings with power utilities to create awareness on how to identify Critical Information Infrastructure (CII) and prepare organizational Cyber Crisis Management Plan (CCMP).

CEA may give a presentation.

Deliberation in the TCC meeting

CEA gave a detailed presentation on Cyber Security in Power Sector highlighting the importance of Cyber Security including the threats and risk of Cyber-attacks .

In the meeting, it was decided that a workshop would be conducted by CEA at ERPC for further benefit of ER Constituents.

As suggested by CEA, a format would be circulated among ER constituents for furnishing the information of the their respective systems for discussion in OCC Meeting.

A. Improved telecom Infrastructure for cyber security

In 142nd OCC, ERLDC informed that, in line with Enquiry Committee Recommendation, cyber security audit is being conducted on regular basis for SCADA system installed at ERLDC and SLDC as well but cyber security audit for telecom infrastructure installed in Eastern Region is not being carried out.

OCC advised all the constituents to conduct the cyber security audit on telecom infrastructure installed in Eastern Region. It is further advised that compliance / mitigation of the points observed during the audit should also be completed for improvement of the telecom infrastructure in ER.

ERLDC may elaborate. TCC may note.

Deliberation in the TCC meeting

ERLDC emphasised that the need for Cyber Security Audit in telecom sector in Eastern Region.

TCC advised all the utilities to take the necessary action in this regard.

ITEM NO. B13:	Training and Certification of System Operator
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In line with Enquiry Committee Recommendation of 2012 Grid Disturbance, training and certification of system operators need to be given focused attention. Sufficient financial incentives need to be given to certified system operators so that system operation gets recognized as specialized activity.

In 142nd OCC meeting, members updated the status of certification as follows:

State	Status of certification of system operator
SLDC, West Bengal	Operators will appear for certification in March 2018
SLDC, Odisha	Complied
SLDC, DVC	Complied
SLDC, Jharkhand	4 operators were certified
SLDC, Bihar	Training has been completed but yet to appear in exam for certification
SLDC, Sikkim	No information received

TCC may guide.

Deliberation in the TCC meeting

TCC underlined the need of creating a separate cadre for system operation with certified system operators.

Sikkim informed that they are in the process of creating a separate cadre of certified operator for their newly established SLDC after necessary approval of the State Govt. of Sikkim.

ITEM NO. B14:	Procurement of WEB-NET-USE Software for ER Constituents
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The PoC Inter-State Transmission Charges and losses are published by CERC on Quarterly basis. A better understanding of the PoC Charges can be developed using “WEB-NET-USE” software which is developed by IIT Mumbai. GRIDCO, Odisha has contacted IIT Mumbai for procurement of the software. It was learnt that this software can be procured from I.I.T. Mumbai at the rate of **Rs 32.2Lakhs plus applicable Taxes, per year, up to 10 logins**. Thus 10 DICs can use the software simultaneously.

CTU is presently raising PoC Bills to all beneficiaries every month. Since the said software is highly essential for developing the understanding of the PoC regime, GRIDCO has suggested that the same should be procured by CTU from IIT Mumbai and hand over the same to ERPC for distribution among the beneficiaries of Eastern Region.

OCC agreed and referred to 37th TCC.

TCC may decide.

Deliberation in the TCC meeting

TCC advised Member Secretary, ERPC to study the methodology of procurement of WEB-NET-USE Software by NRPC and SRPC. Thereafter, a detailed proposal might be placed by ERPC Secretariat in next TCC meeting.

ITEM NO. B15:	Inadequacy of DVC transmission system (220kV and below) for meeting its own demand
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The total load of DVC system is catered by the 220/132kV ATRs at Jamshedpur, CTPS, DTPS, Kalyaneswari , Giridih, Koderma and Ramgarh. The ATRs at CTPS, Kalyaneswari and DTPS remain heavily loaded and tripping of any ATR is likely to trigger cascade tripping and loss of major load in DVC system. Moreover, during shutdown or forced outage of 220kV Jindal-Jamshedpur tie or nil generation at Bokaro-B, the only 315MVA, 400/220kV ICT at Bokaro-A gets severely overloaded. In the event of loss of 400kV Bokaro-A-Koderma D/C line, the Bokaro-A station has little chance of survival as the existing 315MVA, 400/220kV ICT at Bokaro is insufficient to evacuate the station generation. It has also been observed that, during low generation at CTPS-B, the 220kV Bokaro-B – CTPS-B D/C line gets heavily overloaded and (n-1) security criteria is not satisfied.

In view of the aforesaid facts, DVC needs to expedite strengthening of its transmission system for achieving long term adequacy and till such time, to cope with the rising demand, suitable load / generation rejection schemes may be urgently implemented to automatically shed load/generation with tripping of associated line / ATR.

ERLDC may elaborate and DVC may respond.

Deliberation in the TCC meeting

ERLDC gave a detailed presentation highlighting the constraints faced by DVC in catering its load due to phasing out of old units connected at 132kV level and increase in demand at DVC system.

Further evacuation problem in Bokaro-A was also highlighted. Tripping of any of the existing highly loaded 220/132kV ATR may create disturbance not only in DVC system but also the adjacent system.

DVC assured that they have already taken short term and medium term measures to mitigate the problem.

TCC advised DVC to submit their action plan to ERPC and ERLDC.

ITEM NO. B16:	Communication link between NLDC Bhutan to Back up NLDC India (ERLDC)
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Real time data communication between NLDC Bhutan main and Back up NLDC India located at ERLDC, Kolkata is down since 15th September 2017. Due to this, ERLDC is not getting real time SCADA data of Tala HPS, Chukha HPS, Malbase S/s and Dagachu HPS. The matter has

been informed to NLDC Bhutan on several occasions but the communication link is yet to be restored. NLDC Bhutan is requested to restore the real time SCADA data communication at the earliest.

Bhutan may update.

Deliberation in the TCC meeting

It was decided that the issue would be discussed in the meeting scheduled to be held on 27.03.2018 at ERPC Kolkata where Bhutan NLDC as well as NLDC (India) would be present.

ERLDC was advised to ensure the availability of M/s GE in the meeting.

ITEM NO. B17:	Insulator replacement of 220kV Chukha-Birpara D/c line
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In 60th PCC meeting, POWERGRID explained that the 220kV Chukha-Birpara D/c line is in lightning prone area. The line was repeatedly getting tripped due to insulator failures. POWERGRID has informed that line insulators of part of the line which is belongs to POWERGRID have been replaced with polymer insulators. As a result, failure of insulators of this portion during lightning had been reduced. However, the line is getting tripped due to failure of porcelain insulators in 39.8 km stretch which is belongs to Bhutan.

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

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

BPC may update.

Deliberation in the TCC meeting

PGCIL informed that a meeting has been scheduled in the last week of March 2018 where the issue is going to be discussed and expected to be resolved.

ITEM NO. B18:	Repair/Rectification of tower at location 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines
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POWERGRID had informed that their patrolling team had observed bent in part of tower no. 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines which may further degrade the condition of tower.

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

In 141st OCC meeting, Sikkim informed that works relating to rectification of the tower had been taken up with M/s Gati. The work would be completed by 2nd week of February 2018.

POWERGRID and Sikkim may update.

Deliberation in the TCC meeting

After detailed discussion, it was decided that Sikkim would give a comprehensive proposal to PGCIL within one week regarding handing over of the relevant segments of the line to PGCIL. Thereafter, PGCIL and Sikkim would sit together and sort out the issues involved therein.

ITEM NO. B19:	Status of construction of Chuzachen bays at Rangpo S/s.
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Construction of bays at Rangpo S/s meant for evacuation of power from Chuzachen has been undertaken by Department of Power, Govt of Sikkim, under consultancy with POWERGRID.

In 35th TCC, Sikkim informed that retendering work was in progress.

Sikkim assured that they would commission the bay within the target date i.e. December, 2017.

In 19th SCM, Sikkim informed that the work has been awarded and commissioning is expected by March, 2018.

In 36th TCC, Sikkim informed that the work has been awarded and commissioning is expected by March, 2018.

Sikkim may update. TCC may guide.

Deliberation in the TCC meeting

It was decided that Sikkim and PGCIL ER-II would sit together and resolve the issue.

ITEM NO. B20:	Erection and commissioning of 2 nos. of 220 kV line bays at KBUNL
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Despite of several requests and reminders, KBUNL is not taking up this work seriously and it appears that the initiatives of KBUNL for construction of bay, which is essential for making available second circuit with Samastipur(New) and Motipur are far from satisfactory and the work is yet to start. Presently 220 KV KBUNL- Samastipur (new) (D/C) & 220 KV KBUNL - Motipur (D/C) tr. lines have only one 220 KV bays each at KBUNL end since long & due to this one circuit each from KBUNL to Samastipur (new) & KBUNL to Motipur remain unutilised. Due to unavailability of these bays at KBUNL end, BSPTCL is facing difficulties for synchronising 220 KV line at KBUNL and also unable to shift loading of Biharsharif(PG)-

Begusarai D/C T/L on MTPS for off loading of Biharsharif(PG) ICTs and in case of any contingency occurs at DMTCL(D)-Motipur D/C T/L, MTPS-Motipur S/C T/L also tripped at overloading. It is evident that the transmission infrastructure developed by BSPTCL in North Bihar could not be fully utilized causing limitations in power flow as well as power interruption.

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

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

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

In 142nd OCC, it was informed that the work would be awarded by end of April 2018.

KBUNL may update.

TCC may discuss.

Deliberation in the TCC meeting

NTPC informed that the work order will be awarded by July 2018 and the work will be completed by December 2018.

However, BSPTCL underlined the need of completion of the work immediately to avoid overloading problems being faced in BSPTCL system.

After detailed deliberation, it was decided that ERPC would convene a separate meeting with BSPTCL and KBUNL to expedite the work.

ITEM NO. B21:	Outstanding issues towards charging of 220kV Biharsharif-Tenughat line at 400 kV level
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POWERGRID vide letter dated 18.01.2017 informed that the scope of POWERGRID for charging the 220kV Biharsharif-Tenughat line at 400 KV level is construction of
(a) 01 no. bay and 0.8Km 400 KV transmission line for termination at Biharsarif S/s (PG)
(b) 5 nos. bays including Erection, Testing & Commissioning of OSM Equipments (i.e. 2 x 250 MVA ICTs, 50 MVAR L/R) at Tenughat end of TVNL.

The issue was discussed in 35th & 36th TCC Meetings.

In 36th TCC, POWERGRID informed that Biharshariff end is ready for charging. TVNL informed that TVNL end would be ready by November 2017.

36th TCC advised ERPC Secretariat to convene a separate meeting as per the decision of special meeting held on 2nd March, 2017 at ERPC Kolkata.

Accordingly, a special meeting was convened on **14th December, 2017** at ERPC Kolkata. The minutes are placed at **Annexure-B22**. In the meeting, the followings emerged:

- TVNL informed that one 250 MVA, 400/220kV ICT was charged from 220kV side along with the line reactor which is charged as bus reactor.
- POWERGRID informed that scope of POWERGRID under deposit work of TVNL has been almost completed except old ICT. The scope of POWERGRID under deposit work of JUSNL at Biharshariff has been completed except stringing of one span due to non availability of shutdown.
- Director (Projects), BSPTCL informed that after charging of 220kV Biharsharif-Tenughat line at 400 kV level, the power availability at 220kV bus at Biharshariff will reduce. Since 400/220kV ICTs at 400kV Biharshariff S/s were already overloaded, there will be a constraint to draw power from 400kV Biharshariff. He requested to expedite the installation of 4th ICT (500MVA, 400/220kV ICT) at Biharshaff which was already approved in standing committee.
- ED, ERLDC informed that due to charging of 220kV Biharsharif-Tenughat line at 400 kV level, Bihar drawl at 220kV bus will be affected and problems in 220kV system may be aggravated specially during summer peak load.
- POWERGRID informed that commissioning of 4th ICT at Biharshaff will take one and half year.
- Director (Projects), BSPTCL informed that argumentation of 315 MVA, 400/220kV ICT of Pasauli with 500 MVA may be differed and the same 500MVA ICT may be utilised at Biharshaff.
- POWERGRID informed that the same may be done subjected to availability of bay equipment at other places and it would take around 6 to 7 months.

A) Strengthening of Line

- It was informed that that 220 kV Tenughat- Biharsharif line is in very bad shape and need strengthening before charging at 400 kV level. The ground clearance might not meet the safety clearance requirement for 400kV level between some spans. It was further informed that line spans were very long and there might be a requirement of installation of new towers.
- It was emerged that the line was jointly maintained by JUSNL and BSPTCL as per their respective geographical area. The line has total 506 towers out of which JUSNL is looking after 290 towers and rest 216 towers are being maintained by BSPTCL.
- JUSNL and BSPTCL were advised to do survey of their respective portion of the line and assess the requirements like ground clearance, sag etc for charging the line at 400kV level. A report on the assessment may be submitted by March 2018.
- JUSNL/TVNL informed that they will face problem in power evacuation during strengthening of 220 kV Tenughat- Biharsharif line due to outage.
- POWERGRID was advised to expedite 220kV TVNL-Govindpur line so that TVNL power can be evacuated during outage of 220 kV Tenughat- Biharsharif line.

It was agreed that before charging of Tenughat- Biharsharif line at 400 kV level separate meeting(s) will be convened by ERPC Secretariat with JUSNL, TVNL, BSPTCL, PGCIL & ERLDC to settle other operational and commercial issues.

POWERGRID/JUSNL/TVNL may update.

Deliberation in the TCC meeting

JUSNL informed that the survey work in their geographical area would be completed by march 2018.

BSPTCL also confirmed that the survey would be completed by March 2018.

TCC advised ERPC Secretariat to convene a separate meeting after completion of the survey for deciding the next course of action.

ITEM NO. B22:	Issues related to associated / downstream systems
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WEST BENGAL

1. **2 nos. 220 KV line bays at Subhashgram (PG) s/s:** Bays are ready and idle charged under ERSS-VIII due to non readiness of 220 KV D/C Subhashgram – Baruipur Tr. line and associated bays at Baruipur. Order recently placed by WBSETCL and expected completion by December 2018. Program for readiness of lines for utilisation of above bays to be confirmed by WBSETCL.
2. **6 nos. 220 KV bays at Rajarhat GIS substation under ERSS-V -** 02 no. bays of 220 KV will be utilized through LILO of 01 ckt of 220 KV Jeerat New Town Tr. line (WBSETCL) at Rajarhat. (Scope -02 nos. tower, 700 mtr stringing); Program for readiness of lines for utilisation of above bays to be confirmed by WBSETCL. Construction activity of 220 kV line bays was completed. Due to public agitation, work is stopped from January’ 2017 to till date. Even the security guard of POWERGRID was advised to vacate the premise on 17.01.17 by local police for safety of lives. Severe damage of Panels, cables etc have been done by the miscreants during unmanned period. It may take 3-4 months for completion of 220 kV line bays (damaged by miscreants) after clearance for re-commencement of the work at Rajarhat S/S by State Govt. administration.

ODISHA

1. **4 nos. 220 KV bays at Bolangir S/S :** Out of total 4 nos. 220 KV line bays, 2 nos. are commissioned during Feb’16 and 2 nos. are pending due to unavailability of 220 KV lines of OPTCL. Program for utilisation of balance 2 bays to be confirmed by OPTCL.
2. **6 nos. 220 KV bays at Pandiabil GIS:** Pandiabil (PG) substation is ready for commissioning since July ’16. DOCO held up due to non-readiness of 220 KV lines of

OPTCL. OPTCL to confirm plan for readiness of the lines for utilization of 6 nos. 220 KV line bays. Readiness of 220 KV Feeders by OPTCL critical for downstream power flow from Pandiabil (PG) S/S.

- 3. 4 nos. 220 KV bays at Keonjhar S/S:** Utilisation of total 4 nos. 220 KV line bays is pending due to unavailability of 220 KV lines of OPTCL. Program for readiness of lines for utilisation of above bays to be confirmed by OPTCL.

In 36th TCC OPTCL informed that at Pandiabil, 2 no. bays already utilized and 2 no. bays awaiting for approval of ERLDC. In 142nd 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	<i>Only 7 towers left (Severe ROW problem). By June, 2018.</i>
2.	400/220kV Pandiabil Grid S/s:	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	By Mar, 2018.
3.	400/220 kV Keonjhar S/S	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By Mar, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.

JHARKHAND

JUSNL has finalised their downstream of 220 KV & 132 KV TL to evacuate the power from Daltonganj (PG) S/S. 400/220Kv Daltonganj (PG) S/S under ERSS III & 220/132 KV Daltonganj (PG) S/S under ERSS XVII are ready. The following downstream work would be constructed by JUSNL to match for drawl of power from 220 KV & 132 KV level from Daltonganj (PG) :

Eastern Region System Strengthening Scheme III :

- Daltonganj (POWERGRID) – Latehar 220Kv D/C
- Daltonganj (POWERGRID) – Garhwa 220kV D/c

Eastern Region System Strengthening Scheme XVII:

- Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/C
- Daltonganj (POWERGRID) – Chatarpur/Lesliganj132kV D/c

Contingent plan:

The contingent arrangement for the evacuation of power from Daltonganj Substation shall be connecting through existing 220kV D/C Daltonganj-Latehar (presently charged at 132 kV) line passes through Daltonganj SS (PG), which require the diversion, at a distance of about 1km from Daltonganj(PG) only & It is to be disconnected when the original 132kV line from Daltonganj(PG) to Daltonganj(JUSNL) become ready by M/s R S Infra Private Limited.

JUSNL requested to expedite the transmission line of 220 kV & 132 kV for normalization of the system as required.

The issue was placed in 35th CCM meeting held on 02.08.201 and CCM referred the issue to TCC.

In 142nd OCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	Daltonganj 400/220/132kV S/s:	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By Dec, 2017. Forest clearance is pending, it will take time.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	May, 2018. Forest clearance is pending, it will take time.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	Dec, 2018. Forest clearance is pending, it will take time.
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Matching with S/s, Forest clearance is pending, it will take time.

Charging of ICTs at Daltonganj SS

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

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

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

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

In 142nd OCC Meeting, POWERGRID and JUSNL agreed to settle the issues bilaterally in a separate meeting at Daltonganj on 26th February 2018 and above elements would be charged as per the plan.

JUSNL vide mail dated 27th February 2018 informed that revised plan of the charging of elements at Daltonganj SS. As per the revised plan, the elements would be charged during 6th March 2018 to 9th March 2018.

Members may discuss.

Deliberation in the TCC meeting

OPTCL updated the status 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-Kesinga 220 kV D/C line at Bolangir S/S	<i>Only 7 towers left (Severe ROW problem). By June, 2018.</i>
2.	400/220kV Pandiabil Grid S/s:	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	By Dec, 2018.
3.	400/220 kV Keonjhar S/S	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By May, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.

JUSNL updated the status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	Daltonganj 400/220/132kV S/s:	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By April, 2019.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by Dec 2018.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	By May, 2018. However Daltonganj (PG) has been connected to Daltonganj (JUSNL) at 132kV through existing 220 kV Latehar-Daltonganj line as stop gap arrangement till completion of the line.
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019

JUSNL added that ICTs at Daltonganj(PG) along with both 132 kV Daltonganj(PG)-Daltonganj(JUSNL) lines was charged on 9th March 2018.

ITEM NO. B23:	O&M agreement between BSPTCL and POWERGRID
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The following 132 kV and 220 kV bays of M/s BSPTCL has been constructed by POWERGRID under BSPTCL consultancy project:

1. 2 nos. 132 kV bays at Banka for Sultanganj line : Commissioned on 15.07.2015.
2. 2 nos. 220 kV bays at Gaya for Sonenagar line: Commissioned on 03.09.2016.
3. 1 no. 220 kV bay at Patna for Sipara line: Tentative date of commissioning 28.02.2018.

POWERGRID has been maintaining the above bays since commissioning and therefore, agreement for maintenance of above 132 kV and 220 kV bays at Banka, Gaya and Patna need to be enforced between POWERGRID and M/s BSPTCL.

The draft copy of O&M agreement has already been submitted to the Chief Engineer (Proj./BSPTCL vide our letter dated 03.01.2017 but the signing of agreement could not be materialised.

POWERGRID may explain. BSPTCL may update.

Deliberation in the TCC meeting

After detailed deliberation, it was decided that POWERGRID and BSPTCL should bilaterally settle the issue.

ITEM NO. B24:	Installation of PMUs in Eastern Region under URTDSM project
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In URTDSM project Phase-I, 78 substations and 306 PMUs are envisaged for Eastern Region. 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. Substation wise updated status as furnished in 142nd OCC by POWERGRID is given at **Annexure-B25**.

POWERGRID vide letter dated 27th February 2018 informed the status of implementation as follows:

- Supply is completed for 74 substations with 286 PMUs
- Installation and commissioning work is completed for 62 substations with 246 PMUs
- 43 substations with 191 PMUs have already been integrated
- Installation and commissioning work is on hold for following stations:

Sl. No.	Power Plant	Utility	Installation and commissioning status	Remarks
1	IBEUL, Jharsuguda	Ind Barath Power Energy	On hold	Permission Awaited
2	Jindal, Angul	JITPL	On hold	Permission Awaited
3	Monnet, Angul	Monnet	On hold	Permission Awaited
4	Patratu	NTPC	On hold	Front not ready

In 141st OCC, it was informed that Monnet station is not coming up in near future.

OCC advised POWERGRID to take the custody of the material delivered at Monnet.

In 142nd OCC, POWERGRID informed that the installation could not be done at Jindal, Angul due to space constraint. In the meeting, JITPL representative agreed to resolve the issues.

POWERGRID informed that air-conditioning and lighting arrangement in PDC control room at SLDC-Howrah was not yet provided by WBSETCL for PDC installation. The requirement of

air-conditioning and lighting in PDC control room at SLDC-Howrah was intimated to WBSETCL during survey on November-2014 but the same is not yet provided. The matter has also been discussed in 20th SCADA O&M meeting held on 15th December-2018 wherein WBSETCL intimated that the same would be done on priority.

TCC may discuss.

Deliberation in the TCC meeting

JITPL agreed to examine and confirm the space within one week.

Regarding Patratu, it was decided that NTPC and JUSNL would sit together and sort out the issue by March, 2018.

ITEM NO. B25:	Status of bus-bar protection at important 220 kV Sub-stations
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It has been observed that at many 220 kV substations particularly that of STUs, bus-bar protection is either not commissioned or non-functional. The non-availability / non-functionality of bus bar protection, results in delayed, multiple and uncoordinated tripping, in the event of a bus fault. This, in turn, not only results in partial local black out but also jeopardises the security of interconnected national grid as a whole. The matter was also pointed out during the third party protection audit which is being carried out regularly. A list of such important 220 kV sub-stations as per the first third party audit is placed in the meeting.

In 64th PCC, members updated the status as follows:

Bus Bar Protection not available (record as per third party protection audit)				
Sl No	Name of Substation	Bus protection status	Date of audit	Present Status
Bihar				
1	220 kV Bodhgaya	Not available	28-Dec-12	<i>There is no space available for busbar protection</i>
Jharkhand				
1	220 kV Chandil	Not available	29-Jan-13	<i>LBB available</i>
2	220 kV Tenughat	Not available	12-Apr-13	
DVC				
1	220 kV Jamsedpur	Not available	10-Apr-13	<i>Bus bar protection will be commissioned under PSDF.</i>
West Bengal				
1	220 kV Arambah	Not available	24-Jan-13	<i>Relay available at Site and it would be installed in March 2018.</i>
2	220 kV Jeerat	Not available	20-Dec-12	<i>The scheme will be in service from 1st week of March 2018 after testing.</i>

64th PCC advised DVC to install numerical bus bar protection at 220kV Bokaro, Kalyaneswari, Chandrapura, MTPS and Durgapur S/s to improve the reliability. The latest status is placed below:

DVC		
1	220kV Kalyaneswari	<i>Covered under PSDF.</i>
2	220kV Durgapur	<i>Covered under PSDF.</i>
3	220kV Bokaro	
4	220kV Chandrapura	
5	220kV MTPS	

DVC may place their action plan for 220kV Bokaro, Chandrapura and MTPS.

Deliberation in the TCC meeting

TVNL informed that the Bus-bar protection at Tenughat would be commissioned by April, 2018.

DVC informed that the Bus-bar protection at 220 kV Bokaro, Chandrapura and MTPS S/S would be covered under the DPR for PSDF funding which is under preparation.

ITEM NO. B26:	Reliable Communication Scheme under Central Sector for Eastern Region
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In line with the status of Implementation of Enquiry Committee Recommendations under clause no: 9.15.2 under Network visualization, the last mile fibre availability to all central sector stations were discussed in 20th SCADA O & M meeting held on 15th December 2017 at ERLDC, Kolkata wherein it was pointed out that POWERGRID has already taken approval for last mile fibre connectivity for some stations mainly GMR, JITPL & Ind Bharat etc. in 36th TCC/ERPC meeting held on 13th/14th September 2017 at Bhubaneswar. Status of last mile fibre connectivity for central sector stations which are still not having fibre connectivity, required for real time SCADA system & AGC, as mentioned below may also be planned.

ISGS	SL NO	NAME OF THE STATION	DISTANCE BETWEEN THE NEAREST COMMUNICATION NODE TO THE UNIT CONTROL ROOM	NEAREST COMMUNICATION NODE	Fiber layed (Y/N)	End Equipment (Y/N)	Availability Upto SAS/RTU	Distance Between Gen. and SAS for AGC	Distance Between SAS & Communication Equip.
NTPC	1	FARAKKA STPS	2500M	.....NA.....	Y	Y	N	100M	2400M
	2	BARH STPS	2000M		Y	Y	N	1500M	500M
	3	KAHALGAON STPS	1500M		Y	Y	N	1450M	60M
	4	BRBCL NABINAGAR	81.65KM+1000M	SASARAM (PGCIL)	N	N	N	1000M	
	5	TALCHER STPS	660M	.....NA.....	Y	Y	N	650M	10M
NHPC	6	DARLIPALLY STPS	810M	JHARSGUDA (SUNDERGARH)	Y	Y	Y	800M	10M
	7	RANGIT HPS	600M	.....NA.....	Y	Y	N	580M	20M
	8	TEESTA -V HPS	520M		Y	Y	N	500M	20M
IPP HYDRO	9	DIKCHU HPS	32.67KM+550M	RANGPO (PGCIL)	N	N	N	550M	
	10	TEESTA-III HPS	46.28KM+1800M	RANGPO (PGCIL)	N	N	N	1800M	
	11	JORETHANG HPS	27KM+300M	RANGPO (PGCIL)	N	N	N	300M	
	12	CHUZACHEN HPS	21KM+350M	RANGPO (PGCIL)	N	N	N	350M	
	13	TASHIDING HEP	8KM	New Melli	N	N	N	10M	
IPP THERMAL	14	JINDAL ITPL	85KM+1000M	ANGUL (PGCIL)	N	N	N	1000M	
	15	GMR TPS	30KM+800M	ANGUL (PGCIL)	N	N	N	800M	
	16	IND BHARAT EUL	65KM+700M	JHARSGUDA (SUNDERGARH)	N	N	N	700M	
	17	ADHUNIK PNRL	300M	.....NA.....	Y	Y	N	290M	10M
	18	MPL	31.5KM+1500M	MAITHON (PGCIL)	Y	Y	N	1500M	
	19	OPGCL	220M	.....NA.....	Y	Y	Y	200M	20M
NTPC/ JUSNL	20	Lalmatia	79KM+	Farakka	N	N	N		

It is requested that POWERGRID may take up the matter and implement the same at the earliest.

POWERGRID may respond. TCC may discuss.

Deliberation in the TCC meeting

Powergrid informed that the work would be awarded by June, 2018 and would be completed by December, 2019 in phased manner.

ITEM NO. B27:	Issuance of Taking Over Certificate for DSTPS-RTPS OPGW link by DVC
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In 19th SCADA O & M meeting held on 7th April 2017 at ERLDC, Kolkata, POWERGRID had informed that they were not able to complete the OPGW work in DSTPS – RTPS in DVC Sector under Microwave Replacement Package due to severe ROW issue. POWERGRID further informed that they had mobilized the team several times but work could not be completed due to heavy ROW / compensation issues related to TL construction resulting non-completion of 2 nos. OPGW drum (approx. 9 Km) out of total 69.182 Km. POWERGRID again informed that this issue was discussed in various forums but the solution could not be provided by DVC. DVC informed that they are not able to resolve the issue as this was an old ROW / compensation issue related to TL construction. OPGW work in this link could not be completed due to ROW/Compensation issues since September-2013.

In 36th ERPC meeting, matter was deliberated and DVC informed that they would try to resolve ROW issues by 31st October-2017. Otherwise they would provide the necessary certificate.

In 20th SCADA O&M meeting held on 15th December-2017, POWERGRID informed that DVC had not yet issued TOC for this link. DVC confirmed that they will issue TOC and request for a letter from POWERGRID. POWERGRID issued the request letter on 20.12.2017. However, Taking Over Certificate is yet to be issued by DVC.

POWERGRID may elaborate.

DVC may update.

Deliberation in the TCC meeting

DVC informed that the ROW issue would likely to be resolved after the Panchayat Election of West Bengal.

ITEM NO. B28:	Implementation of 5-Minute Scheduling, Metering, Accounting and Settlement in Eastern Region-- metering issues
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The 15-minute scheduling, metering, accounting and settlement system has been implemented in India in 2002-2003 with genesis in the CERC order on Availability Based Tariff (ABT) mechanism. Government of India (GoI) has set the Renewable Energy (RE) target of 175 GW

by 2022. The need for implementing a 5-minute scheduling and settlement at the Inter State level is being felt considering the variability of load and renewable especially considering increasing RE penetration in the coming years. Worldwide, it has been recognized that shorter settlement period such as 5-minute scheduling and settlement offered a lot of advantages, particularly in terms of reduction in the requirement of reserves, robust price discovery and bringing out the value of flexibility.

Technical Committee of Forum of Regulators appreciated the need to move to 5-minute scheduling and settlement and formed a Sub-Group to examine the issue.

The Sub-Group in its meetings decided as below:

- All RPCs may discuss the 5-minute scheduling and settlement
- NPC to follow up the status of amendment of metering standards with CEA and also place the required amendments as agenda item in the next NPC meeting.
- CTU to facilitate collection of the region-wise data on type, vintage and location of existing meters along with proposed procurement process.
- Need for capacity building for better forecasting and scheduling - SLDCs to coordinate with RLDCs/NLDC. Interactive sessions may be organized at different RPCs for generation of ideas and solutions.
- In view of SAMAST implementation, the states who are about to implement the intrastate accounting and settlement system could leapfrog and go for scheduling and settlement at 5- min interval.

In 36th CCM, ERLDC representative gave a presentation on the Implementation of 5-Minute Scheduling, Metering, Accounting and Settlement including the metering issues in the Eastern Region.

However, during the presentation it was felt that the 5-Minute Scheduling involves lots of intricacies as well as challenges. Therefore, ERPC secretariat suggested ERLDC to give a presentation before TCC.

ERLDC may give the presentation.

TCC may discuss.

Deliberation in the TCC meeting

After deliberation, it was decided that ERPC Secretariat would organize a workshop on 5-minute scheduling.

ITEM NO. B29:	Payment/Receipt Status from various pool accounts in ER
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1) Payment of Deviation Charge – Present Status

The status of Deviation Charge payment as on 06.02.2018 is enclosed at **Annexure – B32**. The current principal outstanding Deviation Charge of BSPHCL & JUVNL is ₹ 12.45 Cr & ₹ 12.30 Cr respectively considering bill up to 21.01.2018. Moreover, interest amounts of ₹ 12.16 Lacs

and ₹ 22.45 Lacs (as on 31.01.2018) are also payable by BSPHCL & JUVNL respectively due to delay payment of DSM charges. ERLDC had already issued many reminders to BSPHCL & JUVNL to liquidate the entire Deviation charges.

Further SIKKIM and IBEUL had not paid deviation charges to the Pool in FY 2017-18.

In 36th Commercial Sub-Committee Meeting, ERLDC informed that BSPHCL had partially liquidated their dues and the present outstanding stood around ₹ 10 Cr. The outstanding against JUVNL is also around ₹10 Cr. The interest amount outstanding is around ₹12.16 Lacs and ₹ 22.45 Lacs against BSPCHCL and JUVNL respectively.

As per the decision taken in 36th CCM, ERPC secretariat has already written letters to the concerned constituents for liquidation of their dues within 10 days.

ERLDC may update the latest status.

Deliberation in the TCC meeting

ERLDC informed that the outstanding payment issues regarding BSPHCL and JUVNL have already been resolved.

2) Disbursement of Interest due to delayed payment of deviation charges.

ERLDC had received/recovered interest amount of Rs. 1.43 Cr from BSPHCL and Rs. 1.14 Cr from JUVNL towards interest due to delayed payment of deviation charges in FY 2017-18. Similarly, an amount of ₹28,476 towards interest was recovered from APNRL for FY-2016-17. Same amount was paid towards deviation Charges to the receiving constituents and Ancillary services. Final settlement of delayed payment Interest would be done at the end of 2017-18.

Outstanding deviation charges including interest for all the ER constituents (except Vedanta of ₹ 3, 51,637 towards interest) along with Inter-regional Pool during FY 2016-17 are fully settled.

In 36th CCM, ERLDC requested intervention of GRIDCO for resolution of issues related to Vedanta as it is now an embedded entity of the GRIDCO. GRIDCO representative requested ERLDC to write a letter to Vedanta with a copy to GRIDCO so that the issue could be taken up with appropriate authorities.

ERLDC/ GRIDCO may update.

Deliberation in the TCC meeting

Director (Comm.), GRIDCO assured that the issue would be resolved within a few days.

ITEM NO. B30:	Opening of LC by ER constituents for Deviation Charges Payments
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Clause 10 (4) of CERC Deviation Settlement Mechanism and related matters Regulations, 2014 vide notification No. L-1/132/2013/CERC dated 6th January, 2014 to be implemented from 17.02.2014.

As intimated by ERLDC, the details of LC amount required to be opened in 2017-18 by ER constituents is given in **Annexure – B33**. Letters to this effect has already been issued by ERLDC to the defaulting entities viz, GMR, IBEUL, JUVNL & JITPL. GMR, IBEUL & JUVNL has not opened/renewed the LC. JITPL LC is going to expire on 08.02.18. Rest of the constituents to whom LC were required to open/recoup the LC, have opened/recoup the LC.

In 36th CCM, ERLDC informed that GATI & SIKKIM had opened their LC.

JUVNL, GMR and Ind-Barath were not present in the meeting.

JUVNL, GMR and Ind-Barath may please intimate the latest status.

Deliberation in the TCC meeting

ERLDC emphasized that the requisite amount of LC is required to be opened by ER constituents regarding Deviation Settlement Mechanism.

ITEM NO. B31:	Meter related Issues
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Some of the meter related issues are mentioned below. Due to the meter related issue energy accounting and its validation is being affected.

Issue	Location	Meter No	Line	Responsibility	Problem Since	Remarks
Erroneous data	1.Sundergarh PG	ER-1062-A	765 KV Dharamjaygarh Line-1	PGCIL	15.01.18	Less recording around 10-15%
	2. Patna PG	ER-1232-A	LV side of 500 MVA ICT-3	PGCIL	15.02.18	50 % High Recording
	3. EM Bypass (CESC)	ER-1121-A & ER-1126-A	220 KV Subhasgram(PG) D/C	WB/PG	Charging of Line	Time drift of 14 Hrs since SEM Installation.
	4. Motihari BSPTCL	ER-1256-A & ER-1258-A	132 KV Motihari DMTCL D/C	BSPTCL	Charging of Line	Recording 50 % Less
Non receipt of Data	1. Birpara (WB)	NP-6489-A	132 KV Birpara PGCIL-1	WBSETCL	Almost 3 month	As Informed by WBSETCL Meter is not working
	2.Subhashgram (WB)	ER-1127-A & ER-1003-A	220 KV Subhasgram(PG) D/C	WBSETCL	Charging of Line	Meter is installed in 1st week of Feb 2018 but data is not being sent from WBSETCL
	3. New Town(CESC)	ER-1001-A	220 KV Subhasgram(PG) S/C	WBSETCL	Charging of Line	
	4. Bantala(CESC)	ER-1009-A	220 KV Subhasgram(PG) S/C	WBSETCL	Charging of Line	

ERLDC may explain. PGCIL/BSPTCL/WBSETCL may please update.

Reverse Polarity of meter

Following meters installed at different Locations are connected in Wrong/Reverse Polarity since installation of meters which needs to be corrected. The matter has already been informed to respective Sub stations through e-mail and telephonically.

Location	SEM S. No	Line	Responsibility	Present Status
Jamtara(JUVNL)	NP-6110-A	132 KV Jamtara-Maithon	JUVNL/PGCIL	Same
Raxaul(BSPTCL)	ER-1248-A ER-1249-A	132 KV Raxaul-Motihari DMTCL D/C Line	BSPTCL/PGCIL	Same
Darbhanga(DMTCL)	ER-1272-A ER-1273-A	400 KV Darbhanga DMTCL-Muzafarpur D/C Line	DMTCL/PGCIL	Same

The above issue was last discussed in 36th CCM held on 13.02.18. Wrong Polarity may lead to wrong computation of Injection as well as drawl of respective Utilities.

BSPTCL/JUVNL/DMTCL may correct the Polarity of the meters at their end.

PGCIL/ WBSETCL may please further update the status.

Deliberation in the TCC meeting

From the deliberation, it was emerged that most of the related issues have been resolved. ERLDC assured that the rest of the issues would be resolved within few weeks.

ITEM NO. B32:	Implementation of Automatic Meter Reading in Eastern Region
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The implementation of AMR 3rd phase for 37 locations was last discussed in 36th TCC/ERPC meeting held on 13.09.17 & 14.09.17 and it was informed by PGCIL that all 37 locations has been integrated to AMR. There are few locations Like Balimela, Lakisarai(PG), Gyalesing(Sikkim), Sagbari, TUL, Alipurduar, Atri&Samangara wherein AMR is yet to be integrated.

The list of 16 new locations with 68 Meters & 25 existing locations with 68 meters to be implemented in AMR.

Presently we are receiving data from 125 locations out of total 147 locations through AMR. The latest status of data receipt from the locations as below:

- Number of meters for which AMR has been commissioned-820 meters/163 DCUs
- Number of Meter & locations as per LOA/Phase-I 458 meters/97 locations.
- Number of Meter & locations as per LOA/Phase-II 198 meters/19 locations.
- Number of Meter & locations as per LOA/Phase-III 249 meters/37 locations.
- Number of meters for which data is received: 690

- Number of locations for which data is received: 125 locations
- Number of DCUs online-130 DCU
- Number of DCUs offline-33 DCU

After the phase-wise completion of AMR for the locations commissioned, some of the utilities have been asked to discontinue the sending of the weekly SEM data through mail. However, in case of an emergency or communication failure, as the case may be, the utilities may download the data through DCD/Laptop and send it by mail. As such, DCD is required to be kept in charged condition. Of late, there have been issues with the GPRS communication/DCU for around 10 locations.

In 36th CCM, ED, ERLDC lauded POWERGRID for successful completion of the 3rd phase of AMR project .Now all the meters are reporting ERLDC through AMR which, in turn, reduces a lot of difficulties faced by drifting and time correction by the meters.

Presently ERLDC have been receiving data from 125 locations out of total 147 locations through AMR.

PGCIL/ ERLDC may please further update the status.

Deliberation in the TCC meeting

Members noted.

ITEM NO. B33:	Agenda by POWERGRID
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1) Non Opening of LC requisite amount of LC :

Following constituents are required to enhance/ extend LC towards Payment Security Mechanism, as per CERC Regulations:

SI No.	Amount (in Cr.)	
	Present Value of LC	Value of LC Required
North Bihar Power Distribution Company Limited(NBPDCL)	9.73	29.00
South Bihar Power Distribution Company Limited(SBPDCL)	8.89	40.00
Ind-Bharat Energy (Utkal) Limited	--	20.68

Non-availability of LC for requisite value and validity as per CERC Regulations is causing serious problem for POWERGRID to comply with the provisions of CERC Regulations and Loan Covenants.

In 36th CCM, BSPHCL/BSPTCL representatives were not present.

Members decided to take up this agenda in TCC meeting.

POWERGRID may explain.

BSPHCL/BSPTCL may update.

Deliberation in the TCC meeting

BSPHCL informed that the requisite LCs would be opened by 31st July, 2018 after finalization of Accounts of FY 2017-18.

2) Payment of Outstanding dues more than 60 days :

SI No	Amount(in Cr.)	
	Total Outstanding dues	Outstanding due more than 60 days
Vedanta Ltd.	23.81	23.81
GMR Kamalanga Energy Ltd.	16.11	9.52
Navabharat Power Pvt. Limited	8.56	8.56
Jindal India Thermal Power Limited	12.41	12.41
Monnet Power Company limited*	10.70	10.70
LancoBabandh Power Private Limited	6.46	6.46
Ind-Bharat Energy (Utkal) Limited	179.41	165.61
Damodar Valley Corporation(DVC)	146.27	128.83
West Bengal State Electricity Distribution Company Ltd.(WBSEDCL)	93.04	8.03
GRIDCO Ltd	23.26	23.26
Total	520.03	397.19

*The Bills/Letters to their Generation unit at Angul, Odisha & Registered office, Greater Kailash, New Delhi. They have refused to acknowledge.

In 36th CCM, DVC informed that there was a petition before APTEL regarding the LTA dispute.

WBSEDCL requested for the breakup of total outstanding dues.

It was decided to discuss in TCC meeting.

Concerned members may update the latest status.

Deliberation in the TCC meeting

DVC informed that the issue is sub-judice.

WBSEDCL informed that the issue relating to payment of LPSC for an amount of Rs. 7.30 Cr. which is a part of total outstanding dues more than 60 days i.e. Rs. 8.03 Cr. The outstanding amount would be liquidated by next month.

3) O&M Charges of POWERGRID

POWERGRID is doing 400 KV Bay O&M of M/s JITPL at Angul and M/s Indbarath at Sundargarh Sub Stations with Consultancy charges. In spite of several communications, these 02 agencies are not timely paying the Bay O&M Consultancy charges to POWERGRID.

The following are the pending payments to be received by POWERGRID as per bills raised up to the Qtr ending Mar' 18.

Sl No	Name of Agency	POWERGRID Sub Station	Total 400 KV Bays	Payment against Bay O&M charges	Pending interest charges	Total Pending Payment in lakhs
01	M/s JITPL	ANGUL	04	52.91	52.38	105.29
02	M/s Indbarath	SUNDRGARAH	04	88.0		88.0

JITPL and Ind-Barath may respond.

Deliberation in the TCC meeting

After detailed deliberation, it was decided that JITPL & POWERGRID would submit the relevant documents to ERPC Secretariat for study and thereafter a meeting would be convened to sort out the issue.

4) List of Assets commissioned by POWERGRID.

List of Assets commissioned by POWERGRID is enclosed in **Annexure-B37**.

Members may note.

Deliberation in the TCC meeting

Members noted.

ITEM NO. B34:	Non-Opening of LC of requisite value-Agenda by NHPC
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All the beneficiaries are intimated that the calculation sheet of LC for F.Y 2017-18 have been sent which is based upon 105% of average billing w.e.f Jan'2016 to Dec'2016. All the concerned beneficiaries are requested to enhance the existing LC or open the new LC of requisite value before 31st March'2017 and same should be valid up to 31st March '2018.

NBPDCL, SBPDCL and JBVNL have not yet provided the LC of requisite amount and requested to open L.C amounting to Rs.6.85 Crs, Rs 9.07 Crs and Rs.8.47 Crs respectively at the earliest being statutory requirements as per PPA.

In 36th CCM, NBPDCL, SBPDCL and JBVNL were not present.

NHPC may elaborate.

TCC may discuss.

Deliberation in the TCC meeting

BSPHCL informed that they are already having the LC of requisite amount.

For others, if any, NHPC assured that they would try to sort out the issue bilaterally. However, MS ERPC assured that, in the event of failure for sorting out the issue, NHPC may request ERPC Secretariat to convene a meeting with the concerned constituents.

ITEM NO. B35:	Augmentation of 400/220kV ICT capacity at Maithon, Patna, Sasaram, Biharshariff
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ICTs of (1X315+1X500) MVA capacity exists at Maithon, Patna and Sasaram. In the peak period, the total power catered by each of the sub-stations is high enough to cause tripping of the parallel 315MVA ICT, if the 500MVA ICT trips. Similarly, if one out of the 3X315 MVA ICTs at Biharshariff trips, the other two ICTs are also likely to trip on overload.

The 315 MVA ICTs at Patna and Sasaram are already planned to be replaced by 500MVA ICTs while a 500MVA ICT is scheduled to be added each at Maithon and at Biharshariff.

19th SCM approved the 3rd 500 MVA ICT at Patna for fulfilling the (n-1) criterion and in view of load growth at Patna area.

CTU informed that in view of changed scenario at first the 3rd 500 MVA ICT will be commissioned at Patna and after that the 2nd 315 MVA ICT will be replaced with 500 MVA ICT.

In 36th TCC, POWERGRID informed the status as follows:

S. No.	Name of the Substation		Status
1	Patna	Argumentation of 315 MVA ICT with 500 MVA ICT	will be replaced in first quarter of 2018-19
		New 500 MVA 3 rd ICT	Award is yet to be placed
2	Maithon	Installation of new 500 MVA 3 rd ICT	Installed in October 2017
3	Biharshariff	Installation of new 500MVA 4 th ICT	under awarding stage
4	Sasaram	Argumentation of 315 MVA ICT with 500 MVA ICT	will be done in 4 th quarter of 2017-18.

POWERGRID may update.

Deliberation in the TCC meeting

POWERGRID updated the latest status as follows:

S. No.	Name of the Substation		Status
1	Patna	Argumentation of 315 MVA ICT with 500 MVA ICT New 500 MVA 3 rd ICT	The 2 nd 500 MVA ICT was installed in place of 3 rd ICT.
2	Maithon	Installation of new 500 MVA 2 nd ICT	Installed in October 2017
3	Biharshariff	Installation of new 500MVA 4 th ICT	Installed by January 2019
4	Sasaram	Argumentation of 315 MVA ICT with 500 MVA ICT	will be done in 1 st quarter of 2018-19.

ITEM NO. B36:	Priority-based commissioning of bus reactor for control of high voltage during lean periods
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The latest status updated in OCC Meetings is given below:

S.N.	Reactor	Status
1	125 MVAR Bus reactor of Jamshedpur	Charged on 1 st December 2017
2	125 MVAR Bus reactor of Biharshariff	
3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	Commissioning expected by April'18.
4.	125 MVAR Bus reactor of Subashgram	Under tendering stage

POWERGRID may update.

Deliberation in the TCC meeting

POWERGRID updated the latest status as follows:

S.N.	Reactor	Status
1	125 MVAR Bus reactor of Jamshedpur	Charged on 1 st December 2017
2	125 MVAR Bus reactor of Biharshariff	Commissioned
3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	Commissioning expected by April'18.
4.	125 MVAR Bus reactor of Subashgram	LOA placed.

ITEM NO. B37:	Additional Agenda by PGCIL
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- 1. Diversion of 01 no , 765/400 kV ,500 MVA spare transformer from 765/400/220 kV Gaya ss to 765/400 kV New Ranchi Substation.**

One number 500 MVA 765/400Kv Transformer was approved in 24th ERPC meeting dated 26.04.13 for Gaya S/s as regional spare, Now this Spare we are keeping at Ranchi 765/400Kv substation.

As one transformer is already available at Gaya substation and therefore it is felt prudent to keep one no 500 MVA transformer at New Ranchi S/s.

The matter was discussed in 35th CCM meeting held on 02.08.2017 at ERPC Kolkata and members have agreed.

Deliberation in the TCC meeting

TCC noted.



Minutes
of
37th TCC Meeting
of
EASTERN REGIONAL POWER COMMITTEE

Date: 16th March, 2018

Venue: Goa

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EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 37TH TCC MEETING

Date: 16th March, 2018

Place: Goa

List of participants is at **Annexure-B**

ITEM NO.A1:	CONFIRMATION OF THE MINUTES OF 36TH TCC MEETING
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The minutes of the 36th TCC meeting held on 13th September, 2017 at Bhubaneswar were circulated vide letter no. ERPC/TCC&Committee/14/2017/2692-2757 dated 30th October, 2017.

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

Members may confirm the minutes of 36th TCC meeting.

Deliberation in the TCC meeting

Member Secretary, ERPC informed that a request for amendment to the minutes of the last TCC meeting held on 13.09.2017 has been received from Chief Engineer, National Power Committee, CEA. In the letter he has pointed out that, in the last TCC meeting, a decision was taken to include Chief Engineer, NPC as TCC Member of ERPC. This has not been reflected in the minutes of the last TCC meeting.

After detailed deliberations, members decided the followings:

- 1. There was no agenda in the last TCC meeting regarding inclusion of Chief Engineer, NPC, CEA as TCC Member, ERPC. The then Member Secretary, ERPC in his opening speech had made a passing reference in this regard only. However, this was not included as an agenda and discussed in the meeting. Hence, the question of amendment to the minutes does not arise.*
- 2. TCC advised Member Secretary, ERPC to put a separate proposal, if considered necessary, in the next TCC meeting giving the details of the background including the practices being followed in the other regions.*

Members confirmed the minutes of 36th TCC meeting with above observation.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B1:

Status of projects funded under PSDF schemes

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

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (in Rs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018	108.6 Cr	18.26 Cr.	100 % Supply is Completed 92% Erection is completed
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	19 months from date of release of 1 st instalment	43.37	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	25 months from date of release of 1 st instalment	70.13	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
4	WBPDC	Implementation of Islanding scheme at Bandel Thermal Power Station	10.04.17	March 2018	1.39 Cr		<i>Award placed to ABB. The material reached the site and installation is in progress. The scheme would be implemented by April 2018.</i>
5		Upgradation of Protection and SAS			23.48		Approved by Ministry of Power. Fresh tendering is in progress.
6	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	10.05.15	10.05.17	162.5 Cr.	37.79 Cr	Total contract awarded for Rs. 51.35 Cr
7		Implementation of OPGW based reliable communication at 132kV and above substations	15.11.2017		25.61 Cr.		Agreement signed on 03.01.2018
8	OHPC	Renovation and up-gradation of protection and control system of 4 nos. OHPC substations.		<i>U.Kolab-March 19 Balimela-Feb 2019 U.Indravati-Jan 19 Burla-Nov 2018, Chiplima Dec 2018</i>	22.35 Cr.		Tendering under progress.
9	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sona & 132/33 kV GSS Kataiya	11/5/2015	31.03.2018	64.02 crore	56.04 crore	75% of work has been completed. Contract awarded for Rs.71.37 Cr till date.
10		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	12 th March 2019	18.88 crore	Nil	Work awarded for 9 nos of GSS.

11		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.17	31 st March 2018	49.22 Cr.		75% work completed for seven no. GSS as part of R & M work. Revised DPR is to be submitted for rest 5 no. GSS.
12	JUSNL	Renovation and up-gradation of protection system	September 2017	138.13 crores			LOA will be issued to PRDC in March 2018.
13	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.17	01.06.2019	25.96 Cr	2.596 Crore on 01.06.2017	Work awarded for 28.07 Cr.
14		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.17	24 Months from the date of release of fund.	140.5 Cr.	1 st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 6.45 Cr.
15	POWERGRID	Installation of STATCOM in ER		June 2018	630.28 Cr	63.028 Cr	Work is in progress, expected to complete by June 2018. STATCOM at Rourkela has been commissioned.
16	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16	Project is alive from 30 th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Protection Database Project has been declared 'Go live' w.e.f. 31.10.17. 2) Pending training on PDMS at Sikkim and 3 rd training on PSCT has been also completed at ERPC Kolkata.
17a	ERPC	Training for Power System Engineers					The proposal was approved by Appraisal Committee. The proposal was sent to CERC. CERC has sought some queries from the Appraisal Committee. The matter shall be taken up by the Appraisal Committee during its next meeting.
17b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					

B. Projects under process of approval:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	Sikkim	Renovation & Upgradation of Protection System of Energy and Power Department, Sikkim.	09-08-17	68.95 Cr	Scheme was examined by TSEG. Inputs sought from entity.
2		Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim	09-08-17	25.36 Cr	Scheme was examined by TSEG. Inputs sought from entity.
3	JUSNL	Reliable Communication & Data Acquisition System upto 132kV Substations.	23-08-17	102.31 Cr	Scheme was examined by TSEG. Inputs sought from entity. Scheme has been revised as suggested by TSEG and it would be submitted within a week.
4	OPTCL	Installation of 125 MVAR Bus Reactor along with construction of associated bay each at 400kV Grid S/S of Mendhasal, Meramundali & New Duburi for VAR control & stabilisation of system voltage	28-08-17	31.94 Cr	Scheme was examined by TSEG. Inputs sought from entity. OPTCL submitted the relevant information.

C. Projects recently submitted:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	WBSETCL	Implementation of Integrated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal	22-12-17	25.96 Cr	
2	OPTCL	Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	
3	OPTCL	Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir & Paradeep).	20.02.2018	41.1 Cr.	

TCC may note.

Deliberation in the TCC meeting

Respective members updated the status.

BSPTCL informed that Technical Audit by PSDF Monitoring Committee is yet to be done for SI no. 9 and as a result, release of payment was getting delayed.

Member Secretary, ERPC informed that a Review Meeting of Projects under implementation under PSDF is being organised tentatively in the 2nd week of April, 2018 to discuss the present status of the project and to remove the bottlenecks for implementation of projects funded under PSDF. The meeting would be chaired by Chairperson, CEA

TCC advised all the constituents to communicate the PSDF related issues to ERPC Secretariat on urgent basis for detailed deliberation in the PSDF meeting.

ITEM NO. B2:	Performance of Hydro Power Stations in ER including Hydro Power Stations in Bhutan
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CEA vide letter dated 18.07.17 informed that POSOCO had carried out operational analysis of various hydro stations in the country and observed that despite 40.6 GW of peaking hydro capacity, only about 33 GW peak generation is available on all India basis. According to POSOCO, this is on account of a number of hydro stations, particularly in state sector, not being operated in peaking mode. In order to examine the above observation, a Sub-committee has been constituted by the MoP under Chairperson, CEA with Heads of POSOCO, NHPC, SJVN & THDC as members and Director (H), MoP as the Member Convenor. The Sub-Committee has held three meetings with the concerned hydro generating stations and concluded that there is scope for about 2000 MW additional power generation from hydro stations during peak hours.

It has been desired by the Chairperson that the matter of utilization of hydro stations in peaking mode be made a regular agenda item for discussion at the monthly OCC meetings while

discussing operational planning for the month ahead and analyzing the operation in the previous month.

ERLDC has been regularly presenting the performance of hydro generators of Eastern Region in monthly OCC meetings.

ERLDC may elaborate.

Members may please discuss.

Deliberation in the TCC meeting

*ERLDC gave a detailed presentation highlighting the availability of peaking power from Hydro Stations of Eastern Region. The presentation is enclosed at **Annexure-B2**. From the presentation, it emerged that, out of 1900 MW hydro capacity of OHPC, only 1400 MW (approx.) is available in peak hours. So there is a scope of further enhancement of availability of peaking power.*

However, OHPC clarified that 320 MW capacity is under R&M. They are also having irrigation and drinking water supply obligations which limits the availability of peaking power of Odisha.

MS, ERPC suggested that separate peaking tariff for hydro stations might be thought of, for inducing maximum hydro power during peak hours.

MS, ERPC also informed that a separate meeting with Bhutan is scheduled to be held on 27.03.2018 to discuss the issue related to maximization of the hydro generation during peak hours from Bhutan.

ITEM NO. B3:	Restricted Governor /Free Governor Mode Operation of generators in ER
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Vide CERC order dated 31st July 2017 in Petition No. 84/MP/2015, the Commission directed the following:

Section 23 “

- a) Considering the fact that further measures have been put in place to facilitate desirable primary response, the Commission, starting from the month of September, 2017 shall be closely watching the primary response of ISGSs as reported by POSOCO/NLDCs. At the State level, SLDCs shall report the frequency response of intra-State generators to the concerned SERCs.
- b) NLDCs and SLDCs through the assistance of POSOCO shall start the process of selecting independent third parties capable of undertaking periodic checkups to monitor the RGMO/FGMO response. To start with, selected independent third parties shall be sent to the generating stations which are not providing the desired RGMO/FGMO response. Independent Third Parties shall ensure that the generator has not, in any way, prevented/disabled the governor from providing the desired response. In case, even after enabling the governors, units are not able to provide the desired response as per the provisions of the Grid Code, third parties, based on the submissions of the

generators, shall bring out the technical constraints, if any, which limit the primary response of the units.

- c) All ISGSs are directed to provide primary response compulsorily in terms of Regulation 5.2 (f), (g), (h) and (i) of the Grid Code failing which we would not hesitate in initiating action under Section 142 of Electricity Act, 2003 for not providing desired RGMO/FGMO response without any valid reasons. ”

Section 24

“..... The Committee (on implementation of FGMO / primary response) has also recommended that there is no requirement for granting any exemption even to LMZ units from operation under RGMO/FGMO with manual intervention.”

“... has the option of either expediting the R&M of old units which shall include installation of new EHG governors capable of providing adequate primary response or to go in for retrofit of mechanical governors for adopting RGMO features or to operate on FGMO with manual intervention...”

The latest status of the RGMO/FGMO of ER generators is enclosed in **Annexure-B3**.

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

The issue was discussed in OCC meetings, OCC advised SLDCs to monitor performance of the intra-State generators and send the report to the concerned SERCs.

TCC may note.

A. RGMO/FGMO performance of ISGS/IPPs in the Eastern Region

Governor responses for following events were discussed in OCCs during the month of Aug-2017 to Jan-2018.

- On 16.08.17, at 12:18 Hrs, 400 kV Rangpo-Teesta (III) line tripped on B-N fault resulting in generation loss of 879 MW and 100 MW in Teesta and Dikchu stations respectively.
- On 25.10.2017, at 19:33 hrs, Due to loss of evacuation lines, Unit-I & II at TPCIL(660 MW each) in southern region got tripped.
- On 30.10.17, at 21:37 Hrs, 400 KV TPCIL-Nellore PS ckt-1 tripped due to failure of Station transformer LA, Ckt-2 was under maintenance, Due to Loss of evacuation path generation loss of 1260 MW occurred
- On 12.11.17 at 07:14 Hrs, All lines from Talwandi Sabo tripped, Due to Loss of Evacuation path at Talwandi Sabo generation loss of 1097 Mw.
- On 09-12-17, 12:58 Hrs, TBC breaker blasted at 400 kV Padghe S/S. All emanating feeders from Padghe tripped and about 1400MW load was thrown off.
- On 10.01.2018 at 17:34Hrs, Due to Loss of Evacuation path 1050 MW Generation loss occurred at Teesta-III, Dikchu, Tashding. Frequency changed from 50.02 Hz to 49.96 Hz.

- On 30.01.2018 at 10:46Hrs, Due to Fault at Korderma S/s , Generation loss of 1250 Mw & Load Loss of 350 Mw occurred at Koderma & Bokaro S/S. Frequency changed from 49.90 Hz to 49.84 Hz.

Response of most of the units is unsatisfactory, except Teesta-V and Balimela.

ERLDC may elaborate. TCC may discuss.

Deliberation in the TCC meeting

ERLDC gave a detailed presentation highlighting the performance of ER units. The presentation is enclosed at Annexure-B3A. From the presentation, it emerged that FGMO/RGMO response is very poor for almost all the units except for few hydro units. In the Eastern Region, out of 35 nos. ISGS units that are covered under the scope of monitoring, only 2-3 units are responding satisfactorily.

Member Secretary, ERPC stressed that a detailed roadmap is required to be drawn for implementation of FGMO / RGMO in a time bound manner.

ITEM NO. B4:	Implementation of Automatic Demand Management Scheme (ADMS)
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Regulation 5.4.2 (d) of the Central Electricity Regulatory Commission (Indian /

The issue was discussed in OCC & Project Review Meetings and decided to include ADMS in the new SCADA system project under ULDC. 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.

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 25 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	3 months Feeders identified. Communication healthiness needs to be checked.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation	9 Months RTU installation	Condition 1: Block I feeders will be selected for load shedding

		> 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	is in progress	Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months Sent for PSDF approval.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			No information furnished by Sikkim

In 142nd OCC, members opined that uniform logic should be implemented for all the states. OCC decided to review the logic of ADMS after implementation of the scheme by all the states.

TCC may discuss.

Deliberation in the TCC meeting

Bihar informed that the Scheme would be implemented after commissioning of communication scheme which is being executed by PGCIL.

PGCIL informed that the communication scheme would be commissioned by June 2018.

Bihar added that PGCIL has agreed to commission the communication scheme by April 2018. As such, Powergrid was requested by Bihar to adhere the time schedule.

Jharkhand informed that they would implement the scheme by May 2018.

Sikkim informed that they had submitted a proposal to PSDF Committee for installation of OPGW cables. The Scheme is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW.

ITEM NO. B5:	Implementation of Automatic Generation Control
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For better frequency control by utilisation of spinning reserves, CERC vide order no 11/SM/2015 dated 13-10-2015 has approved introduction of AGC in the country. A pilot implementation at Dadri TPS in NR is already operating successfully. However, it is now required to introduce AGC on regional basis considering each region as a control area.

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

In 142nd OCC meeting, NTPC informed that they are in the process of formulating a plan to implement AGC at recently commissioned station Barh STPS-II. Unit #4 & 5 of Barh STPS are being considered for AGC implementation. However, the work involved would require 6-7 months for implementation. Moreover, at present complete wideband communication with Barh STPS-II is not yet established.

NTPC may elaborate. Members may discuss.

Deliberation in the TCC meeting

NLDC has given a brief presentation on pilot project at Dadri TPS elaborating the implementation, operation and commercial issues involved. The presentation is enclosed at Annexure-B5. The presentation was appreciated by TCC members.

Regarding implementation of AGC at Barh STPS-II, NTPC informed that all the processes related to procurement would be completed in next 6-7 months. Thereafter, the implementation of the scheme would take one more month.

ITEM NO. B6:	Reliable evacuation of power from hydro stations in Sikkim
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In the coming monsoon, the total hydropower that would be generated from the hydro stations in Sikkim would be of the order of 2100MW (excluding overload capacity of 110%). Unless 400kV Rangpo-Kishanganj D/C line is commissioned by end of April-2018, it would not be possible to evacuate the power through the existing 400kV Rangpo-Binaguri D/C line, which has a limit of 1700MW.

In 2017, due to non-availability of 400kV Rangpo-Kishanganj D/C line, the total power has to be evacuated through 400kV Rangpo-Binaguri D/C line. As a result, hydro generation of all Sikkim IPPs was curtailed.

The latest status of 400kV Rangpo-Kishanganj D/C line as on 22nd February 2018 as received from TPTL is as follows:

Items	Total Qty (a)	Cumulative Progress till 15.02.18 (b)	Progress made during the week (16.02.18-22.02.18) (c)	Balance Qty as on 22.02.2018 (d) =a-b-c	Target date for completion of the balance Qty	ROW issue, if any, with location
Foundation	590 Locs.	565 nos.		25 nos.	6 nos. by Mar' 18	19 locations under ROW / Forest
Tower Erection	590 Nos.	545 nos.	3	42 nos.	23 nos. by Apr' 18	
Stringing	213.5 Km	169.25 Km	1.76	42.49 Km	34.09 km by Jun' 18	8.4 km under ROW/ Forest

It seems 400kV Rangpo-Kishanganj D/C line would not likely be available for evacuation of hydro power during coming monsoon.

This is for information and necessary advice.

TCC may discuss.

Deliberation in the TCC meeting

TCC decided that the existing methodology of prioritisation in scheduling of hydro generators in Sikkim would continue till commissioning of 400kV Rangpo-Kishanganj D/C line.

PGCIL informed that the reconductoring work of 400kV Rangpo-Binaguri D/C line is getting delayed due to non-commissioning of 400kV Rangpo-Kishanganj D/C line.

PGCIL added that the reconductoring work of 400kV Rangpo-Binaguri D/C line would start only after commissioning of 400kV Rangpo-Kishanganj D/C line.

A. Status of 400kV Dikchu- Rangpo S/C line

TPTL informed that 400kV Dikchu- Rangpo line-I is completed but could not be charged due to ROW near tower no. AP 36A in vicinity of church.

Due to the unavailability of statutory electrical clearance, some part of the Elim Church in East Sikkim at tower no. 36A needs to be dismantled. An agreement has been reached with Church authorities for demolition of part of church on 18.11.2017 with the help of Government of Sikkim. Government of Sikkim has given the letter ref no 317/DCE/2018 regarding settlement of claims of ELIM Church, on 13.01.2018. Based on Demand note issued by District Collector - East Sikkim, TPTL has deposited compensation amount on 24.01.2018 with DC- East Sikkim.

Demolition of 41 nos. houses coming under ROW of Transmission Line is to be done by District Authority for which payment has been made.

TCC may note.

Deliberation in the TCC meeting

Sikkim informed that related ROW issues have been resolved and TPTL has to commission the line.

ITEM NO. B7:	PSS tuning of Eastern Region generators
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In 2007, based on a system study by IIT Mumbai, it was proposed that the following units to be equipped with PSS devices:

1. Kolaghat stage II 400 kV U#4.5.6. (201MW each) of WBPDCCL;

2. Farakka U#4, 5 (500MW each)of NTPC;
3. U.Kolab 4 units (80 MW each) of OHPC;
4. Budge Budge U# 1,2,(250 MW) of CESC Ltd.

Thereafter, PSS tuning of all units were carried out with the help of BHEL Service Manager, Shri K. Partha Sarathi in the presence of Prof. Kulkarni, IIT Mumbai except Budge Budge units.

PSS tuning of Budge-Budge unit 1&2 of CESC had been subsequently carried out on 28th &29th July, 2015.

In 142nd OCC, members opined that ER system has grown considerably since and a number of generating stations has been added to the grid. The system study needs to be carried at prevailing system conditions and PSS tuning should be done accordingly. It was informed that this also one of the recommendations of the Enquiry Committee of 2012 Grid Disturbance.

TCC may decide.

Deliberation in the TCC meeting

TCC authorised Member Secretary, ERPC to contact different IITs including IISc for the study. A comprehensive proposal in this respect should be placed in the next TCC Meeting.

ITEM NO. B8:	Persistent over drawl by West Bengal and Odisha
---------------------	--

It has been observed that since October 2017, Odisha and West Bengal have been over-drawing from grid which, at times, exceeded 500 MW. The issue was discussed a number of times in monthly OCC meetings and both the constituents were requested to adhere to the drawal schedule from the grid.

Continuous over-drawal by both Odisha and West Bengal showed that there is deficit in their respective system. It was suggested that they should meticulously balance the demand and supply in their respective system, if necessary, by entering into bilateral contract or other mode of procurement of power. They should not lean on the regional grid to bridge the difference between demand and supply. It would be in the interest of both of these constituents that they exercise strict control over their drawal and adhere to the grid norms.

With the onset of summer, system demands of Odisha and West Bengal system are expected to increase further. The problem would be compounded with the planned and unplanned outage of thermal units and depleting water reservoir level of Odisha. If the present trend of over-drawal continues, this would further aggravate the situation.

ERLDC may elaborate. TCC may discuss.

Deliberation in the TCC meeting

ERLDC informed that the overdrawal pattern of West Bengal and Odisha in terms of Maximum quantum of MW overdrawal and daily energy(MU) overdrawal had improved in recent months.

TCC advised West Bengal and Odisha to meticulously plan their generation to balance the load by maximizing the availability of their internal generation and arranging procurement of power through STOA/ MTOA/ Power Exchange. They should not lean on the grid for bridging the gap between demand and supply.

ITEM NO. B9:	Flexible Operation of thermal power stations- Identification of pilot projects
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Central Electricity Authority vide letter dated 16th February 2018 informed that a special Task Force was constituted under IGEF Sub-Group-I for enhancing the flexible operation of existing coal-fired power plants. The Committee has recommended for implementation of measures for 50%, 40% and 25% minimum load in thermal power stations. The measures for 50% minimum load operation requires no investment or minimal investment. (Report is available on CEA website under TRM division)

Subsequently, a meeting was held under the Chairmanship of Member (Thermal) on 8th February 2018 where in it was decided that 55% minimum load operation would be implemented nationwide in first phase. Further, six units, comprising of two units of NTPC and one unit each from DVC, GSECL, APGENCO, MSPGCL, would be taken up for 55% minimum load operation on pilot basis as 55% minimum load operation in line with the CERC notification dated 6th April 2016 and 5th May 2017 (IEGC 4th Amendment).

In 142nd OCC Meeting, NTPC informed all the units of NTPC were capable of 55% minimum load operation.

DVC informed that they were planning to implement at DSTPS.

DVC may update.

TCC may note.

Deliberation in the TCC meeting

DVC informed that they would demonstrate the capability of 55% minimum load operation for one unit of DSTPS by March 2018.

ITEM NO. B10:	Issues of SPS associated with tripping of any pole of HVDC Talcher-Kolar
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During synchronization of NEW grid with SR grid, to limit the surplus power likely to be wheeled to SR through ER and WR, in the event of single or bi-pole outage of 500 kV Talcher-Kolar HVDC, arrangement for 600 MW generation reduction in ER (200 MW each at SEL, GMR and JITPL) by sending digital signals from Talcher STPS was made, apart from the pre-existing reduction/tripping of TSTPS-II generation.

To implement this SPS, signal is transmitted from Talcher to the concerned generating stations.

The SPS needs to be reviewed in view of the following:

- A. Availability of new high capacity AC transmission elements in ER, SR and WR:** A number of new high capacity transmission elements have been commissioned in ER, SR and WR after implementation of the SPS. Since 765kV Angul-Srikakulam D/c line is available, the chances of wheeling of surplus power from ER to SR via WR are limited.
- B. Sending SPS signal to Vedanta (SEL):** after removing LILO of Rourkela-Jharsuguda at SEL, this link is no more available. In view of removal of 400kV Rourkela-Jharsuguda LILO at SEL, PLCC link for sending SPS signal to Vedanta/Sterlite may be re-established either via Jharsuguda or via Meramandali or via Angul.
- C. Continuous receipt of generation back down signal on shutdown of HVDC Talcher-Kolar single pole:** The SPS could not be taken back into service as there was continuous receipt of backing down signal at the respective generator ends. Hence, the SPS had to be kept by-passed throughout the shutdown period even though Pole-II was in service.

In 63rd PCC, Talcher, NTPC has raised several issues related to SPS at Talcher.

PCC advised Talcher, NTPC to send the details to ERLDC and ERPC. PCC decided to discuss the SPS related issues in a special meeting with NLDC, ERLDC, NTPC and POWERGRID.

TCC may discuss.

Deliberation in the TCC meeting

TCC advised Member Secretary, ERPC to convene a separate meeting with the concerned stakeholders to have a review of the existing SPS covering generation reduction to the extent of 600 MW in ER.

ITEM NO. B11:	Reactive Power Capability Testing of Power Plants
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Reactive performances of the units are being regularly monitored in every OCC of Eastern Region. Performance of many power plants has improved over the time which helped in maintaining better voltage profile throughout the grid.

However, the testing of reactive power capability of many units has been pending for a long time and the response from concerned units is very poor in this regards. It is high time that the reactive tests on pending units are done in time bound manner, so that the reactive capability of units, particularly the leading p.f. zone, can be known and utilized to the maximum extent for maintaining better voltage profile.

To start with, the testing schedule of following units/plants which are located in high voltage prone area may be finalized.

- Adhunik TPS(both units) –Yet to be confirmed by Adhunik

- JITPL(both units) – After the emergent inspection of OEM(BHEL). In 142nd OCC meeting JITPL informed that testing of U-1 had already been done in 2017. JITPL is requested to share the results of the test.
- Barh TPS – Planned in November 2017 (yet to be done, due to vibration problem)
- Raghunathpur – Planned in December 2017 (yet to be done)
- GMR (Three units) – yet to be tested

ERLDC may elaborate.

TCC may discuss.

Deliberation in the TCC meeting

Members updated the status and informed the schedule as follows:

- *Adhunik TPS(both units) –Not available in the meeting for discussion*
- *JITPL(both units) – After the emergent inspection of OEM(BHEL). Testing would be done in June 2018*
- *Barh TPS – Vibration problems will be attended during overhauling. The testing would be done after overhauling.*
- *Raghunathpur – In March 2018 with partial loading because of coal shortage issues*
- *GMR (Three units) – It was informed that Grid Conditions are not supporting for testing of the units. TCC advised GMR to discuss the issues in 143rd OCC Meeting scheduled to be held on 26th March 2018.*

ITEM NO. B12:	Web based Protection Database and Desktop based Protection setting calculation tool for Eastern Regional Grid, under PSDF Funding
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After grid disturbances in 2012, Ministry of Power had constituted a ‘Task Force on Power System Analysis under Contingencies’ in December 2012. Task Force strongly recommended creation & maintenance of protection data base under RPCs.

After detailed deliberations in PCC meetings, the issue was placed in 29th ERPC Meeting.

29th ERPC decided to implement the above scheme and authorised Member Secretary, ERPC to:

- i) Proceed for tendering etc. and to do the needful for final implementation of the scheme
- ii) Place application to PSDF funding

The funding of the work on Creation of Protection Database in Eastern Region from PSDF has been approved by PSDF Appraisal Committee on 17th March 2017.

The project has been implemented by PRDC and declared **Go Live** on 31st October 2017. Training on PDMS organised at ERPC, Odisha, Bihar, WBSETCL, Jharkhand, Sikkim and DVC. The following activities have been completed after declaring the project Go Live:

- Data Collection of Newly Commissioned Stations in Eastern Region

- Training on Protection Database (MiP-PDMS) and Protection Setting Calculation Tool at Sikkim from 8th January 2018 to 10th January 2018.
- Third Phase of MiP-PSCT Training Program at ERPC Kolkata from 5th February 2018 to 9th February 2018
- Network and Database updation of Eastern Region Substations in MiP-PDMS and MiP-PSCT.
- Support for MiP-PSCT and MiP-PDMS users of ERPC Constituents

As per the current payment disbursement status the partial payment is pending under following milestones:

1. Milestone 6 : Populating all ERPC constituent data along with SLD : This activity is completed on 31/10/2017 for which ten percent payment is pending that amounts to Rs.13,29,916 (without TDS).

2. Milestone 8 : Completion of Training Program : As per tender document the project scope includes 35 days of training schedule out of which 33 days have been covered by February 2018. Fifty percent payment is pending under this milestone which amounts to Rs.33,24,789 (without TDS).

In 64th PCC, members approved and referred to TCC for further concurrence.

TCC may approve.

Deliberation in the TCC meeting

TCC recommended ERPC to approve the payment of Rs.13,29,916 (without TDS) against Milestone 6 and Rs.33,24,789 (without TDS) against Milestone 8 to PRDC from PSDF as the payment of the balance for the implementation of the project.

ITEM NO. B13:	Cyber Security in Power Sector.
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Cyber security has become an area of key concern across the economy especially in areas of critical infrastructure and essential services such as the energy and power sectors. IT Division, CEA is conducting Region-wise meetings with power utilities to create awareness on how to identify Critical Information Infrastructure (CII) and prepare organizational Cyber Crisis Management Plan (CCMP).

CEA may give a presentation.

Deliberation in the TCC meeting

*CEA gave a detailed presentation on Cyber Security in Power Sector highlighting the importance of Cyber Security including the potential threats and risk arising of Cyber-attacks. The presentation is enclosed at **Annexure-5**.*

In the meeting, it was decided that a workshop would be conducted by CEA at ERPC for further benefit of ER Constituents.

As suggested by CEA, a format would be circulated among ER constituents for furnishing the information of the their respective systems for discussion in OCC Meeting.

A. Improved telecom Infrastructure for cyber security

In 142nd OCC, ERLDC informed that, in line with Enquiry Committee Recommendation, cyber security audit is being conducted on regular basis for SCADA system installed at ERLDC and SLDC as well but cyber security audit for telecom infrastructure installed in Eastern Region is not being carried out.

OCC advised all the constituents to conduct the cyber security audit on telecom infrastructure installed in Eastern Region. It is further advised that compliance / mitigation of the points observed during the audit should also be completed for improvement of the telecom infrastructure in ER.

ERLDC may elaborate. TCC may note.

Deliberation in the TCC meeting

ERLDC emphasised that the need for Cyber Security Audit in telecom sector in Eastern Region.

TCC advised all the utilities to take the necessary action in this regard.

ITEM NO. B14:	Training and Certification of System Operator
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In line with Enquiry Committee Recommendation of 2012 Grid Disturbance, training and certification of system operators need to be given focused attention. Sufficient financial incentives need to be given to certified system operators so that system operation gets recognized as specialized activity.

In 142nd OCC meeting, members updated the status of certification as follows:

State	Status of certification of system operator
SLDC, West Bengal	Operators will appear for certification in March 2018
SLDC, Odisha	Complied
SLDC, DVC	Complied
SLDC, Jharkhand	4 operators were certified
SLDC, Bihar	Training has been completed but yet to appear in exam for certification
SLDC, Sikkim	No information received

TCC may guide.

Deliberation in the TCC meeting

TCC underlined the need of creating a separate cadre for system operation with certified system operators.

Sikkim informed that they are in the process of creating a separate cadre of certified operator for their newly established SLDC after necessary approval of the State Govt. of Sikkim.

ITEM NO. B15:	Procurement of WEB-NET-USE Software for ER Constituents
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The PoC Inter-State Transmission Charges and losses are published by CERC on Quarterly basis. A better understanding of the PoC Charges can be developed using “WEB-NET-USE” software which is developed by IIT Mumbai. GRIDCO, Odisha has contacted IIT Mumbai for procurement of the software. It was learnt that this software can be procured from I.I.T. Mumbai at the rate of **Rs 32.2Lakhs plus applicable Taxes, per year, up to 10 logins**. Thus 10 DICs can use the software simultaneously.

CTU is presently raising PoC Bills to all beneficiaries every month. Since the said software is highly essential for developing the understanding of the PoC regime, GRIDCO has suggested that the same should be procured by CTU from IIT Mumbai and hand over the same to ERPC for distribution among the beneficiaries of Eastern Region.

OCC agreed and referred to 37th TCC.

TCC may decide.

Deliberation in the TCC meeting

TCC advised Member Secretary, ERPC to study the methodology of procurement of WEB-NET-USE Software by NRPC and SRPC. Thereafter, a detailed proposal, if required, might be placed by ERPC Secretariat in next TCC meeting.

ITEM NO. B16:	Inadequacy of DVC transmission system (220kV and below) for meeting its own demand
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The total load of DVC system is catered by the 220/132kV ATRs at Jamshedpur, CTPS, DTSP, Kalyaneswari, Giridih, Koderma and Ramgarh. The ATRs at CTPS, Kalyaneswari and DTSP remain heavily loaded and tripping of any ATR is likely to trigger cascade tripping and loss of major load in DVC system. Moreover, during shutdown or forced outage of 220kV Jindal-Jamshedpur tie or nil generation at Bokaro-B, the only 315MVA, 400/220kV ICT at Bokaro-A gets severely overloaded. In the event of loss of 400kV Bokaro-A-Koderma D/C line, the Bokaro-A station has little chance of survival as the existing 315MVA, 400/220kV ICT at Bokaro is insufficient to evacuate the station generation. It has also been observed that, during low generation at CTPS-B, the 220kV Bokaro-B – CTPS-B D/C line gets heavily overloaded and (n-1) security criteria is not satisfied.

In view of the aforesaid facts, DVC needs to expedite strengthening of its transmission system for achieving long term adequacy and till such time, to cope with the rising demand, suitable load / generation rejection schemes may be urgently implemented to automatically shed load/generation with tripping of associated line / ATR.

ERLDC may elaborate and DVC may respond.

Deliberation in the TCC meeting

ERLDC gave a detailed presentation highlighting the constraints being faced by DVC in catering its load due to phasing out of old units connected at 132kV level and increase in demand at DVC system.

Further, evacuation problem in Bokaro-A was also highlighted. Tripping of any of the existing highly loaded 220/132kV ATR might create disturbance not only in DVC system but also in the adjacent system.

DVC assured that they had already taken short term and medium term measures to mitigate the problem.

TCC advised DVC to submit their action plan to ERPC and ERLDC.

ITEM NO. B17:	Communication link between NLDC Bhutan to Back up NLDC India (ERLDC)
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Real time data communication between NLDC Bhutan main and Back up NLDC India located at ERLDC, Kolkata is down since 15th September 2017. Due to this, ERLDC is not getting real time SCADA data of Tala HPS, Chukha HPS, Malbase S/s and Dagachu HPS. The matter has been informed to NLDC Bhutan on several occasions but the communication link is yet to be restored. NLDC Bhutan is requested to restore the real time SCADA data communication at the earliest.

Bhutan may update.

Deliberation in the TCC meeting

It was decided that the issue would be discussed in the meeting scheduled to be held on 27.03.2018 at ERPC Kolkata where Bhutan NLDC as well as NLDC (India) would be present.

ERLDC was advised to ensure the availability of M/s GE in the meeting.

ITEM NO. B18:	Insulator replacement of 220kV Chukha-Birpara D/c line
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In 60th PCC meeting, POWERGRID explained that the 220kV Chukha-Birpara D/c line is in lightning prone area. The line was repeatedly getting tripped due to insulator failures. POWERGRID has informed that line insulators of part of the line which is belongs to POWERGRID have been replaced with polymer insulators. As a result, failure of insulators of this portion during lightning had been reduced. However, the line is getting tripped due to failure of porcelain insulators in 39.8 km stretch which is belongs to Bhutan.

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

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

BPC may update.

Deliberation in the TCC meeting

PGCIL informed that a meeting has been scheduled in the last week of March 2018 where the issue was going to be discussed and expected to be resolved.

ITEM NO. B19:	Repair/Rectification of tower at location 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines
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POWERGRID had informed that their patrolling team had observed bent in part of tower no. 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines which may further degrade the condition of tower.

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

In 141st OCC meeting, Sikkim informed that works relating to rectification of the tower had been taken up with M/s Gati. The work would be completed by 2nd week of February 2018.

POWERGRID and Sikkim may update.

Deliberation in the TCC meeting

After detailed discussion, it was decided that Sikkim would give a comprehensive proposal to PGCIL within one week regarding handing over of the relevant segments of the line to PGCIL. Thereafter, PGCIL and Sikkim would sit together and sort out the issues involved therein.

ITEM NO. B20:	Status of construction of Chuzachen bays at Rangpo S/s.
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Construction of bays at Rangpo S/s meant for evacuation of power from Chuzachen has been undertaken by Department of Power, Govt of Sikkim, under consultancy with POWERGRID.

In 35th TCC, Sikkim informed that retendering work was in progress.

Sikkim assured that they would commission the bay within the target date i.e. December, 2017.

In 19th SCM, Sikkim informed that the work has been awarded and commissioning is expected by March, 2018.

In 36th TCC, Sikkim informed that the work has been awarded and commissioning is expected by March, 2018.

Sikkim may update. TCC may guide.

Deliberation in the TCC meeting

It was decided that Sikkim and PGCIL ER-II would sit together and resolve the issue.

ITEM NO. B21:	Erection and commissioning of 2 nos. of 220 kV line bays at KBUNL
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Despite of several requests and reminders, KBUNL is not taking up this work seriously and it appears that the initiatives of KBUNL for construction of bay, which is essential for making available second circuit with Samastipur(New) and Motipur are far from satisfactory and the work is yet to start. Presently 220 KV KBUNL- Samastipur (new) (D/C) & 220 KV KBUNL - Motipur (D/C) tr. lines have only one 220 KV bays each at KBUNL end since long & due to this one circuit each from KBUNL to Samastipur (new) & KBUNL to Motipur remain unutilised. Due to unavailability of these bays at KBUNL end, BSPTCL is facing difficulties for synchronising 220 KV line at KBUNL and also unable to shift loading of Biharsharif(PG)-Begusarai D/C T/L on MTPS for off loading of Biharsharif(PG) ICTs and in case of any contingency occurs at DMTCL(D)-Motipur D/C T/L, MTPS-Motipur S/C T/L also tripped at overloading. It is evident that the transmission infrastructure developed by BSPTCL in North Bihar could not be fully utilized causing limitations in power flow as well as power interruption.

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

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

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

In 142nd OCC, it was informed that the work would be awarded by end of April 2018.

KBUNL may update.

TCC may discuss.

Deliberation in the TCC meeting

NTPC informed that the work order would be awarded by July 2018 and the work would be completed by December 2018.

However, BSPTCL underlined the need of completion of the work immediately to avoid overloading problems being faced in BSPTCL system.

After detailed deliberation, it was decided that ERPC would convene a separate meeting with BSPTCL and KBUNL to expedite the work.

ITEM NO. B22:	Outstanding issues towards charging of 220kV Biharsharif-Tenughat line at 400 kV level
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POWERGRID vide letter dated 18.01.2017 informed that the scope of POWERGRID for charging the 220kV Biharsharif-Tenughat line at 400 KV level is construction of
(a) 01 no. bay and 0.8Km 400 KV transmission line for termination at Biharsharif S/s (PG)
(b) 5 nos. bays including Erection, Testing & Commissioning of OSM Equipments (i.e. 2 x 250 MVA ICTs, 50 MVAR L/R) at Tenughat end of TVNL.

The issue was discussed in 35th & 36th TCC Meetings.

In 36th TCC, POWERGRID informed that Biharshariff end is ready for charging. TVNL informed that TVNL end would be ready by November 2017.

36th TCC advised ERPC Secretariat to convene a separate meeting as per the decision of special meeting held on 2nd March, 2017 at ERPC Kolkata.

Accordingly, a special meeting was convened on **14th December, 2017** at ERPC Kolkata. The minutes are placed at **Annexure-B22**. In the meeting, the followings emerged:

- TVNL informed that one 250 MVA, 400/220kV ICT was charged from 220kV side along with the line reactor which is charged as bus reactor.
- POWERGRID informed that scope of POWERGRID under deposit work of TVNL has been almost completed except old ICT. The scope of POWERGRID under deposit work of JUSNL at Biharshariff has been completed except stringing of one span due to non availability of shutdown.
- Director (Projects), BSPTCL informed that after charging of 220kV Biharsharif-Tenughat line at 400 kV level, the power availability at 220kV bus at Biharshariff will reduce. Since 400/220kV ICTs at 400kV Biharshariff S/s were already overloaded, there will be a constraint to draw power from 400kV Biharshariff. He requested to expedite the installation of 4th ICT (500MVA, 400/220kV ICT) at Biharshaff which was already approved in standing committee.
- ED, ERLDC informed that due to charging of 220kV Biharsharif-Tenughat line at 400 kV level, Bihar drawl at 220kV bus will be affected and problems in 220kV system may be aggravated specially during summer peak load.
- POWERGRID informed that commissioning of 4th ICT at Biharshaff will take one and half year.

- Director (Projects), BSPTCL informed that argumentation of 315 MVA, 400/220kV ICT of Pasauli with 500 MVA may be differed and the same 500MVA ICT may be utilised at Biharshaff.
- POWERGRID informed that the same may be done subjected to availability of bay equipment at other places and it would take around 6 to 7 months.

A) Strengthening of Line

- It was informed that that 220 kV Tenughat- Biharsharif line is in very bad shape and need strengthening before charging at 400 kV level. The ground clearance might not meet the safety clearance requirement for 400kV level between some spans. It was further informed that line spans were very long and there might be a requirement of installation of new towers.
- It was emerged that the line was jointly maintained by JUSNL and BSPTCL as per their respective geographical area. The line has total 506 towers out of which JUSNL is looking after 290 towers and rest 216 towers are being maintained by BSPTCL.
- JUSNL and BSPTCL were advised to do survey of their respective portion of the line and assess the requirements like ground clearance, sag etc for charging the line at 400kV level. A report on the assessment may be submitted by March 2018.
- JUSNL/TVNL informed that they will face problem in power evacuation during strengthening of 220 kV Tenughat- Biharsharif line due to outage.
- POWERGRID was advised to expedite 220kV TVNL-Govindpur line so that TVNL power can be evacuated during outage of 220 kV Tenughat- Biharsharif line.

It was agreed that before charging of Tenughat- Biharsharif line at 400 kV level separate meeting(s) will be convened by ERPC Secretariat with JUSNL, TVNL, BSPTCL, PGCIL & ERLDC to settle other operational and commercial issues.

POWERGRID/JUSNL/TVNL may update.

Deliberation in the TCC meeting

JUSNL informed that the survey work in their geographical area would be completed by March, 2018.

BSPTCL also confirmed that the survey would be completed by March, 2018.

TCC advised ERPC Secretariat to convene a separate meeting after completion of the survey for deciding the next course of action.

ITEM NO. B23:	Issues related to associated / downstream systems
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WEST BENGAL

1. **2 nos. 220 KV line bays at Subhashgram (PG) s/s:** Bays are ready and idle charged under ERSS-VIII due to non readiness of 220 KV D/C Subhashgram – Baruipur Tr. line and associated bays at Baruipur. Order recently placed by WBSETCL and expected

completion by December 2018. Program for readiness of lines for utilisation of above bays to be confirmed by WBSETCL.

2. **6 nos. 220 KV bays at Rajarhat GIS substation under ERSS-V - 02** no. bays of 220 KV will be utilized through LILO of 01 ckt of 220 KV Jeerat New Town Tr. line (WBSETCL) at Rajarhat. (Scope -02 nos. tower, 700 mtr stringing); Program for readiness of lines for utilisation of above bays to be confirmed by WBSETCL. Construction activity of 220 kV line bays was completed. Due to public agitation, work is stopped from January' 2017 to till date. Even the security guard of POWERGRID was advised to vacate the premise on 17.01.17 by local police for safety of lives. Severe damage of Panels, cables etc have been done by the miscreants during unmanned period. It may take 3-4 months for completion of 220 kV line bays (damaged by miscreants) after clearance for re-commencement of the work at Rajarhat S/S by State Govt. administration.

ODISHA

1. **4 nos. 220 KV bays at Bolangir S/S** :Out of total 4 nos. 220 KV line bays, 2 nos. are commissioned during Feb'16 and 2 nos. are pending due to unavailability of 220 KV lines of OPTCL. Program for utilisation of balance 2 bays to be confirmed by OPTCL.
2. **6 nos. 220 KV bays at Pandiabil GIS:** Pandiabil (PG) substation is ready for commissioning since July '16. DOCO held up due to non-readiness of 220 KV lines of OPTCL. OPTCL to confirm plan for readiness of the lines for utilization of 6 nos. 220 KV line bays. Readiness of 220 KV Feeders by OPTCL critical for downstream power flow from Pandiabil (PG) S/S.
3. **4 nos. 220 KV bays at Keonjhar S/S:** Utilisation of total 4 nos. 220 KV line bays is pending due to unavailability of 220 KV lines of OPTCL. Program for readiness of lines for utilisation of above bays to be confirmed by OPTCL.

In 36th TCC OPTCL informed that at Pandiabil, 2 no. bays already utilized and 2 no. bays awaiting for approval of ERLDC. In 142nd 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	<i>Only 7 towers left (Severe ROW problem). By June, 2018.</i>
2.	400/220kV Pandiabil Grid S/s:	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	By Mar, 2018.
3.	400/220 kV Keonjhar S/S	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By Mar, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.

JHARKHAND

JUSNL has finalised their downstream of 220 KV & 132 KV TL to evacuate the power from Daltonganj (PG) S/S. 400/220Kv Daltonganj (PG) S/S under ERSS III & 220/132 KV Daltonganj (PG) S/S under ERSS XVII are ready. The following downstream work would be constructed by JUSNL to match for drawl of power from 220 KV & 132 KV level from Daltonganj (PG) :

Eastern Region System Strengthening Scheme III :

- Daltonganj (POWERGRID) – Latehar 220Kv D/C
- Daltonganj (POWERGRID) – Garhwa 220kV D/c

Eastern Region System Strengthening Scheme XVII:

- Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/C
- Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c

Contingent plan:

The contingent arrangement for the evacuation of power from Daltonganj Substation shall be connecting through existing 220kV D/C Daltonganj-Latehar (presently charged at 132 kV) line passes through Daltonganj SS (PG), which require the diversion, at a distance of about 1km from Daltonganj(PG) only & It is to be disconnected when the original 132kV line from Daltonganj(PG) to Daltonganj(JUSNL) become ready by M/s R S Infra Private Limited.

JUSNL requested to expedite the transmission line of 220 kV & 132 kV for normalization of the system as required.

The issue was placed in 35th CCM meeting held on 02.08.201 and CCM referred the issue to TCC.

In 142nd OCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	Daltonganj 400/220/132kV S/s:	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By Dec, 2017. Forest clearance is pending, it will take time.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	May, 2018. Forest clearance is pending, it will take time.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	Dec, 2018. Forest clearance is pending, it will take time.
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Matching with S/s, Forest clearance is pending, it will take time.

Charging of ICTs at Daltonganj SS

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

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

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

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

In 142nd OCC Meeting, POWERGRID and JUSNL agreed to settle the issues bilaterally in a separate meeting at Daltonganj on 26th February 2018 and above elements would be charged as per the plan.

JUSNL vide mail dated 27th February 2018 informed that revised plan of the charging of elements at Daltonganj SS. As per the revised plan, the elements would be charged during 6th March 2018 to 9th March 2018.

Members may discuss.

Deliberation in the TCC meeting

OPTCL updated the status 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-Kesinga 220 kV D/C line at Bolangir S/S	<i>Only 7 towers left (Severe ROW problem). By June, 2018.</i>
2.	400/220kV Pandiabil Grid S/s:	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	By Dec, 2018.
3.	400/220 kV Keonjhar S/S	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By May, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.

JUSNL updated the status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	Daltonganj 400/220/132kV S/s:	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By April, 2019.

b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by Dec 2018.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	By May, 2018. However Daltonganj (PG) has been connected to Daltonganj (JUSNL) at 132kV through existing 220 kV Latehar-Daltonganj line as stop gap arrangement till completion of the line.
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019

JUSNL added that ICTs at Dalatonganj(PG) along with both 132 kV Dalatonganj(PG)-Daltonganj(JUSNL) lines charged on 9th March 2018.

ITEM NO. B24:	O&M agreement between BSPTCL and POWERGRID
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The following 132 kV and 220 kV bays of M/s BSPTCL has been constructed by POWERGRID under BSPTCL consultancy project:

1. 2 nos. 132 kV bays at Banka for Sultanganj line : Commissioned on 15.07.2015.
2. 2 nos. 220 kV bays at Gaya for Sonenagar line: Commissioned on 03.09.2016.
3. 1 no. 220 kV bay at Patna for Sipara line: Tentative date of commissioning 28.02.2018.

POWERGRID has been maintaining the above bays since commissioning and therefore, agreement for maintenance of above 132 kV and 220 kV bays at Banka, Gaya and Patna need to be enforced between POWERGRID and M/s BSPTCL.

The draft copy of O&M agreement has already been submitted to the Chief Engineer (Proj./BSPTCL vide our letter dated 03.01.2017 but the signing of agreement could not be materialised.

POWERGRID may explain. BSPTCL may update.

Deliberation in the TCC meeting

After detailed deliberation, it was decided that POWERGRID and BSPTCL should bilaterally settle the issue.

ITEM NO. B25:	Installation of PMUs in Eastern Region under URTDSM project
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In URTDSM project Phase-I, 78 substations and 306 PMUs are envisaged for Eastern Region. 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. Substation wise updated status as furnished in 142nd OCC by POWERGRID is given at **Annexure-B25**.

POWERGRID vide letter dated 27th February 2018 informed the status of implementation as follows:

- Supply is completed for 74 substations with 286 PMUs
- Installation and commissioning work is completed for 62 substations with 246 PMUs
- 43 substations with 191 PMUs have already been integrated
- Installation and commissioning work is on hold for following stations:

Sl. No.	Power Plant	Utility	Installation and commissioning status	Remarks
1	IBEUL, Jharsuguda	Ind Barath Power Energy	On hold	Permission Awaited
2	Jindal, Angul	JITPL	On hold	Permission Awaited
3	Monnet, Angul	Monnet	On hold	Permission Awaited
4	Patratu	NTPC	On hold	Front not ready

In 141st OCC, it was informed that Monnet station is not coming up in near future.

OCC advised POWERGRID to take the custody of the material delivered at Monnet.

In 142nd OCC, POWERGRID informed that the installation could not be done at Jindal, Angul due to space constraint. In the meeting, JITPL representative agreed to resolve the issues.

POWERGRID informed that air-conditioning and lighting arrangement in PDC control room at SLDC-Howrah was not yet provided by WBSETCL for PDC installation. The requirement of air-conditioning and lighting in PDC control room at SLDC-Howrah was intimated to WBSETCL during survey on November-2014 but the same is not yet provided. The matter has also been discussed in 20th SCADA O&M meeting held on 15th December-2018 wherein WBSETCL intimated that the same would be done on priority.

TCC may discuss.

Deliberation in the TCC meeting

JITPL agreed to examine and confirm the space within one week.

Regarding Patratu, it was decided that NTPC and JUSNL would sit together and sort out the issue by March, 2018.

ITEM NO. B26:	Status of bus-bar protection at important 220 kV Sub-stations
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It has been observed that at many 220 kV substations particularly that of STUs, bus-bar protection is either not commissioned or non-functional. The non-availability / non-functionality of bus bar protection, results in delayed, multiple and uncoordinated tripping, in the event of a bus fault. This, in turn, not only results in partial local black out but also

jeopardises the security of interconnected national grid as a whole. The matter was also pointed out during the third party protection audit which is being carried out regularly. A list of such important 220 kV sub-stations as per the first third party audit is placed in the meeting.

In 64th PCC, members updated the status as follows:

Bus Bar Protection not available (record as per third party protection audit)				
Sl No	Name of Substation	Bus protection status	Bar Date of audit	Present Status
Bihar				
1	220 kV Bodhgaya	Not available	28-Dec-12	<i>There is no space available for busbar protection</i>
Jharkhand				
1	220 kV Chandil	Not available	29-Jan-13	<i>LBB available</i>
2	220 kV Tenughat	Not available	12-Apr-13	
DVC				
1	220 kV Jamsedpur	Not available	10-Apr-13	<i>Bus bar protection will be commissioned under PSDF.</i>
West Bengal				
1	220 kV Arambah	Not available	24-Jan-13	<i>Relay available at Site and it would be installed in March 2018.</i>
2	220 kV Jeerat	Not available	20-Dec-12	<i>The scheme will be in service from 1st week of March 2018 after testing.</i>

64th PCC advised DVC to install numerical bus bar protection at 220kV Bokaro, Kalyaneswari, Chandrapura, MTPS and Durgapur S/s to improve the reliability. The latest status is placed below:

DVC		
1	220kV Kalyaneswari	<i>Covered under PSDF.</i>
2	220kV Durgapur	<i>Covered under PSDF.</i>
3	220kV Bokaro	
4	220kV Chandrapura	
5	220kV MTPS	

DVC may place their action plan for 220kV Bokaro, Chandrapura and MTPS.

Deliberation in the TCC meeting

TVNL informed that the Bus-bar protection at Tenughat would be commissioned by April, 2018.

DVC informed that the Bus-bar protection at 220 kV Bokaro, Chandrapura and MTPS S/S would be covered under the DPR for PSDF funding which is under preparation.

ITEM NO. B27:	Replacement of old RTUs in Eastern Region for reporting of RTU/SAS to backup control centres- POWERGRID
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35th ERPC advised ERLDC to convene a separate meeting a form a committee with CTU/POWERGRID as nodal agency for assessment of old RTUs of Central Sector and further necessary action on replacement. Subsequently, two meeting were held at ERLDC,Kolkata on 09th June-2017 and 4th August-2017. The report has been finalized by the committee based on the suggestions received from the various committee members.

In 36th TCC/ERPC meeting, ERPC approved the proposal of replacement of RTU as submitted by the Committee constituted as per advice of ERPC. The scope of Replacement of RTUs in Eastern Region is enclosed at **Annexure-B27**.

It is proposed to implement the above as ‘Upgradation of SCADA/RTUs/SAS in Central Sector stations and strengthening of OPGW network in Eastern Region’ through tariff basis. **Investment made by POWERGRID on this project shall be recovered through tariff.**

In 142nd OCC, POWERGRID informed that they are going to use the same technical specification of RTU as mentioned in the approved report. In the meeting, POWERGRID confirmed that with the completion of replacement/up-gradation of RTU / SAS, the existing problem of inability of dual reporting of each sub-station to both the control Centre (ERLDC main as well as ERLDC backup located at New Delhi) and multiple RTU / SAS in a single sub-station will be resolved.

In 142nd OCC, members approved the proposal and referred to TCC for further concurrence.

TCC may approve.

Deliberation in the TCC meeting

TCC recommended to ERPC for authorizing POWERGRID to undertake the replacement of old RTUs for Eastern Region. Investment made by POWERGRID on this project shall be recovered through tariff. However, the subsequent O&M will be the responsibility of the concerned constituents.

ITEM NO. B28:	Reliable Communication Scheme under Central Sector for Eastern Region
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In line with the status of Implementation of Enquiry Committee Recommendations under clause no: 9.15.2 under Network visualization, the last mile fibre availability to all central sector stations were discussed in 20th SCADA O & M meeting held on 15th December 2017 at ERLDC, Kolkata wherein it was pointed out that POWERGRID has already taken approval for last mile fibre connectivity for some stations mainly GMR, JITPL & Ind Bharat etc. in 36th TCC/ERPC meeting held on 13th/14th September 2017 at Bhubaneswar. Status of last mile fibre connectivity for central sector stations which are still not having fibre connectivity, required for real time SCADA system & AGC, as mentioned below may also be planned.

ISGS	SL NO	NAME OF THE STATION	DISTANCE BETWEEN THE NEAREST COMMUNICATION NODE TO THE UNIT CONTROL ROOM	NEAREST COMMUNICATION NODE	Fiber layed (Y/N)	End Equipment (Y/N)	Availibility Upto SAS/RTU	Distance Between Gen. and SAS for AGC	Distance Between SAS & Communication Equip.
NTPC	1	FARAKKA STPS	2500M	.....NA.....	Y	Y	N	100M	2400M
	2	BARH STPS	2000M		Y	Y	N	1500M	500M
	3	KAHALGAON STPS	1500M		Y	Y	N	1450M	60M
	4	BRBCL NABINAGAR	81.65KM+1000M	SASARAM (PGCIL)	N	N	N	1000M	
	5	TALCHER STPS	660M	.....NA.....	Y	Y	N	650M	10M
NHPC	6	DARLIPALLY STPS	810M	JHARSGUDA (SUNDERGARH)	Y	Y	Y	800M	10M
	7	RANGIT HPS	600M	.....NA.....	Y	Y	N	580M	20M
	8	TEESTA -V HPS	520M		Y	Y	N	500M	20M
IPP HYDRO	9	DIKCHU HPS	32.67KM+550M	RANGPO (PGCIL)	N	N	N	550M	
	10	TEESTA-III HPS	46.28KM+1800M	RANGPO (PGCIL)	N	N	N	1800M	
	11	JORETHANG HPS	27KM+300M	RANGPO (PGCIL)	N	N	N	300M	
	12	CHUZACHEN HPS	21KM+350M	RANGPO (PGCIL)	N	N	N	350M	
	13	TASHIDING HEP	8KM	New Melli	N	N	N	10M	
IPP THERMAL	14	JINDAL ITPL	85KM+1000M	ANGUL (PGCIL)	N	N	N	1000M	
	15	GMR TPS	30KM+800M	ANGUL (PGCIL)	N	N	N	800M	
	16	IND BHARAT EUL	65KM+700M	JHARSGUDA (SUNDERGARH)	N	N	N	700M	
	17	ADHUNIK PNRL	300M	.....NA.....	Y	Y	N	290M	10M
	18	MPL	31.5KM+1500M	MAITHON (PGCIL)	Y	Y	N	1500M	
	19	OPGCL	220M	.....NA.....	Y	Y	Y	200M	20M
NTPC/ JUSNL	20	Lalmatia	79KM+	Farakka	N	N	N		

It is requested that POWERGRID may take up the matter and implement the same at the earliest.

POWERGRID may respond. TCC may discuss.

Deliberation in the TCC meeting

Powergrid informed that the work would be awarded by June, 2018 and would be completed by December, 2019 in a phased manner.

ITEM NO. B29:	Issuance of Taking Over Certificate for DSTPS-RTPS OPGW link by DVC
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In 19th SCADA O & M meeting held on 7th April 2017 at ERLDC, Kolkata, POWERGRID had informed that they were not able to complete the OPGW work in DSTPS – RTPS in DVC Sector under Microwave Replacement Package due to severe ROW issue. POWERGRID further informed that they had mobilized the team several times but work could not be completed due to heavy ROW / compensation issues related to TL construction resulting non-completion of 2 nos. OPGW drum (approx. 9 Km) out of total 69.182 Km. POWERGRID again informed that this issue was discussed in various forums but the solution could not be provided by DVC. DVC informed that they are not able to resolve the issue as this was an old ROW / compensation issue related to TL construction. OPGW work in this link could not be completed due to ROW/Compensation issues since September-2013.

In 36th ERPC meeting, matter was deliberated and DVC informed that they would try to resolve ROW issues by 31st October-2017. Otherwise they would provide the necessary certificate.

In 20th SCADA O&M meeting held on 15th December-2017, POWERGRID informed that DVC had not yet issued TOC for this link. DVC confirmed that they will issue TOC and request for a letter from POWERGRID. POWERGRID issued the request letter on 20.12.2017. However, Taking Over Certificate is yet to be issued by DVC.

POWERGRID may elaborate.

DVC may update.

Deliberation in the TCC meeting

DVC informed that the ROW issue would likely to be resolved after the Panchayat Election of West Bengal.

ITEM NO. B30:	Implementation of 5-Minute Scheduling, Metering, Accounting and Settlement in Eastern Region-- metering issues
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The 15-minute scheduling, metering, accounting and settlement system has been implemented in India in 2002-2003 with genesis in the CERC order on Availability Based Tariff (ABT) mechanism. Government of India (GoI) has set the Renewable Energy (RE) target of 175 GW by 2022. The need for implementing a 5-minute scheduling and settlement at the Inter State level is being felt considering the variability of load and renewable especially considering increasing RE penetration in the coming years. Worldwide, it has been recognized that shorter settlement period such as 5-minute scheduling and settlement offered a lot of advantages, particularly in terms of reduction in the requirement of reserves, robust price discovery and bringing out the value of flexibility.

Technical Committee of Forum of Regulators appreciated the need to move to 5-minute scheduling and settlement and formed a Sub-Group to examine the issue.

The Sub-Group in its meetings decided as below:

- All RPCs may discuss the 5-minute scheduling and settlement
- NPC to follow up the status of amendment of metering standards with CEA and also place the required amendments as agenda item in the next NPC meeting.
- CTU to facilitate collection of the region-wise data on type, vintage and location of existing meters along with proposed procurement process.
- Need for capacity building for better forecasting and scheduling - SLDCs to coordinate with RLDCs/NLDC. Interactive sessions may be organized at different RPCs for generation of ideas and solutions.
- In view of SAMAST implementation, the states who are about to implement the intrastate accounting and settlement system could leapfrog and go for scheduling and settlement at 5- min interval.

In 36th CCM, ERLDC representative gave a presentation on the Implementation of 5-Minute Scheduling, Metering, Accounting and Settlement including the metering issues in the Eastern Region.

However, during the presentation it was felt that the 5-Minute Scheduling involves lots of intricacies as well as challenges. Therefore, ERPC secretariat suggested ERLDC to give a presentation before TCC.

ERLDC may give the presentation.

TCC may discuss.

Deliberation in the TCC meeting

After deliberation, it was decided that ERPC Secretariat would organize a workshop on 5-minute scheduling.

ITEM NO. B31:	Additional 0.5% ROE for early completion of 400 kV D/C(Quad) Nabinagar II – Gaya Transmission line along with bays
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In the 36th CCM, POWERGRID had informed that 400 kV D/C(Quad) Nabinagar II – Gaya Transmission line along with 2 nos. associated bays at Gaya substations under “Associated Transmission System for Nabinagar-II TPS(3x660MW) is going to be charged on **28.02.2018**.

As per the Investment Approval, the commissioning schedule of the project is **38 months** from the date of Investment Approval. The date of Investment Approval is **02.04.2016**. Hence the assets are to be commissioned in the progressive manner upto June 2019 and put under commercial operation w.e.f. 01.06.2019 against which the above asset is anticipated to be commissioned and put under commercial operation by **28.02.2018**.

There is no time overrun from schedule date of commissioning as given in the investment approval. As the asset is commissioned with-in time frame of CERC Regulation 2014-19 additional **ROE 0.5 % may be allowed**.

In 36th CCM, POWERGRID elaborated the issue to members. POWERGRID explained that the Commissioning of 400 kV D/C(Quad) Nabinagar II – Gaya Transmission line along with bays is satisfying the various clauses of tariff order 2014-19.

As per clause 24 (iii) (which was reproduced below):

‘additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid’

After detailed deliberation, no consensus could be arrived regarding additional ROE of 0.5% .

It was decided to refer the issue to the TCC.

TCC may guide.

Deliberation in the TCC meeting

In the meeting, no consensus could be arrived at, regarding additional ROE of 0.5%. The issue was referred to ERPC Meeting.

ITEM NO. B32:	Payment/Receipt Status from various pool accounts in ER
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1) Payment of Deviation Charge – Present Status

The status of Deviation Charge payment as on 06.02.2018 is enclosed at **Annexure – B32**. The current principal outstanding Deviation Charge of BSPHCL & JUVNL is ₹ 12.45 Cr & ₹ 12.30 Cr respectively considering bill up to 21.01.2018. Moreover, interest amounts of ₹ 12.16 Lacs and ₹ 22.45 Lacs (as on 31.01.2018) are also payable by BSPHCL & JUVNL respectively due to delay payment of DSM charges. ERLDC had already issued many reminders to BSPHCL & JUVNL to liquidate the entire Deviation charges.

Further SIKKIM and IBEUL had not paid deviation charges to the Pool in FY 2017-18.

In 36th Commercial Sub-Committee Meeting, ERLDC informed that BSPHCL had partially liquidated their dues and the present outstanding stood around ₹ 10 Cr. The outstanding against JUVNL is also around ₹10 Cr. The interest amount outstanding is around ₹12.16 Lacs and ₹ 22.45 Lacs against BSPCHCL and JUVNL respectively.

As per the decision taken in 36th CCM, ERPC secretariat has already written letters to the concerned constituents for liquidation of their dues within 10 days.

ERLDC may update the latest status.

Deliberation in the TCC meeting

ERLDC informed that the outstanding payment issues regarding BSPHCL and JUVNL have already been resolved.

2) Disbursement of Interest due to delayed payment of deviation charges.

ERLDC had received/recovered interest amount of Rs. 1.43 Cr from BSPHCL and Rs. 1.14 Cr from JUVNL towards interest due to delayed payment of deviation charges in FY 2017-18. Similarly, an amount of ₹28,476 towards interest was recovered from APNRL for FY-2016-17. Same amount was paid towards deviation Charges to the receiving constituents and Ancillary services. Final settlement of delayed payment Interest would be done at the end of 2017-18.

Outstanding deviation charges including interest for all the ER constituents (except Vedanta of ₹ 3, 51,637 towards interest) along with Inter-regional Pool during FY 2016-17 are fully settled.

In 36th CCM, ERLDC requested intervention of GRIDCO for resolution of issues related to Vedanta as it is now an embedded entity of the GRIDCO. GRIDCO representative requested ERLDC to write a letter to Vedanta with a copy to GRIDCO so that the issue could be taken up with appropriate authorities.

ERLDC/ GRIDCO may update.

Deliberation in the TCC meeting

Director (Comm.), GRIDCO assured that the issue would be resolved within a few days.

ITEM NO. B33:	Opening of LC by ER constituents for Deviation Charges Payments
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Clause 10 (4) of CERC Deviation Settlement Mechanism and related matters Regulations, 2014 vide notification No. L-1/132/2013/CERC dated 6th January, 2014 to be implemented from 17.02.2014.

As intimated by ERLDC, the details of LC amount required to be opened in 2017-18 by ER constituents is given in **Annexure – B33**. Letters to this effect has already been issued by ERLDC to the defaulting entities viz, GMR, IBEUL, JUVNL & JITPL. GMR, IBEUL & JUVNL has not opened/renewed the LC. JITPL LC is going to expire on 08.02.18. Rest of the constituents to whom LC were required to open/recoup the LC, have opened/recoup the LC.

In 36th CCM, ERLDC informed that GATI & SIKKIM had opened their LC.

JUVNL, GMR and Ind-Barath were not present in the meeting.

JUVNL, GMR and Ind-Barath may please intimate the latest status.

Deliberation in the TCC meeting

ERLDC emphasized that the requisite amount of LC is required to be opened by ER constituents regarding Deviation Settlement Mechanism.

ITEM NO. B34:	Meter related Issues
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Some of the meter related issues are mentioned below. Due to the meter related issue energy accounting and its validation is being affected.

Issue	Location	Meter No	Line	Responsibility	Problem Since	Remarks
Erroneous data	1.Sundergarh PG	ER-1062-A	765 KV Dharamjaygarh Line-1	PGCIL	15.01.18	Less recording around 10-15%
	2. Patna PG	ER-1232-A	LV side of 500 MVA ICT-3	PGCIL	15.02.18	50 % High Recording
	3. EM Bypass (CESC)	ER-1121-A & ER-1126-A	220 KV Subhasgram(PG) D/C	WB/PG	Charging of Line	Time drift of 14 Hrs since SEM Installation.

	4. Motihari BSPTCL	ER-1256-A & ER-1258-A	132 KV Motihari DMTCL D/C	BSPTCL	Charging of Line	Recording 50 % Less
Non receipt of Data	1. Birpara (WB)	NP-6489-A	132 KV Birpara PGCIL-1	WBSETCL	Almost 3 month	As Informed by WBSETCL Meter is not working
	2.Subhashgram (WB)	ER-1127-A & ER-1003-A	220 KV Subhasgram(PG) D/C	WBSETCL	Charging of Line	Meter is installed in 1st week of Feb 2018 but data is not being sent from WBSETCL
	3. New Town(CESC)	ER-1001-A	220 KV Subhasgram(PG) S/C	WBSETCL	Charging of Line	
	4. Bantala(CESC)	ER-1009-A	220 KV Subhasgram(PG) S/C	WBSETCL	Charging of Line	

ERLDC may explain. PGCIL/BSPTCL/WBSETCL may please update.

Reverse Polarity of meter

Following meters installed at different Locations are connected in Wrong/Reverse Polarity since installation of meters which needs to be corrected. The matter has already been informed to respective Sub stations through e-mail and telephonically.

Location	SEM S. No	Line	Responsibility	Present Status
Jamtara(JUVNL)	NP-6110-A	132 KV Jamtara-Maithon	JUVNL/PGCIL	Same
Raxaul(BSPTCL)	ER-1248-A ER-1249-A	132 KV Raxaul-Motihari DMTCL D/C Line	BSPTCL/PGCIL	Same
Darbhang(DMTCL)	ER-1272-A ER-1273-A	400 KV Darbhanga DMTCL-Muzafarpur D/C Line	DMTCL/PGCIL	Same

The above issue was last discussed in 36th CCM held on 13.02.18. Wrong Polarity may lead to wrong computation of Injection as well as drawl of respective Utilities.

BSPTCL/JUVNL/DMTCL may correct the Polarity of the meters at their end.

PGCIL/ WBSETCL may please further update the status.

Deliberation in the TCC meeting

From the deliberation, it was emerged that most of the related issues have been resolved. ERLDC assured that the rest of the issues would be resolved within few weeks.

ITEM NO. B35:	Implementation of Automatic Meter Reading in Eastern Region
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The implementation of AMR 3rd phase for 37 locations was last discussed in 36th TCC/ERPC meeting held on 13.09.17 & 14.09.17 and it was informed by PGCIL that all 37 locations has been integrated to AMR. There are few locations Like Balimela, Lakisarai(PG), Gyalesing(Sikkim), Sagbari, TUL, Alipurduar, Atri&Samangara wherein AMR is yet to be integrated.

The list of 16 new locations with 68 Meters & 25 existing locations with 68 meters to be implemented in AMR.

Presently we are receiving data from 125 locations out of total 147 locations through AMR. The latest status of data receipt from the locations as below:

- Number of meters for which AMR has been commissioned-820 meters/163 DCUs
- Number of Meter & locations as per LOA/Phase-I 458 meters/97 locations.
- Number of Meter & locations as per LOA/Phase-II 198 meters/19 locations.
- Number of Meter & locations as per LOA/Phase-III 249 meters/37 locations.
- Number of meters for which data is received: 690
- Number of locations for which data is received: 125 locations
- Number of DCUs online-130 DCU
- Number of DCUs offline-33 DCU

After the phase-wise completion of AMR for the locations commissioned, some of the utilities have been asked to discontinue the sending of the weekly SEM data through mail. However, in case of an emergency or communication failure, as the case may be, the utilities may download the data through DCD/Laptop and send it by mail. As such, DCD is required to be kept in charged condition. Of late, there have been issues with the GPRS communication/DCU for around 10 locations.

In 36th CCM, ED, ERLDC lauded POWERGRID for successful completion of the 3rd phase of AMR project .Now all the meters are reporting ERLDC through AMR which, in turn, reduces a lot of difficulties faced by drifting and time correction by the meters.

Presently ERLDC have been receiving data from 125 locations out of total 147 locations through AMR.

PGCIL/ ERLDC may please further update the status.

Deliberation in the TCC meeting

Members noted.

ITEM NO. B36:	Implementation of 4th Phase AMR in Eastern Region
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Already 249 Meters were integrated under 3rd Phase of AMR system across Eastern Region as per LOA placed upon M/S. TCS. Now certain new locations and few new feeders at existing locations, also came within this period which need to be integrated now. Accordingly ERLDC has provided the list of SEM's against location wise (Attached as **Annexure-B36.1**). In total approx. 150 SEM's need to be integrated under 4th phase of integration.

Going by the previous LOA and standard escalation of component price on Year to Year basis a tentative cost estimate prepared which is attached as **Annexure-B36.2** for reference. Total cost estimate comes to **Rs. 93,56,948/- (Rs. Ninety three lacs fifty six thousand nine hundred forty eight only).**

Considering the implementation of 4th phase AMR, it is proposed to finalize the contract with M/S. TCS on Single Tender basis. However, exact value will be intimated afterwards when negotiation will be completed with TCS.

In addition to above, discussion is already going on with M/S TCS regarding quantity variation of the existing contract for execution of at least few meters immediately with same rate of existing LOA. On finalization of the issue, exact quantities of SEM & cost implication for quantity variation will be intimated.

In 142nd OCC, members approved the procurement and decided to apportion the cost among the beneficiaries in the ratio of central sector allocation.

OCC has referred to TCC for further concurrence.

TCC may approve.

Deliberation in the TCC meeting

TCC recommended to ERPC for placement of order to M/s TCS on single tender basis for implementation of 4th Phase of AMR for an estimated cost of Rs. 93,56,948/- (Rs. Ninety three lacs fifty six thousand nine hundred forty eight only). The cost would be apportioned among the beneficiaries of the Central Sector and from the IPPs in the ratio of Central Sector allocation and LTAs entered respectively.

ITEM NO. B37:	Agenda by POWERGRID
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1) Non Opening of LC requisite amount of LC :

Following constituents are required to enhance/ extend LC towards Payment Security Mechanism, as per CERC Regulations:

SI No.	Amount (in Cr.)	
	Present Value of LC	Value of LC Required
North Bihar Power Distribution Company Limited(NBPDCL)	9.73	29.00
South Bihar Power Distribution Company Limited(SBPDCL)	8.89	40.00
Ind-Bharat Energy (Utkal) Limited	--	20.68

Non-availability of LC for requisite value and validity as per CERC Regulations is causing serious problem for POWERGRID to comply with the provisions of CERC Regulations and Loan Covenants.

In 36th CCM, BSPHCL/BSPTCL representatives were not present.

Members decided to take up this agenda in TCC meeting.

POWERGRID may explain.

BSPHCL/BSPTCL may update.

Deliberation in the TCC meeting

BSPHCL informed that the requisite LCs would be opened by 31st July, 2018 after finalization of Accounts of FY 2017-18.

2) Payment of Outstanding dues more than 60 days :

SI No	Amount(in Cr.)	
	Total Outstanding dues	Outstanding due more than 60 days
Vedanta Ltd.	23.81	23.81
GMR Kamalanga Energy Ltd.	16.11	9.52
Navabharat Power Pvt. Limited	8.56	8.56
Jindal India Thermal Power Limited	12.41	12.41
Monnet Power Company limited*	10.70	10.70
LancoBabandh Power Private Limited	6.46	6.46
Ind-Bharat Energy (Utkal) Limited	179.41	165.61
Damodar Valley Corporation(DVC)	146.27	128.83
West Bengal State Electricity Distribution Company Ltd.(WBSEDCL)	93.04	8.03
GRIDCO Ltd	23.26	23.26
Total	520.03	397.19

*The Bills/Letters to their Generation unit at Angul, Odisha & Registered office, Greater Kailash, New Delhi. They have refused to acknowledge.

In 36th CCM, DVC informed that there was a petition before APTEL regarding the LTA dispute.

WBSEDCL requested for the breakup of total outstanding dues.

It was decided to discuss in TCC meeting.

Concerned members may update the latest status.

Deliberation in the TCC meeting

DVC informed that the issue is sub-judice.

WBSEDCL informed that the issue relating to payment of LPSC for an amount of Rs. 7.30 Cr. which is a part of total outstanding dues more than 60 days i.e. Rs. 8.03 Cr. The outstanding amount would be liquidated by next month.

3) O&M Charges of POWERGRID

POWERGRID is doing 400 KV Bay O&M of M/s JITPL at Angul and M/s Indbarath at Sundargarh Sub Stations with Consultancy charges. In spite of several communications, these 02 agencies are not timely paying the Bay O&M Consultancy charges to POWERGRID.

The following are the pending payments to be received by POWERGRID as per bills raised up to the Qtr ending Mar' 18.

Sl No	Name of Agency	POWERGRID Sub Station	Total 400 KV Bays	Payment against Bay O&M charges	Pending interest charges	Total Pending Payment in lakhs
01	M/s JITPL	ANGUL	04	52.91	52.38	105.29
02	M/s Indbarath	SUNDRGARAH	04	88.0		88.0

JITPL and Ind-Barath may respond.

Deliberation in the TCC meeting

After detailed deliberation, it was decided that JITPL & POWERGRID would submit the relevant documents to ERPC Secretariat for study and thereafter a meeting would be convened to sort out the issue.

4) List of Assets commissioned by POWERGRID.

List of Assets commissioned by POWERGRID is enclosed in **Annexure-B37**.

Members may note.

Deliberation in the TCC meeting

Members noted.

ITEM NO. B38:	Non-Opening of LC of requisite value-Agenda by NHPC
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All the beneficiaries are intimated that the calculation sheet of LC for F.Y 2017-18 have been sent which is based upon 105% of average billing w.e.f Jan'2016 to Dec'2016. All the concerned beneficiaries are requested to enhance the existing LC or open the new LC of requisite value before 31st March'2017 and same should be valid up to 31st March '2018.

NBPDCL, SBPDCL and JBVNL have not yet provided the LC of requisite amount and requested to open L.C amounting to Rs.6.85 Crs, Rs 9.07 Crs and Rs.8.47 Crs respectively at the earliest being statutory requirements as per PPA.

In 36th CCM, NBPDCL, SBPDCL and JBVNL were not present.

NHPC may elaborate.

TCC may discuss.

Deliberation in the TCC meeting

BSPHCL informed that they are already having the LC of requisite amount.

For others, if any, NHPC assured that they would try to sort out the issue bilaterally. However, MS ERPC suggested that, in the event of failure for sorting out the issue, NHPC may approach ERPC Secretariat to convene a meeting with the concerned constituents.

ITEM NO. B39:	Augmentation of 400/220kV ICT capacity at Maithon, Patna, Sasaram, Biharshariff
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ICTs of (1X315+1X500) MVA capacity exists at Maithon, Patna and Sasaram. In the peak period, the total power catered by each of the sub-stations is high enough to cause tripping of the parallel 315MVA ICT, if the 500MVA ICT trips. Similarly, if one out of the 3X315 MVA ICTs at Biharshariff trips, the other two ICTs are also likely to trip on overload.

The 315 MVA ICTs at Patna and Sasaram are already planned to be replaced by 500MVA ICTs while a 500MVA ICT is scheduled to be added each at Maithon and at Biharshariff.

19th SCM approved the 3rd 500 MVA ICT at Patna for fulfilling the (n-1) criterion and in view of load growth at Patna area.

CTU informed that in view of changed scenario at first the 3rd 500 MVA ICT will be commissioned at Patna and after that the 2nd 315 MVA ICT will be replaced with 500 MVA ICT.

In 36th TCC, POWERGRID informed the status as follows:

S. No.	Name of the Substation		Status
1	Patna	Argumentation of 315 MVA ICT with 500 MVA ICT	will be replaced in first quarter of 2018-19
		New 500 MVA 3 rd ICT	Award is yet to be placed
2	Maithon	Installation of new 500 MVA 3 rd ICT	Installed in October 2017
3	Biharshariff	Installation of new 500MVA 4 th ICT	under awarding stage
4	Sasaram	Argumentation of 315 MVA ICT with 500 MVA ICT	will be done in 4 th quarter of 2017-18.

POWERGRID may update.

Deliberation in the TCC meeting

POWERGRID updated the latest status as follows:

S. No.	Name of the Substation		Status
1	Patna	Argumentation of 315 MVA ICT with 500 MVA ICT New 500 MVA 3 rd ICT	The 2 nd 500 MVA ICT was installed in place of 3 rd ICT.
2	Maithon	Installation of new 500 MVA 2 nd ICT	Installed in October 2017
3	Biharshariff	Installation of new 500MVA 4 th ICT	Installed by January 2019
4	Sasaram	Argumentation of 315 MVA ICT with 500 MVA ICT	will be done in 1 st quarter of 2018-19.

ITEM NO. B40:	Priority-based commissioning of bus reactor for control of high voltage during lean periods
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The latest status updated in OCC Meetings is given below:

S.N.	Reactor	Status
1	125 MVAR Bus reactor of Jamshedpur	Charged on 1 st December 2017
2	125 MVAR Bus reactor of Biharshariff	
3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	Commissioning expected by April'18.
4.	125 MVAR Bus reactor of Subashgram	Under tendering stage

POWERGRID may update.

Deliberation in the TCC meeting

POWERGRID updated the latest status as follows:

S.N.	Reactor	Status
1	125 MVAR Bus reactor of Jamshedpur	Charged on 1 st December 2017
2	125 MVAR Bus reactor of Biharshariff	Commissioned
3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	Commissioning expected by April'18.
4.	125 MVAR Bus reactor of Subashgram	LOA placed.

ITEM NO. B41:	Status of Transmission projects approved in various meetings
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The status as updated in 36th TCC/ERPC meeting on transmission projects approved to various meetings is given below:

Sl No.	Scheme	ERPC/SCM Meeting	Latest status
1.	Modification of 132 kV Bus arrangement at 220/132 kV Birpara S/s of POWERGRID from existing single main & transfer bus scheme to double main scheme.	28 th ERPC Meeting	Completed in October 2017
2.	Change in proposed the Associated 765 kV System Strengthening Scheme in ER	28 th ERPC Meeting, 18 th SCM	Under TBCB
3.	Retrofitting of pilot wire protection of 132 kV Purnea (PG) – Purnea (BSPHCL) feeders	26 th ERPC Meeting	<i>Commissioned</i>
4.	Transmission System for immediate evacuation of power from North Karanpura STPP (3x660 MW) to Chandwa and Gaya Pooling stations of POWERGRID	25 th ERPC Meeting	<i>400/220kV Jamshedpur (PG) Charged. T/L is under TBCB, POWERGRID informed that Investment approval accorded in Feb'17 BOD. Commissioning of Chandwa is expected in Mar'18, commissioning of Gaya is expected in Sept'19.</i>
5.	Augmentation of transformation capacity at the existing 400/220 kV Jamshedpur (PG) & Sasaram (PG) S/S	25 th ERPC Meeting	<i>POWERGRID informed that for Sasaram- 1st ICT commissioned, 2nd ICT supply expected by June'17. Design review under progress due to failure of ICT at Alstom factory. For Jamshedpur, commissioning expected to be completed by Mar'17.</i>
6.	Establishment of 220 kV MTPS (Extn.) – Muzaffarpur (PG) D/C line (3 rd & 4 th Circuits)	25 th ERPC Meeting	<i>Bay construction at Muzaffarpur completed in consultancy works. To be commissioned in March'17.</i>
7.	Procurement of 110 MVAR, 765 kV Single Phase spare Reactor unit at Sasaram	25 th ERPC Meeting	<i>POWERGRID informed that the work has been awarded on March, 2015 and expected to be delivered by March' 2018.</i>
8.	Establishment of Gazol 220/132 kV S/S in Malda by LILO of Malda-Dalkhola 220 kV D/C line of POWERGRID	25 th ERPC Meeting	Not pertaining to POWERGRID
9.	Modification of 132 kV Bus arrangement at 220/132 kV Purnea S/S of POWERGRID	25 th ERPC Meeting	<i>Commissioned</i>
10.	Single phase spare converter transformer units of 1x234MVA for pole 1 and 1x201.2 MVA for pole 2 at 2x500 MW HVDC Back-to-Back station at Gazuwaka (one for each pole)	25 th ERPC Meeting	<i>NIT completed. Tender evaluation in process.</i>
11.	GIS bays for 400 kV, 125 MVAR Bus Reactor at Baripada	24 th ERPC Meeting	<i>POWERGRID informed that the work is in progress. Target date June 2018.</i>
12.	Eastern Region Strengthening Scheme- XV; Construction of Farakka—Baharampur 400kV D/C (HTLS) line and Subsequent modification of LILOs	17 th SCM & 30 th ERPC	<i>Work awarded and construction of line under progress, expected completion by 1st Qtr. 2018-19.</i>

13.	Commissioning of 2x160 MVA, 220/132 kV Auto transformer at Daltonganj substation along with 4 number of 132 kV line bays	17th SCM & 30th ERPC	<i>Commissioned</i>
14.	Extension of under construction 400kV D/C Latehar-Essar lines up to 400kV Chandwa Pooling station(PG), under the scope of JUSNL	17th SCM & 30th ERPC	90% work has been completed. Balance is pending due to forest Department approval and it would be done by march 2018.
15.	Establishment of 2x500 MVA 400/220kV sub-station at Dhanbad by LILO of both circuits of Ranchi-Maithon RB 400 kV D/C line at Dhanbad	17th SCM & 30th ERPC	Under TBCB
16.	Construction of 6 no. 400 kV line bays and bus splitting (765 kV & 400kV) arrangement at Jharsuguda (Sundargarh) as GIS	17th SCM & 30th ERPC	<i>All 400kV bays commissioned. 765kV bay would complete by September 2018.</i>
17.	Reconductoring of Maithon RB-Maithon 400 kV D/C line with HTLS conductor	17th SCM & 30th ERPC	<i>LOA placed in Oct'17. Investment approval 28 months</i>
18.	Construction of North Karanpura— Gaya 400 kV D/c & North Karanpura -Chandwa (Jharkhand) Pooling Station 400 kV D/c	17th SCM & 30th ERPC	<i>T/L is under TBCB, POWERGRID informed that Investment approval accorded in Feb'17 BOD. Commissioning of Chandwa is expected in Sep'17, commissioning of Gaya is expected in Sept'19.</i>
19.	LILO of both circuits of Rourkela-Raigarh 400kV D/c (2nd line) at Jharsuguda on multi circuit towers for about 17 km	18 th SCM & 34 th ERPC	<i>Completed and charged on 31.12.2017 & 05.01.2018.</i>
20.	Installation of 400/220 kV, 1x500 MVA ICT at Gaya S/s (400kV bay in AIS and 220kV bay in GIS)	18 th SCM & 34 th ERPC	Awarded to M/s Techno and the work is in progress.
21.	Replacement of 400/220kV, 2x315MVA ICTs at Malda S/s with 400/220kV, 2x500 MVA ICTs	18 th SCM & 34 th ERPC	<i>LOA placed in Mar 17. Investment approval June 2019</i>
22.	Installation of 3rd 400/220kV, 1x315MVA ICT at New Siliguri S/s: to be sourced from pool of spare ICTs (400kV bay in GIS and 220kV bay in AIS)	18 th SCM & 34 th ERPC	<i>LOA placed in Mar 17. Investment approval June 2019</i>
23.	Installation of 3rd 400/220kV, 1x315 MVA ICT at Durgapur S/s: to be sourced from pool of spare ICTs	18 th SCM & 34 th ERPC	<i>LOA placed in Mar 17. Investment approval June 2019</i>
24.	Installation of 400/220kV, 2x315MVA ICTs at Jeypore S/s (one each in parallel to the existing ICTs): to be sourced from pool of spare ICTs.	18 th SCM & 34 th ERPC	<i>Would be completed by Nov 2018.</i>
25.	Installation of 400/220kV, 2x315MVA ICTs at Rourkela S/s (one each in parallel to the existing ICTs): to be sourced from pool of spare ICTs	18 th SCM & 34 th ERPC	<i>Would be completed by Nov 2018.</i>
26.	Bypassing arrangement of LILO of Meramundali – Bolangir/Jeypore 400kV S/c line and LILO of one circuit of Talcher – Meramundali 400 kV D/c line at Angul	18 th SCM & 34 th ERPC	<i>Would be completed by Nov 2018.</i>

27.	installation of 400/220kV, 500MVA ICT (4th) at Biharsharif S/s	18 th SCM & 34 th ERPC	Awarded to M/s TBEA
28.	Establishment of 400/220/132kV, 2x500MVA + 2x200MVA new S/s at Sitamarhi	18 th SCM & 34 th ERPC	Awarded to M/s KEC.
29.	2x125MVA, 420kV bus reactors along with bays	18 th SCM & 34 th ERPC	
30.	Darbhangha – Sitamarhi (New) 400kV D/c (Triple Snowbird) line	18 th SCM & 34 th ERPC	Awarded to M/s TATA
31.	Sitamarhi (New) – Motihari 400kV D/c (Triple Snowbird) line	18 th SCM & 34 th ERPC	Awarded to M/s TATA
32.	Establishment of 400/220/132kV, 3x500MVA + 3x200MVA new S/s at Chandauti	18 th SCM & 34 th ERPC	Yet to be awarded.
33.	2x125MVA, 420kV bus reactors along with bays	18 th SCM & 34 th ERPC	
34.	LILO of both circuits of Nabinagar-II – Gaya 400kV D/c (Quad) line of POWERGRID at Chandauti (New)	18 th SCM & 34 th ERPC	Awarded to M/s TATA.
35.	Establishment of 400/220/132kV, 2x500MVA + 2x200MVA new S/s at Saharsa	18 th SCM & 34 th ERPC	Yet to be awarded.
36.	2x125MVA, 420kV bus reactors along with bays	18 th SCM & 34 th ERPC	Yet to be awarded.
37.	LILO of Kishanganj – Patna 400kV D/c (Quad) line of POWERGRID at Saharsa (New)	18 th SCM & 34 th ERPC	Awarded to M/s TATA.
38.	Installation of 400/132kV, 315MVA (3rd) ICT at Motihari substations of Essel Infra	18 th SCM & 34 th ERPC	Yet to be awarded.
39.	Installation of 400/132kV, 315MVA (3rd) ICT at Banka and Lakhisarai substations of POWERGRID	18 th SCM & 34 th ERPC	Awarded to M/s TBEA.
40.	Reconductoring of Rangpo – Siliguri 400kV D/c Twin Moose line with Twin HTLS conductor along with suitable modification in line bay equipment at both ends	18 th SCM & 34 th ERPC	<i>LOA placed in Jan 18.</i>
41.	Conversion of fixed line reactor at Purnea end of Kishanganj – Purnea 400kV D/c line to switchable line reactor	18 th SCM & 34 th ERPC	
42.	a) Nabinagar-II – Gaya 400kV D/c line with Quad moose conductor b) Nabinagar-II – Patna 400kV D/c line with Quad moose conductor c) Additional 1x1500MVA, 765/400kV ICT at Gaya	18 th SCM & 34 th ERPC	a) <i>Commissioned</i> b) <i>June 2018</i> c) <i>July 2018</i>

43.	Derang - Angul 400 kV D/C line along with two 400kV line bays at Angul S/s	18 th SCM & 34 th ERPC	
44.	Installation of 400/220kV, 500MVA ICT (3rd) at Maithon	18 th SCM & 34 th ERPC	
45.	Replacement of existing 50MVA, 220/132 kV ICT at Malda with new 160 MVA, 220/132 kV ICT	18 th SCM & 34 th ERPC	
46.	Installation of 420kV, 1x125MVAR bus reactor at Subhasgram S/s of POWERGRID	18 th SCM & 34 th ERPC	
47.	Provision of 765kV, 80MVAR single phase spare reactor at Ranchi (New) substation of POWERGRID	19 th SCM	
48.	Baharampur (India) – Bheramara (Bangladesh) 2nd 400kVD/c line	19 th SCM	
49.	conversion of 50MVAR (3x16.67 MVAR) bus reactor at Farakka to switchable line reactor to be installed in one circuit of Farakka – Baharampur 400kV D/c line as	19 th SCM	
50.	Additional 400/220kV, 500MVA ICT (3rd) along with associated bays at Patna.	19 th SCM	Commissioned.
51.	Bypassing Durgapur – Farakka (150km) 400kV D/c and Farakka – Kahalgaon (95km) 400kV 1st D/c (ckt-1 & 2) lines outside the switchyard so as to form Durgapur – Kahalgaon 400kV D/c line to limit fault level at Farakka generation switchyard.	19 th SCM	
52.	Installation of 4th 220/132kV, 160MVA ICT at Rangpo	19 th SCM	
53.	LILO of 2nd circuit of Teesta III – Kishanganj 400kV D/c (Quad) line at Rangpo with Twin HTLS conductor	19 th SCM	
54.	400kV multi circuit tower/line at Rangpo end for termination of LILO of both circuits of Teesta III – Kishanganj 400kV D/c (Quad) line at Rangpo.	19 th SCM	

POWERGRID may update.

Deliberation in the TCC meeting

Members updated the latest status as mentioned in above table.

ITEM NO. B42:	Additional Agenda by PGCIL
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1. Diversion of 01 no , 765/400 kV ,500 MVA spare transformer from 765/400/220 kV Gaya ss to 765/400 kV New Ranchi Substation.

One number 500 MVA 765/400Kv Transformer was approved in 24th ERPC meeting dated 26.04.13 for Gaya S/s as regional spare, Now this Spare we are keeping at Ranchi 765/400Kv substation.

As one transformer is already available at Gaya substation and therefore it is felt prudent to keep one no 500 MVA transformer at New Ranchi S/s.

The matter was discussed in 35th CCM meeting held on 02.08.2017 at ERPC Kolkata and members have agreed.

Deliberation in the TCC meeting

TCC noted.

PART C: ITEMS FOR INFORMATION

The following items are placed before TCC for noting and compliance:

ITEM NO. C1 :	Phasing Plan for implementation of new Environmental Norms for Thermal Plants, issued by MOEF&CC
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A committee headed by Chairperson, CEA was constituted by Ministry of Power; Govt. of India vide Office Order No. FU-1/2015-IPC dated 21.09.2016 for preparing a phasing plan for implementation of new environmental norms issued by MoEF & CC in December 2015 regards to SPM, Sox & NOx emissions. The 1st & 2nd meeting of committee was held on 21.10.2016 and 13.12. 2016 respectively.

A special meeting was convened on 13.02.2017 at ERPC, Kolkata wherein a quarter wise tentative plan for installation of FGD has been prepared for the thermal units of Eastern Region and the same was updated in consultation with all ER constituents.

Further the thermal units, which are not in a position to install FGDs due to non-availability of space and would not be able to meet new SOx emission norms are required to be phased out. In the meeting held on 14th March 2017, between Secretary (P) and Secretary (MoEF&CC), it was decided that CEA would prepare the plan for phasing out the aforesaid. Subsequently, a special meeting was convened on 24.03.2017 at ERPC, Kolkata and a phasing out plan has been prepared in consultation with all utilities including RLDCs.

The Region wise lists of phasing plan for implementation of new environmental norms were prepared by RPC's and consolidated by TPE&CC Division, CEA. Some further modification in the phasing plan was also carried out as per communication from the respective State Governments /PSUs/IPP's. The phasing plan was submitted to MoP which was further submitted to MoEF& CC.

Subsequently, a meeting between Secretary (Power) and Secretary (MoEF& CC) was held at New Delhi on 01.09.2017 to discuss the implementation plan. It was decided that implementation plan must be restricted to 31.12.2022.

Therefore, members may go through the existing phasing plan for their respective plants/units for ESP Upgradation and FGD installation in consultation with concerned Power utilities, SLDC & POSOCO and freeze the implementation plan within 31.12.2022.

In 36th TCC, CE, CEA informed that the existing phasing plan needs to be revised to complete the implementation plan within 31.12.2022.

A separate meeting was held at ERPC, Kolkata on 27th February 2018. Minutes of the meeting are available on ERPC website.

The Final Phasing Plan as received from CEA is given in Annexure-C1.

ITEM NO. C2 :	Status of Installation of STATCOM in Eastern Region
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In the 15th meeting of SCM it was agreed to install STATCOM in combination with mechanically switched Reactors (MSR) and Capacitors (MSC) and co-ordinated control mechanism of MSCs and MSRs at Ranchi, Rourkela, Jeypore and Kishanganj substations in Eastern Region.

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

POWERGRID updated the latest status as follows:

Sl No	Location /Sub-Station of POWERGRID in ER	STATCOM - Dynamic Shunt Controller (MVar)	Mechanically Switched Compensation Sl. (MVar)		Latest status
			Reactor (MSR)	Capacitor (MSC)	
1	Rourkela	±300	2x125		<i>Expected to complete by Mid Feb. 2018</i>
2	Kishanganj	±200	2x125		<i>70% civil work completed. 30% switchyard equipment supplied. Expected to complete by December 2018</i>
3	Ranchi(New)	±300	2x125		<i>80% civil work completed. All switchyard equipment, reactors and 3 transformers supplied. Expected to complete by April 2018</i>
4	Jeypore	±200	2x125	2x125	<i>Expected to complete by June 2018</i>

ITEM NO. C3 :	Black-start and restoration procedure of Eastern Region
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The black-start and restoration plan for Eastern Region has been updated in compliance to Section 5.8(a) of the IEGC.

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

ITEM NO. C4 :	Bus Splitting operation of 400kV Maithon Sub-station
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ERLDC vide mail dated 8th January 2018 informed that split-bus mode operation of Maithon 400kV S/stn was implemented w.e.f. 12:23 Hrs of 05-01-18, by opening the sectionalizing CBs between bus sections A and B. Disposition of line/ICTs are as follows:

SI No	Maithon – B (Bus 2 & 4)	Maithon-A (Bus 1 & 3)
1	400 kV Maithon- MPL D/C	2 x 500 MVA 400/220kV ICT
2	400 kV Maithon Ranchi	400 kV Maithon-Mejia I & II
3	400 kV Maithon-Raghunathpur	400 kV Maithon-Gaya D/C
4	125 MVAR B/Reactor-2	400 kV Maithon-Kahalgaon-II
5	400 kV Maithon-Parulia (Durgapur) D/C	400 kV Maithon-Jamshedpur
6	400 kV Maithon-Kahalgaon -I	125 MVAR B/Reactor-1
7	400kV Maithon – Meja-III	

Power flow before and after the bus splitting are enclosed at **Annexure-C4**.

In 141st OCC, ERLDC informed that there is significant reduction in the fault level and placed the fault level details before and after the bus splitting as follows:

FAULT LEVEL	BEFORE		AFTER	
	3 PHASE MVA	3 PHASE CURRENT(KA)	3 PHASE MVA	3 PHASE CURRENT(KA)
MAITHON-A	32067	46.286	16350.08	23.6
MAITHON-B	32067	46.286	24926.944	35.98

ITEM NO. C5 :	Bus Splitting of Kahalgaon STPS Stage I&II, NTPC
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In 24th ERPC meeting held on 27.04.2013, ERPC advised NTPC to go ahead with the bus-splitting scheme as it is a technical requirement for safe, secure operation of the grid.

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

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

- 400/132kV Switchyard package - bid opened on 14.03.16. Awarded on 04.05.2016.
- Site levelling – Site levelling work has been completed.
- Transformer package and Shunt reactor– have been awarded.

In 35th TCC, NTPC informed that the work is in progress as per the schedule and the bus splitting will be completed by December, 2018.

In 140th OCC, NTPC informed that Bus reactor is at site and Banka line I & II would be shifted by March 2018. Bus splitting would be implemented by December, 2018.

ITEM NO. C6 :	FSTPS Islanding Scheme, NTPC
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In 137th OCC, NTPC informed that Farakka unit #3 is also interfaced with Farakka islanding scheme during overhauling. The FSTPS islanding scheme is in service with U#1&3.

ITEM NO. C7 :	Payment/Receipt Status from various pool accounts in ER
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1) Reactive Energy Charges – Present Status.

The updated position of Receipt/Payment of Reactive Energy Charges in the pool as on 06.02.2018 (considering bill up to 21.01.2018) is indicated in **Annexure – C7.1**. The total outstanding receivable on account of Reactive charges from WBSETCL/WBSEDCL is ₹ 2.56 Cr, from GRIDCO is ₹ 41.18 Lac & from SIKKIM is ₹1.77 Lac.

Out of the above amount of ₹ 2.56 Cr w.r.o WBSTCL/WBSEDCL, reactive amount receivable from WBSEDCL prior to 04.01.2016 is ₹ 1.82 Cr (prior to Suo-moto order dated 21.07.2016 of the Hon'ble WBERC in the matter of case no: SM-14/16-17) which is long pending and not cleared yet.

In 36th CCM, ERLDC informed the Reactive amount receivable by the ER Reactive Pool from WBSETCL/WBSEDCL prior to 04.01.2016 is ₹ 1.82 Cr has been pending for a long time. ERLDC requested for early liquidation of the amount.

WBSETCL/WBSEDCL informed they are unable to come to a consensus on this matter of sharing of Reactive energy charges between them for the outstanding dues prior to 04.01.2016.

After the notification of WBERC order, there are no outstanding for the period starting from 04.01.2016. However, as the order is silent for the period prior to 04.01.2016. As a result, WBSEDCL was unable to get resolve the issue.

2) RRAS Account ----Present Status.

The updated position of Payments to the RRAS Provider(s) from the DSM pool and Payments by the RRAS Provider(s) to the DSM pool as on 06.02.2018 (considering bill up to 21.01.2018) is indicated in **Annexure – C7.2**. So far ₹ 208.7 Cr have been settled under RRAS in ER during FY 2017-18.

3) Congestion account - Present Status

The status of congestion charge payment after full settlement is enclosed at **Annexure –C7.3**.

4) Status of PSDF

An amount of Rs 17.59 Cr from Reactive account have been transferred to PSDF after 35th Commercial sub-committee meeting held on 02.08.17. With this the total amount of Rs 939.3 Cr has been transferred to PSDF so far. No amount from Deviation pool has been transferred to PSDF A/c since 29.06.16 and surplus amount in deviation pool is being utilized for settlement of RRAS Bill. The break up details of fund transferred to PSDF (till 06.02.18) is enclosed in **Annexure-C7.4**.

1) Reconciliation of Deviation Accounts.

At the end of 3rd quarter of 2017-18, the reconciliation statement (Period: 01.10.17 to 31.12.17) has been issued by ERLDC on 08.01.18 and statements had been sent to the respective constituents and also uploaded the same at ERLDC website at http://erlhc.org/Commercial-ER/Constituents/Reconciliation_17_18/. The constituents were requested to verify /check the same & comments if any on the same were to be reported to ERLDC by 31.01.2018. The status of reconciliation is enclosed in **Annexure-C8.1**.

BSPHCL, JUVNL, DVC, SIKKIM, GMR, TPTCL (DAGACHU) & JLHEP (DANS Energy) have not signed reconciliation statement for last two or more quarter of 2017-18. Further NHPC, JITPL, BRBCL & TASHIDING have not signed reconciliation statement for 3rd Quarter of 2017-18.

IBEUL & Teesta-III have not yet signed any reconciliation statement since becoming regional entity. Further BSPHCL, DVC & GMR have not signed reconciliation statement for 3rd Quarter of 2016-17.

Above constituents are once again requested to submit the signed reconciliation statement at the earliest. If the confirmation is not received within 2 weeks from the date of issuance of the letters the statements issued by ERLDC will be deemed to have been reconciled.

In 36th CCM, ERLDC informed that the reconciliation statements had been sent to the respective constituents and the same was also uploaded at ERLDC website. However, most of the constituents have not signed reconciliation statement for last two or more quarters of F.Y 2017-18.

BSPHCL, JUVNL, SIKKIM, GMR, TPTCL, JLHEP, BRBCL & TASHIDING did not attend the meeting.

ERLDC informed that DVC & BRBCL have reconciled the statement for pending quarters.

NHPC representative sent the reconciliation statements on 12/02/2018 for the last two quarters. Remaining constituents were requested to submit the reconciliation statements at the earliest.

2) Reconciliation of Reactive Account

At the end of 3rd quarter of 2017-18, the reconciliation statement (Period: 01.10.17 to 31.12.17) has been issued by ERLDC on 09.01.18 and statements had been sent to the respective constituents and also uploaded the same at ERLDC website (www.erlhc.org). Constituents were requested to verify /check the same & comments if any on the same were to be reported to ERLDC.

In 36th CCM, GRIDCO & WBSETCL have reconciled the Reactive Account statements.

SIKKIM representative was absent.

3) Reconciliation of RRAS Account

At the end of 3rd quarter of 2017-18, the reconciliation statement (Period: 01.10.17 to 31.12.17) has been issued by ERLDC on 09.01.18 and statements had been sent to the respective constituents (NTPC and BRBCL) and also uploaded the same at ERLDC website (www.erlhc.org). NTPC & BRBCL has already reconciled the RRAS Account.

4) Reconciliation for STOA payments made to SLDC / STU:

The reconciliation statements of STOA payments for Quarter-I(Apr-17 to Jun-17), Quarter-II(Jul-17 to Sep-17) and Quarter-III(Oct-17 to Dec-17) of 2017-18 have been sent to the DVC, OPTCL and WBSETCL for checking at their end and confirmation.

WBSETCL is yet to confirm for Quarter-II and Quarter-III of 2017-18. DVC and OPTCL is yet to confirm for Quarter-III of 2017-18.

As per clause 15.1 of CERC approved STOA bilateral procedure since the confirmations have not been received within 2 weeks from the date of issuance of the letters the statement issued by ERLDC have been deemed to be reconciled.

In 36th CCM, WBSETCL informed that they would check reconciliation statements of STOA payments and revert back soon. DVC & OPTCL informed that they would get reconciliation completed at the earliest.

5) Reconciliation for payments received from STOA applicants:

The reconciliation statements of STOA payments for Quarter-I(Apr-17 to Jun-17), Quarter-II(Jul-17 to Sep-17) and Quarter-III(Oct-17 to Dec-17) of 2017-18 have been sent to CESC,GMRKEL, JITPL, JUVNL, SAIL-RSP, TSFAP Bamnival, TSFAP Joda, TSL Kalinganagar,MPL and WBSEDCL for checking at their end and confirmation.

- CESC, JITPL, TSFAP Joda and TSFAP Bamnival has confirmed for the entire period.
- GMRKEL and MPL are yet to confirm for Quarter-III of 2017-18.
- JUVNL is yet to confirm for Quarter-II and Quarter-III of 2017-18 .
- SAIL-RSP is yet to confirm for Quarter-I, Quarter-II and Quarter-III of 2017-18.
- TSL Kalinganagar is yet to confirm for Quarter-I and Quarter-II of 2017-18.
- WBSEDCL is yet to confirm for Quarter-II of 2017-18.

As per clause 15.1 of CERC approved STOA bilateral procedure since the confirmations have not been received within 2 weeks from the date of issuance of the letters the statement issued by ERLDC have been deemed to be reconciled. The details is attached in the **Annexure-C8.5**.

Since there is a serious audit objection on non-signing of DSM, Congestion and STOA reconciliation statement it is once again requested that all regional pool members may check and sign the statement sent by ERLDC.

In 36th CCM, JUVNL, GMR & MPL representative were not present.

ERLDC informed that WBSEDCL has confirmed the statement on 12.02.2018.

All beneficiaries were requested to get the statements reconciled so that audit issues could be avoided.

ITEM NO. C9 :	STU and SLDC Transmission & Operating charges
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1) State Transmission Utility Charges and Losses applicable for STOA for FY 2017-18

As available with ERLDC the STU charges and losses to be considered for STOA for FY 2017-18 are as follows:

Name of STU	Intra-State Transmission Charges	TRANSMISSION LOSS (For Embedded entities)
WBSETCL	*	3.10%
DVC	Rs. 80 / MWh	2.68%
OPTCL	Rs. 62.5 / MWh	3.50%
JUSNL	*	#
BSPTCL	*	#
SIKKIM	*	#

* Indicates rates yet to be furnished by concerned State Utilities. Transmission Charges for use of state network shall be Payable @ Rs.80 per MWh as per subsequent Amendment regulation 2009-dated 20.05.2009.

Not yet intimated by the State Utility.

2) State Load Despatch Centre Operating Charges for STOA for FY 2017-18

Name of SLDC	SLDC Operating Charge
West Bengal	**
DVC	**
Odisha	Rs. 2000
Jharkhand	**
Bihar	**
SIKKIM	**

** Indicates rates yet to be furnished by concerned State Utilities. Operating charges at the rate of Rs 1000/-, per day or part of the day for each bilateral transaction for each of the Regional Load Despatch Centre involved and at the rate of Rs 1000/- per day or part of the day for each State Load Despatch Centre involved shall be payable by the applicant as per subsequent Amendment regulation 2009-dated 20.05.2009.

In 36th CCM, WBSETCL intimated that intra-state transmission charges for West Bengal are Rs 1,63,374.36 ₹/MW/Month for LTA and Rs 1361.45 ₹/MW/Day for STOA charges as per the latest WBERC regulation.

WBSLDC informed that the SLDC charges are 1.5% of transmission charges and 0.5% of transmission charges for Renewable Energy Sources.

ERLDC requested constituents to inform immediately regarding revision of transmission loss, Intra state transmission charges, Operating charges of SLDC, etc through letter/email.

Further, it was emphasized in the meeting that there should be uniformity in the tariff pattern throughout the country issued by the state commission and central commission either in MWhr or in Rs/MW.

ITEM NO. C10 :	Procurement of new SEMs
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In 30th ERPC meeting procurement of 965 no of SEM's and 110 nos of Laptop/DCD (in 111th OCC meeting) was approved. Further 31st TCC/ERPC approved the cost sharing mechanism of expenditure on SEM's and DCD/Laptops along with POWERGRID overhead charges @ 15% to be shared by the beneficiaries constituents of Eastern Region in proportional to the share allocation for the month in which the proposal was approved in the ERPC meeting.

In 35th CCM held at ERPC on 02.08.17, PGCIL informed that in 1st phase, 300 meters and 40 laptops with software had been supplied by M/s Genus so far.

Out of 300 meters delivered so far, around 200 meters is already installed/ replaced at different locations in ER. Time drifted meters/Elster meters are to be replaced by Genus meters phase wise.

In 36th CCM, POWERGRID assured that, after delivery of the second lot of Genus meters by the end of the March,2018, action for time correction of heavily drifted meters and implementation of the AMR project be started.

ITEM NO. C11 :	Time correction of SEMs in Eastern Region – Replacement of heavily drifted SEMs
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The issue was discussed in 35th TCC/ERPC meetings and it was felt that the meters with severe drift greater than 10 min need to be replaced first and if replacement is done with Genus then readings are to be collected manually using Laptop till interfacing with AMR is completed. 35th ERPC advised POWERGRID to replace the 10% of the heavily drifted SEMs with new Genus make meters in Phase-I. Subsequently drifted meter replacement work of Phase –I for 24 meters have been completed.

As per decision taken in 134th OCC meeting, another 10% heavily drifted meter list was prepared by ERLDC and given to POWERGRID for replacement. In 141st OCC it was informed that all the Phase-II meters have been replaced. Since issue of integration of Genus meter is already resolved, It was also decided that list of meters to be replaced in next phase may be prepared.

Accordingly List of drifted meters to be replaced in Phase-III is placed at **Annexure-C11**.

In 36th CCM, POWERGRID assured that, after delivery of the second lot of Genus meters by the end of the March, 2018, action for time correction of heavily drifted meters and implementation of the AMR project be started.

ITEM NO. C12 :	Non-submission of weekly SEM readings by Tuesday noon from non-AMR Locations/ faulty AMR locations/ Genus meter locations
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As per IEGC (effective from 3.5.2010) Sub-clause-22 of Clause-6.4 (demarcation of responsibilities), all concerned utilities in whose premises SEMs are installed shall take weekly meter readings and transmit the same to RLDC by Tuesday noon for timely issuance of Deviation account Bill. Significant improvement in timely receipt of SEM data has been seen after AMR implementation at various locations and most of the meter data is being received by Tuesday. Recently Genus meters are installed at many locations in Eastern Region and integration of Genus meter in AMR is under progress, data of Genus meters from those locations which are yet to be integrated in AMR are being sent manually. It was also gathered that if concerned person responsible for data downloading is on Leave or not available, meter data is not being sent from those substations.

However general trend of receipt of meter data in last few months is as below:

By Wednesday or later: Birpara, Baripada, Pandiabili, NTPC Farakka, WBSETCL (North Bengal, PPSP, Kharagpur) & SIKKIM

In 36th CCM, constituents were requested to send the data on time.

WBSETCL assured to do the needful to get the meter readings to ERLDC on time.

ERLDC informed that due to non-integration of Genus meters in AMR, some of the streamlined stations were also going in default mode.

ITEM NO. C13 :	Integration of Genus Make meter in AMR
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In Eastern Region, order for procurement of 965 no of SEM's was placed with M/s Genus Power. First Lot of the meters have already been delivered by Genus and 24 meters of Genus make meter has been installed in different substation in ER. Issue of Integration of Genus make meters in AMR system was discussed in different fora of ERPC since March,2017. In 36th ERPC meeting POWERGRID informed that a meeting would be held on 20th September 2017 wherein the interfacing issues would be resolved by M/s TCS and M/s Genus.

In 137th OCC, POWERGRID informed that a meeting would be held at RHQ Kolkata on 25th September 2017 wherein the interfacing issues would be discussed and resolved by M/s TCS and M/s Genus.

In 25th September 2017 meeting, it was agreed by all concerned that GENUS will implement the required changes at meter level within 15th October 2017 to resolve the pending issues related to Integration of Genus meter with AMR.

In 138th OCC, POWERGRID informed that integration of Genus meters with AMR is pending because time block identification problem. This problem will be resolved through software by TCS on payment basis within 15 days.

In 139th OCC, POWERGRID informed that integration of Genus meters with AMR will be completed within 20 days. POWERGRID added that additional financial implication of 10 Lakhs (approx) has been taken into consideration as per LOA.

In 140th OCC, POWERGRID informed that the integration issues of Genus meters with AMR have been resolved.

ITEM NO. C14 :	Third Party Protection Audit and UFR Audit in Eastern Region
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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	46	85.19
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	27	39.71
Odisha	59	42	71.19
JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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

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

TCC may note.

2. Status of 2nd Third Party Protection Audit:

2nd Third Party Protection Audit for Sub-stations of Eastern Region has been started from July, 2015. Till date (31st Jan 2018) the audit team has completed two nos 765kV, 32 nos of 400 kV, 4 nos 220kV and 11 nos 132kV Sub-stations. The list is enclosed at **Annexure-C14.2**.

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

TCC may note.

3. UFR audit report of OPTCL substations visited on 02.01.2018 & 05.01.2018

The ERPC UFR inspection group visited 220/132/33kV Jayanagar, 132/33kV Sunabeda and

220/132/33kV Terubali substations of OPTCL for UFR Audit on 02.01.2018 & 05.01.2018. During the inspection, it was found that load (average 0.2 MW & peak 0.5 MW) of 33kV Laxmipur feeder is almost negligible compared to the desired load of 8 MW as per the UFR feeder list submitted by SLDC, Odisha.

The report is enclosed at **Annexure-C14.3**.

In 141st OCC, OPTCL was advised to change 33kV Laxmipur feeder with suitable feeder of desired load.

ITEM NO. C15 :	Status of PLCC system installed in Eastern Region
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According to CEA technical standard for construction of electric plants and electric lines - Clause 43(4) (c), transmission line of 220 KV and above should have single-phase auto-reclosing facility for improving the availability of the lines. However, from the tripping details attached June-August, 2016 it is evident that the some of 220kV above Inter & Intra-Regional lines do not having auto-reclose facility either at one end or at both ends. Out of these for some of the lines even PLCC/OPGW is not yet installed and carrier aided protection including Auto re-closer facility is not yet implemented. Based on the tripping of June- August, 2016 and PMU analysis a list of such lines has been prepared and as given below:

List of line where auto reclose facility is not available(Information based on PMU data analysis)							
S. No	Transmission Lines name	Date of Tripping	Reason of Tripping	Owner Detail		Present Status	
				End-1	End-2	OPGW/P LCC Link available	AR facility functional
1	220KV BUDIPADAR-KORBA-II	23.06.16	Y-N FAULT	OPTCL	CSEB	PLCC available	will be activated in consultation with Korba
2	220 KV TSTPP-RENGALI	17.07.16	EARTH FAULT	NTPC	OPTCL		by March 2018
3	220KV BUDIPADAR-RAIGARH	21.07.16	EARTH FAULT	OPTCL	PGCIL	PLCC defective	
4	400 KV KOLAGHAT-KHARAGPUR	03.08.16	Y-N FAULT	WBPD CL	WBSET CL		1 ckt resolved
5	220 KV FARAKKA-LALMATIA	03.08.16	B-N FAULT	NTPC	JUNSL	Yes	Old Relay and not functional. 7-8 months required for auto re-close relay procurement.

6	220 KV MUZAFFARPUR - HAZIPUR - II	10.08.16	B-N FAULT	PGCIL	BSPTCL		Voice established. For carrier required shutdown
7	220 KV ROURKELA - TARKERA-II	11.08.16	B-N FAULT	PGCIL	OPTCL	OPGW available	Expected to install protection coupler by Jan 17
8	220 KV BIHARSARIF-TENUGHAT	07.09.16	B-N FAULT	BSPTCL	TVNL		
9	220KV Bidhannagar-Waria-II			WBSETCL	DVC		
10	220KV Jamshedpur-Jindal-SC						

OPTCL:

1. 220kV Rengali(PG)-Rengali S/Y (Proposal for Commn. in OPGW is pending): *PSDF appraisal committee accepted the proposal*
2. 220kV Indravati(PG)-Indravati(PH) (Proposal for Commn. in OPGW pending): *PSDF appraisal committee accepted the proposal*
3. 132kV Baripada(PG)-Baripada (Tendering in Progress for OPGW): *Contract awarded*
4. 132kV Baripada(PG)-Rairangpur (Tendering in Progress for OPGW): *Contract awarded*

BSPTCL:

- | | | |
|---|---|---|
| 1. 220kV Purnea (PG)-Madhepura line | } | <i>Work is in progress expected to be by December 2017.</i> |
| 2. 220 kV Biharshariff- Begusarai line
<i>commissioned</i> | | |
| 3. 220 kV Biharshariff- Bodhgaya line | | |
| 4. 220kV MTPS-Motiari line | | |
| 5. 220KV Madhepura-New Purnea D/C | | Auto recloser is out of service at Madhepura |
| 6. 220KV Muzaffarpur-Hajipur D/C line | | Auto recloser is out of service at Hazipur |
| 7. 220KV FSTPP-Lalmatia-1 | | Auto recloser is out of service at Lalmatia |
| 8. 220KV Patna-Khagaul-SC | | Auto recloser is out of service at Khagaul |

ITEM NO. C16 :	Final list of links executed/to be executed under Fiber Optic Communication System in lieu of existing Unified Load Despatch & Communication (ULDC) Microwave links in Eastern Region
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In August, 2008, DoT intimated that 2.3 to 2.4 GHz frequency band presently being used for MW communication is to be allocated for Broadband Wireless Access (BWA.) services as per GOI guidelines. Hence, the users of 2.3 – 2.4 GHz are required to vacate the said band. Considering the importance of the matter the issue was deliberated between the Ministry of Power and Ministry of Communication & IT at the level of Additional Secretaries on 4th Nov. 2008. Based on the deliberations held in the meeting, it was decided to vacate the 2.3 – 2.4 GHz frequency band being used for ULDC MW links and to establish FO based communication system in lieu of existing MW links. The issue has also been discussed with constituents at SCADA O&M committee meeting and Technical Coordination Committee

(TCC) meeting of Eastern Regional Power committee (ERPC) held on 23rd Sept,2008 and 20th November 2008 respectively. Subsequently, the constituents of Eastern Region have agreed in principle for implementation of FO based communication network in order to release the MW frequencies in the time schedule agreed with DoT during the ERPC meeting held on 10th - 11th April 2009.

It may be mentioned that after commissioning of ER-ULDC project, considerable number of EHV substations and power plants have been commissioned but the wideband network has not been expanded, therefore, constituents during the discussions for finalization of FO network have expressed the need for implementation of some of the additional FO links other than needed for replacement of the MW links. In the central sector also the number of substations have come up after commissioning of ER-ULDC Project, but only few wideband nodes have been added. Hence there is a need to increase the wideband nodes in the Central Sector. Accordingly, the FO network has been finalized taking this aspect into consideration.

PGCIL vide mail dated 15th February 2018 communicated the final list of links which has been executed/to be executed along with associated communication equipments under the project. The list is enclosed at **Annexure-C16**.

ITEM NO. C17 :	Final list of links executed/to be executed under Fiber Optic Communication System in ER under Expansion of Wideband Communication Network in ER
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In the 17th ERPC meeting, it was deliberated that with fast growing expansion of Power System and considering the technological requirement such as Special Protection Scheme, Phasor Measurement unit etc., it would not be possible to meet the Communication requirement for such applications through PLCC system. Further, in order to facilitate the voice and data connectivity of POWERGRID stations with RLDCs in accordance with IEGC and also considering technological requirement referred above, need of existing wideband communication system is felt essential. This will facilitate connectivity of other users with data collection points on CTUs system as envisaged in IEGC.

Accordingly, POWERGRID proposed a scheme of fibre optic based communication network in Eastern Region for providing voice and data connectivity of all central sector stations in Eastern Region Power Committee(ERPC). The proposal was discussed and approved in 15th and 17th TCC/ERPC meeting held in Sep, 2010 and March ,2011.

PGCIL vide mail dated 15th February 2018 communicated the final list of links executed/to be executed along with associated communication equipments under this project. The list is enclosed at **Annexure-C17**.

ITEM NO. C18 :	Updated Operating Procedure of Eastern Region
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In compliance to section 5.1(f) of the IEGC, the Operating Procedure of Eastern Region has been updated taking into consideration relevant changes in the regional power system as well as that of IEGC and related CERC regulations, till 30-06-2017.

Soft copy of the procedure was emailed to all stakeholders of Eastern Region on 07-07-2017 vide ERLDC letter dated ERLDC/SS/OP/2017/1673.

Main revisions / updating have taken place in the chapters on Frequency Management, Voltage Management, Periodic Reports and Event Information, Network Security and Congestion Management, Scheduling and Dispatch Procedure, Metering and Settlement System and in all Annexure.

As no comments / observations have been received till date, the procedure has been finalized and uploaded in ERLDC website.

ITEM NO. C19 :	Rectification of bend tower of 220kV Rangpo-New Melli D/C line affected due to Land-slide near to Rangpo S/S
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POWERGRID informed that severe land-slide has occurred and almost entire stretch between Loc No. 2(located in top of hill) & Loc No.-1(located in bottom of hill) of 220kV D/C Rangpo-New Melli TL has slided down. Location No.-1(Multi-Ckt D-Type Tower with Strengthened X-arm) is situated just outside the boundary of POWERGRID Rangpo SS. For carrying out the necessary rectification works on urgent basis, POWERGRID has requested for long shut down of the line. Since this is the only line for evacuation of power for Tashiding and Jorethang, these stations would not be able to generate any power during the above shut down.

A special meeting was held on 11th December, 2017 at ERPC, Kolkata wherein Powergrid informed that the land slide had resulted in bending of Stub in B & C leg along with main leg and lower bracing member causing severe damage to the tower. Therefore complete shutdown of 220kV D/C Rangpo-New Melli line is required for rectification of the tower No.1 near to Rangpo S/s. However, after detailed analysis for squeezing the timelines and with the best efforts by POWERGRID, the estimated time to complete the work would be 20-25 days.

POWERGRID availed the shutdown of 220kV Rangpo-New Melli-1 and 220kV Rangpo-Tashiding SC from 18th January 2018 to 1st February 2018 and rectified the damaged tower at location no. 01.

ITEM NO. C20 :	Updated status on SCADA telemetry
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CERC order (7/SM/2014) dated 29.01.2016 regarding the telemetry CERC at sl. no. 18 of their order have mentioned that

"NLDC and respective RLDC are directed to up-date the status of telemetry every month at their web-site and persistent non-availability of data from the generating stations/sub-stations be taken up in RPC meetings for appropriate direction and action".

Accordingly, ERLDC is preparing the monthly telemetry status in the prescribed CERC format every month and it is being uploaded it in ERLDC website;<http://erldc.org/telemetry.aspx>

33rd TCC advised all the constituents to go through the ERLDC website on regular basis and take appropriate action to make the data available to ERLDC.

The latest status of data/telemetry is enclosed at **Annexure-C20**.

ITEM NO. C21 :

HIGHLIGHTS & GRID PERFORMANCE FOR THE PERIOD FROM AUG' 2017 TO JAN' 2018**A) Real time operation:**

During the period under review, power supply position in the region was as under:

	AUG-16	SEP-16	OCT-16	NOV-16	DEC-16	JAN-17	AUG-17	SEP-17	OCT-17	NOV-17	DEC-17	JAN-18
Avg Frq. (Hz)	50.00	50.00	50.00	49.99	49.99	50.00	49.99	49.97	49.97	49.96	49.98	49.98
Pk Dmd (MW)	18900	19168	19634	18799	17502	18100	20187	21015	21078	18422	17769	18844
Energy Consum. (MU/day)	388	390	381	332	325	341	412	435	406	348	346	346
ISGS Gen (MU)	4999	4567	4750	3967	3864	3799	5066	4697	4605	4200	4007	4078
Region Gen (MU)	14829	14280	14961	12903	12920	13067	15316	14913	14044	12566	13141	14069
% increase in Reg Gen.							3.3%	4.4%	-6.1%	-2.6%	1.7%	7.7%

B) System Operational Discipline during the period from Aug-17 to Jan-18

i) The month-wise energy draws of ER constituents were as given hereunder:

	AUG-17		SEP-17		OCT-17		Nov-17		DEC-17		JAN-18	
	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT
BSPHCL	2236.3	2269.7	2357.9	2350.9	2235.6	2255.2	1711.6	1740.8	1798.7	1795.2	2088.5	2091.4
JUVNL	510.0	518.2	509.8	533.8	473.0	492.5	427.4	451.7	418.8	430.8	438.6	462.4
DVC	-717.9	-659.8	-748.5	-707.0	-529.9	-436.5	-784.1	-727.3	-1118.2	-1140.3	-1076.2	-1103.8
OPTCL	776.5	838.0	998.9	1098.8	1162.6	1318.5	962.6	1122.4	909.6	1046.7	758.1	851.0
WBSE TCL	1624.2	1714.8	1518.7	1580.8	1241.2	1329.8	752.9	830.8	512.0	573.7	471.3	520.4
SIKKIM	36.3	33.1	35.0	33.3	36.6	38.3	40.7	46.8	47.8	47.9	52.9	48.5

A) Frequency & Voltage

i) Frequency profile for the period during **Aug-17 to Jan-18** is given hereunder. The frequency mostly remained within the allowable range for the entire period

Month	% of time for which frequency			
	<49.9	49.9-50.05	> 50.05	IEGC band 49.9-50.05
AUG-17	7.31	76.90	15.78	76.90
SEP-17	11.77	78.50	9.73	78.50
OCT-17	13.60	77.21	9.19	77.21

Nov-17	16.91	73.53	9.56	73.53
DEC-17	12.86	73.86	13.28	73.86
JAN-18	11.07	78.01	10.92	78.01

ii) Maximum and minimum voltages recorded at some important 765/400 kV sub-stations were as follows:

	AUG-17		SEP-17		OCT-17		Nov-17		DEC-17		JAN-18	
SUB-STATION/	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN
POWER STN.	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)
(765 KV) NEW RANCHI	801	767	797	768	798	769	800	772	799	767	792	758
MUZAFFARPUR	415	380	414	380	417	385	415	391	417	389	417	388
BINAGURI	421	391	418	397	425	399	434	404	426	399	425	399
JEERAT	421	383	422	378	427	381	431	387	431	394	432	397
MAITHON	420	405	419	404	420	403	423	408	421	407	421	403
BIHARSHARIFF	418	395	418	394	419	397	420	401	421	400	421	399
JAMSHEDPUR	432	416	433	415	434	416	432	417	429	410	426	409
ROURKELA	420	408	420	407	419	408	421	408	422	407	420	404
JEYPORE	424	385	419	384	418	387	425	383	426	380	424	367
MERAMUNDALI	419	406	420	407	420	407	418	408	419	407	419	405
SASARAM	424	401	425	393	410	386	410	384	410	384	433	410
SUBHASHGRAM	429	382	426	379	432	382	436	391	434	397	432	396

D) Constituent-wise demand met is given below:

		AUG-16	SEP-16	OCT-16	NOV-16	DEC-16	JAN-17	AUG-17	SEP-17	OCT-17	Nov-17	DEC-17	JAN-18
BSPHCL	AVG MAX DMD(MW)	3431	3354	3493	3466	3364	3535	3934	4219	4236	3655	3840	4209
	MU/DAY	71	69	70	64	62	65	79	86	82	65	65	75
JUVNL	AVG MAX DMD(MW)	1069	1058	1099	1101	1105	1138	1172	1141	1121	1110	1114	1169
	MU/DAY	22	22	23	23	24	24	24	25	23	23	24	25
DVC	AVG MAX DMD(MW)	2465	2548	2601	2426	2443	2543	2522	2663	2585	2607	2747	2865
	MU/DAY	59	62	62	59	59	62	63	66	64	65	68	71
ODISHA	AVG MAX DMD(MW)	3921	3885	3765	3558	3509	3575	3917	4002	4147	3612	3709	3884
	MU/DAY	78	77	72	67	65	68	81	87	87	71	71	76
W. BENGAL	AVG MAX DMD(MW)	7817	7964	7806	6601	6336	6632	8098	8253	7584	6767	6462	6635
	MU/DAY	158	160	153	119	114	123	161	171	149	123	117	125

E) Inter-regional energy exchange during the review period were as follows: (Figures in MU)

Region	AUG-17		SEP-17		OCT-17		Nov-17		DEC-17		JAN-18	
	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT
NER	105.2	557.2	38.2	463.2	-70.0	378.5	-109.8	338.4	-18.8	483.3	80.9	180.0
SR	637.3	787.1	288.1	338.6	-220.6	227.5	466.0	943.8	769.7	905.8	487.2	918.6
WR	-34.8	-886.5	-30.2	-1020.8	369.3	-1114.4	619.0	-843.4	363.9	-639.5	322.0	-437.7
NR	1670.8	1658.2	1405.8	1667.4	1346.9	1572.8	1185.9	1337.6	1263.7	1356.0	1536.8	1521.4
TOTAL	2378.5	2115.9	1701.8	1448.5	1425.6	1064.4	2161.2	1776.5	2378.5	2105.7	2426.9	2182.3

F) Reservoir levels of important hydro stations in ER during review period (as on last day of the month) is given below:

STATION	MDDL/	AUG-17	SEP-17	OCT-17	Nov-17	DEC-17	JAN-18
	FRL						
BURLA	590/630 FT	619.45	630.00	629.29	628.08	626.97	624.02
BALIMELA	1440/ 1516 FT	1480.10	1479.50	1486.70	1483.90	1479.20	1467.80
RENGALI	109.7/ 123.5 MTR	120.90	122.92	123.26	123.00	122.68	122.25
U. KOLAB	844/ 858 MTR	851.67	852.60	854.06	853.98	853.79	853.05
INDRAVATI	625/ 641 MTR	635.14	635.97	636.45	636.12	635.90	635.24
MACHKUND	2685/ 2750 FT	2735.50	2744.80	2748.80	2748.85	2747.45	2745.95

G) IMPORTANT EVENTS :

- 1) 400kV Barh- Motihari Ckt-II (LILO of 400kV Barh-GorakhPur II at Motihari) charged for the first time at 19:20Hrs 01/08/17.
- 2) 200MVA ICT I at Motihari S/Stn charged for the first time at 20:52Hrs of 01/08/17.
- 3) 125 MVAR Bus Reactor I & II at Rengali charged for the first time at 20:40Hrs and 21:12Hrs of 01/08/17 respectively.
- 4) 125 MVAR Bus Reactor I & II at Motihari S/Stn charged for the first time at 00:08Hrs and 16:35 hrs of 02/08/17 and 03/08/17 respectively.
- 5) 132kV Motihari-Bettiah I & II charged for the first time at 12:20Hrs and 12:21Hrs of 04/08/17 respectively.
- 6) 132Kv Motihari-Motihari (BSPHCL) II charged for the first time at 15:41hrs of 04/08/17.
- 7) 200MVA ICT II at Motihari S/Stn charged for the first time at 18:09Hrs of 06/08/17.
- 8) 400kV Gorakhpur- Motihari ckt-I (LILO of 400kV Barh-Gorakhpur-I at Motihari) charged for the first time at 12:14Hrs of 07/08/17.
- 9) 400kV Barh- Motihari ckt-I (LILO of 400kV Barh Gorakhpur-I at Motihari) charged for the first time at 15:55hrs of 07/08/17.
- 10) 80MVAR Bus Reactor at New Chanditala S/Stn charged for the first time at 19:07Hrs of 18/08/17.
- 11) 400kV RTPS-Ranchi Ckt.-II & III charged for the first time at 19:37hrs and 19:40Hrs of 28/08/17 respectively.
- 12) 400kV Kharagpur-New Chanditala I & II Charged for the first time at 15:21 hrs. of 06/09/17 and at 15:33 hrs. of 07/09/17 respectively.

- 13) 315 MVA, 400/220/33 kV ICT # II at New Chanditala charged for the first time at 17:05 hrs. of 15/09/17.
- 14) 132 kV Baripada - Jaleswar charged for the first Time at 18:48 hrs. of 23/09/17.
- 15) 132 kV Baripada- Bhograi first time charged at 18:54 hrs. of 25/09/17.
- 16) Tashiding Unit I & II (2 X 48.5 MW) (Shiga Energy, Sikkim IPP) has been declared under COD at 0:00 hrs of 18/10/17.
- 17) 220 KV New Melli-Tashiding ckt (SIKKIM) charged for the first time at 17:34 hrs of 12/10/17.
- 18) 500MVA ICT-II at Maithon (old 315MVA Replacement) charged for the first time at 18:42 hrs of 13/10/17.
- 19) 132kV Motihari-Raxual-I & II Charged for first time at 12:31 hrs of 20/10/17 and at 12:44 hrs of 18/10/17 respectively.
- 20) 220kV Tashiding-Rangpo (SIKKIM) charged for first time at 18:22 hrs of 30/10/17.
- 21) 400kV Jharsuguda-Veedanta I & II (Sterlite) charged for the first time at 18:27 hrs and at 18:53 hrs of 06/11/2017 respectively.
- 22) 500MVA ICT II at Pandiabili charged for the first time at 15:46Hrs of 17/11/17. Previously it was charged on 12/07/2016 but it was failed on 21/09/16 due to internal fault. Then the ICT was replaced and first time charged at 15:46 hrs of 17/11/17.
- 23) 125 MVAR Bus Reactor at Jamshedpur first time charged on 15/11/2017.
- 24) 125 MVAR B/R III at Jamshedpur (PG) charged for the first time in parallel with 50 MVAR BR I at 18:12 hrs of 02/12/17.
- 25) 400/220 kV, 315 MVA ICT # 3 at Jamshedpur (PG) charged for first time at 17:43 hrs of 11/12/17.
- 26) 400 kV Jharsuguda – IB_OPGC # I & II charged for first time at 19:05 hrs and at 18:53 hrs respectively of 19/12/17.
- 27) 220 kV Atri - Pandiabili # II charged and loaded for the first time at 18:53 hrs of 19/12/17.
- 28) 220 kV Samagara - Pandiabili # II charged and loaded for the first time at 19:33 hrs of 19/12/17.
- 29) 400/220 kV, 315 MVA ICT # 3 at New Chanditala (WBSETCL) charged for first time at 16:09 hrs. of 20/12/17.
- 30) 400kV Raigarh – Jhasuguda 4 (LILO of 400kV Rourkela- Raigarh 4 at Jhasuguda) charged for first time at 00:18 hrs of 31/12/17.
- 31) 400kV Jharsuguda-Rourkela-IV (LILO of 400kV Rourkela Raigarh IV at Jharsuguda) line charged for first time at 17:06 hrs of 02/01/18.
- 32) 125MVAR Bus reactor at Rourkela (replacement of old 50MVAR Bus Reactor) charged for first time at 0:16 hrs of 05/01/18.
- 33) 400kV Jharsuguda-Rourkela-III (LILO of 400kV Rourkela Raigarh II at Jharsuguda) line charged for first time at 22:19 hrs of 05/01/18.
- 34) 400kV Jharsuguda-Raigarh-III (LILO of 400kV Rourkela Raigarh II at Jharsuguda) line charged for first time at 22:25 hrs of 05/01/18.
- 35) 400kV Sasaram-Daltonganj-II (PG) charged for first time at 23:32 hrs of 31/01/18.
- 36) 63MVAR line Reactor of 400kV Sasaram-Daltonganj-II at Daltonganj side, charged for first time at 23:32 hrs of 31/01/18.
