



भारत सरकार
विद्युत मंत्रालय
पूर्वी क्षेत्रीय विद्युत समिति
GOVERNMENT OF INDIA
MINISTRY OF POWER
EASTERN REGIONAL POWER COMMITTEE



No. ERPC/TCC&Committee/14/2017/ 2692 - 2757

Date: 30th October 2017

To:

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

Subject: Minutes of 36th ERPC & TCC Meetings.

Sir,

The minutes of the 36th TCC & ERPC meetings held on 13th & 14th September 2017 respectively at Bhubaneswar have been issued and uploaded on www.erpc.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,

(A.K. Bandyopadhyay)
Member Secretary

Encl. As above.

To: 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, Bhubaneshwar-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. General Manager, 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-3, 7th 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.

To : 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), South 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. Chief General Manager (O&M), 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, Alankar Place, Boring Road, Patna-800001.
23. Executive Director (ER-II), Power Grid Corporation of India Ltd, CF-17, Action Area-I, Newtown, Rajarhat, Near Axis Mall, Kolkata-700091.
24. General Manager, 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-3, 7th 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-BI, 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 36th ERPC MEETING OF EASTERN REGIONAL POWER COMMITTEE

Date: 14th September, 2017

Venue: Bhubaneswar

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EASTERN REGIONAL POWER COMMITTEE

MINUTES OF THE 36TH MEETING OF EASTERN REGIONAL POWER COMMITTEE

Date: 14th September 2017

Place: Bhubaneswar

In Chair : Shri Hemant Sharma, Secretary, Department of Energy, Govt. of Odisha and CMD, OPTCL & GRIDCO.

Host: GMR Kamalanga Energy Limited.

List of participants is at **Annexure-I**.

Shri Ramesh R Pai, Chief Operating Officer, GMR Kamalanga Energy Limited, welcomed Shri Hemant Sharma, Secretary, Energy Department and CMD, OPTCL and GRIDCO, Shri A. K. Bandyopadhyaya, Member Secretary, ERPC, Shri Vishal Kumar Dev, CMD, OHPC and other distinguished members on dais, TCC members, guests from Bhutan and all other participants to the 36th ERPC meeting. He said GMR Kamalanga Energy Limited was privileged to host the prestigious TCC and ERPC meetings. He highlighted the following in his address:

- Bhubaneswar is called the temple city of India. The city has rich heritage and culture. The city and around has many places of tourist attraction like Lingaraj temple, Raja Rani temple, Udaygiri & Khandagiri, Dhauli. Bhubaneswar and its adjoining places are having long history going back to 300 BC. Over the years Bhubaneswar has grown up as sophisticated smart city yet maintained its old heritage.
- GMR was founded by Shri G.M. Rao and started its corporate journey in 1978 with a jute mill in Sri Kakulam district of Andhra Pradesh. Today GMR is a well diversified group having its presence in airport, energy, transportation and urban infrastructure sectors.
- GMR has built airports in Delhi, Hyderabad and Philippines and operates them. New airports in Goa and Greece are under construction.
- In the energy sector, the installed capacity of GMR group is 4400 MW. 2300 MW is under construction. Two nos. hydel plants are under construction, one in Himachal Pradesh and the other in Nepal.
- GMR has constructed six highways totalling 2850 km. It owns two nos. SEZs, one in Krishnagiri, the other in Kakinada.
- GMR is the owner of IPL cricket team Delhi Dare devils.
- GMR Kamalanga Energy Limited is having 3 units of 350 MW and it supplies power to Haryana, Bihar and Odisha. Like other thermal power plants, shortage of coal and compliance of stricter environmental norms vis-a-vis its cost are major concerns. Utilisation of ash is also a major concern as there is no consumer nearby.
- GMR group is actively involved in CSR activities through 'GMR Varalakshmi Foundation' at 22 locations in India.

In conclusion, he hoped for fruitful deliberations in the meeting and wished the meeting a grand success.

Shri Hemant Sharma, Secretary, Dept. of Energy, Govt. of Odisha and CMD, OPTCL & GRIDCO welcomed Shri A.K. Bandyopadhyaya, Member Secretary-ERPC, Shri Ramesh Pai, Chief Operating Officer-GMR Kamalanga Energy Limited, Shri V.K. Dev, CMD-OHPC, other distinguished members, members of TCC, the guests from Bhutan and other participants to the 36th ERPC meeting. He thanked GMR for making excellent arrangements for the meeting. In his address he highlighted the following:

- The main three divisions of power sector - generation, transmission & distribution have their own set of challenges. If we consider the policy decision on generation, the decision of Govt. of India to add 175 GW of renewables, phasing out or retrofitting of thermal power plants to comply with new environment norms, integration of renewables with the grid are all big challenges. The way the price of solar power is falling, new investment in thermal power projects may become an uncertainty. Presently about 35% of installed capacity in the country is in the private sector. Many IPPs are under financial stress. The question is whether capacity addition of renewable power is to be accelerated or a balance is to be exercised between renewables and conventional power.
- In the transmission sector, the Standing Committees on Transmission Planning of the five regions are playing major roles in development of transmission system across the country. Huge investments are taking place in the transmission sector. But only about 5% of transmission assets are under private sector, though many transmission licensees have come up in recent time. Under PoC regime there appears to be lack of clarity on how investment in transmission in one region is impacting the constituents of other regions in terms of sharing of transmission charges. With new regulations on generation and transmission due in 2019, the time may have come to review the PoC mechanism and sharing of transmission charges also.
- The distribution sector throughout our country reels under high AT& C losses. Many distribution companies are under severe financial stress due to various reasons. We may have to wait and see the outcome of 'UDAY' scheme.
- The power sector as a whole has many challenges. I propose ERPC through its Secretariat may organize seminars/workshops on various issues from time to time inviting experts from power sector to address the issues and also for knowledge sharing e.g. NTPC price pooling, impact of GST on procurement and contracts, new standard bidding document for procurement of solar power etc.

In conclusion, he said he was looking forward to the valued opinions of members on the agenda items for fruitful deliberation and decision. He once again thanked GMR for hosting this 36th ERPC meeting in excellent manner and wished the meeting a grand success.

Shri A.K. Bandyopadhyaya, Member Secretary, ERPC, welcomed Shri Hemant Sharma, Secretary, Dept. of Energy, Govt. of Odisha and CMD, OPTCL & GRIDCO, Shri Ramesh R Pai, COO, GMR Kamalanga Energy Limited, Shri V.K. Dev, CMD-OHPC, other members on dais and all other participants to the 36th ERPC meeting. He said he was attending this ERPC meeting for the last time since he would superannuate from Govt. Service on 31st October 2017. He said he had taken over the charge of Member Secretary, ERPC on 6th September 2011 and gave an account of the major activities undertaken during his tenure. The full text of his speech is annexed at **Annexure-III**.

ITEM NO.A1:	CONFIRMATION OF THE MINUTES OF 35TH ERPC MEETING
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The minutes of the 35th ERPC meeting held on 25th February 2016 at Ranchi were issued and uploaded on ERPC website (www.erpc.gov.in) vide ref. no.ERPC/TCC&Committee/14/2016/2385-2454 dated 28th March 2017.

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

Members may confirm the minutes of 35th ERPC meeting.

Deliberation in the ERPC meeting

Members confirmed the minutes of 35th ERPC meeting.

PART B: ISSUES REFERRED BY TCC IN ITS 36th MEETING HELD YESTERDAY

ITEM NO. B1:	Status of PSDF funding in respect of ERPC training proposals
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34th TCC/ERPC authorized Member Secretary, ERPC to attend the PSDF Appraisal Committee meeting on behalf of ERPC forum and do needful for getting PSDF grant for following schemes of ERPC:

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

Subsequently, PSDF Appraisal Committee has approved the following projects of ERPC and the approval/sanction of grant from Ministry of Power, GOI is awaited.

- 1) Training for Power System Engineers
- 2) Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents

The training for Power System Engineers (Domestic) will be organized in association with CESC and training on Power market trading at NORD POOL Academy will be organized in association with PTC.

Members may note.

Deliberation in the TCC meeting

CE, NPC informed that both the projects have been approved by the Monitoring Committee and the confirmation of the same will be received after issuance of minutes. Ministry's sanction letter is awaited.

MS, ERPC informed that 1st training on Power System Engineers (Domestic) will start tentatively from October 2017 and 1st training on Power market trading at NORD POOL Academy will start from May 2018.

ERPC may note.

Deliberation in the ERPC meeting

Members noted.

ITEM NO. B2:	Status of construction of 400 kV Sterlite-Jharsuguda D/C line
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Several deliberations were held in this forum on the issue of construction of 400 kV Sterlite – Jharsuguda D/C dedicated line of Vedanta Ltd (formerly known as Sesa Sterlite Ltd).

In view of GRIDCO's recommendations, 35th ERPC decided to extend the dead line for removal of LILO up to 15.04.2017 and advised Vedanta to strictly adhere to the schedule for commissioning of the dedicated line in all aspects.

Further, ERPC authorised CTU to open the LILO on 16.04.2017.

The progress was regularly monitored and reviewed in every OCC meetings in consultation with GRIDCO.

Subsequently, a Special meeting was convened on 14.07.2017 to review the scenario in view of failure of 7 towers 400 kV Vedanta-Meramundali D/C line of OPTCL. The minutes of the meeting is placed at **Annexure-B9**.

In the meeting, it was decided that Vedanta should complete the line construction and bay works by 30th July, 2017. Accordingly, Vedanta should apply beforehand for RIO/CEA inspection in 1st week of August, 2017. The target date for charging the dedicated 400 kV Vedanta- Jharsuguda D/C line should be 12th August, 2017. It was also decided that the LILO of Vedanta Ltd may be disconnected from 16th August, 2017.

Further, Vedanta was advised to follow the list of activities as prepared during the meeting for timely completion of dedicated 400 kV Vedanta- Jharsuguda line.

In 136th OCC meeting, OPTCL informed that construction of dedicated 400 kV Vedanta-Jharsuguda line has been completed except stringing of two 400 kV line crossings. The stringing work is being done manually because of severe rains. However, OPTCL assured that the line would be commissioned by September, 2017 in all respects.

OPTCL requested to extend the deadline for removal of LILO till the restoration of 400 kV Vedanta-Meramundali D/C line which is expected by 2nd week of September, 2017.

OCC advised OPTCL not to link the restoration of 400 kV Vedanta-Meramundali D/C line and stressed for early commissioning of 400 kV Vedanta-Jharsuguda line at least by ensuing TCC/ERPC meetings. With above view OCC referred the issue to TCC for further guidance.

In 19th SCM, it was informed that the LTA application of Vedanta will be closed and it will be treated as embedded generator of OPTCL.

GRIDCO may update. TCC may decide.

Deliberation in the TCC meeting

OPTCL informed that Vedanta will complete the line by 27th September 2017 and of 400 kV Vedanta-Meramundali D/C line will also brought into service by 25th September 2017.

TCC advised to commission 400 kV Sterlite –Jharsuguda D/C dedicated line by 30th September 2017 and the LILO will be opened on 1st October 2017.

ERPC may guide.

Deliberation in the ERPC meeting

ERPC endorsed the decision of TCC and decided to extend the dead line for removal of LILO up to 30th September, 2017 and authorised CTU to open the interim LILO connectivity of Vedanta from 00:00 Hrs of 1st October, 2017.

ITEM NO. B3:	Replacement of old RTU in Eastern Region for reporting of RTU / SAS to back-up control centres
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34th TCC felt that in case of failure of ICCP link/other communication equipment, the data availability needs to be assured at Main as well as Back-up control centres.

Subsequently, in Special PRM meeting was held on 14.02.2017 the issue was deliberated and it was emerged that it is quite necessary to replace the old RTUs / SAS at the earliest.

In 35th TCC, After detailed discussion, TCC decided that a committee may be formed by ERLDC with Powergrid as nodal agency for assessment of old RTUs and further necessary action on replacement. Progress reports in this regard are to be placed before TCC on regular basis.

35th ERPC advised ERLDC to convene a separate meeting and form a committee with CTU/Powergrid as nodal agency for assessment of old RTUs of central sector and further necessary action on replacement.

As advised by TCC, a committee with POWERGRID as a nodal agency, was formed for assessment of old RTUs in Eastern Region and further action on replacement. Subsequently, two meetings were held at ERLDC, Kolkata on 9th June 2017 & 4th August 2017.

The report has been finalized by the committee based on the suggestions received from the various committee members and the report is available in ERPC website (<http://erpc.gov.in/report/>).

ERLDC may update. TCC may guide.

Deliberation in the TCC meeting

ERLDC informed that guidelines/action plan have been finalised in the report for replacement of old RTUs in next two years.

Powergrid informed that many places OPGW is 15 years old and those need to be replaced.

TCC advised Powergrid to place the details in lower forums and then place in TCC/ERPC for approval.

ERPC may advise.

Deliberation in the ERPC meeting

ERPC advised all the constituents to initiate the replacement of old RTUs as per the guidelines finalized by the committee.

ITEM NO. B4:	Reliable Communication Scheme under Central Sector for Eastern Region—PGCIL
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34th TCC has approved reliable communication scheme for 525Kms of OPGW based communication network of an estimated cost of Rs.14 Cr. under central sector for Eastern Region as per the following requirements:

- i. Fiber Optic connectivity along with Communication Equipment and associated items from following stations under Central Sector scheme is required to be established for data and voice communication to ERLDC for efficient grid management.

Sl. No.	Name of Power Station	Name of the Line	Voltage Level in kV	Length in km
1	IB Valley (Budhipadar)	IB Valley-Budhipadar		
2	NALCO (Meeramundali)	NALCO-Meeramundali		
3	Jindal (Angul)	Jindal-Angul	400 KV	55
4	GMR (Angul)	GMR-Angul	400 KV	30
5	LANCO (Angul)	LANCO-Angul	400 KV	24
6	Monet (Angul)	Monet-Angul	400 KV	31
7	Indbharat (Jharsuguda)	Indbharat-Jharsuguda	400 KV	50
8	TT Pool (New Melli)	TT Pool-New Melli	400 KV	25
9	Mangon	Mangon-Rangpo	400 KV	70
10	Sterlite Power (Jharsugoda)	Sterlite-Jharsugoda	400 KV	40
		TOTAL		363

- ii. Fiber Optic connectivity along with Communication Equipment and associated items is also required to be established on following lines of Central Sector to provide redundancy in the system for connectivity with SR and NER:

Sl. No.	Name of the Line	Voltage Level in kV	Length in km
1	Part of Angul - Srikakulam (Angul portion)	400	120
2	Alipurduar - Salakati-I	400	42
	Total		162
	Grand Total		525

Subsequently, as informed by POWERGRID they have worked out detailed cost estimate of the scheme and prepared DPR for the same. The estimated cost comes out to Rs. 19.75 Cr (Feb'2017 Price Level). However, actual cost shall be discovered only after bidding process and implementation of the project. Tender activities have also been initiated based on DPR.

Member may please note the same.

Deliberation in the TCC meeting

Powergrid informed that the project cost has been revised in view of Make in India initiative. Powergrid has prepared the DPR for above schemes and the estimated cost is revised to Rs. 19.75 cr.

ERLDC informed that Monnet should be excluded from the scheme as Monnet generating station is not coming up.

TCC advised Powergrid to consider views of ERLDC while finalising the bidding process and exclude those stations, which are not coming in near future.

ERPC may approve.

Deliberation in the ERPC meeting

ERPC endorsed the TCC decision and approved the estimated cost.

ITEM NO. B5:	OPGW on 400kV Kishenganj – Patna line under ‘Eastern Region Fibre Optic Expansion Project’ (Additional Requirement)- PGCIL
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Under ERSS-XXI transmission system new 400kV Sub-station at Saharsa is proposed to be created through TBCB route with LILO of existing 400kV Kishenganj – Patna Transmission Line. OPGW is being proposed for communication connectivity in LILO portion alongwith construction of transmission line portion in said project. The existing 400kV Kishenganj – Patna Transmission Line is not having OPGW presently and 347Km of OPGW is required to be laid to provide connectivity from Saharsa Substation through OPGW in LILO portion.

This link is proposed to be implemented under ‘Eastern Region Fibre Optic Expansion Project (Additional Requirement)’ which was approved in 33rd ERPC. The DPR Cost Estimate (June’16 price level) was Rs. 35.08 Cr comprising 1147 Km of OPGW and associated communication equipment. After inclusion of OPGW laying on 400 kV Kishenganj – Patna line, the network size of ‘Eastern Region Fibre Optic Expansion Project (Additional Requirement)’ would become 1494 Km of OPGW with communication equipment. The revised tentative cost of this project would become Rs. 46 Cr. However, actual cost shall be discovered only after bidding process and implementation of the project. This project cost shall be recovered as a tariff to be determined by CERC and shall become part of the commercial agreement signed by the constituents of Eastern Region in ULDC scheme.

Member may discuss and approve.

Deliberation in the TCC meeting

TCC approved the additional requirement of OPGW for 400 kV Kishenganj – Patna line. After inclusion of same, the network size of ‘Eastern Region Fibre Optic Expansion Project’ would become 1494 Km. The revised tentative cost of this project would become Rs. 46 Cr. for 1494 Km OPGW with communication equipment.

TCC referred to ERPC for approval.

ERPC may approve.

Deliberation in the ERPC meeting

ERPC approved.

ITEM NO. B6:	Report on “Operational Analysis for Optimization of Hydro Resources & facilitating Renewable Integration in India” by the Forum of Load Despatchers (FOLD)
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Forum of Load Despatchers (FOLD) and POSOCO have prepared a report on “Operational Analysis for Optimization of Hydro Resources & facilitating Renewable Integration in India”. The report was released by the Hon’ble MoS (Independent charge) for Power, Coal, New & Renewable Energy and Mines in the meeting of Forum of Regulators (FOR) on 23.06.2017.

The report has recommended that many of the generating stations can achieve a better peaking capacity, while honouring the other conditionality / constraints such as flood control, drinking water & irrigation requirements. It suggested that operational interventions backed by policy and regulatory framework can obtain additional peaking support from the existing hydro power stations, optimize their operations, value flexibility through incentive schemes for peaking & ramping support, synchronous condenser operation, black start service, pumped mode operation, etc. Further, coordinated scheduling w.r.t. reservoir levels and grid requirement, will bring in overall economy.

Subsequently, Ministry of Power has constituted a sub-committee to study and recommend the individual hydro power stations which can be operated to achieve peak load capacity. The sub-committee has held three rounds of meetings with many of the stakeholders and deliberated on the possible optimization. The sub-committee had agreed in principle with the recommendations in the report submitted by FOLD /POSOCO. The sub-committee recognized that there is ample scope for improvement from the existing hydro generation fleet and hence detailed deliberations are required in the RPC/ TCC Meetings for identifying /sensitizing the hydro power stations for better optimization wherein the views of the developers and other stakeholders could formally be obtained. The following aspects need to be discussed:

➤ ENABLING PEAKING AVAILABILITY

- Dispatch of Hydro units to factor demand pattern & trend of electricity prices
- Ensuring unit availability for maximizing utilization (for better valuing of water & flexibility)

➤ RAMPING SUPPORT

- Ensure more hydro units on bar for a given dispatch schedule

- **REJUVENATION OF PUMPED STORAGE HYDRO UNITS**
 - Resuming pumping mode operation at all existing PSP units
- **ANCILLARY SERVICES FROM HYDRO POWER**
 - DSM for storage & pondage type stations
 - Ancillary Services framework for inter-state hydro stations to begin with
 - AGC for CERC regulated hydro stations
 - RoE linked to Primary Response facility for intra-state hydro
 - Incentive for Voltage Control Service, synchronous condenser operation
 - Incentive for black –start & adequate redundancy for black start units (DG set, network connectivity etc.)
- **TRANSMISSION PLANNING FOR HYDRO FLEXIBILITY**
 - Transmission Planning study to factor in all India hydro dispatch at 10% over-load capability
 - Transfer capability assessment to factor in silt issues
 - One- and –half breaker switching scheme for all hydro stations(especially for Gas insulated sub-stations(GIS))
 - Uprating cables between hydro station(GIS) & pot head yard
 - Adequate Reactive Compensation for transmission system evacuating Hydro Generation
- **COMMUNICATION FACILITIES**
 - Reliable (N-1) Communication path from Hydro stations to RLDCs /SLDCs for flow of real time data & voice signal
 - Provision for adequate telemetry from Hydro stations in SERC Hydro Tariff regulations
- **FORECASTING LEADING TO COORDINATED SCHEDULING & DESPATCH**
 - Constitution of Regional Hydro Coordination Forums
 - Each silt affected station to have facility for silt forecasting
 - Intra-basin hydro stations to have plan for coordinated flushing & review it periodically
 - The RoR & pondage type hydro stations & intra –basin hydro stations must have facility for inflow forecasting
- **Multi Part Tariff**
 - Amendment in Tariff Regulations of appropriate commissions with Capacity charge & energy charge for Hydro power in line with CERC Regulations
- **Renovation & Modernization**
 - Every plant to develop a long term R &M plan with provision for periodic review w.r.t flexibility requirement
- **Review of Standards, Hydrological Constraints**
 - The Review to essentially consider N-1-1 secure operation of hydro units, protection adequacy, flexibility needs etc.
 - The Regional Hydro Coordination forum to periodically review the constraints

POSOCO may elaborate. Members may discuss.

Deliberation in the TCC meeting

POSOCO stressed upon optimum utilisation of hydro generation during peak hours. Study reveals that there is a scope of improving the generation during peak hours by OHPC generators Upper Kolab, Indravati, Burla, Chiplima and Rengali.

ERLDC presented the performance of hydro generators of Eastern Region for peak availability against their installed capacity for 2016 and 2017. During presentation, ERLDC highlighted that there is a scope of improvement for Burla, Chiplima and Rengali.

POSOCO advised OHPC/GRIDCO that they may purchase power from exchange during off peak hours as the price is low and conserve the water during off peak hours. The same water may be used for peak hour generation and there will be a huge commercial advantage.

OHPC informed that they are declaring their availability to SLDC, Odisha and SLDC is scheduling the OHPC generators. However, they will try to run their units upto the available capacity during peak hours subjected to volume of the water to be released for irrigation, which is being decided by their irrigation department. OHPC added that some of their units are under major R &M work and take 2 years to bring into service.

ERPC may advise.

Deliberation in the ERPC meeting

Members felt that in due course ER constituents may start adopting recommendations of the committee. It was also stressed that the flexibility of hydro generators must be used for peak support and variation in renewable power.

ITEM NO. B7:	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. The existing phasing plan for Eastern Region is placed at **Annexure-B25**.

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. The revised unit-wise phasing plan as per the above timeline may be forwarded to ERPC (**e-mail: mserpc-power@nic.in**) at the earliest for finalization of the phasing plan.

Members may update and finalize.

Deliberation in the TCC meeting

CE, CEA informed that the existing phasing plan needs to be revised to complete the implementation plan within 31.12.2022. He informed that as per the phasing plan of ER 17 units of NTPC, 8 units of DVC and one unit of CESC is falling beyond 31.12.2022 and need to be revised. The revised plan should be submitted within a week as per directive of ministry.

Further, he pointed that as per WBPDCCL some of the units in its control area are complying the new norms of SO_x. He informed that without FGD it is not possible to achieve the new standard and suggested WBPDCCL to reassure.

GRIDCO informed that NTPC may explore for FGD installation for TTPS units as they have already invested 800 cr.

NTPC informed that the units of Stage-I of TTPS have completed 48/49 years and units of Stage-II have completed 34/35 years as on January, 2017. Till 2014 expenditure of around Rs. 678 crore has been made towards R&M and the station is operating under extended life of around 20 years i.e. upto 2021.

TVNL informed that they have already planned for FGD installation for TVNL units and tendering is in progress. TVNL requested CEA to revise the phasing out plan.

TCC advised TVNL to submit the FGD installation plan within a week.

Further, TCC advised all the constituents to submit the revised plan by accommodating respective generators within threshold date 31.12.22 within a week to CEA with a copy to ERPC otherwise CEA may revise and finalise the phasing plan.

ERPC may guide.

Deliberation in the ERPC meeting

ERPC felt that the matter has been deliberated in detail and Govt of India has passed a Law (new Environmental norms) which we all have to abide by. Therefore, the matter may be discussed by the constituents with their respective generators bilaterally and communicate their revised plan to CEA within the timeline.

ERPC advised all the constituents to adhere to the timeline and furnish their revised phasing plan by accommodating respective generators within threshold date 31.12.2022 to CEA.

Further, ERPC also advised CEA to revise and finalise the phasing plan to complete the implementation plan within 31.12.2022 in case of the revised plan not received within the above timeline.

ITEM NO. B8:	Restoration of 400kV Patna-Kishanganj D/c line—additional agenda by Powergrid
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Powergrid informed that 400kV Patna-Kishanganj D/c line was under massive breakdown due to devastating floods in Ganga and Kankai rivers during July and August 2017 with collapse of several towers and pile foundation. The line has been successfully restored on 4th August 2017 after casting two pile foundations one each in Ganga and Kankai rivers, repair of one massively damaged pile foundation and erection of new towers at various locations.

TCC may note.

Deliberation in the TCC meeting

TCC appreciated the efforts of Powergrid for restoring the line in record minimum time during unfavourable conditions.

ERPC may note.

Deliberation in the ERPC meeting

ERPC noted.

PART C: ERPC Matters

ITEM NO. C1: 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) Bihar State Power Transmission Company Ltd. (BSPTCL)
- ii) South Bihar Power Distribution Company Ltd. (SBPDCL)
- iii) GRIDCO Ltd.
- iv) Energy & Power Department, Govt. of Sikkim (EPD, Sikkim)
- v) Adhunik Power & Natural Resources Ltd. (APNRL)

The above Member Organisations are requested to send their contributions at an early date.

Deliberation in the ERPC meeting

Both BSPTCL and SBPDCL said necessary actions had been initiated and the payments would be made shortly.

GRIDCO, EPD, Sikkim and APNRL were requested to make payments. ERPC Secretariat requested them to e-mail the UTR no. once payments are made for verification and issuing receipts.

ITEM NO. C2: 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) Bihar State Power Transmission Company Ltd. (BSPTCL)
- ii) South Bihar Power Distribution Company Ltd. (SBPDCL)
- iii) GRIDCO Ltd.
- iv) Energy & Power Department, Govt. of Sikkim (EPD, Sikkim)
- v) Adhunik Power & Natural Resources Ltd. (APNRL)

The above Member Organisations are requested to send their contributions at an early date.

Deliberation in the ERPC meeting

Both BSPTCL and SBPDCL said necessary actions had been initiated and the payments would be made shortly.

GRIDCO, EPD, Sikkim and APNRL were requested to make payments. ERPC Secretariat requested them to e-mail the UTR no. once payments are made for verification and issuing receipts.

ITEM NO. C3: 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 vide letters dated 3rd January 2017 and 10th July 2017. But GIPL is yet to respond.

Put up for information of Members.

Deliberation in the ERPC meeting

Members advised Member Secretary, ERPC to follow up with GIPL for payments.

ITEM NO. C4: 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) East North Interconnection Company Ltd. (ENICL) : Rs.16 lakh (for 2017-18)
- iii) Purulia & Kharagpur Transmission Company Ltd.(PKTCL): Rs.16 lakh (for 2017-18)
- iv) Darbhanga Motihari Transmission Company Ltd. (DMTCL) : Rs. 16 lakh (for 2017-18)
- v) Teestavalley Power Transmission Ltd. (TVPTL): Rs.16 lakh (for 2017-18)
- vi) Gati Infrastructure Private Ltd. (GIPL): Rs.16 lakh (for 2017-18)

Member may discuss and decide the course of action on the matter.

Deliberation in the ERPC meeting

Members advised Member Secretary, ERPC to request IBEUL, who has outstanding for two years, to make payment within a definite time and informing that failing which ERPC may take action as deemed fit.

Members advised Member Secretary, ERPC to follow up for payment with the organisations having outstanding for the current year (2017-18).

ITEM NO. C5: Expenditures from ERPC Establishment Fund

The following expenditures for R&M of office/staff quarter have been incurred from 'ERPC Establishment Fund' as per decision in 22nd, 34th ERPC meeting :

Sl.No	Item of Expenditure	Expenditure
1	CPWD R&M Works—release of progressive payment	1,00,00,000.00
2	2 nos. grid connected roof top solar PV system of 10 kW each have been successfully installed on the roof of ERPC Office Building--completed	12,56,000.00
3	Solar Associated Civil Work-repair of roof, provision of MS railing and staircase, etc--completed	8,77,716.00
4	(a) Horticultural Dev. Work (before taxes) (b) Rockery (c) Associated Civil Works --work in progress	20,38,025.00 1,07,320.00 11,28,154.00
5	(a) Alternate drainage for ERPC & ERLDC –internal works (b) KMC charges (estt) (c) Plumbing charges KMC --work in progress	5,52,162.00 25,000.00 70,000.00
6	Fencing with S.R.B.T (razor wire) (before taxes)—Work in progress	1,42,000.00
7	Structural Steel Platform (estt.)—quotations awaited	3,60,000.00
8	Gym cum Yoga Center(estt.)—quotations awaited	5,18,700.00

The following expenditures for Digitization of ERPC office have been incurred from ERPC Establishment Fund based on approvals in 29th ERPC, 33rd ERPC, 34th ERPC meeting:

1	Purchase of Server for App, softwares--completed	3,20,950.00
2	AMC of all software packages-DMS, Deviation, RTDA, Apps, Website of ERPC—Qtn received from M/s PwC, the OEM	22,00,000.00
3	Software package for Reactive A/c, RRAS, Employee Management & e-notesheet & approval under virtual office project (estt before taxes)—Qtn awaited	21,00,000.00
CSR Activities approved by ERPC in its 27 th ERPC meeting:		
1	Donation to ‘Hope Kolkata Foundation’ for purchase of computers and imparting training to underprivileged children for 2016-17--completed	1,55,400.00
Academic Initiative based on decisions in the 31 st , 34 th ERPC meeting, 29 th ERPC meeting, Approval of Chairperson, ERPC		
1	CIGRE membership renewal under Academic Initiative--completed	29,500.00
2	Two officers of ERPC Secretariat and one officer from BSPHCL had undertaken power market study tour to Germany organized by IEX from 26.09.2016 to 30.09.2016	8,88,121.00
3	Training programme for ER constituents in coordination with AIPM, CESC Ltd	6,38,250.00
Miscellaneous		
1	Purchase of Tata Hexa car from M/s Lexus Motors Limited- authorised dealer of Tata Motors --with approval of	19,34,222.00

	Chairperson, ERPC	
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Members may approve.

Deliberation in the ERPC meeting

ERPC approved.

ITEM NO. C6: Authorization for opening of Bank account in respect of two new PSDF projects

Two new projects in Capacity building have been submitted for approval through PSDF funding (1) Capacity Building program at ERPC for Fresh Power System Engineers of Eastern Regional Constituents (2) Capacity Building programmes on Power Market Trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents.

The sanction letter from Ministry of Power is yet to be received. As per the rules of PSDF funding, the funds must be taken in a separate bank account. Member Secretary, ERPC may be authorized to get opened two new bank accounts at any nationalized bank for receiving funds from PSDF for the two new projects.

Members may approve.

Deliberation in the ERPC meeting

ERPC approved.

ITEM NO. C7: Distribution of Prize money to winners of PSCT quiz.

Under the Protection database project, to address issues/handholding in using PSCT software package a Whatsapp group has been opened. Through the Whatsapp group a quiz competition is being held on regular basis to encourage young engineers to develop problem solving skills on PSCT software. Three such competitions have been held. There has been overwhelming response from the participants.

In order to incentivize participation in the quiz a nominal prize money for first three best answers for Rs 1000/-, Rs 700/- and Rs. 500/- has been instituted and paid through the ERPC Fund.

Members may approve the scheme.

Deliberation in the ERPC meeting

ERPC approved.

ITEM NO. C8: Discussions in 19th Standing Committee Meeting (SCM) on Power System Planning for ER

The 19th SCM of ER was held on 01.09.2017. The discussions in the meeting were in line with the decisions of the 5th State Standing Committee meeting held on 03.08.2017, minutes are available ERPC website. The minutes of 19th SCM is awaited.

Further, CTU has placed before ERPC, some modifications in the already approved schemes which are under various stages of implementation and need expeditious approval of TCC/ERPC forum so as to enable to proceed ahead for implementation.

1.0 Termination of 220kV side of 400/220kV, 500MVA ICT-4 at Biharsharif (POWERGRID) substation under ERSS-XX

- 1.1 In the 18th ER SCM, installation of 400/220kV, 500MVA ICT-4 at Biharsharif (POWERGRID) substation by POWERGRID under ERSS-XX scheme was approved.
- 1.2 In this regard, it is to mention that there is no 220kV bus at Biharsharif (POWERGRID) S/s. Accordingly, 220kV side of the existing three ICTs is terminated at Biharsharif (BSPTCL) S/s which is adjacent to Biharsharif (POWERGRID) S/s. Similarly, for installation of 4th 400/220kV ICT, 220kV ICT bay needs to be constructed at Biharsharif (BSPTCL) S/s along with small 220kV interconnecting line section from 220kV ICT bushing to 220kV ICT bay.
- 1.3 Accordingly, termination of 220kV side of the 400/220kV, 500MVA ICT-4 at 220kV bus of Biharsharif (BSPTCL) S/s and laying of small 220kV interconnecting line section from 220kV ICT bushing to 220kV ICT bay under ERSS-XX is proposed by POWERGRID.
- 1.4 The proposal has already been discussed and agreed in the 19th SCM of ER held on 01-09-2017 (minutes awaited).

2.0 Modification in - Transmission System for Transfer of power from generation projects in Sikkim to NR/WR (Part-B1)

- 2.1 In the 18th ER SCM, it was decided to delink the LILO of 2nd circuit of Teesta-III – Kishanganj 400kV D/c (Quad) line at Rangpo from Part-B of the scheme “Transmission System for Transfer of power from generation projects in Sikkim to NR/WR (Part-B)” and take it up as a separate part (Part-B1) of the same scheme as “Transmission System for Transfer of power from generation projects in Sikkim to NR/WR (Part-B1)”.
- 2.2 LILO of first circuit of Teesta-III – Kishanganj 400kV D/c (Quad) line at Rangpo has been made using HTLS conductor. Accordingly, keeping in view the anticipated problems in construction due to hilly terrain as well as requirement of land for foundation, construction of 2nd LILO line with HTLS would be a better techno commercial solution.
- 2.3 The two 400kV LILO lines are being constructed on two separate D/c towers, however, in view of RoW constraints near Rangpo the two LILO lines are proposed to be terminated on a Multi Circuit tower at Rangpo end. Multi circuit has been considered along with LILO of first circuit.
- 2.4 In view of the above, following is proposed:
 - (i) LILO of 2nd circuit of Teesta III – Kishanganj 400kV D/c (Quad) line at Rangpo with Twin HTLS conductor
 - (ii) 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.
- 2.5 The proposal has already been discussed and agreed in the 19th SCM of ER held on 01-09-2017 (minutes awaited).

3.0 Revision in capacity of 4th 220/132kV ICT at Rangpo S/s under ERSS-XX

- 3.1 In the 18th SCM of ER, installation of 4th 220/132kV, 160MVA ICT at Rangpo S/s was planned under ERSS-XX in order to meet the N-1 reliability criteria. About 250MW power from three generation projects viz. Chuzachen (99MW), Bhasmey (51MW) and Dikchu (98MW) would be injected at 132kV level at Rangpo S/s.
- 3.2 POWERGRID has informed that 220/132kV, 160MVA ICT which is about 89-109MT cannot be transported to Rangpo S/s, as the maximum load bearing capacity of the bridge en-route Siliguri to Rangpo is only about 80MT. Thus, it is proposed that 220/132kV, 100MVA ICT may be installed at Rangpo in place of 220/132kV, 160MVA ICT as the 4th ICT under ERSS-XX. As such, the 220/132kV, 4x100MVA transformation capacity would be enough to meet the N-1 security criteria.
- 3.3 The proposal has already been discussed and agreed in the 19th SCM of ER held on 01-09-2017 (minutes awaited).

Member may approve.

Deliberation in the ERPC meeting

ERPC ratified the minutes of 5th meeting of Standing Committee on Transmission Planning for State sectors held on 03.08.2017.

ERPC approved the above three proposal.

ITEM NO. C9: 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.	CESEC - 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 – hosting 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. -New member wef 2017-18

As per roster APRNL was to host the 36th TCC and ERPC meetings. In the last (35th) ERPC meeting APRNL cited some financial constraints to host the 36th TCC & ERPC meetings but agreed to host meetings at a later date jointly with any other member organisation. Members may discuss and decide on the host(s), the dates and the venue for the next TCC & ERPC meetings.

Deliberation in the ERPC meeting

Members noted that DVC had last hosted the meetings (22nd) in August 2012 and requested DVC to host the next (37th) TCC and ERPC meetings in January 2018. Members advised Member Secretary, ERPC to finalise dates and venue in consultation with DVC and Chairperson, ERPC.

Representative of DVC acknowledged the request of members and agreed to take up the matter with higher authority for confirmation.

PART D: ITEMS FOR INFORMATION

The following items were noted by ERPC members:

ITEM NO. D1:	Status of DPR for PSDF funding in respect of Sikkim & JUSNL
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In 33rdTCC, JUSNL and Sikkim informed that they need funds for upgradation of protection system. TCC, therefore advised JUSNL and Sikkim to prepare DPR within a month for upgradation of protection system and send to NLDC for PSDF funding with intimation to ERPC Secretariat.

In 35th TCC, Sikkim informed that they need some help from ERPC secretariat and assured that DPR will be submitted by 15th April 2017. Secretariat assured to extend their help.

JUSNL informed that M/s PRDC, consultant is preparing the DPR and they will submit the DPR to PSDF nodal agency by 15th April, 2017.

Subsequently, JUSNL vide letter dated 16.05.2017 and 13.06.2017 has submitted the DPR for Renovation & upgradation of JUSNL protection system and Reliable communication network of JUSNL respectively.

In line with the discussions in the 34th & 35th ERPC meeting, ERPC Secretariat has issued appraisal letter on 04.08.2017 for Submission of DPRs for Renovation & Modernization of Protection system including up-gradation of sub-station equipment and Reliable communication network of E&PD, Sikkim.

Sikkim and JUSNL may update.

Deliberation in the TCC meeting

CE, NPC informed that PSDF Monitoring Committee has approved 138.13 Cr. for Renovation & upgradation of JUSNL protection system.

Sikkim informed that they have already submitted DPRs for Renovation & Modernization of Protection system including up-gradation of sub-station equipment and Reliable communication network of E&PD, Sikkim.

CE, NPC added that the DPRs are under scrutiny by the PSDF Appraisal Committee.

ITEM NO. D2:	Implementation of on-line tripping incident reporting system in Protection Database Management System
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The Protection Database Management System (PDMS) has been made operational w.e.f 31.03.2017. USER-ID had been allotted to all the nodal officers as nominated by the respective authorities to facilitate the access of PDMS. Also, several training programme on PDMS were organized for all the nodal officers at ERPC, Kolkata as well as at respective sites.

Protection Database Management System (PDMS) is also having the provision for on-line tripping incident reporting system. The tripping incident reporting page can be accessed in PDMS through the ERPC protection database website: **www.erpc-protectiondb.in:8185**. The link is also available in ERPC website on right side bar.

As decided in 53rd & 54th PCC Meetings, details of the tripping incident along with the DR, EL events and other reports are to be uploaded through this online portal. ERPC vide letter dated 12th July 2017 also informed all the constituents to submit the tripping incident report along with DR (comtrade files), EL and other relevant files through this on-line portal with immediate effect.

In 57th PCC, all the constituents were advised to submit the tripping incident report along with DR (comtrade files), EL and other relevant files through this on-line portal.

PCC decided to consider both hard copy and details uploaded in the on-line portal for the month of August, 2017.

PCC decided to consider only the on-line tripping incident report as received in PDMS from 1st September, 2017 as a compliance of clause 5.2(r) & 5.9 of IEGC.

- A.** The status of online-tripping reporting in PDMS for the disturbances of July, 2017 as per 58th PCC meeting is as given below:

Sl No	Name of the incidence	Name of the Constituent	Status
1.	Repeated disturbances at 400kV Teesta-III, Dikchu and Rangpo on at 00:30 hrs on 16-07-2017, 15:56 hrs & 19:11 hrs on 24-07-2017 and 10:08 hrs on 27-07-2017	Teesta Urja, Dikchu and Powergrid	Not uploaded in PDMS
2.	Disturbance at 400 kV Bokaro S/s on 13-07-17 at 20:18 hrs	DVC	Uploaded in PDMS
3.	Disturbance at 400kV Patna on 03-07-17 at 18:53 hrs	Powergrid	Uploaded in PDMS
4.	Disturbance at 220 kV Lalmatia S/s on 15-07-17 at 09:40 hrs & 13:54 hrs	JUSNL and BSPTCL	Not uploaded in PDMS
5.	Disturbance at 220 kV Lalmatia S/s on 03-07-17 at 18:32 hrs	JUSNL	Not uploaded in PDMS
6.	LBB operation at 220 kV Tarkera S/s on 31-07-17 at 11:24 hrs	OPTCL	Not uploaded in PDMS
7.	Bus bar protection operation at 220 kV Dalkhola S/s on 19-07-17 at 10:50 hrs	Powergrid	Not uploaded in PDMS

In 58th PCC, all the constituents were once again advised to upload the tripping details along with DR (comtrade files), EL and other relevant files in PDMS on-line portal.

TCC may advice.

Deliberation in the TCC meeting

ERPC Secretariat placed the status of online-tripping reporting in PDMS for the disturbances of August, 2017 as follows:

SI No	UTILITY NAME	TRIPPING INCIDENT	OCCURRENCE DATE	UPLOAD STATUS IN PDMS	PDMS ISSUES
1	OPTCL	220kV MERAMUNDALI-BSL 1 Tripping	01-08-2017	YES	NIL
2	JUSNL	220kV HATIA-RANCHI and 220kV HATIA-PTPS Tripping	03-08-2017	YES	NIL
3	TEESTA-3 (TUL)	400kV TEESTA-3 to Dikchu Line Tripping	04-08-2017	YES	NIL
4	WBPDC	Disturbance at Bakreswar TPP	11-08-2017	Detailed report entered, DR file not uploaded	NIL
5	PGCIL-ER1	Disturbance at Sasaram	12-08-2017	NIL	Unable to access the website, PRDC to resolve by 15/09/2017
6	BSPTCL	Tripping of 220kV Purnea-Madhepura D/C	14-08-2017	NIL	NIL
7	TEESTA-3 (TUL)	400kV TEESTA-3 to RANGPO Line Tripping	16-08-2017	YES	NIL
8	BSPTCL	Tripping of 132kV BANKA-SULTANGANJ D/C and ICTs at BANKA	21-08-2017	NIL	NIL
9	DVC	Disturbance at Waria S/S	27-08-2017	NIL	NIL
10	DVC	Multiple tripping at CTPS-B and Bokaro A	28-08-2017	Tripping Incident created, DR file not uploaded	NIL
11	NHPC	Power Failure at Rangit Station	30-08-2017	NIL	NIL
12	NHPC	Power Failure at Rangit Station	31-08-2017	NIL	NIL

Teesta Urja informed that they are facing problem in uploading the tripping details. Teesta Urja was advised to inform its difficulties officially.

TCC also advised all the constituents to communicate to ERPC Secretariat immediately, if they are facing any problem in uploading the tripping details in PDMS.

TCC advised all the constituents to upload the tripping details of a month in networks under respective control area along with DR (comtrade files), EL and other relevant files in PDMS on-line portal, otherwise it will be considered as violation of compliance of clause 5.2(r) & 5.9 of IEGC.

ERPC Secretariat informed that some relay setting data for protection database is still pending from constituents. The latest status of data collection as updated in special meeting on 7th September 2017 is given below:

1. Odisha: 92.77%
2. Jharkhand: 91.34%
3. West Bengal: 92.152%
4. Bihar: 70.617% (Powergrid ER-I data is pending)
5. Sikkim: 92.408%

TCC felt that Ministry of Power is funding the project and it would be a gross negligence of ER constituents, if complete relay setting data were not provided for implementation of the project.

TCC advised all the constituents to send the pending relay setting data to ERPC and also to check & verify their respective Substation data (relay data/SLD/CT/PT etc) as available in PDMS regularly and submit their observations as per the decision of 07.09.17.

B. The status of DR and EL data received from the constituents for single line tripping which occurred in the month of July,2017 is given below:

SI No.	Line Name	Local end utility	Remote end utility	Date	Time	Type of fault	DR/EL status	
							Local end	Remote end
1.	220KV FSTPP-LALMATIA-I	NTPC	JSEB	18/07/2017	9:50	R-N FAULT	No	No
2.	220KV CHANDIL-RANCHI-I	JSEB	ER-I	21/07/2017	3:56	R-N FAULT	Yes	Yes
3.	220KV CHANDIL-STPS(WBSEB)-I	JSEB	WBSEB	21/07/2017	3:56	R-N FAULT	Yes	No
4.	400KV FARAKKA -KAHALGAON-IV	NTPC	NTPC	01/07/2017	23:09	Y-N FAULT		No
5.	400KV RANCHI-ROURKELA-I	ER-I	ER-II	02/07/2017	16:32	Y-N FAULT	No	Yes
6.	765KV NEW RANCHI-DHARAMJAIGARH-II	ER-I	WR	05/07/2017	15:41	Y-N FAULT	Yes	No
7.	400KV BIHARSARIFF-MUZAFFARPUR-I	ER-I	ER-I	06/07/2017	14:12	Y-N FAULT	No	No
8.	220KV BARIPADA-BALASORE-II	ODISHA PROJECT(PG)	OPTCL	07/07/2017	11:39	R-N FAULT	No	Yes
9.	220KV TSTPP-MEERAMUNDALI-II	NTPC	OPTCL	08/07/2017	16:09	R-N FAULT	Yes	No
10.	400KV PATNA-BALIA-II	ER-I	NR	09/07/2017	15:08	Y-N FAULT	No	No
11.	400KV PATNA-BALIA-III	ER-I	NR	09/07/2017	15:16	R-N FAULT	No	No
12.	220KV DEHRI -GAYA-II	BSPTCL	ER-I	09/07/2017	15:33	B-N FAULT	No	Yes
13.	220KV ARRAH-PUSAULI-S/C	ER-I	ER-I	10/07/2017	9:13	R-N FAULT	No	No
14.	400KV LAKHISARAI-KhSTPP-II	ER-I	ER-I	11/07/2017	8:15	Y-N FAULT	No	No
15.	220KV BUDHIPADAR-KORBA-II	OPTCL	WR	15/07/2017	21:31	R-N FAULT	No	No
16.	220KV GAYA-SONENAGAR-II	ER-I	BSPTCL	20/07/2017	14:24	B-N FAULT	No	Yes
17.	400KV KOLAGHAT-KHARAGPUR-II	WBSEB	WBSEB	28/07/2017	9:04	Y-N FAULT	No	No
18.	220KV CHANDIL-RANCHI-I	JSEB	ER-I	29/07/2017	20:16	R-N FAULT	Yes	No

In 58th PCC, all the constituents were advised upload the details along with DR and EL in PDMS on-line portal.

TCC may advice.

Deliberation in the TCC meeting

TCC advised all the constituents to use the PDMS on-line portal for uploading the single line tripping details along with DR (comtrade files), EL and other relevant files for all trippings of August 2017 onwards. Otherwise, it will be considered as violation of compliance of clause 5.2(r) & 5.9 of IEGC.

ITEM NO. D3:	Disturbance at 765 kV Dharmajaygarh S/s on 15-06-17 at 14:23 hrs
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At 14:23:12.417, distance protection of Dharamjaigarh-Jabalpur Ckt-3 issued trip command on R-Y fault at both ends. At Dharamjaigarh end, main CB tripped, however, none of the poles of Tie CB tripped, thus all the connected lines tripped on Zone-3 from remote end. LBB did not operate at Dharamjaigarh due to failure in DC supply. Fault was cleared after tripping of 765kV Dharamjaigarh-Ranchi - II after 4 minutes from the fault.

In 57th PCC, Powergrid explained that R-Y fault occurred in 765kV Dharamjaigarh-Jabalpur Ckt-3, main CB at Dharamjaigarh end tripped, but none of the poles of Tie CB tripped. LBB at 765kV Dharamjaigarh also not operated due to some problem in DC supply. As a result, all the connected lines of 765kV Dharamjaigarh tripped from remote end on Zone-3. But Ranchi end of 765kV Dharamjaigarh-Ranchi line- II tripped after 4 minutes.

Powergrid informed that Ranchi end relay observed power swing hence the power swing blocking was initiated and blocked the relay to trip the line.

PCC felt that fault in 765kV network was cleared after 4 minutes is not acceptable. Moreover Powergrid did not send any report to ERPC and ERLDC in this regard.

PCC advised Powergrid to analyze the tripping and submit a detailed report to ERPC and ERLDC.

Powergrid vide mail dated 30th Aug 2017 informed that during investigation of delayed tripping, the zone 3 reach setting was found slightly less than the calculated zone 3 reach value. This might caused delay in pickup and drop of zone 3.

The zone 3 reach setting has been corrected.

Powergrid may submit the report & explain.

Deliberation in the TCC meeting

Powergrid informed that they have submitted the details and DR on 30th August 2017.

ERLDC informed that though they have sent the DR, the relevant DR containing the tripping instant is missing. ERLDC asked that how 765kV Dharamjaigarh-Ranchi line- II only observed the power swing when parallel line (765kV Dharamjaigarh-Ranchi line- I) had successfully cleared the fault in time.

Powergrid informed that line length of both the ckts are different and the zone 3 setting of 765kV Dharamjaigarh-Ranchi line- II at Ranchi end was slightly less than the calculated zone 3 reach value.

TCC felt that delayed fault clearance of fault in 765 kV level may be resulted to serious threat for grid security.

TCC advised Powergrid to take the issue seriously and present detail analysis on delayed tripping of 765kV Dharamjaigarh-Ranchi line- II form Ranchi end with all the explanation in forthcoming PCC meeting scheduled to be held on 20th September 2017.

ITEM NO. D4:	Repeated pole blocking at HVDC Sasaram
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S. No.	Tripping Date	Tripping Time	Brief Reason/Relay Indication	Restoration Date	Restoration Time	Duration
1	17-07-17	5:41	System failure alarm	17-07-17	6:38	0:57
2	17-07-17	16:35	System failure alarm	17-07-17	17:34	1:00:00
3	20-07-17	8:29	System failure alarm	20-07-17	9:25	0:56
4	31-07-17	18:34	System failure alarm	31-07-17	19:45	1:11:00
5	29-05-17	00:15	System failure alarm	29-05-17	01:24	1:09:00
6	25-04-17	06:03	Auxiliary supply failure	25-04-17	07:14	1:11:00
7	01-04-17	09:15	Tripped due to Valve cooling system problem	01-04-17	12:56	3:41:00
8	11-04-17	23:32	System failure alarm	12-04-17	00:17	0:45:00
9	30-04-17	03:24	Due to tripping of filters on eastern side	30-04-17	16:13	12:49:00
10	12-01-17	13:36	Blocked due to unbalanced auxiliary system	12-01-17	15:06	1:30:00
11	14-01-17	05:03	Tripped due to system failure alarm	14-01-17	08:57	3:54:00
12	10-01-17	13:23	Filter problem at Sasaram	12-01-17	11:24	46:01:00
13	03-01-17	11:00	To take pole in service in HVDC mode	10-01-17	07:42	164:42:00
14	03-12-16	12:15	Converter control protection operated	03-12-16	13:22	1:07:00
15	06-12-16	19:12	Tripped due to CCP east side M1, M2 major alarm and observed sys fail in East side	06-12-16	20:55	1:43:00
16	19-12-16	12:43	Due to tripping of 400 kv Biharshariff-Sasaram-II	19-12-16	13:35	0:52:00
17	05-11-16	04:51	System fail alarm	05-11-16	06:57	2:06:00
18	22-11-16	12:12	CCP Main-2 major alarm	22-11-16	13:35	1:23:00
19	26-11-16	09:36	CB filter bank burst	27-11-16	11:31	25:55:00

Regarding pole block on 25-05-17, there is back up in the station in the following form:

132/33 KV Pusauli	315 MVA ICT-2 tertiary	01 No. DG set of 1500 KVA	Battery available for valve cooling system only. It can provide auxiliary supply for at max 2 minutes.
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In 58th PCC, Powergrid was advised to submit the details to ERLDC and ERPC.

Detail report not yet received from POWERGRID.

Powergrid may explain.

Deliberation in the TCC meeting

Powergrid informed that pole blocking at HVDC Sasaram system is being initiated on system failure alarm. They have contacted OEM and OEM is also failing to conclude and rectify the issue.

Powergrid added that since the HVDC control system is quite old and it is not operating satisfactorily the HVDC control system at Sasaram needs to be upgraded. Powergrid requested TCC to consider.

TCC felt that Powergrid has not placed any report in the PCC meeting and advised Powergrid to take the issue seriously.

TCC opined that system upgradation needs detailed discussion in lower forums and advised Powergrid to place the details in forthcoming PCC meeting scheduled to be held on 20th September 2017.

ITEM NO. D5:	Agenda related to issues of JITPL
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a) Frequent failure of JITPL data to ERLDC:

Real time SCADA data from JITPL is frequently failing (May-17: 24% & June-17 (up to 18th): 62%). It was observed that

- Microwave terminal equipment at Talcher HVDC end is getting hanged quite frequently causing failure of real time data to ERLDC.
- The direct line from JITPL to Angul 765/400 kV pooling station is available but real time SCADA data is yet to be diverted through this path.
- The voice connectivity from JITPL to ERLDC is yet to be provided / integrated with Hot Line Voice Communication installed by M/s Orange.

In 135th OCC, it was informed that the data is coming through Powergrid substations via PLCC link. Because of some commercial issues between JITPL and Powergrid the direct link is yet to be restored.

OCC advised JITPL and Powergrid to settle the commercial issues bilaterally and restore the JITPL data availability to ERLDC.

In 136th OCC, JITPL informed that presently they are communicating ERLDC with a radio link, which is an interim arrangement and is not reliable and they are trying hard to maintain it. However, they had planned to make PLCC system operational for uninterruptable communication to ERLDC. But Powergrid is not allowing them to shift NSK modem of PLCC system from Bolangir(PG) S/s which is the property of JITPL.

JITPL added that they were in process of settling the commercial issues with Powergrid and requested Powergrid to cooperate.

OCC took serious note of the issue and felt Powergrid should not interrupt in establishing the proper communication system for SCADA/telemetry data to ERLDC. OCC felt that Powergrid should not take up commercial issue by staking the grid security and advised Powergrid to take up the commercial issue separately.

TCC may guide.

Deliberation in the TCC meeting

TCC took serious note of the issue and felt Powergrid should not interrupt in establishing the proper communication system for SCADA/telemetry data to ERLDC. TCC felt that Powergrid should not take up commercial issue by staking the grid security and advised Powergrid to take up the commercial issue separately.

Powergrid agreed to allow JITPL to shift their PLCC modem from Bolangir S/s within a week.

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

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

b) Delay in restoration of 400kV JITPL-Angul line II on 04-08-2017

JITPL vide letter dated 09.08.2017 informed that they have received the charging code from ERLDC at 23:39 hrs on 04.08.2017. But the line could not be charged due to no communication from Angul S/s.

After repeated pursuation the line was charged at 11:19 hrs on 05.08.2017.

In 136th OCC, JITPL informed that this is the third time Powergrid has delayed to charge the JITPL line because of pending commercial issues.

ERLDC informed that till date no information was made available by Powergrid on delayed charging of the line. In OCC meeting also Powergrid failed to give satisfactory explanation on delayed charging of the line.

OCC took serious note of delayed charging of the line and endangering the grid security by forcing a 2x600 MW power plant of JITPL connectivity through a single line.

After detailed deliberation, OCC felt that at the stake of grid security, Powergrid should not take up the commercial issues.

Further, OCC advised Powergrid to submit the reason for delayed charging at the earliest and decided to refer the issue to TCC.

Powergrid may explain.

Deliberation in the TCC meeting

Powergrid informed that Angul end was continuously receiving DT from JITPL and they were not able to trace the reason till next day due to severe rain.

However JITPL informed that though there was no fault in line and the line was cleared for charging but Powergrid personals did not respond even to the phone calls.

ERPC and ERLDC informed that Powergrid had not placed any report and not given proper explanation till date.

TCC took serious note of delayed charging of the line and endangering the grid security by forcing a 2x600 MW power plant of JITPL connectivity through a single line.

TCC advised Powergrid not to repeat this kind of operation and to report to ERPC/ERLDC for all such sort of incidences in future.

ITEM NO. D6:	Unsatisfactory SPS operations and generation relief in case of disturbances at 400kV Teesta-III, Dikchu and Rangpo
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At 16:14 hrs on 17-06-17

400 kV Teesta III - Rangpo S/C tripped during SPS testing at Teesta III. Unit #1, #2, #4, #5 & #6 at Teesta III & Unit #1 & #2 at Dikchu tripped due to loss of evacuation path. DT was received at Rangpo.

At 15:49 hrs on 24-06-17

There was a B-N fault in 400kV Teesta III – Dikchu line near to Dikchu end. Teesta III end cleared the fault in zone 2 time i.e. 0.5sec. Simultaneously, 400 kV Teesta III – Rangpo S/C line tripped from Teesta III end on backup OC protection, at time delay of 0.5sec and sent DT to Rangpo end.

In 57th PCC, members felt that fault in 400kV Teesta III – Dikchu line should be cleared from Dikchu end and advised Dikchu to check the relay.

At 00:30 hrs on 16-07-2017:

400 kV Teesta III - Dikchu S/C (tripped only from Teesta III end) and Unit #I at Dikchu tripped due to operation of cable differential protection (B phase current 1.1 kA at Teesta III) resulting generation loss at Unit # II at Dikchu due to loss of evacuation path.

At 15:56 hrs on 24-07-2017:

400 kV B/C at Teesta III tripped on receipt of SPS signal resulting in tripping of unit I, II & IV. However both circuits of 400 kV Rangpo - Binaguri D/C were in service. Flow in 400 kV Rangpo - Binaguri D/C was around 800 MW/Ckt. Rangpo personnel verbally confirmed non increment of TX counter dedicated for transmitting SPS signal.

At 19:11 hrs on 24-07-2017:

Due to Rotor Earth Fault in Unit #5 of Teesta III there was a dip in DC Voltage during Unit 5 Start-up (DC Field Flushing) leading other synchronized units to No Load Operation.

At 10:08 hrs on 27-07-2017:

At 10:08 hrs 400 kV Rangpo – Binaguri – II tripped due to B-N fault. (DEF, F/C at Rangpo and DT received at Binaguri). After tripping of circuit – II, power flow in 400 kV Rangpo – Binaguri – I became more than 850 MW (1700 MW approx.) and SPS – I (generation reduction at Teesta III, Dikchu, JLHEP and Chujachen.) got activated resulting tripping of one unit at each power plant at Chujachen, JLHEP and Dikchu. Due to non-tripping of any unit at Teesta III, power flow in 400 kV Rangpo – Binaguri – I remained more than 850 MW for more than 500 ms and SPS – II got activated resulting tripping of 400 kV Teesta III – Rangpo S/C followed by tripping of remaining units at Teesta III and Dikchu due to loss of evacuation path.

In 58th PCC, Teesta-III and Dikchu representatives were not available for discussion.

PCC took serious note of non-submission of the complete details of the disturbances and absence of Teesta-III and Dikchu representatives in the meeting.

It was informed that only Teesta III station has received SPS trip signal at 15:56 hrs on 24-07-2017 but Rangpo end confirm non-transmission of SPS signal. Hence it may be a spurious tripping.

In other instance at 10:08 hrs on 27-07-2017, Teesta-III did not provide generation relief when 400 kV Rangpo – Binaguri – II tripped and SPS operated at Rangpo.

PCC felt that this kind of inadvertent SPS operations of Teesta-III may endanger the grid security and advised Teesta-III to check and review the SPS at their end.

PCC opined that in view of repeated unsatisfactory SPS operations during last few months, the threshold limit on power flow through 400 kV Rangpo – Binaguri D/C line needs to be reviewed.

In last few OCC meetings, Teesta-III, Jorethang, Dikchu, Chuzachen & Powergrid were not submitting the healthiness certificate for Rangpo SPS as per the decision of special meeting of 21.06.2017.

The issue is placed before TCC for further guidance.

TCC may guide.

Deliberation in the TCC meeting

Teesta-III explained that on 24-07-2017 at 15:56 hrs the tripping was initiated at Teesta III because of PLCC maloperation due to fault in DC system during DC field flushing.

Teesta-III informed that now they are following to AC field flushing in order to avoid the DC voltage dip.

Teesta-III explained that on 27-07-2017 at 10:08 hrs, they have not received the SPS signal due to some problem in PLCC panel. The same has been rectified and successfully operated on 19th August 2017.

Further Teesta-III suggested that second PLCC channel may also be used for transferring the signal from Rangpo to Teesta III to improve the reliability. Teesta III added that spare channel is already available.

Teesta III added that other disturbances were not related to SPS operation.

TCC advised Teesta III and Dikchu to attend the OCC and PCC meetings regularly and the proposal of utilising the spare channel may be placed in lower forum.

TCC advised Teesta-III, Jorethang, Dikchu, Chuzachen & Powergrid to submit the healthiness certificate for Rangpo SPS as per the decision of special meeting of 21.06.2017.

ITEM NO. D7:	Status of Bus Splitting schemes in Eastern Region
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A. Bus Splitting of Powergrid Sub-stations

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

- 400 kV Maithon ---Completed
- 400 kV Durgapur--Completed
- 400 kV Biharshariff— *Completed in May, 2017.*

During third party protection of 400kV Maithon S/s on 18th May 2017, it was observed that bus splitting scheme at 400kV Maithon S/s has been commissioned but not in service.

In 134th OCC, it was informed that the bus splitting scheme at 400 kV Maithon & Biharshariff will be operationalized after the getting the consent from CTU.

In 5th State Standing committee meeting held at ERPC on 3rd August 2017, CTU informed that they will re-study the bus splitting arrangement and put the study result in upcoming meeting.

In 19th SCM, CTU informed that the study is under progress and the action plan will be shared shortly for operationalization of Bus-splitting schemes.

Further, CEA informed that the Fault level of FSTPS bus is also violating its limits. At present the same will be mitigated by bypassing the 400 kV Durgapur-Farakka D/C and 400 kV Farakka-Kahalgaoon D/C lines at FSTPS and making them direct 400 kV Durgapur-Kahalgaoon D/C line.

Powergrid/CTU may update.

Deliberation in the TCC meeting

CTU informed that they have carried out the study and decided to operationalize bus splitting scheme at 400 kV Maithon and Biharsharif. They will issue the letter to ERLDC for operationalization within a day.

CTU added that as the fault level is not severe at 400 kV Durgapur so it is not required for the time being.

ERLDC informed that they will carry out internal study and operationalize the bus splitting schemes at 400kV Maithon and Biharsharif one by one with close monitoring of the system behaviour.

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

In 130th 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 leveling – *Site leveling 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.

NTPC may update.

Deliberation in the TCC meeting

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

ITEM NO. D8:	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 is in progress.

Sikkim assured that they will 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.

Sikkim may update. TCC may guide.

Deliberation in the TCC meeting

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

ITEM NO. D9:	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) and (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.

35th TCC advised ERPC secretariat to convene a separate meeting at ERPC, Kolkata on 2nd March, 2017 at 12:00 hrs to resolve the issues.

Accordingly, a special meeting was convened on 2nd March, 2017 at ERPC Kolkata. The minutes is placed at **Annexure-B11**. In the meeting following were concluded:

A) BiharSharif S/s End (Deposit work of JUSNL):-

It was informed that due to delay in payment the project was delayed and in the meanwhile one new 132 kV Sekhpura-BiharSharif line has been constructed in the same corridor of proposed modified 400 kV line. Therefore for crossing of the 132 kV line one additional tower needs to be constructed with the additional cost of Rs. 48.5 Lacks approx.

JUSNL agreed to do the additional payment of Rs. 48.5 Lacks very soon.

Powergrid informed that the work will be completed in two months after the receipt of additional payment of Rs. 48.5 Lacks. Further, Powergrid pointed that there may be additional cost for ROW issues for stringing of line near 400 kV BiharSharif.

B) Tenughat End (TVNL Consultancy project):-

Powergrid informed that the total completion of work will take 3 months (tentatively by June, 2017) from date of receipt of balance payment. The detail schedule of work is as given below:

- a) One no new 250 MVA ICT: The work will be completed by June, 2017.
- b) One no. old 250 MVA ICT: The ICT was of 1992 make. The healthiness certificates from Tenughat will be given within a week and commissioning work of the same will be completed by June, 2017.
- c) 50 MVAR old LR: The LR is 25 years old and need to be shifted to new plinth area. The shifting will be done by TVNL within March, 2017. Subsequently, on receipt of healthiness certificates from Tenughat the LR will be commissioned by June, 2017.

Further, Powergrid pointed that the present 220 kV Tenughat- BiharSharif line is in very bad shape and need strengthening before charging at 400 kV level.

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.

Subsequently, TVNL vide letter dated 25.08.17 has intimated that for getting connected at 400 kV BiharShariff (PG) there may be certain wheeling & commercial charges so the commercial issues needs to be resolved.

Powergrid/JUSNL/TVNL may update.

Deliberation in the TCC meeting

Powergrid informed that Biharshariff end is ready for charging.

TVNL informed that TVNL end will be ready by November 2017.

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

ITEM NO. D10:	Status of PLCC system installed in Eastern Region
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1) Restoration of PLCC system of important lines of JUSNL

I) 220 KV Chandil –Santaldih line

WBPDCCL vide mail dated 24.07.2017 informed that single phase Auto Reclose feature has been put into service at 220 KV STPS-Chandil feeder at STPS end at 14:02 hrs. on 14.07.17.

In 136th OCC, it was informed that the PLCC has been put into service w.e.f 14.07.2017.

II) 220 KV Ramchandrapur-Joda line

In 136th OCC, OPTCL informed that the PLCC system has been implemented on 27th July 2017.

TCC may note.

Deliberation in the TCC meeting

Members noted.

2) Restoration of PLCC system of important lines of OPTCL and BSPTCL

In 35th TCC, OPTCL updated the latest status as follow:

1. Jeypore(PG)-Jayanagar (Commn. in OPGW exists): SDH tendering is in progress
2. Rourkela(PG)-Tarkera (Commn. in OPGW exists): SDH received, will be *commissioned by March, 2017*
3. Rengali(PG)-Rengali S/Y (Proposal for Commn. in OPGW is pending): tendering is in progress
4. Indravati(PG)-Indravati(PH) (Proposal for Commn. in OPGW pending): tendering is in progress
5. Baripada(PG)-Baripada (Tendering in Progress for OPGW): Contract awarded
6. Baripada(PG)-Rairangpur (Tendering in Progress for OPGW): Contract awarded

The updated status of BSPTCL lines are as follows:

1. 220kV Patna-Fatua S/C line---*PLCC system has been installed and Fatua end tested. PLCC will be put in service after completion of reconductoring work.*

2. 220kV Patna-Khagul S/C line--- *PLCC system has been installed and commissioned.*
 3. 220kV Gaya-Dehri D/C line--- *PLCC system has been installed and and commissioned.*
 4. 220kV Gaya-Bodhgaya D/C line--- *PLCC system has been installed and and commissioned.*
 5. 220kV Purnea (PG)-Madhepura line
 6. 220 kV Biharshariff- Begusarai line
 7. 220 kV Biharshariff- Bodhgaya line
- } Digital PLCC will be implemented.

OPTCL and BSPTCL may update.

Deliberation in the TCC meeting

OPTCL updated the latest status as follows:

1. Jeypore(PG)-Jayanagar (Commn. in OPGW exists): *Commissioned*
2. Rourkela(PG)-Tarkera (Commn. in OPGW exists): *Commissioned*
3. Rengali(PG)-Rengali S/Y (Proposal for Commn. in OPGW is pending): *PSDF appraisal committee accepted the proposal*
4. Indravati(PG)-Indravati(PH) (Proposal for Commn. in OPGW pending): *PSDF appraisal committee accepted the proposal*
5. Baripada(PG)-Baripada (Tendering in Progress for OPGW): *Contract awarded*
6. Baripada(PG)-Rairangpur (Tendering in Progress for OPGW): *Contract awarded*

The updated status of BSPTCL lines are as follows:

8. 220kV Patna-Fatua S/C line---*PLCC system is in service*
 9. 220kV Patna-Khagul S/C line--- *PLCC system is in service*
 10. 220kV Gaya-Dehri D/C line--- *PLCC system is in service*
 11. 220kV Gaya-Bodhgaya D/C line--- *PLCC system is in service*
 12. 220kV Purnea (PG)-Madhepura line
 13. 220 kV Biharshariff- Begusarai line
 14. 220 kV Biharshariff- Bodhgaya line
- } *Work is in progress expected to be commissioned by December 2017.*

ITEM NO. D11:	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 STU, bus-bar protection is either not commissioned or non-functional. The non-availability / non-functionality of bus bar protection, results in delayed, multiple and uncoordinated tripping, in the event of a bus fault. This in turn not only results in partial local black out but also jeopardises the security of interconnected national grid as a whole. The matter was also pointed out during the third party protection audit which is being carried out regularly. Constituents are required to meet the audit compliance and commission or make bus –bar protection functional where ever it is not available. A list of such important 220 kV sub-stations as per the first third party audit is placed in the meeting.

In 35th TCC meeting, all the constituents were advised to give the latest status of Bus Bar protection of other 220KV S/S under respective control area.

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

In 58th PCC, members updated the status of pending substations as follows:

Bihar				
Sl No	Name of Substation	Bus protection status	Date of audit	Present Status
1	220 kV Bodhgaya	Not available	28-Dec-12	<i>Single bus and 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>Single bus. Bus bar will be commissioned under PSDF.</i>
West Bengal				
1	220 kV Arambah	Not available	24-Jan-13	<i>Available in alarm mode. Planning to replace with numerical relay</i>
2	220 kV Jeerat	Not available	20-Dec-12	<i>Relays have been received at site. Installation is in progress.</i>

58th PCC advised DVC to install numerical bus bar protection at 220kV Bokaro, Kalyaneswari, Chandrapura and Durgapur S/s to improve the reliability.

Members may place their action plan.

Deliberation in the TCC meeting

DVC informed that they have already covered the upgradation of busbar protection for 220kV Kalyaneswari and Durgapur in PSDF proposal. They will place their action plan for 220kV Bokaro and Chandrapura in upcoming PCC meeting.

ITEM NO. D12:	Non scheduling of power from KBUNL to JBVNL -- JBVNL
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Jharkhand Bijli Vitran Nigam Limited (JBVNL) vide letter dated 04.09.17 informed that neither JBVNL is getting Power from Kanti Bijli Utpadan Nigam Limited (KBUNL) till date and nor getting any intimation from SLDC Patna or ERLDC regarding scheduling but we are regularly getting bills from KBUNL towards the fixed charges.

They mentioned that they have already signed the LTA agreement with CTU on 18th May'2017 and even after signing of this agreement power from KBUNL is not getting scheduled to JBVNL. They have already written to CTU and KBUNL regarding the issue vide our letter no. 909 dated 22.06.2017, 1110 dated 31.07.2017, 1148 dated 10.08.2017, 1149 dated 10.08.2017.

The matter was placed before the 135th OCC meeting wherein JUSNL was advised to pursue with CTU for issuing the letter for LTA operationalisation for enabling the scheduling of JUSNL share from MTPS Stage-II.

Further, in 136th OCC meeting it was informed that a petition (Petition No. 20/MP/2017) on a related issue was heard before CERC on 09.05.2017 and the final order is reserved till filling of additional information by the respondents.

JBVNL/CTU may update. Members may discuss.

Deliberation in the TCC meeting

CTU informed that LTA has been signed by JUSNL only but other beneficiaries (DVC, GRIDCO and WBSEDCL) are yet to sign.

The issue has been heard by CERC and the order is awaited.

TCC felt that further discussion in this forum would not be fruitful as the issue is pending with CERC.

ITEM NO. D13:	Surrender of capacity allocated from Muzaffarpur TPS Stage-II (2X195 MW) -- by DVC
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DVC vide letter dated 24.08.17 intimated that MoP, GOI, vide letter dated 10.12.2010 allocated 10 MW i.e. 2.6% of the installed capacity from Muzaffarpur TPS Stage-II (2x195 MW). DVC entered into PPA with Kanti Bijlee Utpadan Nigam Limited on 30.12.2010 for that allocated capacity. Kanti Bijlee Utpadan Nigam Limited failed to commission the first unit Muzaffarpur TPS Stage-II even within five years from the date of PPA. Meanwhile, all the new 500 MW units of DVC were commissioned one after another and DVC became a surplus generating entity. DVC continuously persuaded with MoP, GOI for de-allocation of capacity from Muzaffarpur TPS Stage-II (2x 195 MW) through letter dated 30.12.2014, 10.02.2015, 13.07.2015, 09.02.2016, 30.05.2016, 19.09.2016 and 24.05.2017.

DVC also intimated the above fact to KBUNL through letter dated 06.04.2015 and 29.04.2015. Power Grid Corporation (CTU) was also informed through their letter dated 20.03.2015 and clarified the reasons for not signing any LTA with CTU.

In a Special Meeting convened by the Eastern Regional Power committee on 25.01.2017 on issues related to scheduling of power from BRBCL, Nabinagar and KBUNL, MTPS Stage-II, it was mentioned that 67.7% of power from KBUNL, Stage-II is already allocated to Bihar. The State of Bihar may like to avail the remaining quantum of power as well. Meanwhile, CTU has given notice to KBUNL for signing LTA for evacuation of power from MTPS Stage-II failing which LTA granted to KBUNL, shall be liable for revocation. KBUNL filed a Petition No. 20/MP/2017 before CERC with a prayer for direction to the beneficiaries for signing LTA with CTU so that power can be evacuated from MTPS Stage-II. The judgment of the petition is yet to be delivered by CERC.

After commissioning of the units of Muzaffarpur TPS Stage-II (2x195 MW), KBUNL started sending the bill for capacity charges to DVC without settling the issue of evacuation of the power MTPS Stage-II.

In view of the above, the matter may be discussed and views of other beneficiaries of Muzaffarpur TPS Stage-II (2x195 MW) may please be obtained for settlement of the issues.

TCC may guide.

Deliberation in the TCC meeting

GRIDCO informed that they are also trying to surrender the power.

TCC felt that this is not the appropriate forum to discuss the issue as the allocation of power is done by MoP. Further TCC advised DVC and GRIDCO to approach MoP, GoI for revision of allocation.

ITEM NO. D14:	Payment of Deviation Charge – Present Status
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As informed by ERLDC, The status of Deviation Charge payment as on 03.08.2017 is enclosed at **Annexure – B19**. The current principal outstanding Deviation Charge of BSPHCL & JUVNL is ₹ **4.85 Cr & ₹ 9.13 Cr** respectively considering bill up to 30.07.2017. ERLDC has also given reminders to BSPHCL & JUVNL requesting to liquidate the entire Deviation charges.

SIKKIM, APNRL and IBEUL are not paying deviation charges amount to the Pool and waiting for adjustment with the receivable amount.

In the 35th CCM held on 02.08.17 BSPHCL representative informed that the outstanding would be liquidated by the end of this month. JUVNL representative was absent.

CC members requested to clear the dues before the ensuing TCC.

ERLDC may update.

Deliberation in the TCC meeting

ERLDC updated that the current outstanding Deviation Charge of BSPHCL & JUVNL is ` 10.94 Cr (Principle) & 8.26 lac (Interest) and ` 11.87 Cr (Principle) & 11.52 lac (Interest) respectively.

Bihar informed that they will clear the dues within a week.

JUVNL informed that they will clear the dues by fortnight.

ITEM NO. D15:	Opening of LC by ER constituents for Deviation Charges Payments
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The details of LC amount required to be opened in 2017-18 by ER constituents is given in **Annexure – B20**. Letters to this effect has already been issued by ERLDC to the defaulting entities viz, BSPHCL, GMR, GATI, JITPL, IBEUL, BRBCL, JLHEP (DANS Energy), TPTCL, NVVN (Nepal) and TUL. At present JUVNL, Sikkim, APNRL & BRBCL have valid LC. Rest of the constituents which were required to open/recoup the LC, have not opened/recoup the LC.

In the 35th CCM meeting held on 02.08.2017, BSPHCL representative informed that opening of LC was under process and it would be opened shortly.

GMR, GATI, JITPL, IBEUL, JLHEP(DANS Energy), TPTCL, NVVN(Nepal) and TUL were once again advised to get the LC opened as per regulatory requirement.

Member Secretary opined that STOA to defaulting entities may be denied as per decision of ERPC.

It was decided that ERLDC would write letter to all defaulting constituents for opening of LC within a specified time frame with the condition that if they fail to open the LC, STOA would be denied. The updated position would be placed before the ensuing TCC/ERPC meetings.

ERLDC may update.

Deliberation in the TCC meeting

It was informed that JITPL has already opened the LC.

GMR informed that they have already opened the LC.

ERLDC informed that there is discrepancy between issuing and receiving bank which will be resolved soon.

TCC advised all the other constituents to open the LC as per the regulatory requirement by 30th September 2017. TCC reiterated that STOA to defaulting entities would be denied as per decision of ERPC wef 1st October 2017.

ITEM NO. D16:	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 meeting held with PGCIL, ERLDC, M/s Genus, & M/s TCS on 02.03.17 at ERLDC. M/s TCS informed that they have done the AMR integration test with Genus meter and informed that communication with existing Genus meter for AMR integration couldn't be established. Moreover M/s TCS had informed that they will try the subsequent steps for communication with Genus meter and update ERLDC & PGCIL accordingly.

In 132nd OCC, Powergrid informed that as per their communication with M/s TCS, integration of Genus meters in AMR system is possible, but it will take some more time to establish the communication.

In 133rd OCC, Powergrid informed that it will take some more time and asserted it will be done by June, 2017.

In 134th OCC, Powergrid informed that TCS is able to read the Genus make meter data however there are some issues related to baud rate of communication. Testing is in progress at Subashgram. It is expected to be completed by July, 2017.

In 135th OCC, Powergrid informed that integration with Genus make meter is successful but some configuration issues are still pending.

In 136th OCC, Powergrid informed that firmware needs to be upgraded which has been under progress. After the firmware upgradation the integration of Genus make meters with AMR will be established by September 2017.

Powergrid may please update the status.

Deliberation in the TCC meeting

Powergrid informed that a meeting will be held on 20th September 2017 wherein the interfacing issues would be resolved by M/s TCS and M/s Genus.

TCC advised Powergrid to place the outcome of the meeting in ensuing OCC meeting.

ITEM NO. D17:	Non-completion of DSTPS-RTPS OPGW link in DVC Sector under Microwave Replacement Project
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POWERGRID ERTS – 2 ULDC informed in 19th SCADA O & M meeting held on 07th April 2017 at ERLDC, Kolkata that they are not able to complete the OPGW work in DSTPS – RTPS in DVC Sector under Microwave Replacement Package due to severe ROW issue. POWERGRID further informed that they have mobilized the team several times but work could not be completed due to heavy ROW / compensation issues related to TL construction resulting non-completion of 2 nos. OPGW drum (approx. 9 Km). POWERGRID again informed that this issue is discussed in various forums but the solution is yet to be provided by DVC.

DVC informed that they are not able to resolve the issue as this is old ROW / compensation issue related to TL construction.

ERLDC opined that the matter may be placed before TCC/ERPC board for further deliberation and resolution of the matter. POWERGRID & DVC agreed for the same.

TCC may guide.

Deliberation in the TCC meeting

Powergrid informed that laying of two drums of OPGW cable is pending due to ROW issues. Powergrid requested DVC to take the pending OPGW cable and close the contract.

DVC informed that they will try to resolve the ROW issues by 31st October 2017 otherwise they will close the contract.

ITEM NO. D18:	Metering and Scheduling Methodology for Tashiding HEP
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In view of anticipated delay in commissioning of Legship Pooling station and 2 no. 220 GIS bays at New Melli S/s and expected commissioning of Tashiding HEP by Dec., 2016, members in 18th Standing Committee of ER agreed to the following interim arrangement, till the commissioning of Legship Pooling sub-station and 2 no. 220 kV GIS bays at New Melli.

Temporary Arrangement no. 1

a) Interconnection of Tashiding-Legship Pool 220 kV D/C line with Legship Pool New Melli 220 kV D/C line by bypassing Legship Pooling station.

Temporary Arrangement no. 2

If the bays at New Melli for termination of Legship Pool-New Melli 220 kV D/C line are not ready.

b) LILO of one circuit of New Melli-Rangpo 220 kV D/c line at a suitable location near New Melli and connecting it with Tashiding-New Melli line to form Tashiding-New Melli, Tashiding-Rangpo and New Melli-Rangpo 220 kV S/c lines.

135th OCC advised to discuss the related issues of control area jurisdiction, scheduling, etc in a separate meeting.

A meeting was held with ERPC and ERLDC on 04.09.2017 A brief note on the subject and gist of discussions is at **Annexure-B24**.

TCC may approve.

Deliberation in the TCC meeting

Sikkim agreed to issue the NoC for scheduling of Tashiding HEP by ERLDC.

TCC advised to discuss other issues related to scheduling of Tashiding HEP in the lower forums.

ITEM NO. D19:	Augmentation of 400/220kV ICT capacity at Maithon, Patna, Sasaram, Bihar Shariff
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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 Bihar Shariff 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 Bihar Shariff.

In 35th TCC, Powergrid informed that the augmentation 400/220kV ICTs at Maithon S/s will be completed by July, 2017.

Powergrid added that type test of 400/220kV ICT of Sasaram and Patna S/s had failed and the design of the ICT is being reviewed by OEM. The augmentation of 400/220kV ICTs at Sasaram and Patna will take time.

Powergrid also informed that augmentation of 400/220kV ICTs at Bihar Shariff will take one and half year.

Bihar requested Powergrid to divert ICTs from any other sub-stations for early augmentation at Bihar Shariff, Sasaram and Patna S/s. Bihar added that immediate augmentation of ICTs at Bihar Shariff S/s is essential to meet increasing demand in Bihar.

Powergrid informed that diversion of ICT to Biharshariff S/s is not possible at this juncture. However Powergrid assured to explore further possibilities to expedite.

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.

Powergrid may update.

Deliberation in the TCC meeting

Powergrid informed that 2nd ICT at Patna will be replaced in first quarter of 2018-19 and for 3rd ICT the award is yet to be placed.

Installation of 2nd ICT at Maithon will be completed by 20th September 2017 and will be commissioned subject to availability of shutdown.

TCC advised powergrid to place the shutdown in OCC meeting.

4th ICT at Biharshariff is under awarding stage.

Argumentation of ICT at Sasaram will be done in 4th quarter of 2017-18.

ITEM NO. D20:	Priority-based commissioning of bus reactor for control of high voltage during lean periods
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In 35th TCC, Powergrid updated the latest status as follows:

S.N.	Reactor	Status
1	125 MVAR Bus reactor of Jamshedpur	<i>Expected commissioning at Jamshedpur and Biharshariff by April'17</i>
2	125 MVAR Bus reactor of Biharshariff	
3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	<i>Commissioning expected by April'18.</i>

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	<i>Expected commissioning at Jamshedpur and Biharshariff by November'17</i>
2	125 MVAR Bus reactor of Biharshariff	
3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	<i>Commissioning expected by April'18.</i>
4.	125 MVAR Bus reactor of Subashgram	<i>Under tendering stage</i>

ITEM NO. D21:	Status of Transmission projects approved in various meetings
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The status as updated in 35th 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	Powergrid informed that the work under progress and expected commissioning by Nov'18.
2	Change in proposed the Associated 765 kV System Strengthening Scheme inER	28 th ERPC Meeting	Under TBCB
3	Retrofitting of pilot wire protection of 132 kV Purnea (PG) – Purnea (BSPHCL) feeders	26 th ERPC Meeting	<i>Powergrid informed that the scheme was covered in the scheme of modification of 132 kV Bus arrangement at 220/132 kV Purnea S/S of Powergrid under GIS package. The work has been awarded and expected to be completed by Dec'17.</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>T/L is under TBCB, POWERGRID informed that Investment approval accorded in Feb'17 BOD. Commissioning of Chandwa is expected in Dec'17(GIS is under transit by Hyosung), commissioning of Gaya is expected in Sept'19.</i>
5	Procurement of two single phase spare ICT units (2x500 MW), 765/400 kV for Eastern Region - to be stationed at Angul & Jharsuguda S/S).	25 th ERPC Meeting	<i>Powergrid informed that work has been awarded on March, 2015 and expected to be completed by June'17.</i>
6	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 Dec'17. For Jamshedpur, <u>after failure, diverted transformer reached at site. Commissioning expected by Oct,17.</u></i>
7	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. <u>Bay is ready for charging at Muzaffarpur.</u></i>
8	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 May' 2017. <u>Reactor reached at site. Completion by Oct,17.</u></i>
9	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

10	Modification of 132 kV Bus arrangement at 220/132 kV Purnea S/S of Powergrid	25 th ERPC Meeting	<i>POWERGRID informed that the scheme will be implemented by Mar'17. S/D issue at Purnea. Expected commissioning by Dec,17.</i>
11	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>
12	GIS bays for 400 kV, 125 MVAR Bus Reactor at Baripada	24th ERPC Meeting	<i>Powergrid informed that the work has been awarded and expected to be completed by 3rd qtr of 2017-18.</i>
13	Eastern Region Strengthening Scheme- XV; Construction of Farakka—Baharampur 400kV D/C (HTLS) line and Subsequent modification of LILOs	17th SCM & 30th ERPC	<i>Work awarded and construction of line under progress, expected completion by 2nd Qtr. 2017-18.</i>
14	Installation of 3rd 400/220 kV, 1 x 31.5 MVA ICT at Durgapur & New Siliguri Substation	17th SCM & 30th ERPC	<i>NIT done in Sept'16. Investment approval on Feb'17 BOD. Completion schedule-28 months.</i>
15	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>Award placed, work under Progress, expected commissioning by Nov'17.</i>
16	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	<i>JUSNL to inform</i>
17	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	<i>Under TBCB</i>
18	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>Award placed. 2 no's 400kV bays by July'17 & balance by April'19.</i>
19	Reconductoring of Maithon RB-Maithon 400 kV D/C line with HTLS conductor	17th SCM & 30th ERPC	<i>NIT held on 20.12.16 . LOA expected by April'17.</i>
20	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 Dec'17, commissioning of Gaya is expected in Sept'19.</i>

. Powergrid may update.

Deliberation in the TCC meeting

Powergrid updated the status as above.

ITEM NO. D22:	Status of Spare Transformers & Reactors approved in various meetings
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The status updated as in 35th TCC/ERPC meeting on Spare transformers & reactors to be commissioned by Powergrid for use in ER.

Sl No.	Spare transformer/reactor	Latest status
1	1 X 315 MVA, 400/220 KV AUTO TRANSFORMER Bihar Shariff	Available at site.
2	1 X 315 MVA, 400/220 KV AUTO TRANSFORMER at Durgapur	Utilized at 400 kV Farakka. Procurement of spare ICT is under process. Awarded to M/S. TBEA. Expected to be delivered at site in Dec, 17.
3	1 X 80 MVAR SHUNT REACTOR AS O&M SPARE Rourkela Substation	Available at site.
4	2 X 500 MVA, 765/400 KV single phase ICTs at Angul & Jharsuguda.	Powergrid informed that the work has been awarded on March, 2015. Delivery at Angul expected in Mar'17. Delivery at Jharsuguda expected in Dec'17.
5	1 X 110 MVAR, 765KV single phase bus reactor at Sasaram	Powergrid informed that the work has been awarded on March, 2015 and expected to be delivered by June, 2017.
FOR MEMBER STATES:		
1	2 X 315 MVA 400/220 kv ICTs	Available
2	2 X 160/150 MVA 220/132 kv ICTs	One ICT available at Purnea S/s, 2 ICT available at Siliguri S/s.
3	1 X 50 MVA 132/66 kv ICT	Consumed at Gangtok. Gangtok transformer under repair.
SURPLUS FROM OLD ASSPARE		
1	3x 50 MVA, 220/132kV (to be released from Malda (2nos.) & Birpara (1no.) S/Ss)	Replaced with 160 MVA transformer. 50 MVA ICT scrapped.
2	2x 100 MVA, 220/132kV (to be released from one at Birpara & one at Siliguri)	Taken out and kept at Birpara and Siliguri
3	2x 100 MVA, 220/132kV (to be released from Purnea (2nos.) S/Stn.)	Consumed. Installed at Muzaffarpur for Muzaffarpur-Dhalkebar line.

Powergrid may update the latest status.

Deliberation in the TCC meeting

TCC advised Powergrid to update the status.

ITEM NO. D23:	Issues related to associated / downstream systems—Powergrid
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WEST BENGAL

- 02 no 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 – Baraipur Tr. line and associated bays at Baraipur. Order recently placed by WBSETCL and expected completion by

Dec '17. 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 bal 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.

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 to be scheduled in October'17. 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.

Members may discuss.

Deliberation in the TCC meeting

Members updated the status as follows:

WEST BENGAL

1. **02 no 220 KV line bays at Subhashgram (PG) s/s:** by December 2018
2. **6 nos. 220 KV bays at Rajarhat GIS substation under ERSS-V -** will be intimated in due course

ODISHA

1. **4 nos. 220 KV bays at Bolangir S/S :** remaining 2 bays will be utilized by 2017
2. **6 nos. 220 KV bays at Pandiabil GIS:**
 - 2 bays already utilized
 - 2 bays awaiting for approval of ERLDC
 - 2 bays by March 2018
3. **4 nos. 220 KV bays at Keonjhar S/S:**
 - 2 bays by Dec 2017
 - 2 bays by 2019

JHARKHAND

Powergrid informed that 400/220/132kV Daltonganj S/s will be commissioned by 2017 and requested JUSNL expedite downstream 220 and 132kV lines for better utilisation of the assets.

JUSNL informed that downstream 220kV system at Daltonganj will be completed by December 2018 and 132kV system will be completed by October 2017.



MINUTES OF 36th TCC MEETING OF EASTERN REGIONAL POWER COMMITTEE

Date: 13th September, 2017

Venue: Bhubaneswar

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EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 36TH TCC MEETING

Date: 13th September, 2017

Venue: Bhubaneswar

List of participants is at **Annexure- II**.

ITEM NO.A1:	CONFIRMATION OF THE MINUTES OF 35TH TCC MEETING
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The minutes of the 35th TCC meeting held on 24th February, 2017 at Ranchi were circulated vide letter no. ERPC/TCC & Committee/14/2017/2385-2454 dated 28th March, 2017.

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

Members may confirm the minutes of 35th TCC meeting.

Deliberation in the TCC meeting

Members confirmed the minutes of 35th TCC meeting.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B1:	Status of PSDF funding in respect of ERPC training proposals
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34th TCC/ERPC authorized Member Secretary, ERPC to attend the PSDF Appraisal Committee meeting on behalf of ERPC forum and do needful for getting PSDF grant for following schemes of ERPC:

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

Subsequently, PSDF Appraisal Committee has approved the following projects of ERPC and the approval/sanction of grant from Ministry of Power, GOI is awaited.

- 1) Training for Power System Engineers
- 2) Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents

The training for Power System Engineers (Domestic) will be organized in association with CESC and training on Power market trading at NORD POOL Academy will be organized in association with PTC.

Members may note.

Deliberation in the TCC meeting

CE, NPC informed that both the projects have been approved by the monitoring committee and the confirmation of the same will be received after issuance of minutes. Ministry's sanction letter is awaited.

MS, ERPC informed that 1st training on Power System Engineers (Domestic) will start tentatively from October 2017 and 1st training on Power market trading at NORD POOL Academy will start from May, 2018.

ITEM NO. B2:	Status of DPR for PSDF funding in respect of Sikkim & JUSNL
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In 33rdTCC, JUSNL and Sikkim informed that they need funds for upgradation of protection system. TCC, therefore advised JUSNL and Sikkim to prepare DPR within a month for up gradation of protection system and send to NLDC for PSDF funding with intimation to ERPC Secretariat.

In 35th TCC, Sikkim informed that they need some help from ERPC secretariat and assured that DPR will be submitted by 15th April 2017. Secretariat assured to extend their help.

JUSNL informed that M/s PRDC, consultant is preparing the DPR and they will submit the DPR to PSDF nodal agency by 15th April, 2017.

Subsequently, JUSNL vide letter dated 16.05.2017 and 13.06.2017 has submitted the DPR for Renovation & upgradation of JUSNL protection system and Reliable communication network of JUSNL respectively.

In line with the discussions in the 34th & 35th ERPC meeting, ERPC Secretariat has issued appraisal letter on 04.08.2017 for Submission of DPRs for Renovation & Modernization of Protection system including up-gradation of sub-station equipment and Reliable communication network of E&PD, Sikkim.

Sikkim and JUSNL may update.

Deliberation in the TCC meeting

CE, NPC informed that PSDF Monitoring Committee has approved 138.13 Cr. for Renovation & upgradation of JUSNL protection system.

Sikkim informed that they have already submitted DPRs for Renovation & Modernization of Protection system including up-gradation of sub-station equipment and Reliable communication network of E&PD, Sikkim.

CE, NPC added that the DPRs are under scrutiny by the PSDF Appraisal Committee.

ITEM NO. B3:	Implementation of on-line tripping incident reporting system in Protection Database Management System
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The Protection Database Management System (PDMS) has been made operational w.e.f 31.03.2017. USER-ID had been allotted to all the nodal officers as nominated by the respective authorities to facilitate the access of PDMS. Also, several training programme on PDMS were organized for all the nodal officers at ERPC, Kolkata as well as at respective sites.

Protection Database Management System (PDMS) is also having the provision for on-line tripping incident reporting system. The tripping incident reporting page can be accessed in PDMS through the ERPC protection database website: **www.erpc-protectiondb.in:8185**. The link is also available in ERPC website on right side bar.

As decided in 53rd & 54th PCC Meetings, details of the tripping incident along with the DR, EL events and other reports are to be uploaded through this online portal. ERPC vide letter dated 12th July 2017 also informed all the constituents to submit the tripping incident report along with DR (comtrade files), EL and other relevant files through this on-line portal with immediate effect.

In 57th PCC, all the constituents were advised to submit the tripping incident report along with DR (comtrade files), EL and other relevant files through this on-line portal.

PCC decided to consider both hard copy and details uploaded in the on-line portal for the month of August, 2017.

PCC decided to consider only the on-line tripping incident report as received in PDMS from 1st September, 2017 as a compliance of clause 5.2(r) & 5.9 of IEGC.

- A.** The status of online-tripping reporting in PDMS for the disturbances of July, 2017 as per 58th PCC meeting is as given below:

Sl No	Name of the incidence	Name of the Constituent	Status
1.	Repeated disturbances at 400kV Teesta-III, Dikchu and Rangpo on at 00:30 hrs on 16-07-2017, 15:56 hrs & 19:11 hrs on 24-07-2017 and 10:08 hrs on 27-07-2017	Teesta Urja, Dikchu and Powergrid	Not uploaded in PDMS
2.	Disturbance at 400 kV Bokaro S/s on 13-07-17 at 20:18 hrs	DVC	Uploaded in PDMS
3.	Disturbance at 400kV Patna on 03-07-17 at 18:53 hrs	Powergrid	Uploaded in PDMS
4.	Disturbance at 220 kV Lalmatia S/s on 15-07-17 at 09:40 hrs & 13:54 hrs	JUSNL and BSPTCL	Not uploaded in PDMS
5.	Disturbance at 220 kV Lalmatia S/s on 03-07-17 at 18:32 hrs	JUSNL	Not uploaded in PDMS
6.	LBB operation at 220 kV Tarkera S/s on 31-07-17 at 11:24 hrs	OPTCL	Not uploaded in PDMS
7.	Bus bar protection operation at 220 kV Dalkhola S/s on 19-07-17 at 10:50 hrs	Powergrid	Not uploaded in PDMS

In 58th PCC, all the constituents were once again advised to upload the tripping details along with DR (comtrade files), EL and other relevant files in PDMS on-line portal.

TCC may advice.

Deliberation in the TCC meeting

ERPC Secretariat placed the status of online-tripping reporting in PDMS for the disturbances of August, 2017 as follows:

Sl No	UTILITY NAME	TRIPPING INCIDENT	OCCURRENCE DATE	UPLOAD STATUS IN PDMS	PDMS ISSUES
1	OPTCL	220kV MERAMUNDALI-BSL 1 Tripping	01-08-2017	YES	NIL
2	JUSNL	220kV HATIA-RANCHI and 220kV HATIA-PTPS Tripping	03-08-2017	YES	NIL
3	TEESTA-3 (TUL)	400kV TEESTA-3 to Dikchu Line Tripping	04-08-2017	YES	NIL
4	WBPDC	Disturbance at Bakreswar TPP	11-08-2017	Detailed report entered, DR file not uploaded	NIL
5	PGCIL-ER1	Disturbance at Sasaram	12-08-2017	NIL	Unable to access the website, PRDC to resolve by 15/09/2017
6	BSPTCL	Tripping of 220kV Purnea-Madhepura D/C	14-08-2017	NIL	NIL
7	TEESTA-3 (TUL)	400kV TEESTA-3 to RANGPO Line Tripping	16-08-2017	YES	NIL
8	BSPTCL	Tripping of 132kV BANKA-SULTANGANJ D/C and ICTs at BANKA	21-08-2017	NIL	NIL
9	DVC	Disturbance at Waria S/S	27-08-2017	NIL	NIL
10	DVC	Multiple tripping at CTPS-B and Bokaro A	28-08-2017	Tripping Incident created, DR file not uploaded	NIL
11	NHPC	Power Failure at Rangit Station	30-08-2017	NIL	NIL
12	NHPC	Power Failure at Rangit Station	31-08-2017	NIL	NIL

Teesta Urja informed that they are facing problem in uploading the tripping details. Teesta Urja was advised to inform its difficulties officially.

TCC also advised all the constituents to communicate to ERPC Secretariat immediately, if they are facing any problem in uploading the tripping details in PDMS.

TCC advised all the constituents to upload the tripping details of a month in networks under respective control area along with DR (comtrade files), EL and other relevant files in PDMS online portal, otherwise it will be considered as violation of compliance of clause 5.2(r) & 5.9 of IEGC.

ERPC Secretariat informed that some relay setting data for protection database is still pending from constituents. The latest status of data collection as updated in special meeting on 7th September 2017 is given below:

1. Odisha: 92.77%
2. Jharkhand: 91.34%
3. West Bengal: 92.152%
4. Bihar: 70.617% (Powergrid ER-I data is pending)
5. Sikkim: 92.408%

TCC felt that Ministry of Power is funding the project and it would be a gross negligence of ER constituents, if complete relay setting data were not provided for implementation of the project.

TCC advised all the constituents to send the pending relay setting data to ERPC and also to check & verify their respective Substation data (relay data/SLD/CT/PT etc) as available in PDMS regularly and submit their observations as per the decision of 07.09.17.

B. The status of DR and EL data received from the constituents for single line tripping which occurred in the month of July, 2017 is given below:

Sl No.	Line Name	Local end utility	Remote end utility	Date	Time	Type of fault	DR/EL status	
							Local end	Remote end
1.	220KV FSTPP-LALMATIA-I	NTPC	JSEB	18/07/2017	9:50	R-N FAULT	No	No
2.	220KV CHANDIL-RANCHI-I	JSEB	ER-I	21/07/2017	3:56	R-N FAULT	Yes	Yes
3.	220KV CHANDIL-STPS(WBSEB)-I	JSEB	WBSEB	21/07/2017	3:56	R-N FAULT	Yes	No
4.	400KV FARAKKA -KAHALGAON-IV	NTPC	NTPC	01/07/2017	23:09	Y-N FAULT		No
5.	400KV RANCHI-ROURKELA-I	ER-I	ER-II	02/07/2017	16:32	Y-N FAULT	No	Yes
6.	765KV NEW RANCHI-DHARAMJAIGARH-II	ER-I	WR	05/07/2017	15:41	Y-N FAULT	Yes	No
7.	400KV BIHARSARIFF-MUZAFFARPUR-I	ER-I	ER-I	06/07/2017	14:12	Y-N FAULT	No	No
8.	220KV BARIPADA-BALASORE-II	ODISHA PROJECT(PG)	OPTCL	07/07/2017	11:39	R-N FAULT	No	Yes
9.	220KV TSTPP-MEERAMUNDALI-II	NTPC	OPTCL	08/07/2017	16:09	R-N FAULT	Yes	No
10.	400KV PATNA-BALIA-II	ER-I	NR	09/07/2017	15:08	Y-N FAULT	No	No
11.	400KV PATNA-BALIA-III	ER-I	NR	09/07/2017	15:16	R-N FAULT	No	No
12.	220KV DEHRI -GAYA-II	BSPTCL	ER-I	09/07/2017	15:33	B-N FAULT	No	Yes
13.	220KV ARRAH-PUSAULI-S/C	ER-I	ER-I	10/07/2017	9:13	R-N FAULT	No	No
14.	400KV LAKHISARAI-KhSTPP-II	ER-I	ER-I	11/07/2017	8:15	Y-N FAULT	No	No
15.	220KV BUDHIPADAR-KORBA-II	OPTCL	WR	15/07/2017	21:31	R-N FAULT	No	No

16.	220KV GAYA-SONENAGAR-II	ER-I	BSPTCL	20/07/2017	14:24	B-N FAULT	No	Yes
17.	400KV KOLAGHAT-KHARAGPUR-II	WBSEB	WBSEB	28/07/2017	9:04	Y-N FAULT	No	No
18.	220KV CHANDIL-RANCHI-I	JSEB	ER-I	29/07/2017	20:16	R-N FAULT	Yes	No

In 58th PCC, all the constituents were advised upload the details along with DR and EL in PDMS on-line portal.

TCC may advice.

Deliberation in the TCC meeting

TCC advised all the constituents to use the PDMS on-line portal for uploading the single line tripping details along with DR (comtrade files), EL and other relevant files for all trippings of August 2017 onwards. Otherwise, it will be considered as violation of compliance of clause 5.2(r) & 5.9 of IEGC.

ITEM NO. B4:	Disturbance at 765 kV Dharmajaygarh S/s on 15-06-17 at 14:23 hrs
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At 14:23:12.417, distance protection of Dharamjaigarh-Jabalpur Ckt-3 issued trip command on R-Y fault at both ends. At Dharamjaigarh end, main CB tripped, however, none of the poles of Tie CB tripped, thus all the connected lines tripped on Zone-3 from remote end. LBB did not operate at Dharamjaigarh due to failure in DC supply. Fault was cleared after tripping of 765kV Dharamjaigarh-Ranchi - II after 4 minutes from the fault.

In 57th PCC, Powergrid explained that R-Y fault occurred in 765kV Dharamjaigarh-Jabalpur Ckt-3, main CB at Dharamjaigarh end tripped, but none of the poles of Tie CB tripped. LBB at 765kV Dharamjaigarh also not operated due to some problem in DC supply. As a result, all the connected lines of 765kV Dharamjaigarh tripped from remote end on Zone-3. But Ranchi end of 765kV Dharamjaigarh-Ranchi line- II tripped after 4 minutes.

Powergrid informed that Ranchi end relay observed power swing hence the power swing blocking was initiated and blocked the relay to trip the line.

PCC felt that fault in 765kV network was cleared after 4 minutes is not acceptable. Moreover Powergrid did not send any report to ERPC and ERLDC in this regard.

PCC advised Powergrid to analyze the tripping and submit a detailed report to ERPC and ERLDC.

Powergrid vide mail dated 30th Aug 2017 informed that during investigation of delayed tripping, the zone 3 reach setting was found slightly less than the calculated zone 3 reach value. This might caused delay in pickup and drop of zone 3.

The zone 3 reach setting has been corrected.

Powergrid may submit the report & explain.

Deliberation in the TCC meeting

Powergrid informed that they have submitted the details and DR on 30th August 2017.

ERLDC informed that though they have sent the DR, the relevant DR containing the tripping instant is missing. ERLDC asked that how 765kV Dharamjaigarh-Ranchi line- II only observed the power swing when parallel line (765kV Dharamjaigarh-Ranchi line- I) had successfully cleared the fault in time.

Powergrid informed that line length of both the ckts are different and the zone 3 setting of 765kV Dharamjaigarh-Ranchi line- II at Ranchi end was slightly less than the calculated zone 3 reach value.

TCC felt that delayed fault clearance of fault in 765 kV level may be resulted to serious threat for grid security.

TCC advised Powergrid to take the issue seriously and present detail analysis on delayed tripping of 765kV Dharamjaigarh-Ranchi line- II from Ranchi end with all the explanation in forthcoming PCC meeting scheduled to be held on 20th September 2017.

ITEM NO. B5:	Repeated pole blocking at HVDC Sasaram
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S. No.	Tripping Date	Tripping Time	Brief Reason/Relay Indication	Restoration Date	Restoration Time	Duration
1	17-07-17	5:41	System failure alarm	17-07-17	6:38	0:57
2	17-07-17	16:35	System failure alarm	17-07-17	17:34	1:00:00
3	20-07-17	8:29	System failure alarm	20-07-17	9:25	0:56
4	31-07-17	18:34	System failure alarm	31-07-17	19:45	1:11:00
5	29-05-17	00:15	System failure alarm	29-05-17	01:24	1:09:00
6	25-04-17	06:03	Auxiliary supply failure	25-04-17	07:14	1:11:00
7	01-04-17	09:15	Tripped due to Valve cooling system problem	01-04-17	12:56	3:41:00
8	11-04-17	23:32	System failure alarm	12-04-17	00:17	0:45:00
9	30-04-17	03:24	Due to tripping of filters on eastern side	30-04-17	16:13	12:49:00
10	12-01-17	13:36	Blocked due to unbalanced auxiliary system	12-01-17	15:06	1:30:00
11	14-01-17	05:03	Tripped due to system failure alarm	14-01-17	08:57	3:54:00
12	10-01-17	13:23	Filter problem at Sasaram	12-01-17	11:24	46:01:00
13	03-01-17	11:00	To take pole in service in HVDC mode	10-01-17	07:42	164:42:00
14	03-12-16	12:15	Converter control protection operated	03-12-16	13:22	1:07:00

15	06-12-16	19:12	Tripped due to CCP east side M1, M2 major alarm and observed sys fail in East side	06-12-16	20:55	1:43:00
16	19-12-16	12:43	Due to tripping of 400 kv Biharshariff-Sasaram-II	19-12-16	13:35	0:52:00
17	05-11-16	04:51	System fail alarm	05-11-16	06:57	2:06:00
18	22-11-16	12:12	CCP Main-2 major alarm	22-11-16	13:35	1:23:00
19	26-11-16	09:36	CB filter bank burst	27-11-16	11:31	25:55:00

Regarding pole block on 25-05-17, there is back up in the station in the following form:

132/33 KV Pusauli	315 MVA ICT-2 tertiary	01 No. DG set of 1500 KVA	Battery available for valve cooling system only. It can provide auxiliary supply for at max 2 minutes.
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In 58th PCC, Powergrid was advised to submit the details to ERLDC and ERPC.

Detail report not yet received from POWERGRID.

Powergrid may explain.

Deliberation in the TCC meeting

Powergrid informed that pole blocking at HVDC Sasaram system is being initiated on system failure alarm. They have contacted OEM and OEM is also failing to conclude and rectify the issue.

Powergrid added that since the HVDC control system is quite old and it is not operating satisfactorily the HVDC control system at Sasaram needs to be upgraded. Powergrid requested TCC to consider.

TCC felt that Powergrid has not placed any report in the PCC meeting and advised Powergrid to take the issue seriously.

TCC opined that system upgradation needs detailed discussion in lower forums and advised Powergrid to place the details in forthcoming PCC meeting scheduled to be held on 20th September 2017.

ITEM NO. B6:	Agenda related to issues of JITPL
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a) Frequent failure of JITPL data to ERLDC:

Real time SCADA data from JITPL is frequently failing (May-17: 24% & June-17 (up to 18th): 62%). It was observed that

- Microwave terminal equipment at Talcher HVDC end is getting hanged quite frequently causing failure of real time data to ERLDC.

- The direct line from JITPL to Angul 765/400 kV pooling station is available but real time SCADA data is yet to be diverted through this path.
- The voice connectivity from JITPL to ERLDC is yet to be provided / integrated with Hot Line Voice Communication installed by M/s Orange.

In 135th OCC, it was informed that the data is coming through Powergrid substations via PLCC link. Because of some commercial issues between JITPL and Powergrid the direct link is yet to be restored.

OCC advised JITPL and Powergrid to settle the commercial issues bilaterally and restore the JITPL data availability to ERLDC.

In 136th OCC, JITPL informed that presently they are communicating ERLDC with a radio link, which is an interim arrangement and is not reliable and they are trying hard to maintain it. However, they had planned to make PLCC system operational for uninterruptable communication to ERLDC. But Powergrid is not allowing them to shift NSK modem of PLCC system from Bolangir(PG) S/s which is the property of JITPL.

JITPL added that they were in process of settling the commercial issues with Powergrid and requested Powergrid to cooperate.

OCC took serious note of the issue and felt Powergrid should not interrupt in establishing the proper communication system for SCADA/telemetry data to ERLDC. OCC felt that Powergrid should not take up commercial issue by staking the grid security and advised Powergrid to take up the commercial issue separately.

TCC may guide.

Deliberation in the TCC meeting

TCC took serious note of the issue and felt Powergrid should not interrupt in establishing the proper communication system for SCADA/telemetry data to ERLDC. TCC felt that Powergrid should not take up commercial issue by staking the grid security and advised Powergrid to take up the commercial issue separately.

Powergrid agreed to allow JITPL to shift their PLCC modem from Bolangir S/s within a week.

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

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

b) Delay in restoration of 400kV JITPL-Angul line II on 04-08-2017

JITPL vide letter dated 09.08.2017 informed that they have received the charging code from ERLDC at 23:39 hrs on 04.08.2017. But the line could not be charged due to no communication from Angul S/s.

After repeated pursuation the line was charged at 11:19 hrs on 05.08.2017.

In 136th OCC, JITPL informed that this is the third time Powergrid has delayed to charge the JITPL line because of pending commercial issues.

ERLDC informed that till date no information was made available by Powergrid on delayed charging of the line. In OCC meeting also Powergrid failed to give satisfactory explanation on delayed charging of the line.

OCC took serious note of delayed charging of the line and endangering the grid security by forcing a 2x600 MW power plant of JITPL connectivity through a single line.

After detailed deliberation, OCC felt that at the stake of grid security, Powergrid should not take up the commercial issues.

Further, OCC advised Powergrid to submit the reason for delayed charging at the earliest and decided to refer the issue to TCC.

Powergrid may explain.

Deliberation in the TCC meeting

Powergrid informed that Angul end was continuously receiving DT from JITPL and they were not able to trace the reason till next day due to severe rain.

However JITPL informed that though there was no fault in line and the line was cleared for charging but Powergrid personals did not respond even to the phone calls.

ERPC and ERLDC informed that Powergrid had not placed any report and not given proper explanation till date.

TCC took serious note of delayed charging of the line and endangering the grid security by forcing a 2x600 MW power plant of JITPL connectivity through a single line.

TCC advised Powergrid not to repeat this kind of operation and to report to ERPC/ERLDC for all such sort of incidences in future.

ITEM NO. B7:	Unsatisfactory SPS operations and generation relief in case of disturbances at 400kV Teesta-III, Dikchu and Rangpo
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At 16:14 hrs on 17-06-17

400 kV Teesta III - Rangpo S/C tripped during SPS testing at Teesta III. Unit #1, #2, #4, #5 & #6 at Teesta III & Unit #1 & #2 at Dikchu tripped due to loss of evacuation path. DT was received at Rangpo.

At 15:49 hrs on 24-06-17

There was a B-N fault in 400kV Teesta III – Dikchu line near to Dikchu end. Teesta III end cleared the fault in zone 2 time i.e. 0.5sec. Simultaneously, 400 kV Teesta III – Rangpo S/C line tripped from Teesta III end on backup OC protection, at time delay of 0.5sec and sent DT to Rangpo end.

In 57th PCC, members felt that fault in 400kV Teesta III – Dikchu line should be cleared from Dikchu end and advised Dikchu to check the relay.

At 00:30 hrs on 16-07-2017:

400 kV Teesta III - Dikchu S/C (tripped only from Teesta III end) and Unit #I at Dikchu tripped due to operation of cable differential protection (B phase current 1.1 kA at Teesta III) resulting generation loss at Unit # II at Dikchu due to loss of evacuation path.

At 15:56 hrs on 24-07-2017:

400 kV B/C at Teesta III tripped on receipt of SPS signal resulting in tripping of unit I, II & IV. However both circuits of 400 kV Rangpo - Binaguri D/C were in service. Flow in 400 kV Rangpo - Binaguri D/C was around 800 MW/Ckt. Rangpo personnel verbally confirmed non increment of TX counter dedicated for transmitting SPS signal.

At 19:11 hrs on 24-07-2017:

Due to Rotor Earth Fault in Unit #5 of Teesta III there was a dip in DC Voltage during Unit 5 Start-up (DC Field Flushing) leading other synchronized units to No Load Operation.

At 10:08 hrs on 27-07-2017:

At 10:08 hrs 400 kV Rangpo – Binaguri – II tripped due to B-N fault. (DEF, F/C at Rangpo and DT received at Binaguri). After tripping of circuit – II, power flow in 400 kV Rangpo – Binaguri – I became more than 850 MW (1700 MW approx.) and SPS – I (generation reduction at Teesta III, Dikchu, JLHEP and Chujachen.) got activated resulting tripping of one unit at each power plant at Chujachen, JLHEP and Dikchu. Due to non-tripping of any unit at Teesta III, power flow in 400 kV Rangpo – Binaguri – I remained more than 850 MW for more than 500 ms and SPS – II got activated resulting tripping of 400 kV Teesta III – Rangpo S/C followed by tripping of remaining units at Teesta III and Dikchu due to loss of evacuation path.

In 58th PCC, Teesta-III and Dikchu representatives were not available for discussion.

PCC took serious note of non-submission of the complete details of the disturbances and absence of Teesta-III and Dikchu representatives in the meeting.

It was informed that only Teesta III station has received SPS trip signal at 15:56 hrs on 24-07-2017 but Rangpo end confirm non-transmission of SPS signal. Hence it may be a spurious tripping.

In other instance at 10:08 hrs on 27-07-2017, Teesta-III did not provide generation relief when 400 kV Rangpo – Binaguri – II tripped and SPS operated at Rangpo.

PCC felt that this kind of inadvertent SPS operations of Teesta-III may endanger the grid security and advised Teesta-III to check and review the SPS at their end.

PCC opined that in view of repeated unsatisfactory SPS operations during last few months, the threshold limit on power flow through 400 kV Rangpo – Binaguri D/C line needs to be reviewed.

In last few OCC meetings, Teesta-III, Jorethang, Dikchu, Chuzachen & Powergrid were not submitting the healthiness certificate for Rangpo SPS as per the decision of special meeting of 21.06.2017.

The issue is placed before TCC for further guidance.

TCC may guide.

Deliberation in the TCC meeting

Teesta-III explained that on 24-07-2017 at 15:56 hrs the tripping was initiated at Teesta III because of PLCC mal-operation due to fault in DC system during DC field flushing.

Teesta-III informed that now they are following to AC field flushing in order to avoid the DC voltage dip.

Teesta-III explained that on 27-07-2017 at 10:08 hrs, they have not received the SPS signal due to some problem in PLCC panel. The same has been rectified and successfully operated on 19th August 2017.

Further Teesta-III suggested that second PLCC channel may also be used for transferring the signal from Rangpo to Teesta III to improve the reliability. Teesta III added that spare channel is already available.

Teesta III added that other disturbances were not related to SPS operation.

TCC advised Teesta III and Dikchu to attend the OCC and PCC meetings regularly and the proposal of utilising the spare channel may be placed in lower forum.

TCC advised Teesta-III, Jorethang, Dikchu, Chuzachen & Powergrid to submit the healthiness certificate for Rangpo SPS as per the decision of special meeting of 21.06.2017.

ITEM NO. B8:	Status of Bus Splitting schemes in Eastern Region
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A. Bus Splitting of Powergrid Sub-stations

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

- 400 kV Maithon ---Completed
- 400 kV Durgapur--Completed
- 400 kV Biharshariff— *Completed in May, 2017.*

During third party protection of 400kV Maithon S/s on 18th May 2017, it was observed that bus splitting scheme at 400kV Maithon S/s has been commissioned but not in service.

In 134th OCC, it was informed that the bus splitting scheme at 400 kV Maithon & Biharshariff will be operationalized after the getting the consent from CTU.

In 5th State Standing committee meeting held at ERPC on 3rd August 2017, CTU informed that they will re-study the bus splitting arrangement and put the study result in upcoming meeting.

In 19th SCM, CTU informed that the study is under progress and the action plan will be shared shortly for operationalization of Bus-splitting schemes.

Further, CEA informed that the Fault level of FSTPS bus is also violating its limits. At present the same will be mitigated by bypassing the 400 kV Durgapur-Farakka D/C and 400 kV Farakka-Kahalgaon D/C lines at FSTPS and making them direct 400 kV Durgapur-Kahalgaon D/C line.

Powergrid/CTU may update.

Deliberation in the TCC meeting

CTU informed that they have carried out the study and decided to operationalize bus splitting scheme at 400 kV Maithon and Biharshariff. They will issue the letter to ERLDC for operationalization within a day.

CTU added that as the fault level is not severe at 400 kV Durgapur so it is not required for the time being.

ERLDC informed that they will carry out internal study and operationalize the bus splitting schemes at 400kV Maithon and Biharshariff one by one with close monitoring of the system behaviour.

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

In 130th 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 leveling – *Site leveling 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.

NTPC may update.

Deliberation in the TCC meeting

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

ITEM NO. B9:	Status of construction of 400 kV Sterlite-Jharsuguda D/C line
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Several deliberations were held in this forum on the issue of construction of 400 kV Sterlite – Jharsuguda D/C dedicated line of Vedanta Ltd (formerly known as Sesa Sterlite Ltd).

In view of GRIDCO's recommendations, 35th ERPC decided to extend the dead line for removal of LILO up to 15.04.2017 and advised Vedanta to strictly adhere to the schedule for commissioning of the dedicated line in all aspects.

Further, ERPC authorised CTU to open the LILO on 16.04.2017.

The progress was regularly monitored and reviewed in every OCC meetings in consultation with GRIDCO.

Subsequently, a Special meeting was convened on 14.07.2017 to review the scenario in view of failure of 7 towers 400 kV Vedanta-Meramundali D/C line of OPTCL. The minutes of the meeting is placed at **Annexure-B9**.

In the meeting, it was decided that Vedanta should complete the line construction and bay works by 30th July, 2017. Accordingly, Vedanta should apply beforehand for RIO/CEA inspection in 1st week of August, 2017. The target date for charging the dedicated 400 kV Vedanta- Jharsuguda D/C line should be 12th August, 2017. It was also decided that the LILO of Vedanta Ltd may be disconnected from 16th August, 2017.

Further, Vedanta was advised to follow the list of activities as prepared during the meeting for timely completion of dedicated 400 kV Vedanta- Jharsuguda line.

In 136th OCC meeting, OPTCL informed that construction of dedicated 400 kV Vedanta-Jharsuguda line has been completed except stringing of two 400 kV line crossings. The stringing work is being done manually because of severe rains. However, OPTCL assured that the line would be commissioned by September, 2017 in all respects.

OPTCL requested to extend the deadline for removal of LILO till the restoration of 400 kV Vedanta-Meramundali D/C line which is expected by 2nd week of September, 2017.

OCC advised OPTCL not to link the restoration of 400 kV Vedanta-Meramundali D/C line and stressed for early commissioning of 400 kV Vedanta-Jharsuguda line at least by ensuing TCC/ERPC meetings. With above view OCC referred the issue to TCC for further guidance.

In 19th SCM, it was informed that the LTA application of Vedanta will be closed and it will be treated as embedded generator of OPTCL.

GRIDCO may update. TCC may decide.

Deliberation in the TCC meeting

OPTCL informed that Vedanta will complete the line by 27th September 2017 and of 400 kV Vedanta-Meramundali D/C line will also brought into service by 25th September 2017.

TCC advised to commission 400 kV Sterlite –Jharsuguda D/C dedicated line by 30th September 2017 and the LILO will be opened from 1st October 2017.

ITEM NO. B10:	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 is in progress.

Sikkim assured that they will 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.

Sikkim may update. TCC may guide.

Deliberation in the TCC meeting

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

ITEM NO. B11:	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) and (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.

35th TCC advised ERPC secretariat to convene a separate meeting at ERPC, Kolkata on 2nd March, 2017 at 12:00 hrs to resolve the issues.

Accordingly, a special meeting was convened on 2nd March, 2017 at ERPC Kolkata. The minutes is placed at **Annexure-B11**. In the meeting following were concluded:

A) Biharsharif S/s End (Deposit work of JUSNL):-

It was informed that due to delay in payment the project was delayed and in the meanwhile one new 132 kV Sekhpura-Biharsharif line has been constructed in the same corridor of proposed modified 400 kV line. Therefore for crossing of the 132 kV line one additional tower needs to be constructed with the additional cost of Rs. 48.5 Lacks approx.

JUSNL agreed to do the additional payment of Rs. 48.5 Lacks very soon.

Powergrid informed that the work will be completed in two months after the receipt of additional payment of Rs. 48.5 Lacks. Further, Powergrid pointed that there may be additional cost for ROW issues for stringing of line near 400 kV Biharsharif.

B) Tenughat End (TVNL Consultancy project):-

Powergrid informed that the total completion of work will take 3 months (tentatively by June, 2017) from date of receipt of balance payment. The detail schedule of work is as given below:

- a) One no new 250 MVA ICT: The work will be completed by June, 2017.
- b) One no. old 250 MVA ICT: The ICT was of 1992 make. The healthiness certificates from Tenughat will be given within a week and commissioning work of the same will be completed by June, 2017.
- c) 50 MVAR old LR: The LR is 25 years old and need to be shifted to new plinth area. The shifting will be done by TVNL within March, 2017. Subsequently, on receipt of healthiness certificates from Tenughat the LR will be commissioned by June, 2017.

Further, Powergrid pointed that the present 220 kV Tenughat- Biharsharif line is in very bad shape and need strengthening before charging at 400 kV level.

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.

Subsequently, TVNL vide letter dated 25.08.17 has intimated that for getting connected at 400 kV Biharshariff (PG) there may be certain wheeling & commercial charges so the commercial issues needs to be resolved.

Powergrid/JUSNL/TVNL may update.

Deliberation in the TCC meeting

Powergrid informed that Biharshariff end is ready for charging.

TVNL informed that TVNL end will be ready by November 2017.

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

ITEM NO. B12:	Status of PLCC system installed in Eastern Region
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1) Restoration of PLCC system of important lines of JUSNL

I) 220 KV Chandil –Santaldih line

WBPDCCL vide mail dated 24.07.2017 informed that single phase Auto Reclose feature has been put into service at 220 KV STPS-Chandil feeder at STPS end at 14:02 hrs. on 14.07.17.

In 136th OCC, it was informed that the PLCC has been put into service w.e.f 14.07.2017.

II) 220 KV Ramchandrapur-Joda line

In 136th OCC, OPTCL informed that the PLCC system has been implemented on 27th July 2017.

TCC may note.

Deliberation in the TCC meeting

Members noted.

2) Restoration of PLCC system of important lines of OPTCL and BSPTCL

In 35th TCC, OPTCL updated the latest status as follow:

1. Jeypore(PG)-Jayanagar (Commn. in OPGW exists): SDH tendering is in progress
2. Rourkela(PG)-Tarkera (Commn. in OPGW exists): SDH received, will be *commissioned by March, 2017*
3. Rengali(PG)-Rengali S/Y (Proposal for Commn. in OPGW is pending): tendering is in progress
4. Indravati(PG)-Indravati(PH) (Proposal for Commn. in OPGW pending): tendering is in progress
5. Baripada(PG)-Baripada (Tendering in Progress for OPGW): Contract awarded
6. Baripada(PG)-Rairangpur (Tendering in Progress for OPGW): Contract awarded

The updated status of BSPTCL lines are as follows:

1. 220kV Patna-Fatua S/C line---*PLCC system has been installed and Fatua end tested. PLCC will be put in service after completion of reconductoring work.*
 2. 220kV Patna-Khagul S/C line--- *PLCC system has been installed and commissioned.*
 3. 220kV Gaya-Dehri D/C line--- *PLCC system has been installed and and commissioned.*
 4. 220kV Gaya-Bodhgaya D/C line--- *PLCC system has been installed and and commissioned.*
 5. 220kV Purnea (PG)-Madhepura line
 6. 220 kV Biharshariff- Begusarai line
 7. 220 kV Biharshariff- Bodhgaya line
- } Digital PLCC will be implemented.

OPTCL and BSPTCL may update.

Deliberation in the TCC meeting

OPTCL updated the latest status as follows:

1. Jeypore(PG)-Jayanagar (Commn. in OPGW exists): *Commissioned*
2. Rourkela(PG)-Tarkera (Commn. in OPGW exists): *Commissioned*
3. Rengali(PG)-Rengali S/Y (Proposal for Commn. in OPGW is pending): *PSDF appraisal committee accepted the proposal*
4. Indravati(PG)-Indravati(PH) (Proposal for Commn. in OPGW pending): *PSDF appraisal committee accepted the proposal*
5. Baripada(PG)-Baripada (Tendering in Progress for OPGW): *Contract awarded*
6. Baripada(PG)-Rairangpur (Tendering in Progress for OPGW): *Contract awarded*

The updated status of BSPTCL lines are as follows:

1. 220kV Patna-Fatua S/C line---*PLCC system is in service*
 2. 220kV Patna-Khagul S/C line--- *PLCC system is in service*
 3. 220kV Gaya-Dehri D/C line--- *PLCC system is in service*
 4. 220kV Gaya-Bodhgaya D/C line--- *PLCC system is in service*
 5. 220kV Purnea (PG)-Madhepura line
 6. 220 kV Biharshariff- Begusarai line
 7. 220 kV Biharshariff- Bodhgaya line
- } *Work is in progress expected to be commissioned by December 2017.*

ITEM NO. B13:	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 STU, bus-bar protection is either not commissioned or non-functional. The non-availability / non-functionality of bus bar protection, results in delayed, multiple and uncoordinated tripping, in the event of a bus fault. This in turn not only results in partial local black out but also jeopardises the security of interconnected national grid as a whole. The matter was also pointed out during the third party protection audit which is being carried out regularly. Constituents are required to meet the audit compliance and commission or make bus –bar protection functional where ever it is not available. A list of such important 220 kV sub-stations as per the first third party audit is placed in the meeting.

In 35th TCC meeting, all the constituents were advised to give the latest status of Bus Bar protection of other 220KV S/S under respective control area.

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

In 58th PCC, members updated the status of pending substations as follows:

Bihar				
Sl No	Name of Substation	Bus protection status	Date of audit	Present Status
1	220 kV Bodhgaya	Not available	28-Dec-12	<i>Single bus and 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>Single bus. Bus bar will be commissioned under PSDF.</i>
West Bengal				
1	220 kV Arambah	Not available	24-Jan-13	<i>Available in alarm mode. Planning to replace with numerical relay</i>
2	220 kV Jeerat	Not available	20-Dec-12	<i>Relays have been received at site. Installation is in progress.</i>

58th PCC advised DVC to install numerical bus bar protection at 220kV Bokaro, Kalyaneswari, Chandrapura and Durgapur S/s to improve the reliability.

Members may place their action plan.

Deliberation in the TCC meeting

DVC informed that they have already covered the upgradation of busbar protection for 220kV Kalyaneswari and Durgapur in PSDF proposal. They will place their action plan for 220kV Bokaro and Chandrapura in upcoming PCC meeting.

ITEM NO. B14:	Non scheduling of power from KBUNL to JBVNL -- JBVNL
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Jharkhand Bijli Vitran Nigam Limited (JBVNL) vide letter dated 04.09.17 informed that neither JBVNL is getting Power from Kanti Bijli Utpadan Nigam Limited (KBUNL) till date and nor getting any intimation from SLDC Patna or ERLDC regarding scheduling but we are regularly getting bills from KBUNL towards the fixed charges.

They mentioned that they have already signed the LTA agreement with CTU on 18th May'2017 and even after signing of this agreement power from KBUNL is not getting scheduled to JBVNL. They have already written to CTU and KBUNL regarding the issue vide our letter no. 909 dated 22.06.2017, 1110 dated 31.07.2017, 1148 dated 10.08.2017, 1149 dated 10.08.2017.

The matter was placed before the 135th OCC meeting wherein JUSNL was advised to pursue with CTU for issuing the letter for LTA operationalisation for enabling the scheduling of JUSNL share from MTPS Stage-II.

Further, in 136th OCC meeting it was informed that a petition (Petition No. 20/MP/2017) on a related issue was heard before CERC on 09.05.2017 and the final order is reserved till filling of additional information by the respondents.

JBVNL/CTU may update. Members may discuss.

Deliberation in the TCC meeting

CTU informed that LTA has been signed by JUSNL only but other beneficiaries (DVC, GRIDCO and WBSEDCL) are yet to sign.

The issue has been heard by CERC and the order is awaited.

TCC felt that further discussion in this forum would not be fruitful as the issue is pending with CERC.

ITEM NO. B15:	Surrender of capacity allocated from Muzaffarpur TPS Stage-II (2X195 MW) -- by DVC
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DVC vide letter dated 24.08.17 intimated that MoP, GOI, vide letter dated 10.12.2010 allocated 10 MW i.e. 2.6% of the installed capacity from Muzaffarpur TPS Stage-II (2x195 MW). DVC entered into PPA with Kanti Bijlee Utpadan Nigam Limited on 30.12.2010 for that allocated capacity. Kanti Bijlee Utpadan Nigam Limited failed to commission the first unit Muzaffarpur TPS Stage-II even within five years from the date of PPA. Meanwhile, all the new 500 MW units of DVC were commissioned one after another and DVC became a surplus generating entity. DVC continuously persuaded with MoP, GOI for de-allocation of capacity from Muzaffarpur TPS Stage-II (2x 195 MW) through letter dated 30.12.2014, 10.02.2015, 13.07.2015, 09.02.2016, 30.05.2016, 19.09.2016 and 24.05.2017.

DVC also intimated the above fact to KBUNL through letter dated 06.04.2015 and 29.04.2015. Power Grid Corporation (CTU) was also informed through their letter dated 20.03.2015 and clarified the reasons for not signing any LTA with CTU.

In a Special Meeting convened by the Eastern Regional Power committee on 25.01.2017 on issues related to scheduling of power from BRBCL, Nabinagar and KBUNL, MTPS Stage-II, it was mentioned that 67.7% of power from KBUNL, Stage-II is already allocated to Bihar. The State of Bihar may like to avail the remaining quantum of power as well. Meanwhile, CTU has given notice to KBUNL for signing LTA for evacuation of power from MTPS Stage-II failing which LTA granted to KBUNL, shall be liable for revocation. KBUNL filed a Petition No. 20/MP/2017 before CERC with a prayer for direction to the beneficiaries for signing LTA with CTU so that power can be evacuated from MTPS Stage-II. The judgment of the petition is yet to be delivered by CERC.

After commissioning of the units of Muzaffarpur TPS Stage-II (2x195 MW), KBUNL started sending the bill for capacity charges to DVC without settling the issue of evacuation of the power MTPS Stage-II.

In view of the above, the matter may be discussed and views of other beneficiaries of Muzaffarpur TPS Stage-II (2x195 MW) may please be obtained for settlement of the issues.

TCC may guide.

Deliberation in the TCC meeting

GRIDCO informed that they are also trying to surrender the power.

TCC felt that this is not the appropriate forum to discuss the issue as the allocation of power is done by MoP. Further TCC advised DVC and GRIDCO to approach MoP, GoI for revision of allocation.

ITEM NO. B16:	Replacement of old RTU in Eastern Region for reporting of RTU / SAS to back-up control centres
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34th TCC felt that in case of failure of ICCP link/other communication equipment, the data availability needs to be assured at Main as well as Back-up control centres.

Subsequently, in Special PRM meeting was held on 14.02.2017 the issue was deliberated and it was emerged that it is quite necessary to replace the old RTUs / SAS at the earliest.

In 35th TCC, After detailed discussion, TCC decided that a committee may be formed by ERLDC with Powergrid as nodal agency for assessment of old RTUs and further necessary action on replacement. Progress reports in this regard are to be placed before TCC on regular basis.

35th ERPC advised ERLDC to convene a separate meeting and form a committee with CTU/Powergrid as nodal agency for assessment of old RTUs of central sector and further necessary action on replacement.

As advised by TCC, a committee with POWERGRID as a nodal agency, was formed for assessment of old RTUs in Eastern Region and further action on replacement. Subsequently, two meetings were held at ERLDC, Kolkata on 9th June 2017 & 4th August 2017.

The report has been finalized by the committee based on the suggestions received from the various committee members and the report is available in ERPC website (<http://erpc.gov.in/report/>).

ERLDC may update. TCC may guide.

Deliberation in the TCC meeting

ERLDC informed that guidelines/action plan have been finalised in the report for replacement of old RTUs in next two years.

Powergrid informed that many places OPGW is 15 years old and those need to be replaced.

TCC advised Powergrid to place the details in lower forums and then place in TCC/ERPC for approval.

ITEM NO. B17:	Reliable Communication Scheme under Central Sector for Eastern Region—PGCIL
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34th TCC has approved reliable communication scheme for 525Kms of OPGW based communication network of an estimated cost of Rs.14 Cr. under central sector for Eastern Region as per the following requirements:

- i. Fiber Optic connectivity along with Communication Equipment and associated items from following stations under Central Sector scheme is required to be established for data and voice communication to ERLDC for efficient grid management.

Sl. No.	Name of Power Station	Name of the Line	Voltage Level in kV	Length in km
1	IB Valley (Budhipadar)	IB Valley-Budhipadar		
2	NALCO (Meeramundali)	NALCO-Meeramundali		
3	Jindal (Angul)	Jindal-Angul	400 KV	55
4	GMR (Angul)	GMR-Angul	400 KV	30
5	LANCO (Angul)	LANCO-Angul	400 KV	24
6	Monet (Angul)	Monet-Angul	400 KV	31
7	Indbharat (Jharsuguda)	Indbharat-Jharsuguda	400 KV	50
8	TT Pool (New Melli)	TT Pool-New Melli	400 KV	25
9	Mangon	Mangon-Rangpo	400 KV	70
10	Sterlite Power (Jharsugoda)	Sterlite-Jharsugoda	400 KV	40
		TOTAL		363

- ii. Fiber Optic connectivity along with Communication Equipment and associated items is also required to be established on following lines of Central Sector to provide redundancy in the system for connectivity with SR and NER:

Sl. No.	Name of the Line	Voltage Level in kV	Length in km
1	Part of Angul - Srikakulam (Angul portion)	400	120
2	Alipurduar - Salakati-I	400	42
	Total		162
	Grand Total		525

Subsequently, as informed by POWERGRID they have worked out detailed cost estimate of the scheme and prepared DPR for the same. The estimated cost comes out to Rs. 19.75 Cr (Feb'2017 Price Level). However, actual cost shall be discovered only after bidding process and implementation of the project. Tender activities have also been initiated based on DPR.

Member may please note the same.

Deliberation in the TCC meeting

Powergrid informed that the project cost has been revised in view of Make in India initiative. Powergrid has prepared the DPR for above schemes and the estimated cost is revised to 19.75 cr.

ERLDC informed that Monnet should be excluded from the scheme as Monnet generating station is not coming up.

TCC advised Powergrid to consider views of ERLDC while finalising the bidding process and exclude those stations, which are not coming in near future.

ITEM NO. B18:	OPGW on 400kV Kishenganj – Patna line under ‘Eastern Region Fibre Optic Expansion Project’ (Additional Requirement)- PGCIL
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Under ERSS-XXI transmission system new 400kV Sub-station at Saharsa is proposed to be created through TBCB route with LILO of existing 400kV Kishenganj – Patna Transmission Line. OPGW is being proposed for communication connectivity in LILO portion alongwith construction of transmission line portion in said project. The existing 400kV Kishenganj – Patna Transmission Line is not having OPGW presently and 347Km of OPGW is required to be laid to provide connectivity from Saharsa Substation through OPGW in LILO portion.

This link is proposed to be implemented under ‘Eastern Region Fibre Optic Expansion Project (Additional Requirement)’ which was approved in 33rd ERPC. The DPR Cost Estimate (June'16 price level) was Rs. 35.08 Cr comprising 1147 Km of OPGW and associated communication equipment. After inclusion of OPGW laying on 400 kV Kishenganj – Patna line, the network size of ‘Eastern Region Fibre Optic Expansion Project (Additional Requirement)’ would become 1494 Km of OPGW with communication equipment. The revised tentative cost of this project would become Rs. 46 Cr. However, actual cost shall be discovered only after bidding process and implementation of the project. This project cost shall be recovered as a tariff to be determined by CERC and shall become part of the commercial agreement signed by the constituents of Eastern Region in ULDC scheme.

Member may discuss and approve.

Deliberation in the TCC meeting

TCC approved the additional requirement of OPGW for 400 kV Kishenganj – Patna line. After inclusion of same, the network size of ‘Eastern Region Fibre Optic Expansion Project’ would become 1494 Km. The revised tentative cost of this project would become Rs. 46 Cr. for 1494 Km OPGW with communication equipment.

TCC referred to ERPC for approval.

ITEM NO. B19:	Payment of Deviation Charge – Present Status
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As informed by ERLDC, The status of Deviation Charge payment as on 03.08.2017 is enclosed at **Annexure – B19**. The current principal outstanding Deviation Charge of BSPHCL & JUVNL is ₹ **4.85 Cr & ₹ 9.13 Cr** respectively considering bill up to 30.07.2017. ERLDC has also given reminders to BSPHCL & JUVNL requesting to liquidate the entire Deviation charges.

SIKKIM, APNRL and IBEUL are not paying deviation charges amount to the Pool and waiting for adjustment with the receivable amount.

In the 35th CCM held on 02.08.17 BSPHCL representative informed that the outstanding would be liquidated by the end of this month. JUVNL representative was absent.

CC members requested to clear the dues before the ensuing TCC.

ERLDC may update.

Deliberation in the TCC meeting

ERLDC updated that the current outstanding Deviation Charge of BSPHCL & JUVNL is ` 10.94 Cr (Principle) & 8.26 lac (Interest) and ` 11.87 Cr (Principle) & 11.52 lac (Interest) respectively.

Bihar informed that they will clear the dues within a week.

JUVNL informed that they will clear the dues by fortnight.

ITEM NO. B20:	Opening of LC by ER constituents for Deviation Charges Payments
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The details of LC amount required to be opened in 2017-18 by ER constituents is given in **Annexure – B20**. Letters to this effect has already been issued by ERLDC to the defaulting entities viz, BSPHCL, GMR, GATI, JITPL, IBEUL, BRBCL, JLHEP (DANS Energy), TPTCL, NVVN (Nepal) and TUL. At present JUVNL, Sikkim, APNRL & BRBCL have valid LC. Rest of the constituents which were required to open/recoup the LC, have not opened/recoup the LC.

In the 35th CCM meeting held on 02.08.2017, BSPHCL representative informed that opening of LC was under process and it would be opened shortly.

GMR, GATI, JITPL, IBEUL, JLHEP(DANS Energy), TPTCL, NVVN(Nepal) and TUL were once again advised to get the LC opened as per regulatory requirement.

Member Secretary opined that STOA to defaulting entities may be denied as per decision of ERPC.

It was decided that ERLDC would write letter to all defaulting constituents for opening of LC within a specified time frame with the condition that if they fail to open the LC, STOA would be denied. The updated position would be placed before the ensuing TCC/ERPC meetings.

ERLDC may update.

Deliberation in the TCC meeting

It was informed that JITPL has already opened the LC.

GMR informed that they have already opened the LC.

ERLDC informed that there is discrepancy between issuing and receiving bank which will be resolved soon.

TCC advised all the other constituents to open the LC as per the regulatory requirement by 30th September 2017. TCC reiterated that STOA to defaulting entities would be denied as per decision of ERPC wef 1st October 2017.

ITEM NO. B21:	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 meeting held with PGCIL, ERLDC, M/s Genus, & M/s TCS on 02.03.17 at ERLDC. M/s TCS informed that they have done the AMR integration test with Genus meter and informed that communication with existing Genus meter for AMR integration couldn't be established. Moreover M/s TCS had informed that they will try the subsequent steps for communication with Genus meter and update ERLDC & PGCIL accordingly.

In 132nd OCC, Powergrid informed that as per their communication with M/s TCS, integration of Genus meters in AMR system is possible, but it will take some more time to establish the communication.

In 133rd OCC, Powergrid informed that it will take some more time and asserted it will be done by June, 2017.

In 134th OCC, Powergrid informed that TCS is able to read the Genus make meter data however there are some issues related to baud rate of communication. Testing is in progress at Subashgram. It is expected to be completed by July, 2017.

In 135th OCC, Powergrid informed that integration with Genus make meter is successful but some configuration issues are still pending.

In 136th OCC, Powergrid informed that firmware needs to be upgraded which has been under progress. After the firmware upgradation the integration of Genus make meters with AMR will be established by September 2017.

Powergrid may please update the status.

Deliberation in the TCC meeting

Powergrid informed that a meeting will be held on 20th September 2017 wherein the interfacing issues would be resolved by M/s TCS and M/s Genus.

TCC advised Powergrid to place the outcome of the meeting in ensuing OCC meeting.

ITEM NO. B22:	Non-completion of DSTPS-RTPS OPGW link in DVC Sector under Microwave Replacement Project
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POWERGRID ERTS – 2 ULDC informed in 19th SCADA O & M meeting held on 07th April 2017 at ERLDC, Kolkata that they are not able to complete the OPGW work in DSTPS – RTPS in DVC Sector under Microwave Replacement Package due to severe ROW issue. POWERGRID further informed that they have mobilized the team several times but work could not be completed due to heavy ROW / compensation issues related to TL construction resulting non-completion of 2 nos. OPGW drum (approx. 9 Km). POWERGRID again informed that this issue is discussed in various forums but the solution is yet to be provided by DVC.

DVC informed that they are not able to resolve the issue as this is old ROW / compensation issue related to TL construction.

ERLDC opined that the matter may be placed before TCC/ERPC board for further deliberation and resolution of the matter. POWERGRID & DVC agreed for the same.

TCC may guide.

Deliberation in the TCC meeting

Powergrid informed that laying of two drums of OPGW cable is pending due to ROW issues. Powergrid requested DVC to take the pending OPGW cable and close the contract.

DVC informed that they will try to resolve the ROW issues by 31st October 2017 otherwise they will close the contract.

ITEM NO. B23:	Report on “Operational Analysis for Optimization of Hydro Resources & facilitating Renewable Integration in India” by the Forum of Load Despatchers (FOLD)
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Forum of Load Despatchers (FOLD) and POSOCO have prepared a report on “Operational Analysis for Optimization of Hydro Resources & facilitating Renewable Integration in India”. The report was released by the Hon’ble MoS (Independent charge) for Power, Coal, New & Renewable Energy and Mines in the meeting of Forum of Regulators (FOR) on 23.06.2017.

The report has recommended that many of the generating stations can achieve a better peaking capacity, while honouring the other conditionality / constraints such as flood control, drinking water & irrigation requirements. It suggested that operational interventions backed by policy and regulatory framework can obtain additional peaking support from the existing hydro power stations, optimize their operations, value flexibility through incentive schemes for peaking & ramping support, synchronous condenser operation, black start service, pumped mode operation, etc. Further, coordinated scheduling w.r.t. reservoir levels and grid requirement, will bring in overall economy.

Subsequently, Ministry of Power has constituted a sub-committee to study and recommend the individual hydro power stations which can be operated to achieve peak load capacity. The sub-committee has held three rounds of meetings with many of the stakeholders and deliberated on the possible optimization. The sub-committee had agreed in principle with the recommendations in the report submitted by FOLD /POSOCO. The sub-committee recognized that there is ample scope for improvement from the existing hydro generation fleet and hence detailed deliberations are required in the RPC/ TCC Meetings for identifying /sensitizing the hydro power stations for better optimization wherein the views of the developers and other stakeholders could formally be obtained. The following aspects need to be discussed:

➤ **ENABLING PEAKING AVAILABILITY**

- Despatch of Hydro units to factor demand pattern & trend of electricity prices
- Ensuring unit availability for maximizing utilization (for better valuing of water & flexibility)

➤ **RAMPING SUPPORT**

- Ensure more hydro units on bar for a given dispatch schedule

➤ **REJUVENATION OF PUMPED STORAGE HYDRO UNITS**

- Resuming pumping mode operation at all existing PSP units

➤ **ANCILLARY SERVICES FROM HYDRO POWER**

- DSM for storage & pondage type stations
- Ancillary Services framework for inter-state hydro stations to begin with
- AGC for CERC regulated hydro stations
- RoE linked to Primary Response facility for intra-state hydro
- Incentive for Voltage Control Service, synchronous condenser operation
- Incentive for black –start & adequate redundancy for black start units (DG set, network connectivity etc.)

➤ **TRANSMISSION PLANNING FOR HYDRO FLEXIBILITY**

- Transmission Planning study to factor in all India hydro dispatch at 10% over-load capability
- Transfer capability assessment to factor in silt issues
- One- and –half breaker switching scheme for all hydro stations(especially for Gas insulated sub-stations(GIS))
- Uprating cables between hydro station(GIS) & pot head yard
- Adequate Reactive Compensation for transmission system evacuating Hydro Generation

➤ **COMMUNICATION FACILITIES**

- Reliable (N-1) Communication path from Hydro stations to RLDCs /SLDCs for flow of real time data & voice signal
- Provision for adequate telemetry from Hydro stations in SERC Hydro Tariff regulations

➤ **FORECASTING LEADING TO COORDINATED SCHEDULING & DESPATCH**

- Constitution of Regional Hydro Coordination Forums
- Each silt affected station to have facility for silt forecasting

- Intra-basin hydro stations to have plan for coordinated flushing & review it periodically
 - The RoR & pondage type hydro stations & intra –basin hydro stations must have facility for inflow forecasting
- **Multi Part Tariff**
- Amendment in Tariff Regulations of appropriate commissions with Capacity charge & energy charge for Hydro power in line with CERC Regulations
- **Renovation & Modernization**
- Every plant to develop a long term R &M plan with provision for periodic review w.r.t flexibility requirement
- **Review of Standards, Hydrological Constraints**
- The Review to essentially consider N-1-1 secure operation of hydro units, protection adequacy, flexibility needs etc.
 - The Regional Hydro Coordination forum to periodically review the constraints

POSOCO may elaborate. Members may discuss.

Deliberation in the TCC meeting

POSOCO stressed upon optimum utilisation of hydro generation during peak hours. Study reveals that there is a scope of improving the generation during peak hours by OHPC generators Upper Kolab, Indravati, Burla, Chiplima and Rengali.

ERLDC presented the performance of hydro generators of Eastern Region for peak availability against their installed capacity for 2016 and 2017. During presentation, ERLDC highlighted that there is a scope of improvement for Burla, Chiplima and Rengali. The presentation is enclosed at Annexure-B23.

POSOCO advised OHPC/GRIDCO that they may purchase power from exchange during off peak hours as the price is low and conserve the water during off peak hours. The same water may be used for peak hour generation and there will be a huge commercial advantage.

OHPC informed that they are declaring their availability to SLDC, Odisha and SLDC is scheduling the OHPC generators. However, they will try to run their units upto the available capacity during peak hours subjected to volume of the water to be released for irrigation, which is being decided by their irrigation department. OHPC added that some of their units are under major R &M work and take 2 years to bring into service.

ITEM NO. B24:	Metering and Scheduling Methodology for Tashiding HEP
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In view of anticipated delay in commissioning of Legship Pooling station and 2 no. 220 GIS bays at New Melli S/s and expected commissioning of Tashiding HEP by Dec., 2016, members in 18th Standing Committee of ER agreed to the following interim arrangement, till the commissioning of Legship Pooling sub-station and 2 no. 220 kV GIS bays at New Melli.

Temporary Arrangement no. 1

a) Interconnection of Tashiding-Legship Pool 220 kV D/C line with Legship Pool New Melli 220 kV D/C line by bypassing Legship Pooling station.

Temporary Arrangement no. 2

If the bays at New Melli for termination of Legship Pool-New Melli 220 kV D/C line are not ready.

b) LILO of one circuit of New Melli-Rangpo 220 kV D/c line at a suitable location near New Melli and connecting it with Tashiding-New Melli line to form Tashiding-New Melli, Tashiding-Rangpo and New Melli-Rangpo 220 kV S/c lines.

135th OCC advised to discuss the related issues of control area jurisdiction, scheduling, etc in a separate meeting.

A meeting was held with ERPC and ERLDC on 04.09.2017 A brief note on the subject and gist of discussions is at **Annexure-B24**.

TCC may approve.

Deliberation in the TCC meeting

Sikkim agreed to issue the NoC for scheduling of Tashiding HEP by ERLDC.

TCC advised to discuss other issues related to scheduling of Tashiding HEP in the lower forums.

ITEM NO. B25:	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. The existing phasing plan for Eastern Region is placed at **Annexure-B25**.

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. The revised unit-wise phasing plan as per the above timeline may be forwarded to ERPC (**e-mail: mserpc-power@nic.in**) at the earliest for finalization of the phasing plan.

Members may update and finalize.

Deliberation in the TCC meeting

CE, CEA informed that the existing phasing plan needs to be revised to complete the implementation plan within 31.12.2022. He informed that as per the phasing plan of ER 17 units of NTPC, 8 units of DVC and one unit of CESC is falling beyond 31.12.2022 and need to be revised. The revised plan should be submitted within a week as per directive of ministry.

Further, he pointed that as per WBPDCCL some of the units in its control area are complying the new norms of SO_x. He informed that without FGD it is not possible to achieve the new standard and suggested WBPDCCL to reassure.

GRIDCO informed that NTPC may explore for FGD installation for TTPS units as they have already invested 800 cr.

NTPC informed that the units of Stage-I of TTPS have completed 48/49 years and units of Stage-II have completed 34/35 years as on January, 2017. Till 2014 expenditure of around Rs. 678 crore has been made towards R&M and the station is operating under extended life of around 20 years i.e. upto 2021.

TVNL informed that they have already planned for FGD installation for TVNL units and tendering is in progress. TVNL requested CEA to revise the phasing out plan.

TCC advised TVNL to submit the FGD installation plan within a week.

Further, TCC advised all the constituents to submit the revised plan by accommodating respective generators within threshold date 31.12.22 within a week to CEA with a copy to ERPC otherwise CEA may revise and finalise the phasing plan.

ITEM NO. B26:	Augmentation of 400/220kV ICT capacity at Maithon, Patna, Sasaram, Bihar Shariff
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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 Bihar Shariff 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.

In 35th TCC, Powergrid informed that the augmentation 400/220kV ICTs at Maithon S/s will be completed by July,2017.

Powergrid added that type test of 400/220kV ICT of Sasaram and Patna S/s had failed and the design of the ICT is being reviewed by OEM. The augmentation of 400/220kV ICTs at Sasaram and Patna will take time.

Powergrid also informed that augmentation of 400/220kV ICTs at Biharshariff will take one and half year.

Bihar requested Powergrid to divert ICTs from any other sub-stations for early argumentation at Biharshariff, Sasaram and Patna S/s. Bihar added that immediate argumentation of ICTs at Biharshariff S/s is essential to meet increasing demand in Bihar.

Powergrid informed that diversion of ICT to Biharshariff S/s is not possible at this juncture. However Powergrid assured to explore further possibilities to expedite.

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.

Powergrid may update.

Deliberation in the TCC meeting

Powergrid informed that 2nd ICT at Patna will be replaced in first quarter of 2018-19 and for 3rd ICT the award is yet to be placed.

Installation of 2nd ICT at Maithon will be completed by 20th September 2017 and will be commissioned subject to availability of shutdown.

TCC advised powergrid to place the shutdown in OCC meeting.

4th ICT at Biharshariff is under awarding stage.

Argumentation of ICT at Sasaram will be done in 4th quarter of 2017-18.

ITEM NO. B27:	Priority-based commissioning of bus reactor for control of high voltage during lean periods
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In 35th TCC, Powergrid updated the latest status as follows:

S.N.	Reactor	Status
1	125 MVAR Bus reactor of Jamshedpur	Expected commissioning at Jamshedpur and Biharshariff by April'17
2	125 MVAR Bus reactor of Biharshariff	

3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	Commissioning expected by April'18.
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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	<i>Expected commissioning at Jamshedpur and Biharshariff by November'17</i>
2	125 MVAR Bus reactor of Biharshariff	
3	Additional bus-reactor of 125 MVAR capacity at Beharampur.	<i>Commissioning expected by April'18.</i>
4.	125 MVAR Bus reactor of Subashgram	<i>Under tendering stage</i>

ITEM NO. B28:	Status of Transmission projects approved in various meetings
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The status as updated in 35th 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	Powergrid informed that the work under progress and expected commissioning by Nov'18.
2	Change in proposed the Associated 765 kV System Strengthening Scheme inER	28 th ERPC Meeting	Under TBCB
3	Retrofitting of pilot wire protection of 132 kV Purnea (PG) – Purnea (BSPHCL) feeders	26 th ERPC Meeting	Powergrid informed that the scheme was covered in the scheme of modification of 132 kV Bus arrangement at 220/132 kV Purnea S/S of Powergrid under GIS package. The work has been awarded and expected to be completed by Mar'17.
4	Transmission System for immediate evacuation of power from North Karanpura STPP (3x660 MW) to Chandwa and Gaya Pooling stations ofPowergrid	25 th ERPC Meeting	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.
5	Procurement of two single phase spare ICT units (2x500 MW), 765/400 kV for Eastern Region - to be stationed at Angul& JharsugudaS/S).	25 th ERPC Meeting	Powergrid informed that work has been awarded on March, 2015 and expected to be completed by June'17.

6	Augmentation of transformation capacity at the existing 400/220 kV Jamshedpur (PG) & Sasaram (PG) S/S	25 th ERPC Meeting	Powergrid informed that for Sasaram- 1 st ICT commissioned, 2 nd 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.
7	Establishment of 220 kV MTPS (Extn.) – Muzaffarpur (PG) D/C line (3 rd & 4 th Circuits)	25 th ERPC Meeting	Bay construction at Muzaffarpur completed in consultancy works. To be commissioned in March'17.
8	Procurement of 110 MVAR, 765 kV Single Phase spare Reactor unit at Sasaram	25 th ERPC Meeting	Powergrid informed that the work has been awarded on March, 2015 and expected to be delivered by May' 2017.
9	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
10	Modification of 132 kV Bus arrangement at 220/132 kV Purnea S/S of Powergrid	25 th ERPC Meeting	POWERGRID informed that the scheme will be implemented by Mar'17.
11	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	NIT completed. Tender evaluation in process.
12	GIS bays for 400 kV, 125 MVAR Bus Reactor at Baripada	24 th ERPC Meeting	Powergrid informed that the work has been awarded and expected to be completed by 3 rd qtr. of 2017-18.
13	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	Work awarded and construction of line under progress, expected completion by 2nd Qtr. 2017-18.
14	Installation of 3 rd 400/220 kV, 1 x 315 MVA ICT at Durgapur & New Siliguri Substation	17 th SCM & 30 th ERPC	NIT done in Sept'16. Investment approval on Feb'17 BOD. Completion schedule- 28 months.
15	Commissioning of 2x160 MVA, 220/132 kV Auto transformer at Daltonganj substation along with 4 number of 132 kV line bays	17 th SCM & 30 th ERPC	Award placed, work under Progress, expected commissioning by Nov'17.
16	Extension of under construction 400kV D/C Latehar-Essar lines up to 400kV Chandwa Pooling station (PG), under the scope of JUSNL	17 th SCM & 30 th ERPC	JUSNL to inform
17	Establishment of 2x500 MVA 400/220kV sub-station at Dhanbad by LILO of both circuits of Ranchi-Maithon RB 400kV D/C line at Dhanbad	17 th SCM & 30 th ERPC	Under TBCB
18	Construction of 6 no. 400 kV line bays and bus splitting (765 kV & 400kV) arrangement at Jharsuguda (Sundargarh) as GIS	17 th SCM & 30 th ERPC	Award placed. 2 no's 400kV bays by July'17 & balance by April'19.
19	Reconductoring of Maithon RB-Maithon 400kV D/C line with HTLS conductor	17 th SCM & 30 th ERPC	NIT held on 20.12.16 . LOA expected by April'17.
20	Construction of North Karanpura— Gaya 400 kV D/c & North Karanpura -Chandwa (Jharkhand) Pooling Station 400 kV D/c	17 th SCM & 30 th ERPC	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.

. Powergrid may update.

Deliberation in the TCC meeting

Powergrid updated the status as follows:

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	Powergrid informed that the work under progress and expected commissioning by Nov'18.
2	Change in proposed the Associated 765 kV System Strengthening Scheme in ER	28 th ERPC Meeting	Under TBCB
3	Retrofitting of pilot wire protection of 132 kV Purnea (PG) – Purnea (BSPHCL) feeders	26 th ERPC Meeting	<i>Powergrid informed that the scheme was covered in the scheme of modification of 132 kV Bus arrangement at 220/132 kV Purnea S/S of Powergrid under GIS package. The work has been awarded and expected to be completed by Mar'17.</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>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>
5	Procurement of two single phase spare ICT units (2x500 MW), 765/400 kV for Eastern Region - to be stationed at Angul & Jharsuguda S/S).	25 th ERPC Meeting	<i>Powergrid informed that work has been awarded on March, 2015 and expected to be completed by June'17.</i>
6	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>
7	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>
8	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 May' 2017.</i>
9	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
10	Modification of 132 kV Bus arrangement at 220/132 kV Purnea S/S of Powergrid	25 th ERPC Meeting	<i>POWERGRID informed that the scheme will be implemented by Mar'17.</i>

11	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	NIT completed. Tender evaluation in process.
12	GIS bays for 400 kV, 125 MVAR Bus Reactor at Baripada	24th ERPC Meeting	Powergrid informed that the work has been awarded and expected to be completed by 3 rd qtr of 2017-18.
13	Eastern Region Strengthening Scheme-XV; Construction of Farakka—Baharampur 400kV D/C (HTLS) line and Subsequent modification of LILOs	17th SCM & 30th ERPC	Work awarded and construction of line under progress, expected completion by 2nd Qtr. 2017-18.
14	Installation of 3rd 400/220 kV, 1 x 315 MVA ICT at Durgapur & New Siliguri Substation	17th SCM & 30th ERPC	NIT done in Sept'16. Investment approval on Feb'17 BOD. Completion schedule-28 months.
15	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	Award placed, work under Progress, expected commissioning by Nov'17.
16	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	JUSNL to inform
17	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
18	Construction of 6 no. 400 kV line bays and bus splitting (765 kV & 400kV) arrangement at Jharsuguda (Sundargarh) as GIS	17th SCM & 30th ERPC	Award placed. 2 no's 400kV bays by July'17 & balance by April'19.
19	Reconductoring of Maithon RB-Maithon 400 kV D/C line with HTLS conductor	17th SCM & 30th ERPC	NIT held on 20.12.16 . LOA expected by April'17.
20	Construction of North Karanpura— Gaya 400 kV D/c & North Karanpura -Chandwa (Jharkhand) Pooling Station 400 kV D/c	17th SCM & 30th ERPC	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.

ITEM NO. B29:	Status of Spare Transformers & Reactors approved in various meetings
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The status updated as in 35th TCC/ERPC meeting on Spare transformers & reactors to be commissioned by Powergrid for use in ER.

Sl No.	Spare transformer/reactor	Latest status
1	1 X 315 MVA, 400/220 KV AUTO TRANSFORMER Bihar Shariff	Available at site.
2	1 X 315 MVA, 400/220 KV AUTO TRANSFORMER at Durgapur	Utilized at 400 kV Farakka. Procurement of spare ICT is under process. Awarded to M/S. TBEA. Expected to be delivered at site in Dec, 17.

3	1 X 80 MVAR SHUNT REACTOR AS O&M SPARE Rourkela Substation	Available at site.
4	2 X 500 MVA, 765/400 KV single phase ICTs at Angul & Jharsuguda.	<i>Powergrid informed that the work has been awarded on March, 2015. Delivery at Angul expected in Mar'17. Delivery at Jharsuguda expected in Dec'17.</i>
5	1 X 110MVA, 765KV single phase bus reactor at Sasaram	Powergrid informed that the work has been awarded on March, 2015 and expected to be delivered by June, 2017.
FOR MEMBER STATES:		
1	2 X 315 MVA 400/220 kv ICTs	Available
2	2 X 160/150 MVA 220/132 kv ICTs	One ICT available at Purnea S/s, 2 ICT available at Siliguri S/s.
3	1 X 50 MVA 132/66 kv ICT	Consumed at Gangtok. Gangtok transformer under repair.
SURPLUS FROM OLD ASSPARE		
1	3x 50 MVA, 220/132kV (to be released from Malda (2nos.) & Birpara (1no.) S/Ss)	Replaced with 160MVA transformer. 50 MVA ICT scrapped.
2	2x100 MVA, 220/132kV (to be released from one at Birpara & one at Siliguri)	Taken out and kept at Birpara and Siliguri
3	2x100 MVA, 220/132kV (to be released from Purnea (2nos.) S/Stn.)	Consumed. Installed at Muzaffarpur for Muzaffarpur-Dhalkebar line.

Powergrid may update the latest status.

Deliberation in the TCC meeting

Powergrid update the status as follows:

Sl No.	Spare transformer/reactor	Latest status
1	1 X 315 MVA, 400/220 KV AUTO TRANSFORMER at Bihar Shariff	Available at site.
2	1 X 315 MVA, 400/220 KV AUTO TRANSFORMER at Durgapur	Utilized at 400 kV Farakka. Procurement of spare ICT is under process. Awarded to M/S. TBEA. Expected to be delivered at site in Dec, 17.
3	1 X 80 MVAR SHUNT REACTOR AS O&M SPARE Rourkela Substation	Available at site.
4	2 X 500 MVA, 765/400 KV single phase ICTs at Angul & Jharsuguda.	Powergrid informed that the work has been awarded on March, 2015. Delivery at Angul expected in Mar'17. Delivery at Jharsuguda expected in Dec'17.

5	1 X 110MVA, 765KV single phase bus reactor at Sasaram	Powergrid informed that the work has been awarded on March, 2015 and expected to be delivered by June, 2017.
FOR MEMBER STATES:		
1	2 X 315 MVA 400/220 kvICTs	Available
2	2 X 160/150 MVA 220/132 kvICTs	One ICT available at Purnea S/s, 2 ICT available at Siliguri S/s.
3	1 X 50 MVA 132/66 kvICT	Consumed at Gangtok. Gangtok transformer under repair.
SURPLUS FROM OLD ASSPARE		
1	3x 50 MVA, 220/132kV (to be released from Malda (2nos.) & Birpara (1no.) S/Ss)	<i>Replaced with 160MVA transformer. 50 MVA ICT scrapped.</i>
2	2x100 MVA, 220/132kV (to be released from one at Birpara & one at Siliguri)	<i>Taken out and kept at Birpara and Siliguri</i>
3	2x100 MVA, 220/132kV (to be released from Purnea (2nos.) S/Stn.)	<i>Consumed. Installed at Muzaffarpur for Muzaffarpur-Dhalkebar line.</i>

ITEM NO. B30:	Issues related to associated / downstream systems—Powergrid
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WEST BENGAL

- 02 no 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 – Baraipur Tr. line and associated bays at Baraipur. Order recently placed by WBSETCL and expected completion by Dec '17. Program for readiness of lines for utilisation of above bays to be confirmed by WBSETCL.
- 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

- 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 bal 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.

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 to be scheduled in October'17. 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.

Members may discuss.

Deliberation in the TCC meeting

Members updated the status as follows:

WEST BENGAL

1. **02 no 220 KV line bays at Subhashgram (PG) s/s:** by December 2018
2. **6 nos. 220 KV bays at Rajarhat GIS substation under ERSS-V -** will be intimated in due course

ODISHA

1. 4 nos. 220 KV bays at Bolangir S/S : remaining 2 bays will be utilized by 2017
2. 6 nos. 220 KV bays at Pandiabil GIS: 2 bays already utilized
2 bays awaiting for approval of ERLDC
2 bays by March 2018
3. 4 nos. 220 KV bays at Keonjhar S/S: 2 bays by Dec 2017
2 bays by 2019

JHARKHAND

Powergrid informed that 400/220/132kV Daltonganj S/s will be commissioned by 2017 and requested JUSNL expedite downstream 220 and 132kV lines for better utilisation of the assets.

JUSNL informed that downstream 220kV system at Daltonganj will be completed by December 2018 and 132kV system will be completed by October 2017.

ITEM NO. B31:	Restoration of 400kV Patna-Kishanganj D/c line—additional agenda by Powergrid
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Powergrid informed that 400kV Patna-Kishanganj D/c line was under massive breakdown due to devastating floods in Ganga and Kankai rivers during July and August 2017 with collapse of several towers and pile foundation. The line has been successfully restored on 4th August 2017 after casting two pile foundations one each in Ganga and Kankai rivers, repair of one massively damaged pile foundation and erection of new towers at various locations.

TCC may note.

Deliberation in the TCC meeting

TCC appreciated the Powergrid efforts for restoring the line in record minimum time during unfavourable conditions.

PART C: ITEMS FOR INFORMATION

TCC members noted the following items for compliance:

ITEM NO. C1 :	Status of Projects approved/under consideration of PSDF appraisal committee
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The latest status of projects which are being funded by PSDF as updated in 136th OCC meeting is as given below:

S N	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.)	Status as updated in 136 th OCC
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14		120.67 Cr	11.04 Cr.	95 % Supply Completed
2	WBSETCL	Transmission System improvement of WBSETCL					
3	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	10.05.15	10.05.17	162.5 Cr.	16.25 Cr + 8.91 Cr	Total contract awarded for Rs. 51.35 Cr
4	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16		20 Cr.	4.94 Cr. + 9.88 Cr.	1) Hardware supplied and installed. 2) SAT completed for pilot state 3) Protection database management software (PDMS) put in live w.e.f. 30.03.17. 4) Training on PDMS organised at ERPC, Odisha, Bihar, WBSETCL, Jharkhand and DVC.
5	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharsharif, Bodhgaya, Fatuha, Khagaul, Dehri - on-sona & 132/33 kV GSS Kataiya	11/5/2015	Feb'2017	64.22 crore	23.68 crore	Project is on going. Contract awarded for Rs.71.37 Cr till date.
6		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016		18.88 crore		Approved (triparty agreement among NLDC, Govt. of Bihar & BSPTCL is in under process)
7		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.					Recommendation of appraisal committee is awaited. Estimated cost 54.69 crore.
8	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation			25.96		Approved by Ministry of Power
9		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC			140		Appraisal committee has recommended. It will be placed in next monitoring Committee meeting.

10	WBPDC	Implementation of Islanding scheme at Bandel Thermal Power Station			1.39 Cr		<i>MOP vide letter dated 16.05.17 has issued the sanction for grant of Rs. 1.39 Cr.</i>
		Upgradation of Protection and SAS			26.09		Approved by Ministry of Power
11	OHPC	Renovation and up-gradation of protection and control system of 4 nos OHPC substations.			22.35 Cr		MOP has issued the sanction letter for PSDF grant.
12 a	ERPC	Training for Power System Engineers					<i>The proposal was approved by Appraisal Committee. The approval from MoP, GOI is awaited.</i>
12 b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					

ITEM NO. C2 :	FSTPS Islanding Scheme, NTPC
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In 132nd OCC, NTPC informed that the FSTPS islanding scheme with U#1 has been implemented during overhaul period of 14th March-17th April, 2017.

ITEM NO. C3 :	Furnishing of data for Merit Order Web Portal
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During the Power Minister's Conference held on 3rd and 4th May 2017, at New Delhi, it was decided to develop a web portal/mobile app in about a month's time with a view to having transparency in Merit order scheduling & dispatch and ensuring most economic system operation.

In the conference Hon'ble Union Minister for Power requested all the States/UTs to submit the requisite data to CEA immediately.

On this regard, it is to inform that POSOCO has developed the facility for online uploading of monthly & daily data related to Merit Order Dispatch Portal, by the SLDCs. NLDC (POSOCO) has already communicated via email to all the SLDCs, their respective User IDs & Passwords and the procedure for online filling & uploading of data. All the SLDCs to start submitting the above data to NLDC online immediately.

In case of any doubt / clarification, Shri Harish Kr Rathour (NLDC) may be contacted at his Mobile No.9873918443. The procedure for online uploading of data for the portal is available in ERPC website.

Subsequently, CEA vide mail dated 4th July 2017 informed that for the ease of user, import from excel (in a predefined format) facility have also been implemented. Users are requested to follow following steps to upload data through excel:

- 1) Login to MERIT web portal (www.meritindia.in/login).
- 2) Select any date and click on "GO" button. After this, list of all station will be visible for that date with other information's, if already filled.
- 3) Click on "Export Data in Excel" to export the file in excel. ***This would be a template file which is to be used for uploading the data.***

- a. Once you do not have any changes in the list of plants, this file can be used for data uploading and on daily basis user need not to download excel format again.
 - b. In case updation in list of station is required (State owned stations), same can be modified through monthly page. At present this feature is disabled and very shortly it will be enabled.
 - c. Initial two row has station ID and name of station, which should not be disturbed and data will be uploaded based on these only. Any changes in it may lead to wrong data uploading.
 - d. User can select any file name to save and upload the data.
 - e. Once you filled data click on “If you have data ready in Excel, CLICK HERE to upload”, select date for which you want to upload data, browse for the desired file and click on UPLOAD.
 - f. If entire file has not been uploaded, you will get the file which will show list of stations not uploaded.
- 4) If new station to be added for state, user can add through monthly data upload pages. Once, it has added new EXCEL template to be downloaded again in order to fill data for new station.
 - 5) User who wants to fill data directly through web-portal, would now have option to sort based on the various fields, which will help in filling data. Users who wants to fill on-line need not to click on “If you have data ready in Excel, CLICK HERE to upload”, they only select the date and simply click on “GO” button.

After submission of data, user can check directly on www.meritindia.in. It is once again requested to all to fill the monthly data (variable and fixed cost) because all visualization in first page is based on variable costs of the plants. In case of any doubt / clarification, Shri Harish Kr Rathour (NLDC) may be contacted at his Mobile No.9873918443.

ITEM NO. C4 :	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. C5 :	Weather website for Eastern Region
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ERLDC-IMD has developed a weather website for Eastern Region. The information provided on this website is dedicated to Power System operators. ERLDC would deliberate the detail features available in the website which would be beneficial for the users during preparation of their load forecast in the OCC meeting. All the beneficiaries are requested to furnish their load forecast data to ERLDC on daily basis using weather data information available in ERLDC website.

In the 133rd OCC ERLDC demonstrated features of weather website developed by ERLDC-IMD. OCC appreciated ERLDC efforts and advised all the SLDCs to use this information for better forecasting of loads.

ERPC in coordination with NLDC and ERLDC has also arranged a Workshop cum interactive session on Web Portal for weather information for Power-Sector. The link for ER-weather is available at ERPC/ERLDC website.

ITEM NO. C6 :	Implementation of New Web Based Scheduling at ERLDC
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As per the deliberation in 130th OCC meeting, a detailed workshop cum interactive Session with all Stakeholders/beneficiaries was arranged during 20-21 February, 2017, where in all eastern region IPPs, NTPC, NHPC, Regional entities and SLDCs except Sikkim SLDC participated.

As per the decision taken in the workshop, parallel operation of WBES has been started with effective from 01st March, 2017. In this process all users were uploading their daily operation scheduling related data in new WBES module as well as in the old scheduling software. As there are no operational/ technical issues with the WBES software, ERLDC had migrated to the new WBES software from 01st April, 2017.

ITEM NO. C7 :	Restricted Governor /Free Governor Mode Operation of generators in Eastern Region
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Primary response (FGMO/RGMO) by generators (200MW and above thermal and 10MW and above hydro) is a fundamental requirement for maintaining the reliability of the bulk interconnected power system.

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

Accordingly, 134th OCC advised all the constituents to go through the list and update the latest status vide mail to ERPC/ERLDC.

ERPC vide letter dated 6th July 2017 advised all the generators to update the latest status of RGMO/FGMO.

Updated status of the RGMO/FGMO of ER generators are available at ERPC website.

Further honorable CERC in their order dated 31st July 2017, against in Petition No. 84/MP/2015 in the matter of

Endangering the secured grid operation of All India electricity grid through inadequate/non-performance of Free Governor Mode Operation (FGMO) with Manual Intervention by the generators and non-compliance of Regulation 5.2 (f), (g), (h), (i) of Indian Electricity Grid Code read with Regulations 24 and 111 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

directed the following:-

- 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.

ITEM NO. C8 :	Despatch of power from Farakka-III under RRAS
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The Eligibility for participation for Reserves Regulation Ancillary Services under clause 5.1 of Ancillary Services Operations regulation states that:

Quote:

“5.1. All Generating Stations that are regional entities and whose tariff is determined or adopted by the Commission for their full capacity shall provide RRAS.”

Unquote

As per CERC order 280 GT 2014 dated 03.03.17 Hon’ble commission has determined tariff for 500 MW i.e. for full capacity for Farakka Stage-III. Therefore Farakka Stage-III should come under the ambit of RRAS and shall provide necessary formats such as AS-1, AS-2.

In the 35th CCM meeting held on 02.08.2017, ERLDC informed that as the tariff for Farakka Stage-III had been decided by the Hon’ble commission for full capacity, the station should participate in RRAS. Further it was informed that participation in RRAS would help in getting a higher schedule for the station.

NTPC representative informed that as there was 15 % merchant capacity in FSTPS-III which needs to be considered. ERLDC opined that FSTPS-III would be scheduled under RRAS keeping in view its merchant nature.

NTPC sought some time to sort out the commercial implications with their Corporate office.

In 136th OCC, NTPC informed that Farakka Stage-III is ready to participate in RRAS.

OCC advised FSTPS Stage-III to furnish the necessary formats (AS-1, AS-2 & AS-3) at the earliest to commence the participation in RRAS.

ITEM NO. C9 :	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-C9**.

ITEM NO. C10 :	Payment/Receipt Status from various pool accounts in ER
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1. Disbursement of Interest due to delayed payment of deviation charges.

As intimated, ERLDC had received/recovered interest amount from JUVNL, BSPHCL and APNRL towards interest due to delayed payment of deviation charges in FY 2016-17. Same amount was paid towards deviation interest payment to the receiving constituents and Ancillary services. Details of Interest disbursement are mentioned in **Annexure-C10.1**. With this, outstanding deviation charges including interest for all the ER constituents (*except APNRL which has Rs. 28,476 & Vedanta has Rs. 3, 51,637 towards interest*) along with Inter-regional Pool during FY 2016-17 are fully settled.

In the 35th CCM meeting held on 02.08.2017, ERLDC requested intervention of GRIDCO for resolution of issues related to Vedanta as they have ceased to be a member of ER Pool. GRIDCO representative requested ERLDC to write to Vedanta with a copy to GRIDCO so that the issue could be taken up with appropriate authorities.

2. Reactive Energy Charges – present status.

The updated position of Receipt/Payment of Reactive Energy Charges in the pool as on 07.08.2017 (considering bill up to 16.07.2017) is indicated in **Annexure – III C10.2**. The total outstanding receivable on account of Reactive charges from WBSETCL/WBSEDCL is ₹ 2.25 Cr.

Out of the above amount of ₹ 2.25 Cr, 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)

In response to a request by ERPC, a letter has been received from Hon'ble WBERC recently (at **Annexure-C10.2A**) in which the state Commission has advised to settle bills prior to 04.01.2016 as per practice being followed at that time.

In the 35th CCM meeting held on 02.08.2017, BSPHCL informed that they have liquidated their outstanding amount. WBSETCL informed that they have paid an amount of Rs. 60 Lakhs towards reactive energy charges.

WBSETCL informed that for some bills raised by ERLDC clarifications were required. ERLDC requested the details so that clarifications could be provided.

3. 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 23.08.2017 (considering bill up to 30.07.2017) is indicated in **Annexure – C10.3**. So far ₹ 83.55 Cr have been settled under RRAS in ER during FY 2017-18.

In the 35th CCM meeting held on 02.08.2017, members noted the status of RRAS account.

GRIDCO representative informed that initially there had been some delay in receiving reimbursement of capacity charges from NTPC. NTPC informed that there were some teething troubles initially which have been streamlined. GRIDCO representative opined that there should be provision for interest payment in case of delay of Generators in reimbursement of capacity charges.

GRIDCO representative stated while they were making payment to ERLDC on behalf of their open access customers on time, some of their open access customers were delaying payment to GRIDCO. ERLDC opined that GRIDCO should take up with the state regulatory commission for dealing with such situations.

4. Status of PSDF

As intimated, an amount of **Rs. 24.8 Cr** from Reactive account have been transferred to PSDF after 34th Commercial sub-committee meeting held on 06.02.17. With this the total amount of **Rs. 924.2 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 08.08.17) is enclosed in **Annexure-C10.4**.

ITEM NO. C11 :	Reconciliation of Commercial Accounts
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1. Reconciliation of Deviation Accounts.

At the end of 1st quarter of 2017-18, the reconciliation statement (Period: 01.04.17 to 30.06.17) has been issued by ERLDC on 04.07.17 and statements had been sent to the respective constituents and also uploaded the same at ERLDC website (www.erldc.org). The constituents were requested to verify /check the same & comments if any on the same were to be reported to ERLDC by 21.07.2017. The status of reconciliation is enclosed in **Annexure-C11.1**.

BSPHCL, JUVNL, DVC, WBSETCL, SIKKIM, MPL, APNRL, JITPL, IBEUL, TPTCL, JLHEP (DANS Energy), TUL & DICKCHU have not signed reconciliation statement for 1st quarter of 2017-18. Further JUVNL, SIKKIM, MPL, APNRL, JITPL & TPTCL have not signed reconciliation statement for previous Quarter of 2016-17.

JLHEP (DANS Energy) & IBEUL have not yet signed any reconciliation statement since becoming regional entity.

In the 35th CCM meeting held on 02.08.2017, it was updated that WBSETCL and BSPHCL had reconciled. DVC committed to get the statement reconciled within 10.08.2017. MPL representative informed that they would reconcile at the earliest. JLHEP and Dikchu HPS have got deviation statements reconciled.

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

At the end of 1st quarter of 2017-18, the reconciliation statement (Period: 01.04.17 to 30.06.17) has been issued by ERLDC on 04.07.17 and statements had been sent to respective constituents and also uploaded the same at ERLDC website (www.erldc.org). Constituents were requested to verify /check the same & comments if any on the same were to be reported to ERLDC.

In the 35th CCM meeting held on 02.08.2017, it was informed that WBSETCL have reconciled the Reactive Account.

3. RRAS Account

At the end of 1st quarter of 2017-18, the reconciliation statement (Period: 01.04.17 to 30.06.17) has been issued by ERLDC on 04.07.17 and statement had been sent to RRAS Provides and also uploaded the same at ERLDC website (www.erldc.org). RRAS Provider i.e NTPC has already reconciled the RRAS Account.

4. Short Term Open Access

I. Reconciliation for STOA payments made to SLDC / STU :

The reconciliation statements of STOA payments for the period Apr'17 to Jun'17 have been sent to the DVC, OPTCL and WBSETCL for checking at their end and confirmation.

WBSETCL & OPTCL has confirmed for the entire period. DVC is yet to confirm for the month Apr-17.

As per clause 15.1 of CERC approved STOA bilateral procedure if the confirmations are not been received within 2 weeks from the date of issuance of the letters the statement issued by ERLDC they are deemed to be reconciled.

II. Reconciliation for payments made to STOA applicants:

The reconciliation statements of STOA payments for the period of Apr'16-Jun'17 have been sent to the CESC, DVC, GMRKEL, JITPL, JUVNL, SAIL-RSP, MPL,TATA Steel(Discom),TSFAP Bamnival,TSFAP Joda,TSL Kalinganagar and WBSEDCL for checking at their end and confirmation.

CESC,GMRKEL,JITPL,TSL(Discom),TSFAP Joda,MPL has confirmed for the entire period. DVC and TSFAP Bamnival are yet to confirm for the period of Jan-17 to Mar-17. SAIL-RSP is yet to confirm for the period of Jul-16 to Jun-17. JUVNL and WBSEDCL is yet to confirm for the period Jan-17 to Jun-17.

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-C11.4**.

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.

ITEM NO. C12 :	State Transmission Utility Charges and Losses applicable for STOA for FY 2016-17
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As available with ERLDC the STU charges and losses to be considered for STOA for FY 2017-18 is as follows:

Name of STU	Intra-State Transmission Charges	TRANSMISSION LOSS (For Embedded entities)
WBSETCL	*	3.10%
DVC	Rs. 80 / MWh	3.04%
OPTCL	Rs. 62.5 / MWh	3.70%
JUSNL	*	#
BSPTCL	*	#
SIKKIM	*	#

N.B:* 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.

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	**

N.B:

**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 the 35th CCM meeting held on 02.08.2017, DVC informed that their transmission loss figures have been revised to 2.68 % for 2017-18. OPTCL informed that their rate has been revised to 3.5 % for 2017-18.

ERLDC requested constituents to inform immediately upon revision of transmission loss, Intra state transmission charges, Operating charges of SLDC, etc through letter/e-mail. The change would be effected on receipt of the intimation. Retrospective revision would not be carried out.

ITEM NO. C13 :	Meter readings 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
	1.Chandil	NP-7436-A	220 KV Chandil-Santalidih	JUVNL	19.07.17
Non receipt of Data	1. Kurseong	NP-7542-A & NP-7541-A	132 KV Siliguri & Rangit	WBSETCL	19.06.17
	2. Kalimpong	NP-5994-A	66 KV Melli	WBSETCL	19.06.17
	3. Rammam	NP-5917-A	132 KV Rangit	WBSETCL	19.06.17
	4. NPGC	NP1282-A & NP-1287-A	132 KV Rihand & Sonnagar	BSPTCL	2 month
Installation of Check/Standby meter	1. Barh NTPC		400 KV Kahalgaon-1 & Patna-1	PGCIL/NTPC	Lilo of Kahalgaon-Patna-1 At Barh
	2.Subhashgram(WBSETCL)		220 KV Subhasgram(PG) D/C	WBSETCL/PGCIL	Charging of Line
	3. New Town(CESC)		220 KV Subhasgram(PG) S/C	WBSETCL/PGCIL	Charging of Line
	4. Bantala(CESC)		220 KV Subhasgram(PG) S/C	WBSETCL/PGCIL	Charging of Line
	5. EM Bypass(CESC)		220 KV Subhasgram(PG) D/C	WBSETCL/PGCIL	Charging of Line

ITEM NO. C14 :	Information of Deviation/reactive payment in ER pool account
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Constituents of Eastern region are making payment of Deviation charge and Reactive Charge in ER Pool Accounts. However ERLDC is not getting details of payment made in ER pool account. In 31st and subsequent CCM, all the ER pool members were requested to send the details of payment in the format to ERLDC in the email account at erldcomm1@posoco.in. APNRL, DANS Energy, JLHEP, TPTCL and MPL are sending the details. DVC and WBSETCL are sending through Hard Copy. Other constituents may furnish the details of payment made in ER Pool.

S.No	Name of Utility	Amount	DSM/Reactive Account Week No	Date	Cheque No	Mode of Payment

ITEM NO. C15 :	Implementation of Automatic Meter Reading in Eastern Region
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The implementation of AMR 3rd phase was last discussed in 35th TCC/ERPC meeting held on 25.02.17 and it was informed by PGCIL that all 37 locations has been integrated to AMR. There are few locations Like Balimela, Lakisarai (PG), Darbhanga, Gyalesing (Sikkim), Rangpo, Sagbari, TUL, Alipurduar, Atri, Samangara and Sundergarh wherein AMR is yet to be integrated.

The list of meter and location of 3rd phase is in **Annexure-C15**.

Presently we are receiving data from 124 locations out of total 153 locations through AMR. The status of data receipt from the locations as below:

- Number of meters for which AMR has been commissioned-820/153 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: 620
- Number of locations for which data is received: 124 locations
- Number of DCUs online-124 DCU
- Number of DCUs offline-29 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 15 locations.

In the 35th CCM meeting held on 02.08.2017, ERLDC expressed concern that the Genus make meters have not yet been in integrated in the AMR system due to one issue or the other. Powergrid informed that as multiple agencies were involved, there had been some coordination issue in the beginning. Much progress has been made in the meanwhile and data capture from Genus meters is now possible. The only pending issue was relating to the data format which would be settled shortly.

ERLDC observed that in future tenders Powergrid need to incorporate the learnings from the present case into tender process so that this type of delay in integration of meters with AMR could be avoided.

Powergrid representative agreed to bring the issues to the notice of concerned department.

ITEM NO. C16 :	Time correction of SEMs in Eastern Region
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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. However meter replacement work for 2nd phase is yet to be done. Same is enclosed in **Annexure-C16**.

In the 35th CCM meeting held on 02.08.2017, Powergrid representatives confirmed that all the drifted meters in Phase-II would be replaced before the ensuing TCC/ERPC meetings

In 135th OCC, Powergrid informed that they are doing the time correction in some SEMs and those SEMs are not required to be replaced.

In 136th OCC, Powergrid informed that they will replace all the time drifted SEMs as prepared by ERLDC by September, 2017.

ITEM NO. C17 :	Third Party Protection Audit
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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	38	64.41
JUSNL	34	16	47.06
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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

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

2. Status of 2nd Third Party Protection Audit:

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

1) Jeerat (PG)	Completed on 15 th July 2015
2) Subashgram (PG)	Completed on 16 th July 2015
3) Kolaghat TPS (WBPDCCL)-	Completed on 7 th August 2015
4) Kharagpur (WBSETCL) 400/220kV -	Completed on 7 th August 2015
5) Bidhannagar (WBSETCL) 400 & 220kV	Completed on 8 th September, 2015
6) Durgapur (PG) 400kV S/s	Completed on 10 th September, 2015
7) DSTPS(DVC) 400/220kV	Completed on 9 th September, 2015
8) Mejia (DVC) TPS 400/220kV	Completed on 11 th September, 2015
9) 400/220/132kV Mendhasal (OPTCL)	Completed on 2 nd November, 2015
10) 400/220kV Talcher STPS (NTPC)	Completed on 3 rd November, 2015
11) 765/400kV Angul (PG)	Completed on 4 th November, 2015
12) 400kV JITPL	Completed on 5 th November, 2015
13) 400kV GMR	Completed on 5 th November, 2015
14) 400kV Malda (PG)	Completed on 23 rd February, 2016
15) 400kV Farakka (NTPC)	Completed on 24 th February, 2016
16) 400kV Behrampur (PG)	Completed on 25 th February, 2016
17) 400kV Sagardighi (WBPDCCL)	Completed on 25 th February, 2016
18) 400kV Bakreswar (WBPDCCL)	Completed on 26 th February, 2016
19) 765kV Gaya (PG)	Completed on 1 st November, 2016
20) 400kV Biharsharif (PG)	Completed on 3 rd November, 2016
21) 220kV Biharsharif (BSPTCL)	Completed on 3 rd November, 2016
22) 400kV Maithon (PG)	Completed on 18 th May, 2017
23) 132kV Gola (DVC)	Completed on 17 th May, 2017
24) 132kV Barhi (DVC)	Completed on 18 th May, 2017
25) 132kV Koderma (DVC)	Completed on 18 th May, 2017
26) 132kV Kumardhubi (DVC)	Completed on 19 th May, 2017
27) 132kV Ramkanali (DVC)	Completed on 19 th May, 2017
28) 220kV Ramchandrapur	Completed on 1 st June, 2017
29) 400kV Jamshedpur (PG)	Completed on 1 st June, 2017
30) 132kV Patherdih (DVC)	Completed on 31 st May, 2017
31) 132kV Kalipahari (DVC)	Completed on 30 th May, 2017
32) 132kV Putki (DVC)	Completed on 31 st May, 2017
33) 132kV ASP (DVC)	Completed on 30 th May, 2017
34) 132kV Mosabani (DVC)	Completed on 2 nd June, 2017
35) 132kV Purulia (DVC)	Completed on 1 st June, 2017

It was informed that the third party protection audit observations are available in the ERPC website in important documents.

PCC advised all the constituents to comply the observations at the earliest.

ITEM NO. C18 :	Non-submission of weekly SEM readings by Tuesday noon from non-AMR Locations/ faulty AMR 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 few locations in Eastern Region and integration of Genus meter in AMR is under progress, data of those Genus meters are being sent manually. However general trend of receipt of readings is as below:

By Wednesday or later: Birpara, Ranchi New, Pusauli, Rangpo, WBSETCL (North Bengal) & SIKKIM

In the 35th CCM meeting held on 02.08.2017, Constituents where readings were getting delayed were requested to send the data 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.

GM, ERLDC informed that introduction of 5 minutes scheduling and dispatch were being actively discussed by the policy makers and may become a reality in near future. In such a scenario, current SEM's need to be either retrofitted or replaced by 5 minute meters. Powergrid may discuss with the vendors of existing meters for options available.

ITEM NO. C19 :	Procurement of new SEM's and DCD/Laptops
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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 33rd TCC/ERPC, PGCIL informed that delivery is expected in six phases starting August'16. In 34th CCM held on 06.02.17 and 35th TCC/ERPC meeting held on 24.02.17 & 25.02.17, Powergrid informed that receipt of Genus make meters have already started and had been installed in some locations and their integration with AMR was under process by M/s TCS.

In the 35th CCM meeting held on 02.08.2017, Powergrid updated that 300 meters and 40 laptops with software had been supplied by M/s Genus so far.

ITEM NO. C20 :	Accounting of Tertiary Loading Arrangement at PGCIL s/station in ER
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Auxiliary consumption of PGCIL EHV AC sub stations are usually met from HT feeders of the State Discom. In few substations of PGCIL, auxiliary consumption is met through tertiary winding (as alternate supply for reliability). At present State net drawl through Powergrid substation in ER is being computed considering meter installed at feeders after LV side of Transformer. Those sub stations where auxiliary requirement is met through tertiary, States net drawl need to be computed

by adding drawl through feeders after LV side of Transformer and auxiliary consumption through tertiary.

In NR, WR & SR, auxiliary power through tertiary is already being accounted in States net drawl.

In order to account for the drawl through tertiary for Auxiliary consumption, PGCIL is requested to:

1. Provide list of substations in ER where auxiliary supply is met through tertiary.
2. Install SEM on 33 KV tertiary side of transformers used for auxiliary supply.

133rd OCC advised Powergrid to send the readings of SEMs connected to tertiary windings to ERLDC regularly for accounting purpose. Further OCC decided that after getting the SEMs details of all tertiary loadings, ERPC/ERLDC will devise a mechanism for accounting of the tertiary loading arrangement.

In 134th & 135th OCC, Powergrid was advised to submit the details of pending SEM details connected to tertiary windings and also the SEM readings on regular basis to ERLDC and ERPC for accounting of the tertiary loading arrangement.

Status of meter details and receipt of their data at ERLDC from Powergrid ER-I, ER-II and Odisha project is at **Annexure-C20**.

In the 35th CCM meeting held on 02.08.2017, it was decided that the drawal of auxiliary power from tertiary winding by Powergrid substations would be treated as state drawl for inter-regional accounting. Powergrid and the states would make back to back commercial arrangements for this power.

ERLDC requested Powergrid to submit the requisite information such as meter no, CTR, PTR, etc in respect of those meters and also make meter readings available on time.

Powergrid agreed to make the necessary data available before the ensuing TCC/ERPC meetings.

ITEM NO. C21 :	Nomination of Nodal Officers by Regional Entities to ERLDC
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All Regional entities is requested to intimate the contact details of the Nodal Officer who could coordinate with their sites and ERLDC to ensure the following:

- Under - recording of SEM data due to reasons such as CT/PT input problems
- Polarity reversal
- Change in CT/PT ratio
- Meter replacements
- Completeness w.r.t no of meters and no of days
- Checking of time drift in meters: correction and reporting to RLDC
- Data non-availability due to reasons such as outage of Feeder etc.

It was requested to furnish the details like Name, designation, Mailing address, Landline No, Fax No, Email Id, Mobile No etc. to ERLDC for smooth transaction of SEM data.

So far details of Nodal person only from BSPHCL, GATI, DVC, Teesta-V, NTPC ER-I(HQ), Talcher NTPC, GMR, BRBCL and GRIDCO have been received by ERLDC.

In the last CC meeting, ERLDC informed that inspite of communicating with the nodal person difficulties had been faced by them for coordination. DVC representative requested ERLDC to contact him directly in case there were coordination issues. Rangit HPS representative provided the details of nodal officer.

Powergrid informed that they were facing access issues while sending personnel to constituent's premises for replacement of meters, testing, etc. GM, ERLDC felt that in general the SLDC Chief in case of states and Station Head in case of generating station may be taken to be nodal officers for coordinating meter related issues. Members agreed.

ITEM NO. C22 :	List of Assets commissioned by POWERGRID
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Powergrid has submitted a list of assets commissioned in the last CCM held on 02.08.2017. The same is at Annexure- C22.

ITEM NO. C23 :	Agenda items submitted by Powergrid updated with discussions in 35th CCM meeting
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a) Non Opening of LC requisite amount of LC :

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

Beneficiary	(Amount (in Cr.))	
	Present Value of LC	Value of LC Required
North Bihar Power Distribution Company Limited(NBPDCL)	3.85	29.00
South Bihar Power Distribution Company Limited(SBPDCL)	15.27	40.00
Ind-Bharat Energy (Utkal) Limited	14.38	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 the 35th CCM meeting held on 02.08.2017, BSPTCL representatives informed that as per their knowledge the fund requirement had been placed before the Holding company (BSPHCL) which is responsible for coordination of commercial accounts.

IBUEL representative was not present.

MS, ERPC felt that Powergrid may put their appeal for payment before the TCC/ERPC members.

b) Payment of Outstanding dues more than 60 days :

(Amount (in Cr.))		
Beneficiary	Total Outstanding dues	Outstanding due more than 60 days
South Bihar Power Distribution Company Limited(SBPDCL)	152.54	69.46
Bhartiya Rail Bijlee Company (BRBCL)	17.82	11.95
Ind-Bharat Energy (Utkal) Limited	114.92	95.61

In the 35th CCM meeting held on 02.08.2017, Powergrid requested beneficiaries to avoid outstanding more than 60 days as they were facing serious audit issues.

Ind Barath representative was not present. SBPDCL representative informed that the situation would ease by the end of August. BRBCL representative informed that process had been initiated and outstanding dues would be settled soon.

c) Issue related to non-payment of Transmission charges & non-renewal of LC by Ind-Bharat(Utkal) Limited :

A special meeting was convened on 22.05.17 at ERPC Kolkata issues on Commencement of Commercial Power transaction from Unit # 1 of Ind Barath. In the said meeting Ind Barath has agreed to follow the direction CERC vide Petition no 127/MP/2016 along-with IA 2/2017. After giving the assurance till date Ind Barath has neither pay **Rs 10.0 Cr** nor starting balance amount including surcharge in 12 monthly instalments. However Ind Barath has opened an LC of **Rs 14.28 Cr** which is not sufficient & not in line with our terms & conditions. As on date the total outstanding towards our transmission charges comes to **Rs 114.92 Cr.** out of which **Rs 95.61 Cr** has already cross the limit of **60 days**.

In the 35th CCM meeting held on 02.08.2017, IBUEL representative was not present.

Powergrid representative informed that M/s IBUEL had not complied with the directions of CERC also. ERLDC informed that M/s IBUEL had not engaged in any commercial transaction.

d) Diversion of spare transformer from Gaya(765kV) to New Ranchi(765kV)

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.

ITEM NO. C24 :	Agenda items submitted by NHPC updated with discussions in the 35th CCM
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1) Signing of reconciliation statement.

Reconciliation statements are pending for IVth quarter for the F.Y 2016-17 in respect of GRIDCO, NBPDCCL & SBPDCL whereas reconciliation statements for 1st quarter of 2017-18 have also been sent to all the beneficiaries which also need to be signed on priority.

In the 35th CCM meeting held on 02.08.2017, BSPTCL requested NHPC to send their representatives preferably on 09.08.2017 for getting the statements reconciled. NHPC agreed.

2) Payment of Late Payment Surcharge by WBSEDCL.

A late payment surcharge of Rs. 1.14 Crs is pending against WBSEDCL since long in respect of Rangit and Teesta-V Power Stations despite many reminders from NHPC. WBSEDCL may be requested to release the said amount on priority.

In the 35th CCM meeting held on 02.08.2017, WBSEDCL representative informed that a decision would soon be taken by their management and accordingly the issue would be resolved.

3) Non-Opening of LC of requisite value

NBPDCL, SBPDCL and JBVNL have not provided the LC of requisite amount NBPDCL, SBPDCL & JBVNL be requested to open L.C amounting to Rs. 6.41 Crs, Rs.9.23 Crs and Rs. 8.34 Crs respectively at the earliest being a statutory requirement as per PPA .

In the 35th CCM meeting held on 02.08.2017, Representatives from Jharkhand were not present. It was decided that issues related to Bihar could be taken up during the visit of NHPC representatives on 09.08.2017 to Bihar.

4) Extension of PPA in r/o TLDP-III & IV Power Stations.

WBSEDCL at present has valid PPAs for TLDP-III & IV projects for 05 years period only which are expiring on 31.03.2018 and 10.03.2021 respectively. WBSEDCL be again requested to extend the PPA for a period of 35 years from COD of power stations.

In the 35th CCM meeting held on 02.08.2017, WBSEDCL representative informed that the issue of cost overrun was subjudice and therefore decision could not be taken.

NHPC requested to get the agreement signed which would be subject to the outcome of the judicial process.

5) Signing of PPA in respect of Tawang H.E.Project, Stage-I & II.

Signing of Power Purchase Agreement is pending with GRIDCO, JBVNL & WBSEDCL. All the three beneficiaries are once again requested to sign the long pending Power purchase agreement at the earliest.

In the 35th CCM meeting held on 02.08.2017, JBVNL representative was not present. GRIDCO representative informed that they were still examining the issue.

WBSEDCL representative informed that there was an in principle agreement however, they would send the revised PPA for comments to NHPC before finalizing.

ITEM NO. C25 :	HIGHLIGHTS & GRID PERFORMANCE FOR THE PERIOD FROM FEB' 2017 TO JUL' 2017
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A) Real time operation:

During the period under review, power supply position in the region was as under:

	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17
AvgFrq. (Hz)	50.01	50.00	49.98	49.98	49.99	50.01	50.00	49.99	49.99	49.99	50.00	50.00
PkDmd (MW)	17868	18719	19112	18993	19149	18974	18647	19649	20582	19794	20326	20274
Energy Consum. (MU/day)	349	376	405	380	399	393	351	369	413	408	416	400.5
ISGS Gen (MU)	3387	3399	3292	4126	4515	4846	3967	3864	3915.6	4393.0	4195.9	4756
Region Gen (MU)	12477	13813	14288	14015	14300	14999	12911	12918	14272.0	15292.2	14878.0	15258
% increase in Reg Gen.							3.5	-6.5	-0.1	9.1	4.0	1.7

B) System Operational Discipline during the period from Feb-16 to Jul-17

i) The month-wise energy draws of ER constituents were as given hereunder:

	Feb-17		Mar-17		Apr-17		May-17		Jun-17		Jul-17	
	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT
BSPHCL	1648.8	1675.7	1791.9	1832.9	1942.5	1960.6	2103.0	2142.4	2242.9	2296.5	2176.5	2185.4
JUVNL	450.2	493.2	506.0	545.7	526.4	579.1	539.0	545.5	508.0	518.4	495.5	480.0
DVC	-1019.2	-1063.5	-1180.0	-1203.9	-1095.6	-1120.2	-1318.8	-1332.1	-1048.5	-1046.0	-936.9	-929.7
OPTCL	418.0	427.6	582.3	578.2	681.8	699.2	782.8	811.3	507.2	525.0	836.5	859.2
WBSET CL	562.7	590.1	1000.6	1058.8	1387.8	1430.0	1158.5	1217.8	1366.4	1467.5	1375.8	1455.6
SIKKIM	43.4	38.7	51.9	42.1	38.6	35.8	32.9	36.3	39.5	33.6	36.4	33.8

A) Frequency & Voltage

i) Frequency profile for the period during **Feb-17 to Jul-17** 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
Feb-17	5.30	73.98	20.72	73.98
Mar-17	8.82	73.46	17.71	73.46
Apr-17	9.05	74.49	16.45	74.49
May-17	9.20	71.60	19.20	71.60
Jun-17	5.99	75.55	18.47	75.55
Jul-17	6.56	76.15	17.29	76.15

- ii) Maximum and minimum voltages recorded at some important 765/400 kV sub-stations were as follows:

SUB-STATION/ POWER STN.	Feb-17		Mar-17		Apr-17		May-17		Jun-17		Jul-17	
	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN	MAX.	MIN
	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)	(KV)
(765 kV) N. RANCHI	804.6	759.7	800.1	766.7	798.7	754.2	803	766	804	744	800	766
MUZAFFARPUR	416.8	388.0	424.3	383.8	421.5	379.6	425	383	417	382	412	381
BINAGURI	431.3	400.2	426.9	395.6	428.5	394.2	426	384	420	392	420	394
JEERAT	424.4	388.8	426.5	372.4	425.4	374.0	427	381	425	379	428	384
MAITHON	419.7	405.2	419.0	400.7	419.3	401.4	418	403	418	396	420	404
BIHARSHARIFF	419.7	393.2	423.0	393.7	422.8	391.4	424	392	421	394	420	393
JAMSHEDPUR	431.5	416.0	431.0	408.9	429.6	412.7	429	412	428	410	434	415
ROURKELA	418.3	405.2	416.7	400.5	414.3	401.0	417	402	418	394	420	407
JEYPORE	427.5	374.7	420.7	381.5	436.2	371.0	428	376	425	381	422	383

D) Constituent-wise demand met is given below:

		Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17
BSPHCL	AVG MAX DMD(MW)	3224	3170	3336	3350	3313	3345	3481	3447	3669	3793	3944	3789
	MU/DAY	64	63	66	66	70	69	63	64	70	74	81	75
JUVNL	AVG MAX DMD(MW)	1068	1131	1134	1034	1057	1083	1136	1118	1142	1133	1109	1107
	MU/DAY	23	24	24	22	22	23	24	23	25	24	23	22
DVC	AVG MAX DMD(MW)	2549	2622	2767	2636	2627	2640	2603	2561	2721	2701	2725	2537
	MU/DAY	58	60	65	62	62	62	61	63	66	65	66	64
ODISHA	AVG MAX DMD(MW)	3818	4010	3881	3727	3855	3986	3639	3809	3998	3925	3633	3820
	MU/DAY	74	79	78	77	80	80	70	75	84	83	76	80
W. BENGAL	AVG MAX DMD(MW)	6561	7224	7697	7088	7584	7729	7025	7398	8025	7687	7980	7717
	MU/DAY	129	149	170	153	165	159	132	143	167	163	169	160

E) Inter-regional energy exchange during the review period were as follows: (Figures in MU)

Region	Feb-17		Mar-17		Apr-17		May-17		Jun-17		Jul-17	
	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT
NER	116	-125	70	-127	94	3	143	199	-12	354	-43	560
SR	584	865	614	704	836	963	542	770	389	680	832	1086
WR	250	-311	-26	-344	-336	-834	114	-426	141	-686	74	-1068
NR	1367	1859	1691	2005	1035	1322	1535	1650	1645	1612	1667	1821
TOTAL	2318	2289	2348	2239	1629	1454	2334	2194	2163	1959	2529	2399

F) Reservoir levels of important hydro stations in ER during review period (as on last day of the month) is given below:

STATION	MDDL/ FRL	Feb-17	Mar-17	Apr-17	May-17	Jun-17	July-17
BURLA	630.06	622.17	617.62	611.91	605.25	598.52	607.04
BALIMELA	1507.20	1496.60	1486.00	1478.40	1467.40	1458.30	1473.20
RENGALI	123.00	121.76	121.07	120.02	115.36	110.25	116.50
U. KOLAB	856.66	854.93	853.37	851.51	849.47	848.47	850.24
INDRAVATI	639.32	636.93	635.06	632.45	630.20	628.94	632.80
MACHKUND	2747.50	2729.65	2723.20	2714.60	2705.6	2707.8	2725.9

G) IMPORTANT EVENTS :

1. Bokaro 'A' Unit-I of 500 MW has taken into under Commercial Operation on 23/02/17 at 0:00 hrs.
2. 400/220/33kV, 315MVA ICT – II at ± 800 kV HVDC Alipurduar, POWERGRID was charged for first time at 16:25 hrs of 10/02/17.
3. Dikchu (2x48 MW) Unit I & II successfully test synchronized for the first time at 11:20 hrs and 10:26 hrs respectively of 31/03/2017.
4. 125MVAR Bus Reactor-1 at Alipurduar (PG) first time charged on 19:31 Hrs of 8/03/17.
5. 315 MVA ICT- I at Alipurduar first time charged from 400kV side on 20:35 Hrs of 09/03/17.
6. 220kV Kishanganj (BSEB) - Kishanganj (PG) 1 & 2 first time charged at 16:10 hrs and 16:41 hrs respectively of 10/03/17.
7. 6 Nos. of converter transformer (295MVA each) at Alipurduar first time charged at 17:29Hrs of 15/03/17.
8. 4 Sub-Bank of Filter-Bank at Alipurduar first time charged as follows:
 - i. Bank 1-Subbank I (125Mvar) : 19:57hrs 16/03/17
 - ii. Bank 1-Subbank II (160Mvar) : 16:30hrs 17/03/17
 - iii. Bank 1-Subbank V (160Mvar) : 19:40hrs 17/03/17
 - iv. Bank 1-Subbank IV (159Mvar) : 12:19hrs 20/03/17
9. Pole 3 at Alipurduar first time charged at 15:42Hrs of 17/03/17.
10. MTPS Unit#1 (Stage-II) of 195 MW has been declared under COD w.e.f 18/03/17
11. 315 MVA ICT- 3 at Kharagapur (WBSETCL) first time charged at 11:26hrs of 19/03/17.
12. 400kV Farakka - Gokarna I & II first time charged at 18:16 hrs of 28/03/17 and at 17:04 hrs of 29/03/17 respectively.
13. 80 MVAR Bus reactor at Gokarna S/Stn. first time charged at 12:38hrs on 30/03/17.

14. 315 MVA ICT- 3 at Jamshedpur S/Stn (PG) first time charged at 23:04Hrs on 30/03/17
15. Dikchu Unit I of 48 MW has been taken under Commercial Operation w.e.f 0:00 hrs of 12/04/2017.
16. 125MVAR BR-II at Alipurduar (PG) charged for the first time at 15:36hrs of 07-04-2017.
17. 400kV Darbhanga-Muzaffarpur-I charged for the first time on no load from Muzaffarpur end at 18:20hrs of 07-04-2017.
18. 500MVA ICT-I and 125 MVAR Bus Reactor at Darbhanga charged for the first time at 22:29hrs of 09-04-2017 and at 01:07 hrs of 10-04-2017 respectively.
19. Dikchu Unit I of 48 MW has taken into under Commercial Operation on 12/04/17 at 0:00 hrs.
20. 220kV Samastipur-Darbhanga-S/C charged for first the time at 14:00hrs of 16-04-2017.
21. 220kV Motipur-Darbhanga-I & II charged for the first time at 18:58hrs of 17-04-2017 and at 18:12 hrs of 22-04-17 respectively.
22. 80MVAR switchable Line Reactor with 400kV Farakka- Gokarna-I at FSTPS, NTPC charged for the first time at 16:49hrs of 28-04-2017.
23. Dikchu Unit II of 48 MW has taken into under Commercial Operation on 28/05/17 at 0:00 hrs.
24. MTPS Unit#2 (Stage-II) of 195 MW has been declared under COD w.e.f 01/07/17
25. 400kV Kolaghat- New Chanditala (LILO of 400kV Jeerat- Kolaghat SC at New Chanditala) charged for the first time at 14:46Hrs of 03/07/17.
26. 400kV Jeerat-New Chanditala (LILO of 400kV Jeerat- Kolaghat SC at New Chanditala) charged for the first time at 16:42Hrs of 03/07/17.
27. New PPSP-Arambag Ckt-1 (LILO of 400kV PPSP-Arambag Ckt-1 at New PPSP) charged for the first time at 19:13Hrs of 15/07/17.
28. PPSP-New PPSP Ckt-1 (LILO of 400kV PPSP-Arambag Ckt-1 at New PPSP) charged for the first time at 18:49Hrs of 15/07/17.
29. 50MVAR Bus Reactor-1 at New PPSP Substation charged for the first time at 19:00Hrs of 15/07/17.
30. 400kV New Ranchi-New PPSP-I & II charged for the first time at 20:08 hrs and at 20:50 hrs respectively of 24/07/17.
31. 400kV Gorakhpur-Motihari (DMTCL) ckt-2 (LILO of 400kV Barh-Gorakhpur ckt-2) charged for the first time at 22:54Hrs of 31/07/17.

ANNEXURES

LIST OF PARTICIPANTS IN THE 36th ERPC MEETING

Date: 14.09.2017

Venue: Hotel Swosti Premium

In Chair: Shri Hemant Sharma, Secretary, Dept. of Energy, Govt. of Odisha and CMD, OPTCL & GRIDCO.

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LIST OF PARTICIPANTS IN THE 36th TCC MEETING

Date: 13.09.2017

Venue: Hotel Swosti Premium, Bhubaneswar

In Chair: Shri Atul Kumar, Chairperson, TCC & Director (Project), JUSNL.

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Address of Shri A.K. Bandyopadhyaya, Member Secretary, ERPC in 36th ERPC meeting held on 14.09.2017 at Bhubaneswar

I would like to inform that this 36th ERPC meeting is my last ERPC meeting since I am going to superannuate from Govt. Service on 31st October 2017 on attaining the age of superannuation.

I had taken the charge of Member Secretary, ERPC on 6th September 2011.

Now at the end of my tenure of 6 long years I feel this is my responsibility to place my accounts before all esteemed members.

When I took the charge of ERPC the task before me was huge and challenging.

That day ERPC had no CBR, no web site in government domain, no official mail id, meetings were poorly attended by members, secretariat office building with its residential complex were in a dilapidated condition and had many other shortcomings.

With the active cooperation of all members of ERPC, TCC, Operation and Protection Sub-Committees today the Secretariat and ERPC as a whole have succeeded in placing Eastern Region in a very laudable position in Indian Power Sector.

Views, decisions, deliberations of ERPC are now-a-days taken with utmost importance by different forums in power sector. During my tenure some of the important outcome in ER are:

- 1) Real time Inspection and audit of UFR installed in Eastern Region.
- 2) Implementation new islanding schemes for Chandrapura TPS of DVC, Farakka STPS of NTPC, Bakreswar TPS of WBPCL and Tata Power, Haldia of WBSETCL.
- 3) PSDF grant for Bandel Islanding Scheme which is under implementation.
- 4) Facilitated integration of new generators with Eastern Grid by resolving techno-economic issues for GMR, JITPL, Chuzachen, Jorhang HEP, Teesta-III (TUL), Dikchu, BRBCL, Tashiding.
- 5) Integration of NEW grid with SR grid with suitable SPS design. and implementation for optimum power transfer for HEPs in Sikkim.
- 6) A methodology for testing of the special protection schemes of ER.
- 7) Commencement of Bangladesh & Nepal Power transfer.
- 8) Commercial settlement for Dagachu HEP of Bhutan power transfer.

- 9) Formation of new sub-committee “Standing Committee on transmission planning for State Sectors (SSCM)” to give a platform to state utilities for better & adequate planning of transmission schemes of state sectors before deliberating in Standing Committee on central sectors.
- 10) Various workshops on “Emerging issues in Power Sector” in view of growing emphasis on commercial and other complex issues of Eastern Region.
- 11) Various workshops-cum-training on Power System Protection (Transmission line/Distance Protection & Generator Protection) with on-site visit for protection engineers of ER.
- 12) The long pending 400 kV Sterlite- Jharsuguda D/C line is on the verge of completion after lot of persuasion and initiative taken by ERPC.
- 13) Designing & Implementation of Protection Philosophy for Eastern Region.
- 14) Over voltage Stage-I setting in Eastern Region were reviewed, standardized and implemented
- 15) A uniform zone setting was achieved in Eastern Region for all the inter-state transmission lines of all constituents viz. JUSNL, BSPTCL, OPTCL, WBSETCL and DVC.
- 16) Carrying out third party audit of different S/S for ER constituents. In India 2nd third party audit is being carried out only in ER.
- 17) Protection audit for root cause analysis as well as remedial action needed for un-coordinated trippings around 220/132 kV Chandil, Ramchandrapur and 132 kV Adiffapur substations of JUSNL system.
- 18) Ensuring the PLCC over 400 kV lines and important 220 kV lines of ER constituents.
- 19) Ensuring submission of detailed disturbance report including DR/EL for PCC Meeting.
- 20) Settlement of pre ABT disputes for re-import of power by Bhutan through Assam System.
- 21) Open Access to Railways from RGPPL and BRBCL.
- 22) Scheduling of KBUNL by SLDC, BSPTCL.
- 23) Enhancing the power flow through 400 kV D/C Rangpo-Binaguri line upto 1700 MW (probably the maximum achieved power transfer through twin moose line under difficult terrain) for power evacuation of Sikkim HEPs, thereby restricting spillage of water, a natural resource.

Now subcommittee meetings of ERPC are held regularly in ER. Protection Sub-Committee meetings are conducted on monthly basis, may be the first region in India on this account and members enthusiastically participate in all these meetings.

Besides these achievements in Operational, Protection and Commercial fronts, the initiatives in other areas :

- i) Installation and commissioning of 2x10 kW grid connected roof top solar pv system in keeping with GOI solar initiatives.
- ii) Document Management System to provide Secretariat a digitally maintained archives for all day to day paper documents.
- iii) Up gradation of ERPC website with analytical features.
- iv) Launching of ERPC App “purvSHAKTI”.
- v) Launching of technical magazine “purvSHAKTI”.
- vi) Renovation and modernisation of ERPC Office, ERPC guest houses.
- vii) Renovation of ERPC Staff Quarters.
- viii) Secretariat has now its own CBR, official mail ids, digitally operated office through Asset Registrar.

Other initiatives:

- 1) Eastern Region is the first region in the country to undertake the project of “Web based Protection Database management System & Protection settings Calculation tool” and getting the project funded from PSDF, MoP, GOI.
- 2) ERPC is the first RPC among all RPCs in India wherein Social Responsibility Initiatives have been taken up regularly. Recently Aashirbad Boys Home of HOPE Foundation was provided with Desktop computers.
- 3) ERPC is the first RPC among all RPCs in India wherein intermingling of industry and academics are started and faculties from IITs, Siemens, Alstom & other institutes usually take part in different capacity building training program undertaken by Secretariat. We are now members of CIGRE.
- 4) Indian Power exchange now operate with only one segment - Cash settlement leg. But in near future Derivative segment is surely to come. To capture that scenario with trained personnel ERPC Secretariat as the first RPC in India recently placed proposal for PSDF funding for study programmes on power market trading at NORD POOL Academy and it is in the final stage of approval.
- 5) ERPC is the only RPC who can now boast of with its own LOGO.
- 6) ERPC is now having two WAPP group – i) ERPC PSCT –a platform to interact on studies utilising web based Protection data base Management system of ER ii) ERPC Commercial- a platform to interact on various commercial issues.

During my tenure as Member Secretary, ERPC, I have received support and guidance from all members of ERPC, TCC, Operation, Protection & Commercial Sub-Committees in general.

But, I would particularly like to place on record the support and guidance I have received from Shri Hemant Sharma, Secretary, Energy Department, Govt. of Odisha on various matters.

Sharma Sahib has a long association with ERPC as Chairperson-ERPC and Member of ERPC and has always been very proactive and keen in resolving various issues. I have always marvelled at his insights on various subjects.

I should also place my gratitude to Sri U.K. Verma, ED, NLDC, to Sri P. Mukhopadhyaya, ED ERLDC, to Shri P.K. Pradhan, Ex. Chairperson of TCC and Ex. Director (Commercial), Gridco and to Shri Bhaskar Sharma, Director (Project), BSPTCL, without whose support and guidance it would have been a difficult proposition for me to participate in resolving many issues of grid, Odisha and Bihar. Such is the strength of their intellect and wisdom that we were able to work together with synergy.

Today I should not also forget to convey my special thanks to Sri Sabyasachi Roy, Director, WBSETCL, Sri Jayanta Datta, Dy.CE, DVC, Sri L. Nayak, GM, OPTCL and Sri Surojit Banerjee, AGM, ERLDC. Their priceless contribution actually brought into reality our dream project- Protection Data Base of Eastern Region.

I shall demit my office on 31st October 2017 with lot of satisfactions on the work done during my tenure.

Before, I conclude, I wish functioning of ERPC will flourish further and ERPC will be able to meet the aspirations and requirements of its stakeholders through lively deliberations and consensus, as in today.

Some of the initiatives, I had taken in my tenure, like Renovation ERPC office building are not yet completed. I am extremely sorry for this unfulfilled dream. But I am keeping faith that with God's grace new incumbent in my place could complete the same in the near future.

Thank you all my members - NTPC, PGCIL, CTU, NHPC, DVC, ODISHA, JHARKHAND, BIHAR, WEST BENGAL, SIKKIM and all IPPS once again for your support, encouragement, guidance and inspiration.

It has been an honour to work with you as MEMBER SECRETARY, ERPC.

Thank you.

Eastern Regional Power Committee, Kolkata

Minutes of Special Meeting for “Reviewing the removal of interim LILO connectivity of Vedanta Ltd” held on 14th July, 2017 at ERPC, Kolkata

List of participants is at **Annexure-A**. Member Secretary, ERPC welcomed all the participants to the special meeting. He informed that this special meeting was convened on short notice to review the removal of interim LILO of Vedanta Limited.

Member Secretary briefed---

In the 134th OCC of ERPC held on 23.06.17 GRIDCO/OPTCL informed that 7 No. of towers of 400KV Vedanta-Meramundali D/C line have been severely damaged due to whirlwind and cyclonic storm on 15-06-2017 night between Location No.7-0 to 8-0. As a result, GRIDCO could not avail State share of power through the said line and is solely dependent on LILO connectivity to avail IPP power from M/s. Vedanta Limited.

In view of the above, OCC agreed to extend the LILO connectivity of Vedanta till 15th July, 2017. It was also decided that the removal of LILO could be reviewed subject to the completion of dedicated line as per the latest schedule i.e. by 15th July, 2017.

MS requested OPTCL/Vedanta to update the status of dedicated line.

CTU representatives stated that as per the decision of 35th ERPC the interim LILO of M/s Vedanta was to be opened by CTU on 16th April, 2017 but they have not received any communication regarding non-opening of LILO from ERPC.

MS, ERPC pointed out that the LILO of Vedanta was allowed to continue since last 7-8 years even though it was an interim arrangement. Therefore 35th ERPC was compelled to decide for opening of the LILO from 16.04.2017, post 35th ERPC the scenario has changed. ERPC had taken up it to the highest level and the dedicated line is almost 90-95 % ready. Therefore opening of LILO at this juncture and that too by exposing Odisha to a non-comfortable position would not be a solution. So Member Secretary on behalf of ERPC has taken the decision to continue the LILO and thereby CTU was not advised to open the LILO.

Further, he added that the information on extension for LILO opening was intimated to each of CERC/ CEA/ CTU/ ERLDC/ GRIDCO/OPTCL vide mail dated 12.04.2017 and subsequent letters dated 05.06.17 & 04.07.17. So the CTU's claim for non-receipt of information is totally not tenable.

The removal of LILO was continuously reviewed taking in consideration with OPTCL / GRIDCO connectivity with Vedanta in every OCC meetings. Now the line is almost ready and expected by 30th July, 2017.

GRIDCO informed that the work is in progress and placed the detailed status as given below:

Activities	Nos	Status as on 14.07.2017
Tower Foundation	64	64
Tower Erection	64	64
Stringing	20.5 Km	17.6 km completed
Bay at Sundargarh	2	2

.Further, OPTCL informed that out of 20.5 Km the balance 2.9 Km is inclusive of hot stringing of 1.0 Km for which shutdown request have been placed to ERLDC and stringing will be carried out as per the availability of shutdown of following lines:

- 1) 400KV Rourkela-Sundargarh – II
- 2) 400KV Sterlite-Raigarh-II
- 3) 400KV Rourkela-Sundargarh – I
- 4) 400KV Rourkela-Raigarh –II (Direct ckt)
- 5) 400KV Raigarh-Sundargarh – I
- 6) 400KV Raigarh-Sundargarh - II

On query, Vedanta intimated that the manpower and material is ready for carrying out the hotline stringing. He further clarified that as all the above six lines are crossing their dedicated line, the hotline stringing will be done by taking the shutdown of two lines together for 3-3 days which is as given below:

- 1) 400KV Rourkela-Sundargarh – II along with 400KV Sterlite-Raigarh-II
- 2) 400KV Rourkela-Sundargarh – I along with 400KV Rourkela-Raigarh –II (Direct ckt)
- 3) 400KV Rourkela-Sundargarh – II along with 400KV Raigarh-Sundargarh – II
- 4) 400KV Rourkela-Sundargarh – I along with 400KV Raigarh-Sundargarh - I

For the balance 1.9 Km stringing, two gangs are available at site and the material will be available at site by 15.07.17. So, the balance stringing work which is in two stretches of 1.068 (from bay to Loc 2/0) & 0.760 Km (Loc 7/0 to 8/0) will be carried together and is expected to be completed by 27th /29th July, 2017 considering all the margins.

ERLDC clarified that the shutdown required for hotline stringing involves the consent of WR and advised Vedanta to place the shutdown request via SLDC, Odisha to ERLDC at the earliest for further transmission to WRPC for their consent.

It was also requested to Member Secretary, ERPC to take up the issue with his counter part in WRPC for their consent.

After detailed discussion it was decided that Vedanta will place the shutdown request w.e.f 19.07.2017 for their hotline stringing.

Powergrid-Odisha pointed that some important works including the work of finalizing PLCC carrier frequency, wave trap, coordination of relay settings at both ends of the line, integration of RTU data of the bays at Sundergarh with ERLDC SCADA etc. are pending at 400 kV Sundargarh (Jharsuguda) S/s which needs to be taken up simultaneously for commissioning of line in timely manner. Moreover, prior to commissioning of bays Bus stability test needs to be carried out for which shutdown of 400kV Bus-1 at Sundergarh (Jharsuguda) and help from Siemens would be required.

ERLDC stressed that the existing SPS of Vedanta needs reviewing to take care of sudden load throw off as also tripping of units for restricting power flow in 400kV Vedanta – Meramundali / Vedanta-Jharsuguda line particularly in case of outage of any of the outgoing lines.

After detailed discussion, it was decided that Vedanta should complete the line construction and bay works by 30th July, 2017. Accordingly, Vedanta should apply beforehand for RIO/CEA inspection in 1st week of August, 2017. The target date for charging the dedicated 400 kV Vedanta- Jharsuguda D/C line should be 12th August, 2017. It was also decided that the LILO of Vedanta Ltd may be disconnected from 16th August, 2017.

Further, Vedanta was advised to follow the following list of activities for timely completion of dedicated 400 kV Vedanta- Jharsuguda line.

- Apply for revised shutdown for hot line stringing from 19th July to 30th July, 2017.
- Wave trap /Isolator are to be installed & tested at 400 kV Jharsuguda S/s.
- Apply for shutdown of 400 kV Jharsuguda bus for bus-bar stability testing.
- Pending civil works in respect of bays at Jharsuguda S/s are to be completed
- Siemens and SCADA engineer to be coordinated for establishing SCADA and data communication for Vedanta bays at Jharsuguda (Sundergarh) S/s to ERLDC.
- Protection co-ordination for the new dedicated line is to be done in co-ordination OPTCL / PGCIL.
- Advance application is to RIO/CEA for inspection of the line and bay. The tentative date of inspection should be by 1st week of August.
- Advance shutdown schedule is to be intimated for opening of LILO connection and switching to dedicated line.
- Coordination with Sundergarh (PGCIL) and ERLDC for charging of the dedicated line.
- The target date for charging the dedicated line is 12th August, 2017.

On query about restoration of 400 kV Vedanta-Meramendali D/C line, OPTCL informed that during survey it was found that 2 nos of DA type tower have been completely damaged including stub and another 3 nos tower from top to bottom cross arm have been damaged. It was informed that some ROW issue has also arisen at Loc. No. 8/0. OPTCL informed that after considering all the factors like availability of materials, ROW issues etc. the restoration work is expected to be completed by 15th August, 2017.

Meeting ended with vote of thanks to the chair.

Eastern Regional Power Committee

Minutes of Special Meeting on issues related to charging of 220kV Biharsharif-Tenughat line at 400 kV level held on 2nd March, 2017 at ERPC, Kolkata

Shri A. K. Bandyopadhyaya, Member Secretary, ERPC, at the outset, welcomed all the participants in the meeting. He informed that this special meeting was convened as per the decision of 35th TCC on issues related to charging of 220kV Biharsharif-Tenughat line at 400 kV level. The following issues were discussed:

A) Biharsharif S/s End (Deposit work of JUSNL):-

POWERGRID informed that the scope of POWERGRID under deposit work of JUSNL are 01 no. bay and 0.8 Km 400 KV transmission line for termination at Biharsarif S/s. In this regard it was informed that the project was envisaged in 2008 with 7.13 Crores plus consultancy charges & taxes (Approx. 8.2 Cr.) with completion schedule of 24 months.

The payments made by JUSNL is Rs. 8.29 Cr. (net Rs. 7.13 Cr.) In instalments, the details are as given below:

- a) 1st Instalment paid in 30.09.2008: 1.24 Cr. (Gross& net)
- b) 2nd Instalment paid in 15.05.2012: 2.07 Cr. (Gross before TDS i.e. net 1.7 Cr.)
- c) 3rd Instalment paid in 14.07.2016: 4.98 Cr. (Gross before TDS i.e. net 4.48 Cr.)

It was informed that due to delay in payment the project was delayed and in the meanwhile one new 132 kV Sekhpura-Biharsharif line has been constructed in the same corridor of proposed modified 400 kV line. Therefore for crossing of the 132 kV line one additional tower needs to be constructed with the additional cost of Rs. 48.5 Lacks approx.

JUSNL agreed to do the additional payment of Rs. 48.5 Lacks very soon.

Powergrid informed that the work will be completed in two months after the receipt of additional payment of Rs. 48.5 Lacks. Further, Powergrid pointed that there may be additional cost for ROW issues for stringing of line near 400 kV Biharsharif.

JUSNL agreed to consider the additional cost due to ROW issues in consultation with their Competent Authority.

The final settlement of payments for the aforesaid works will be done as per actual.

B) Tenughat End (TVNL Consultancy project):-

Powergrid informed that the scope of POWERGRID under deposit work of TVNL are 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 initial cost for the above work was Rs. 22.70 Cr. which was re-estimated to Rs. 23.665 Cr. It was informed that till February, 2017 TVNL has paid Rs. 21.59 Cr, and the balance of Rs. 2.07 Cr. will be paid by March, 2017 as committed in 35th TCC.

Powergrid informed that the total completion of work will take 3 months (tentatively by June, 2017) from date of receipt of balance payment. The detail schedule of work is as given below:


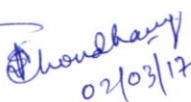
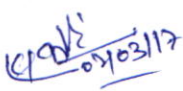
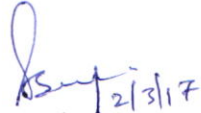
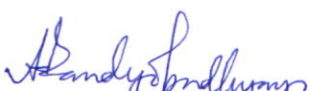

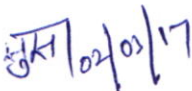

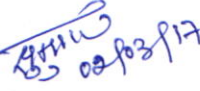


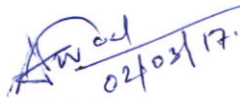
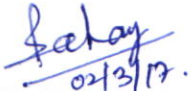
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- a) One no new 250 MVA ICT: The work will be completed by June, 2017.
- b) One no. old 250 MVA ICT: The ICT was of 1992 make. The healthiness certificates from Tenughat will be given within a week and commissioning work of the same will be completed by June, 2017.
- c) 50 MVAR old LR: The LR is 25 years old and need to be shifted to new plinth area. The shifting will be done by TVNL within March, 2017. Subsequently, on receipt of healthiness certificates from Tenughat the LR will be commissioned by June, 2017.

Further, Powergrid pointed that the present 220 kV Tenughat- Biharsharif line is in very bad shape and need strengthening before charging at 400 kV level.

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.

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.

 (Ajoy Prasad) CE (Trans), JUSNL	 (S.K. Choudhary) ESE, TVNL	 (S.K. Singh) DGM, PGCIL	 (S. Banerjee) DGM, ERLDC	 (A.K. Bandyopadhyaya) MS, ERPC
 (S. R. Singh) EEE, TVNL	 (S. Samanta) DGM, PGCIL	 (Rajesh) Asst GM, PGCIL	 (S. Sarda) Asst. GM, ERLDC	 (D. K. Bauri) EE, ERPC
 (S.K. Singh) Asst GM, PGCIL	 (A.N. Pal) CM, ERLDC	 (S. K. Sahay) Sr. Engineer, ERLDC		

SUMMARY OF DEVIATION CHARGE RECEIPT AND PAYMENT STATUS

BILL UPTO 30.07.17 (Week -16 of 2017 - 18)

Last Payment Disbursement Date - 25.08.17

Figures in Rs. Lakhs

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
WR	0.00000	0.00000	57873.89192	58787.95090	914.05898
SR	18857.77678	18899.57678	0.00000	43.57998	1.77997
NER	21980.32860	23169.55465	4167.45508	4167.45508	-1189.22605
NR	11952.27465	11060.28999	904.27287	904.34001	892.05180
BSPHCL	5385.05112	4888.21380	11.08539	0.00000	485.75193
JUVNL	3248.55805	2332.19798	2.76079	0.00000	913.59928
DVC	224.91076	121.12494	2018.95744	2018.95744	103.78582
GRIDCO	251.84695	338.48569	369.62159	454.37514	-1.88519
WBSETCL	7955.13189	7974.34730	0.00000	19.21540	-0.00001
SIKKIM	173.37103	0.00000	311.84518	158.73072	20.25657
NTPC	4051.84235	4064.18163	0.00000	12.33928	0.00000
NHPC	0.00000	0.00000	749.76894	749.76894	0.00000
MPL	10.12102	10.12102	242.14885	242.14885	0.00000
STERLITE	0.00000	0.00000	0.00000	0.00000	0.00000
APNRL	82.24922	0.00000	99.25925	0.00000	-17.01003
CHUZACHEN (GATI)	15.80204	15.80198	179.33004	179.32837	-0.00161
NVVN (IND-BNG)	50.01994	44.32003	97.43524	97.44659	5.71126
JITPL	134.14144	134.15263	389.72441	389.73560	0.00000
GMR	83.59502	36.97655	416.34374	365.15336	-4.57191
IND BARATH	49.97132	0.00000	0.00000	0.00000	49.97132
TPTCL(DAGACHU)	766.28874	766.45109	30.61041	30.77276	0.00000
JLHEP (DANS ENERGY)	185.61420	171.26047	68.78401	68.77337	14.34309
BRBCL(NABINAGAR)	156.10611	156.10755	56.75608	56.75608	-0.00144
NVVN (IND-NEPAL)	98.38547	80.36136	310.17861	319.63469	27.48019
HVDC SASARAM	2.33430	2.33430	8.74323	8.74323	0.00000
KBUNL	0.00000	0.00000	0.00000	0.00000	0.00000
TEESTA-III	841.38121	837.44912	309.31393	309.29393	3.91209
DIKCHU	0.00000	0.00000	382.23573	382.23573	0.00000
Pool Balance	0.00000	428.39519	-1610.94154	0.00000	1182.54635
Addl Deviation charge	4006.40651	8393.89278	0.00000	0.00000	-4387.48627
IRE	0.00000	0.00000	197.30798	0.00000	-197.30798
VAE	0.00000	0.00000	4997.40009	0.00000	-4997.40009
TOTAL	64749.67358	58606.67667	61167.84969	54885.04536	

	% Realization	98 As on	25.08.17
Receivable:	Receivable by ER POOL	Payable	Payable by ER POOL
Received	Received by ER POOL	Paid	Paid by ER POOL
"- ve" Payable by ER pool	"+" ve" Receivable by ER pool		

Annexure - B20

Current Status of Letter of Credit (LC) amount against UI charges for ER constituents*Figures in Lacs of Rupees*

SI No	ER Constituents	No. of weeks in which Deviation Charge payable	No of times payment was delayed during 2015-16	Total Deviation charges payable to pool during 2015-16	Average weekly Deviation Charge liability	LC Amount	Due date of expiry	Remarks
		(A)	(B)	(C)	(D)	(E)	(F)	(G)
1	BSPHCL	44	44	10288.28725	194.11863	213.53049	Expired on 03.01.17	Reminder letter issued on 30/05/17
2	JUVNL	45	45	12078.12053	227.88907	250.67797	31.01.2018	Opened for 85.89820 Lac
3	SIKKIM	6	6	43.59053	0.82246	0.90471	07.03.2018	Opened for 1.60277 Lacs
4	APNRL	31	31	514.12213	9.70042	10.67046	31.10.2017	Opened for ₹ 10.67046 Lacs
5	CHUZACHEN	6	5	24.43612	0.46106	0.50716	Not Opened	Letter issued on 02/05/17
6	JITPL	18	3	1304.7548	24.61802	27.07982	Not Opened	Letter issued on 02/05/17
7	GMR	12	4	367.39848	6.93205	7.62525	15.07.2017	Opened for 19.66436 Lacs
8	IND-BARATH	48	36	96.68933	1.82433	2.00676	Not Opened	Letter issued on 02/05/17
9	TPTCL	45	3	1287.684311	24.29593	26.72552	Not Opened	Letter issued on 02/05/17
10	JLHEP	27	24	346.25598	6.53313	7.18644	Not Opened	Letter issued on 02/05/17
11	BRBCL	48	3	343.15334	6.47459	7.12205	31.03.2018	Opened for ₹ 7.12205 Lacs
12	NVVN(IND-NEP)	36	5	419.02891	7.90621	8.69683	Not Opened	Letter issued on 02/05/17
13	TEESTA-III(TUL)	3	3	109.40403	2.06423	2.27065	Not Opened	Letter issued on 02/05/17

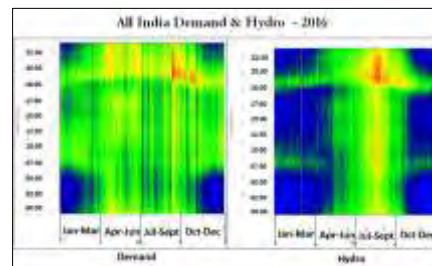


Report
on
Operational Analysis for Optimization of Hydro
Resources & facilitating Renewable Integration
in India

Forum of Load Despatchers
India

Motivation

- **Sub optimal operation of some hydro generators**
 - Scope for optimization & flexible operation along with economic gains
 - Requirement of flexibility in view of large scale Renewable Integration
- **Hydro Power - a source of flexibility & reliability**
 - Overload capability
 - Peaking support
 - Fast ramping
 - Primary Response
 - Voltage Regulation
 - Black Start Capability



FOLD Working Group on Hydro (21-Nov-2016)

Terms of Reference(ToR):

1. To study the existing capability of hydro stations in States and Interstate level
 2. To study the existing tariff and operating norms for hydro stations
 3. To study the prevailing practices for scheduling and utilization of available capabilities of hydro stations and the existing constraints/issues withholding full utilization.
 4. To study the operating constraints in respect of inflows, hydrology, water release, rate of reservoir depletion, machine capabilities etc.
-

Terms of Reference(ToR)

5. To explore the possibilities for utilizing available hydro stations as a flexible resource for primary response, secondary control (AGC), load following, peaking, pumped storage, reactive energy, Black-start etc.
 6. To explore the possibilities of integrated operation of tandem hydro stations or stations on same river basin.
 7. To study the availability of existing communication facility between the stations and control centers.
 8. To suggest possible mechanisms and regulatory interventions for optimizing/enhancing utilization of existing hydro capabilities without violating the identified constraints.
 9. Any other related matter.
-

Process

Survey of hydro power stations

- 35 GW (79%) out of 44.5 GW
- 149 hydro stations
- 486 generating units

Consultation with hydro generators / State Load Despatch Centres

- Appreciation of constraints
- Philosophy of dispatch

Big Data Analysis

- 9 Years Data Analysis
- 38 Million Data Points
- Data Visualization

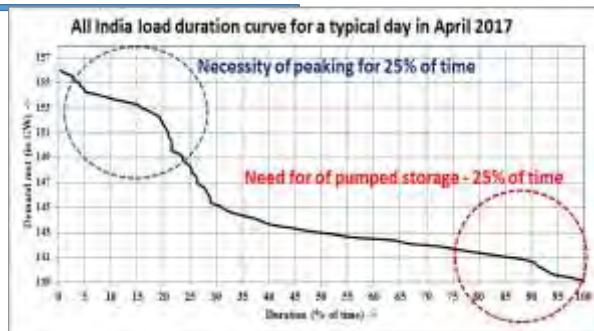
Brain Storming in FOLD Meetings

- 6 months work
- Around 70 Contributors
- More than 1000 man hours

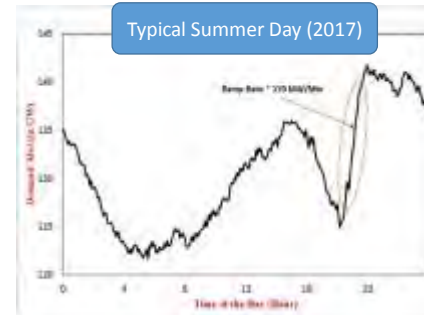
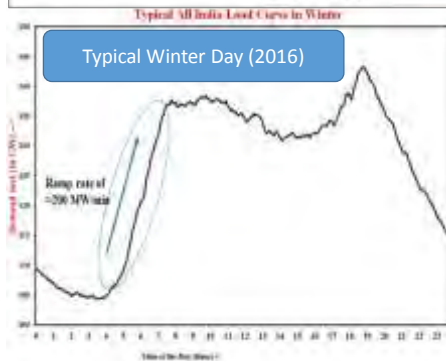
Summary of Contents

1. Introduction
2. Existing Hydro & Pattern Analysis & Survey
3. Flexibility Metrics
4. Valuing Hydro: Flexibility Assessment, Ranking & Optimization
5. Pump Storage Facilities
6. Constraints in Hydro Generation Despatch
7. Tariff Structure for Hydro Power
8. Scheduling & Dispatch at Regional level
9. International Experience on Hydro Despatch
10. Recommendations
11. Bibliography (Appendices)



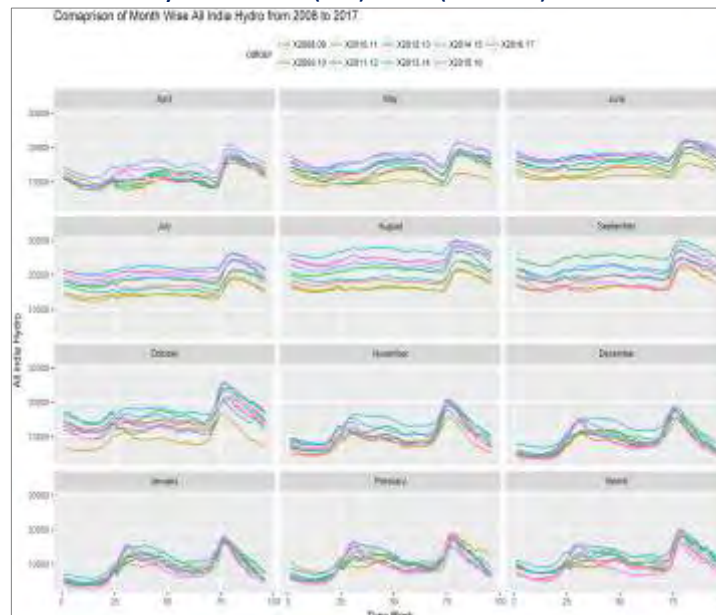


1. Need for Flexibility Resources



7

All India Hydro Generation (MW) Pattern (2008-2017)



The peak hydro during the high-hydro season ~ 29-30 GW while during winters it is of the order of 18-20 GW

8

Constraints

- Silt Issues
- Coordination issue associated with stations sharing common basin
- Transmission Evacuation constraints
- Grid Events (GD/GI) causing Hydro Generating unit outage
- Coordinating Generation Outage to avoid Water Spillage
- Social Obligations & other issues

6/12/2017

9

Scheduling Practice at Regional Level

- ER/NER/NR – experience
- Cross border Hydro scheduling (Chukha, Tala, Kurichu)
- Special Cases – Best fit scheduling for Sardar Sarovar (SSP)

6/12/2017

10



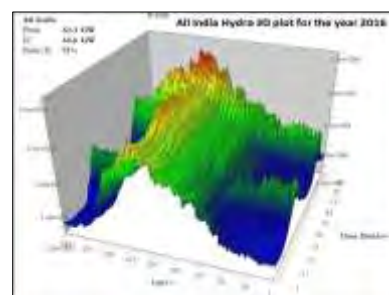
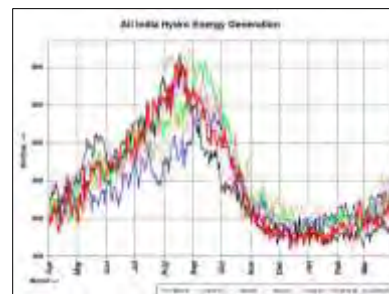
Summary of Findings

• Defining Flexibility Indices

- Peaking, Ramping, Capacity Utilization
- Flexibility Indices as a metric for improvement
- Plants with multi part tariff performing better

• Operational Performance

- Peak Hydro Support 30 GW in high hydro season & 18-20 GW in lean hydro season against IC of 45 GW
- Seasonal Hydro Flexibility
- 87 tested for black start
- 25 Stations out of 150 have synchronous condenser facility - to be harnessed



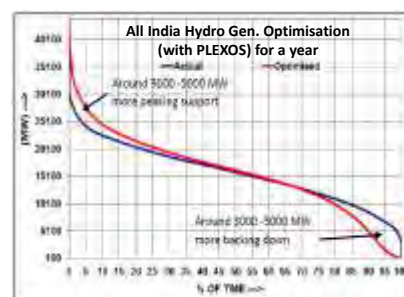
Summary of Findings

• Valuing Hydro

- 128 BU of annual hydro generation
- 32 BU Reservoir energy content
- Economic gains with further optimization

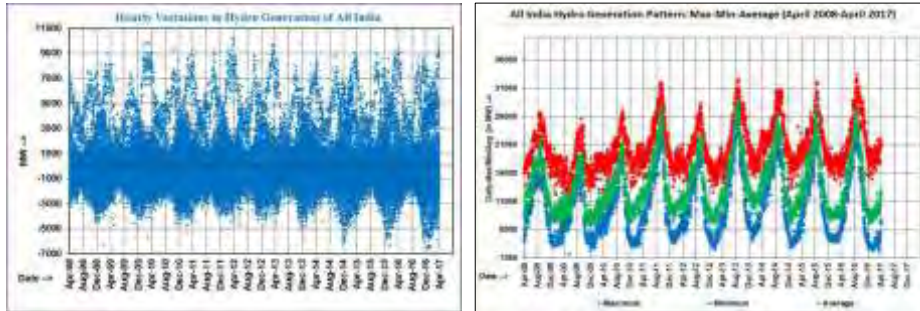
• Optimization based on Production Cost Modelling

- 4 GW Extra Peaking Support during peak
- 5 GW Extra Backing down during off peak
- Overall flexibility enhanced





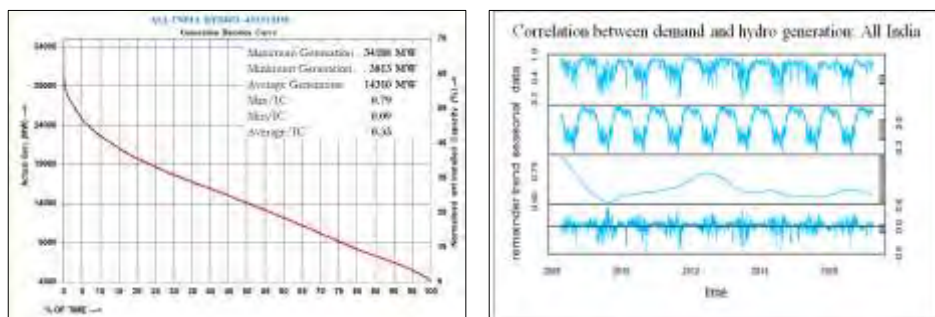
Flexibility Analysis of Hydro Generation



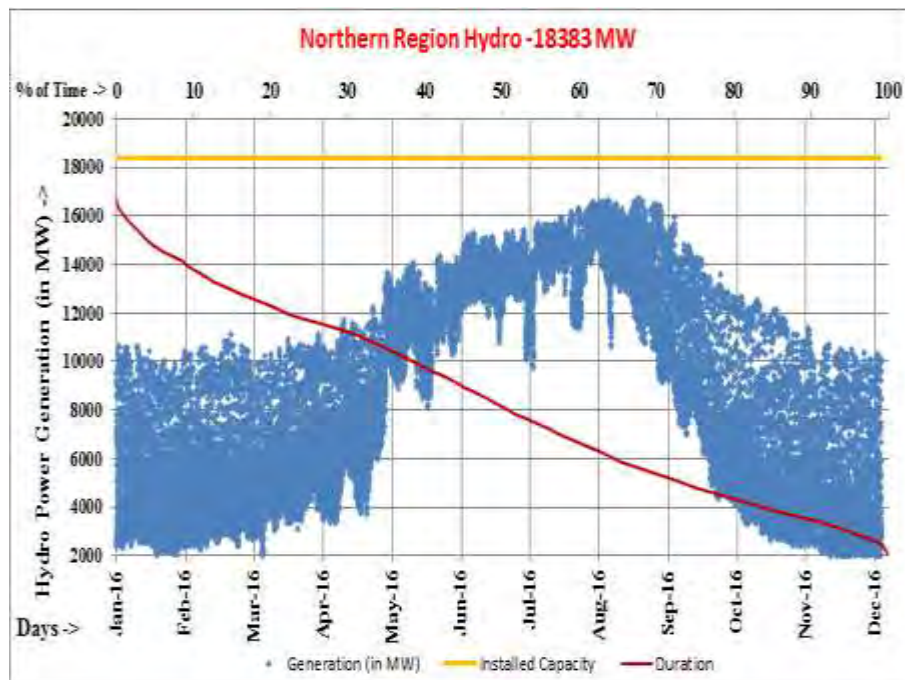
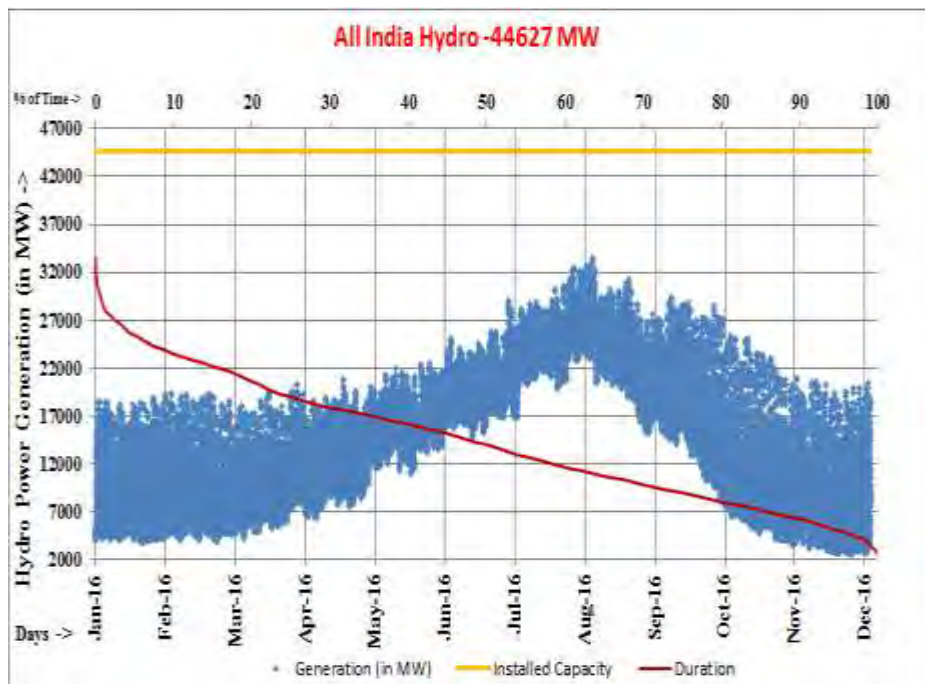
- Seasonality in Hydro Variation / Max / Min /Average Generation
- Less Variation in High Hydro Season
- More Variation in Low Hydro Season
- More scope for peaking support and off-peak backing down

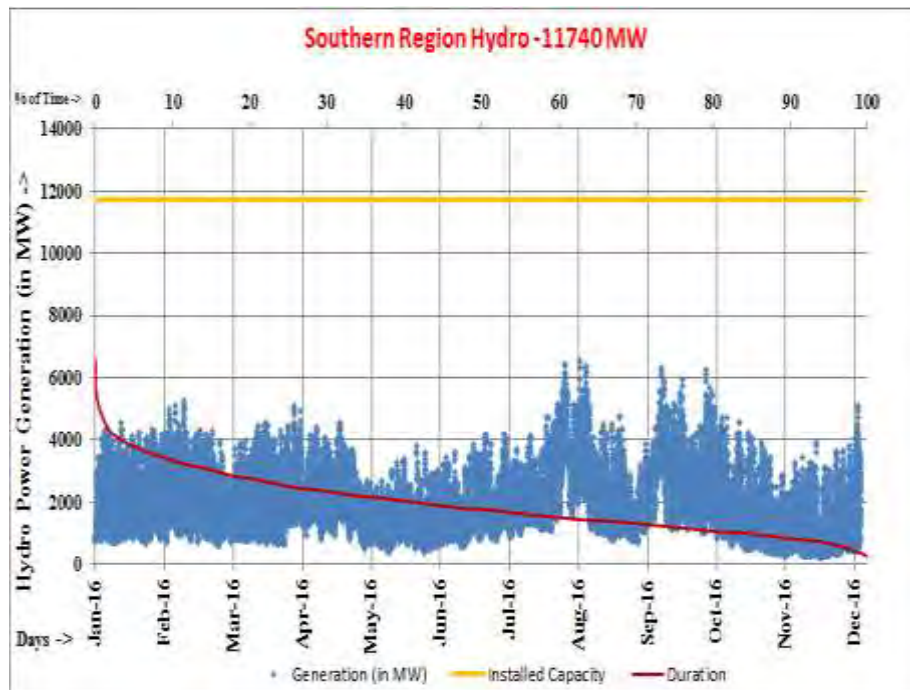
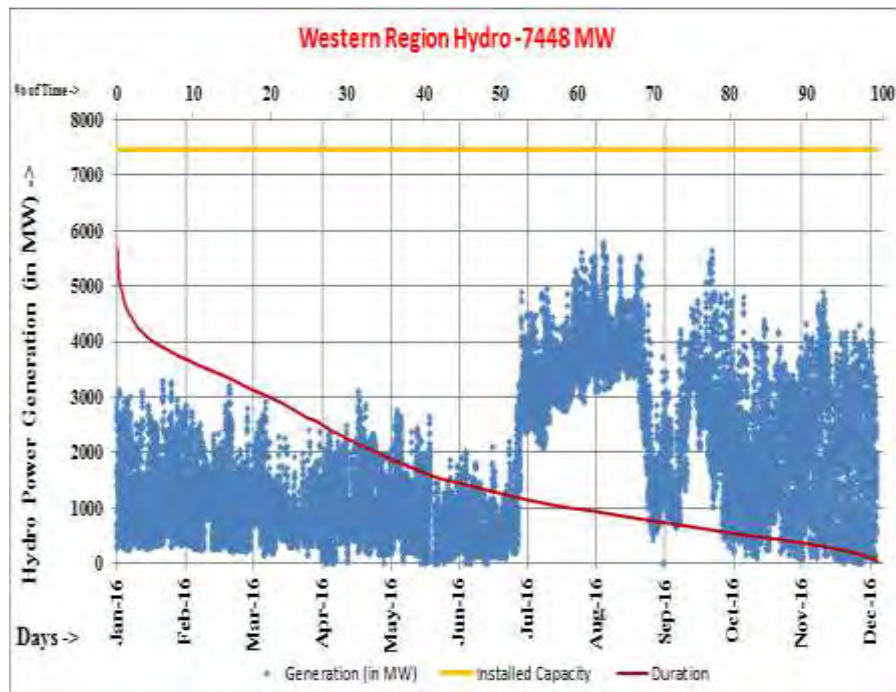


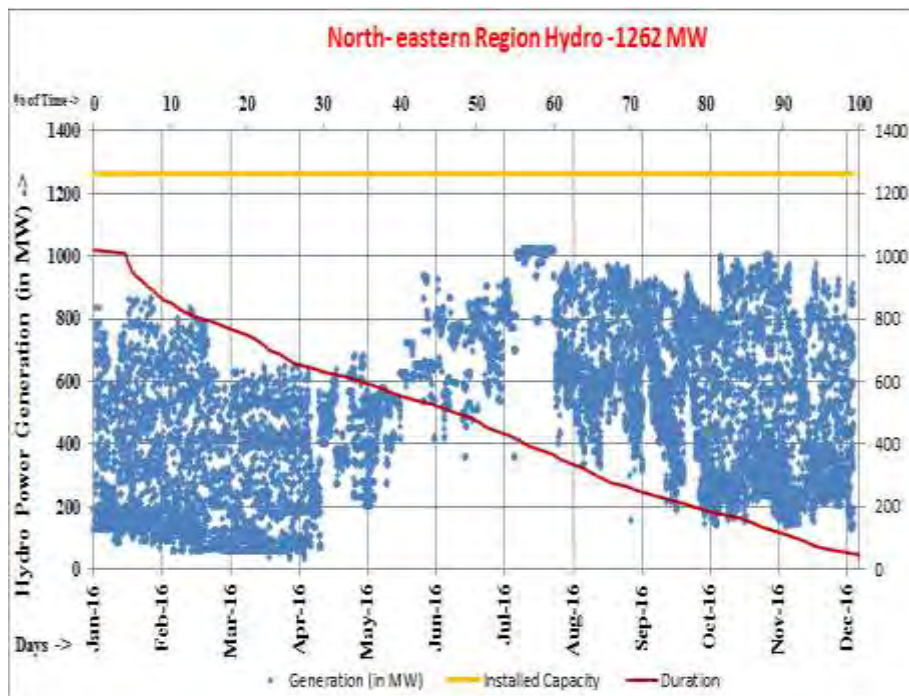
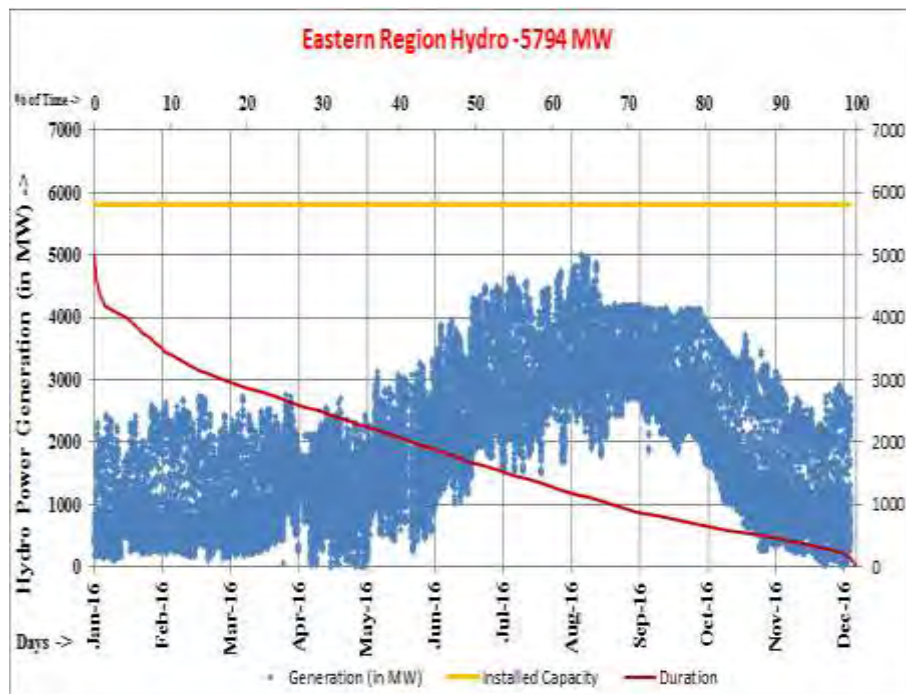
Flexibility Analysis of Hydro Generation



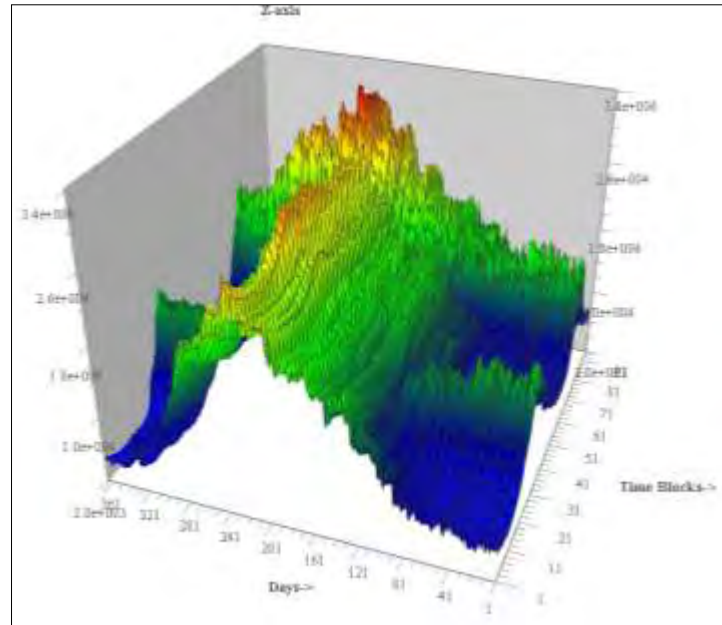
- Max Gen : 34 GW
- Min Gen : 4 GW
- Average Gen : 14 GW
- Max/IC : 0.79
- Min/IC : 0.09
- Average/IC : 0.33
- Seasonal Decomposition to identify trend and seasonality
- Decreasing Correlation between Demand and Hydro Generation
- Higher Correlation during lean hydro season



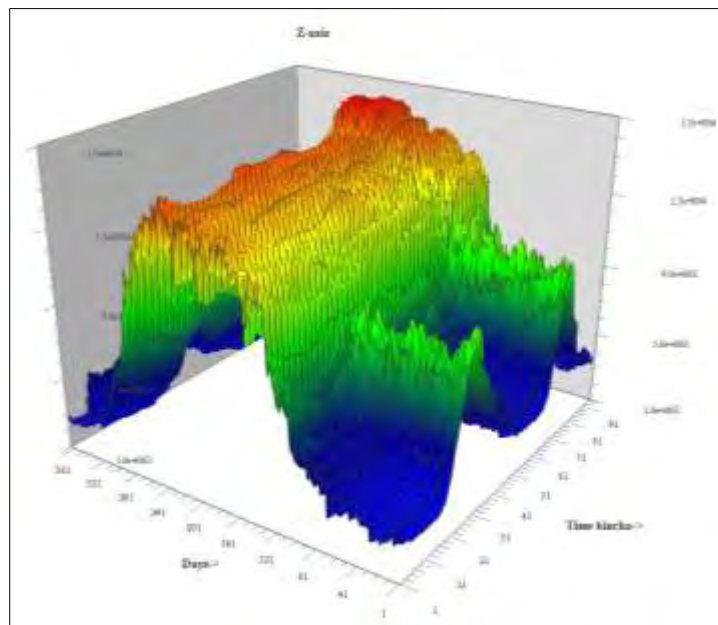




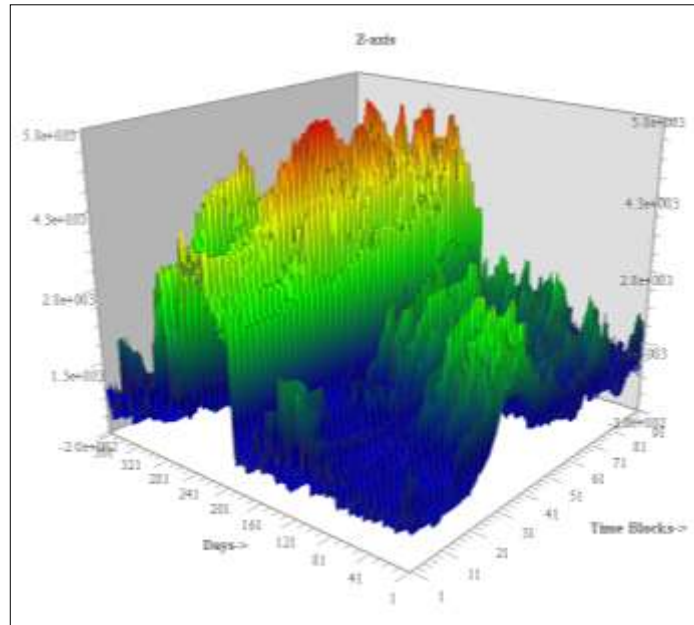
All India Hydro



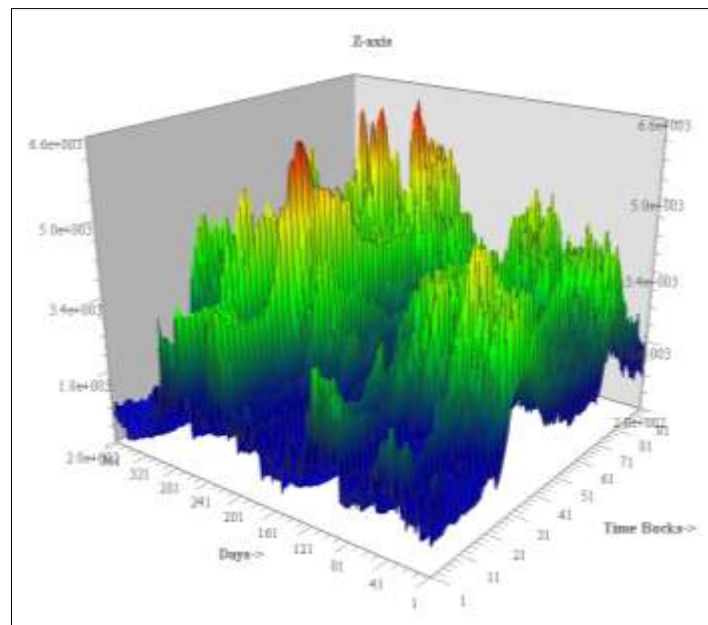
NR-Hydro



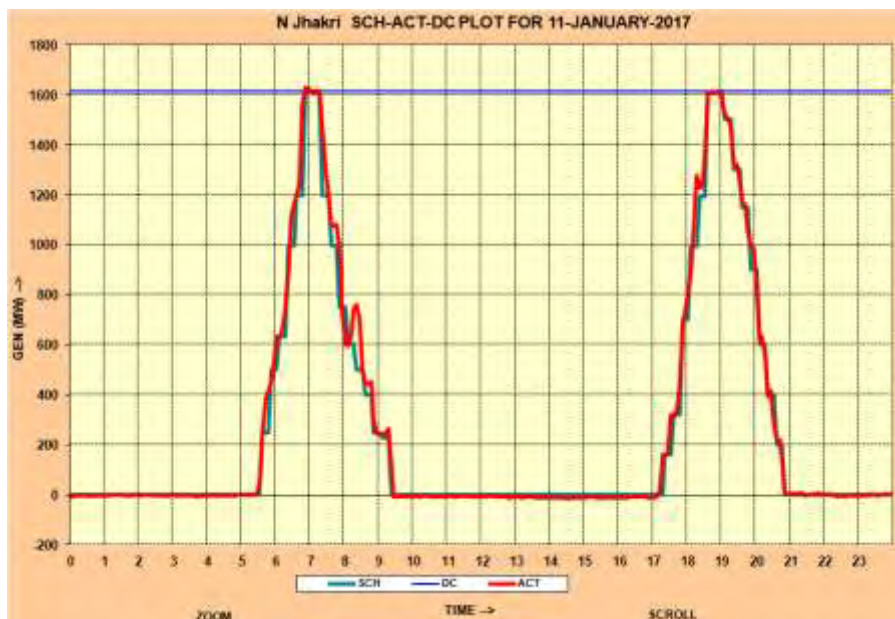
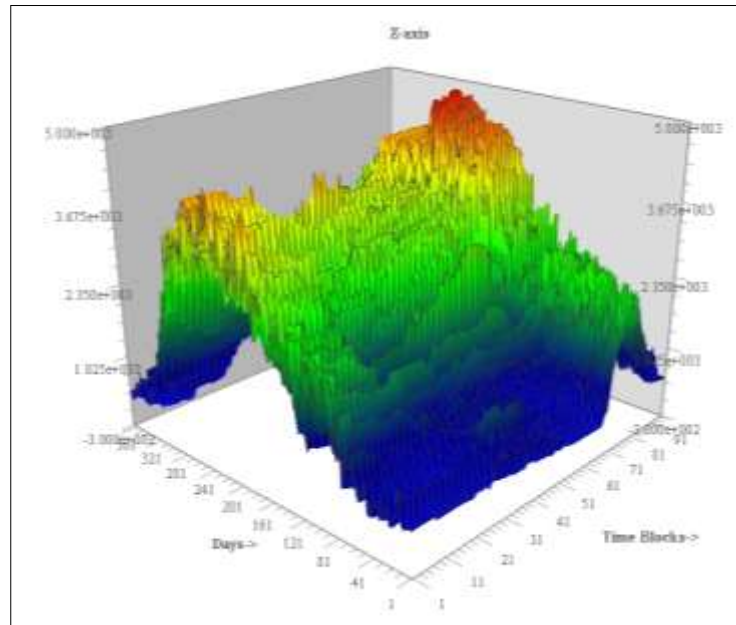
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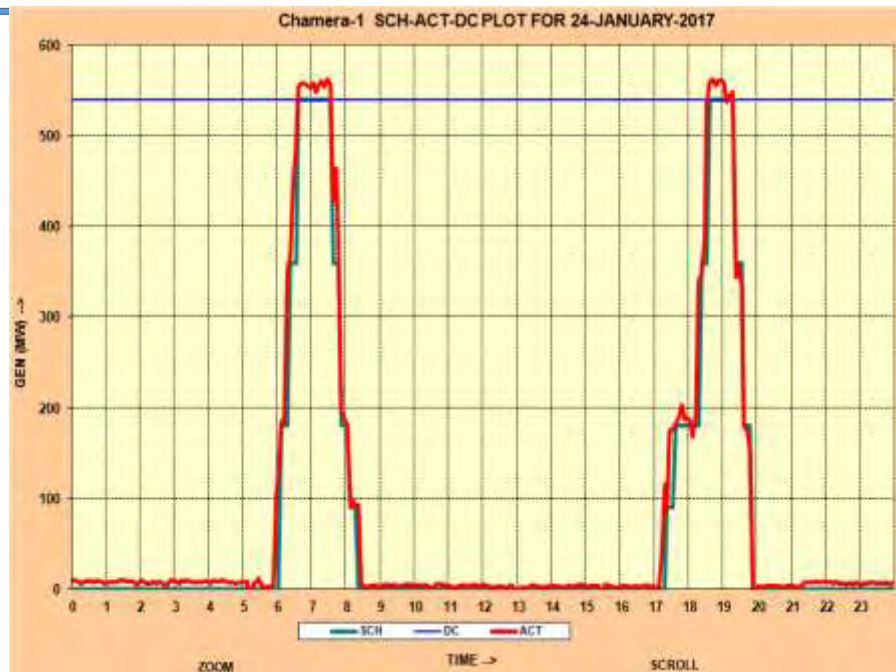
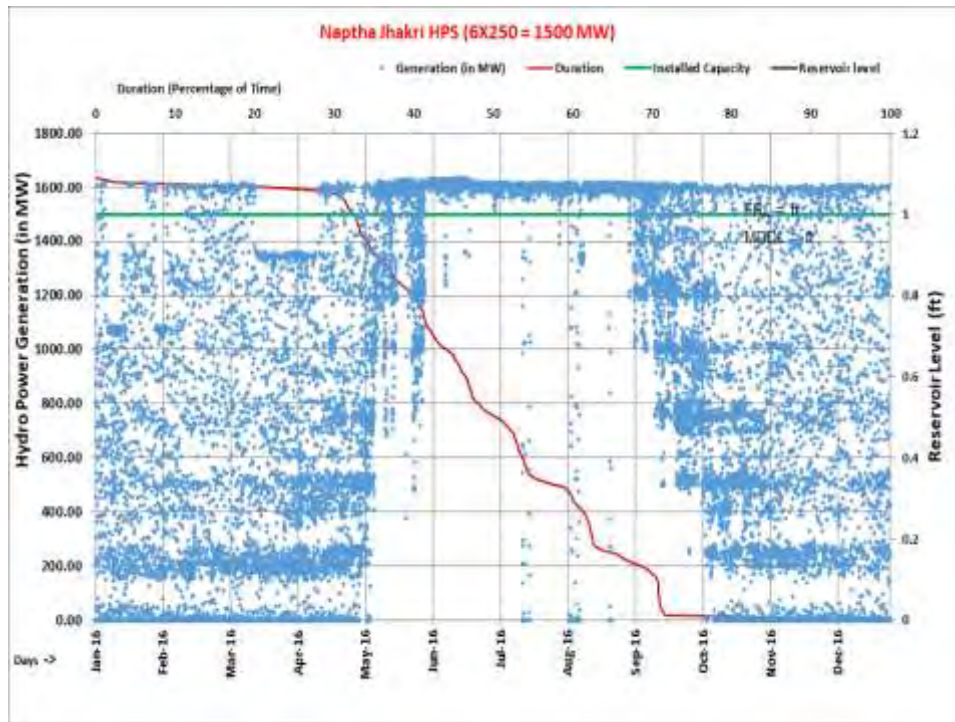


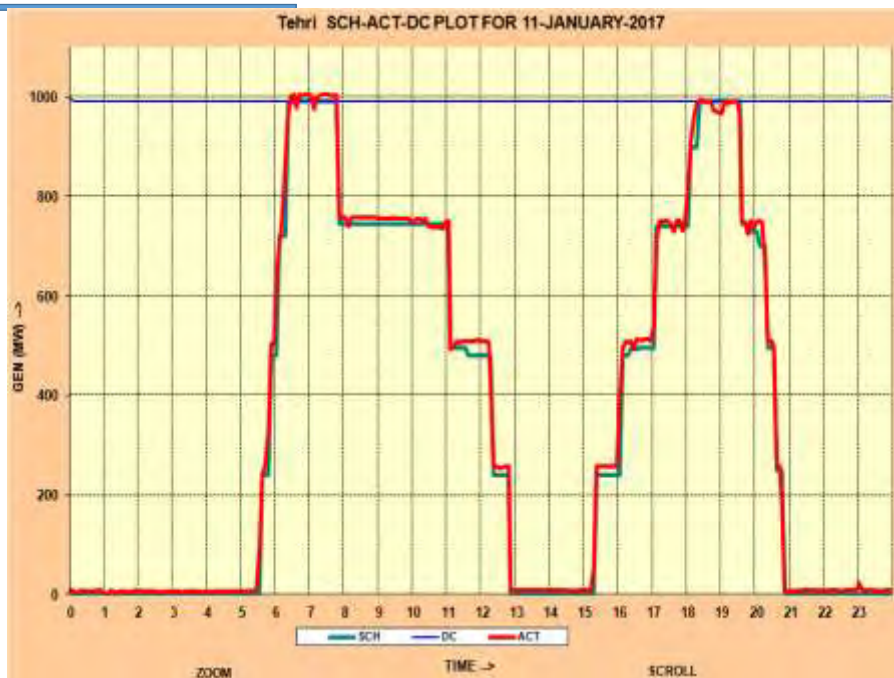
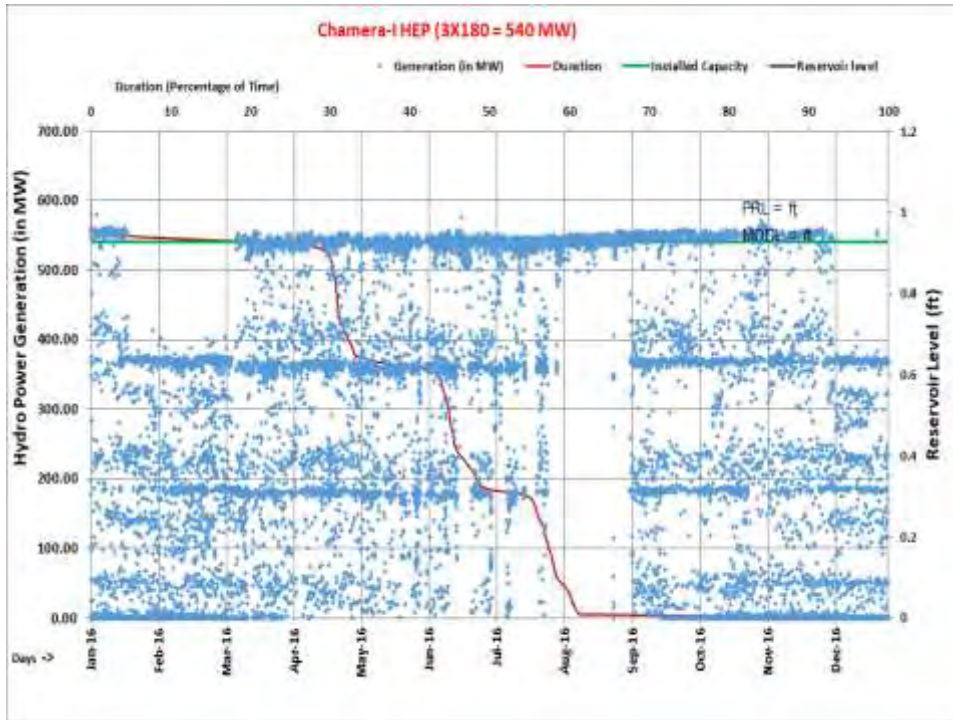
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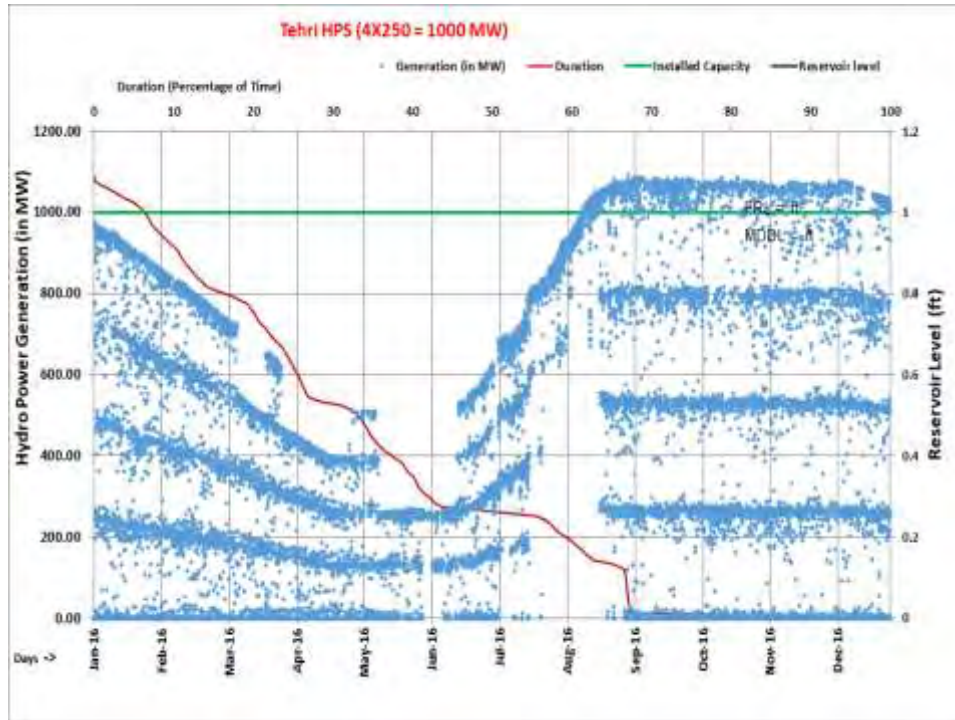


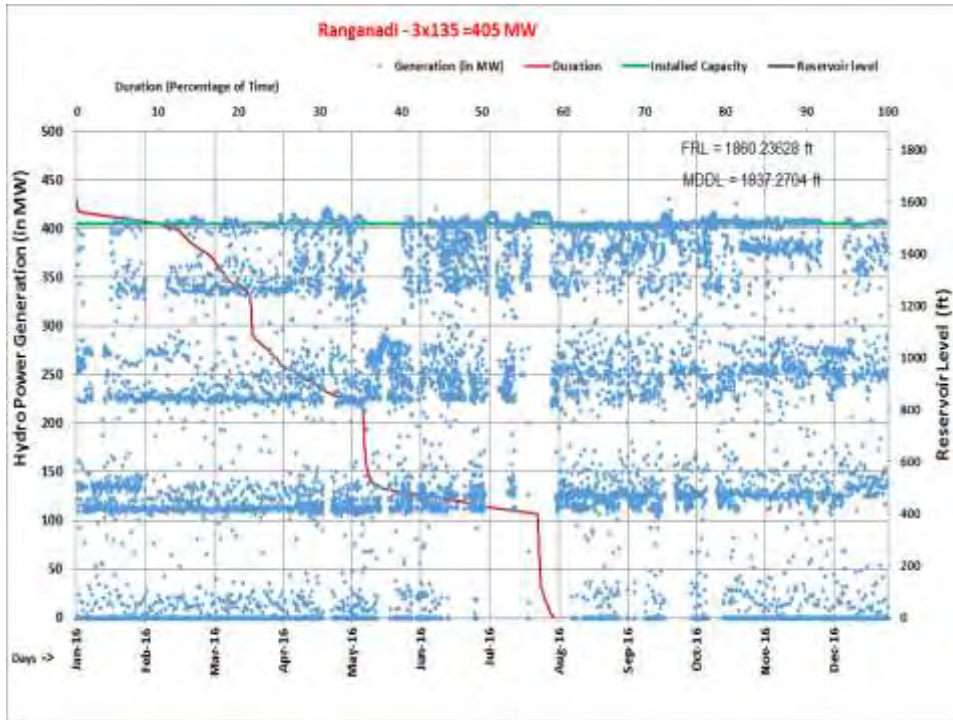
ER-Hydro



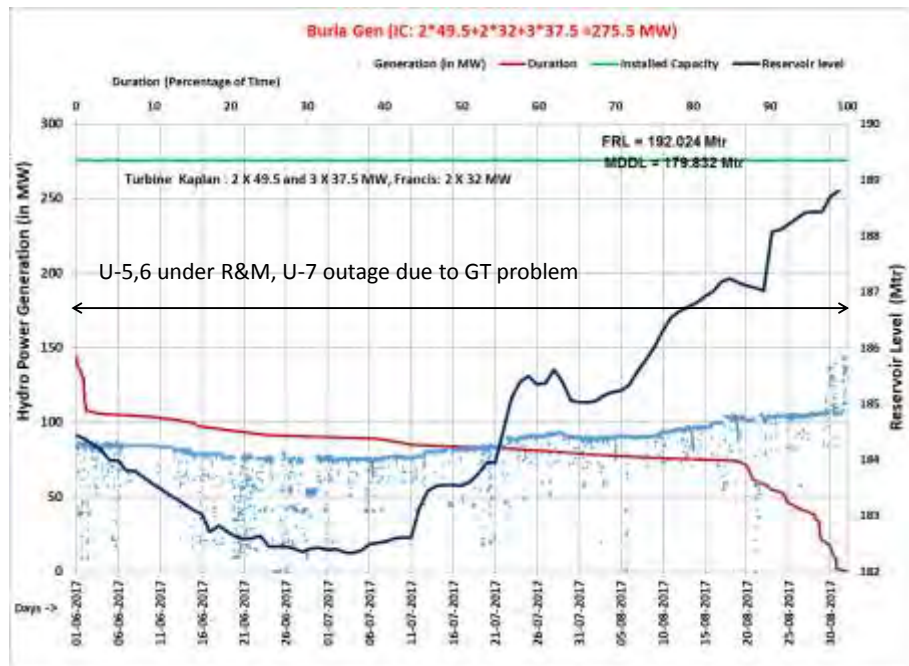
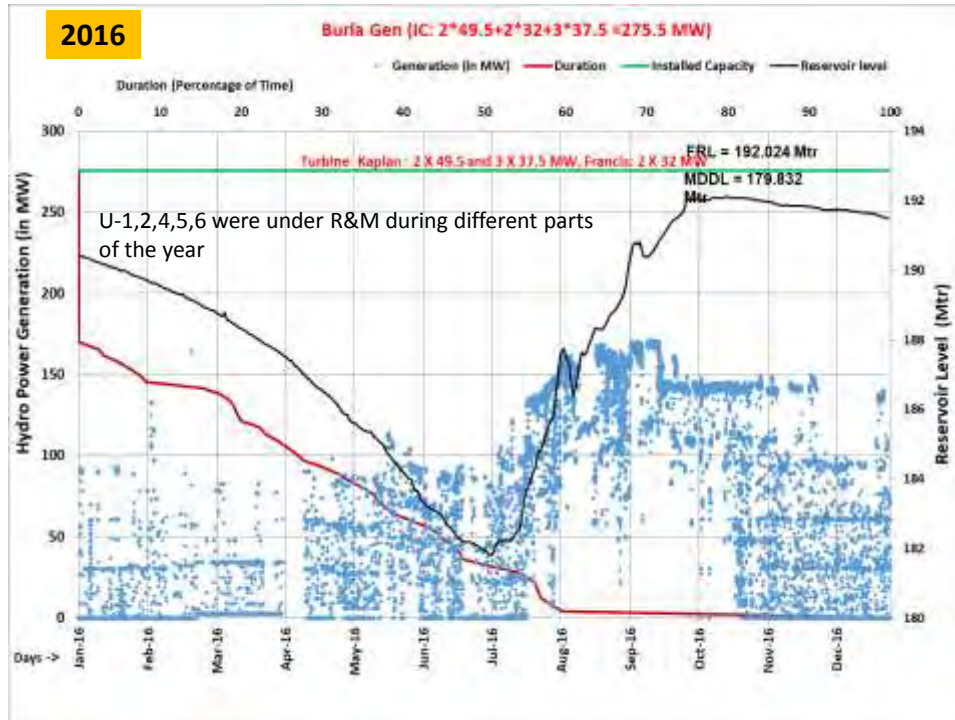




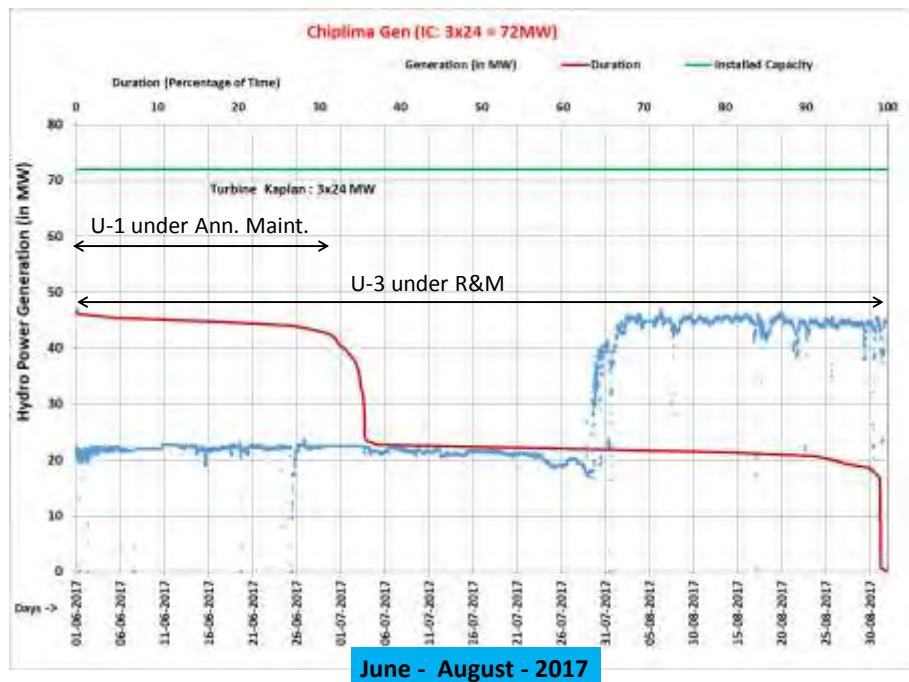
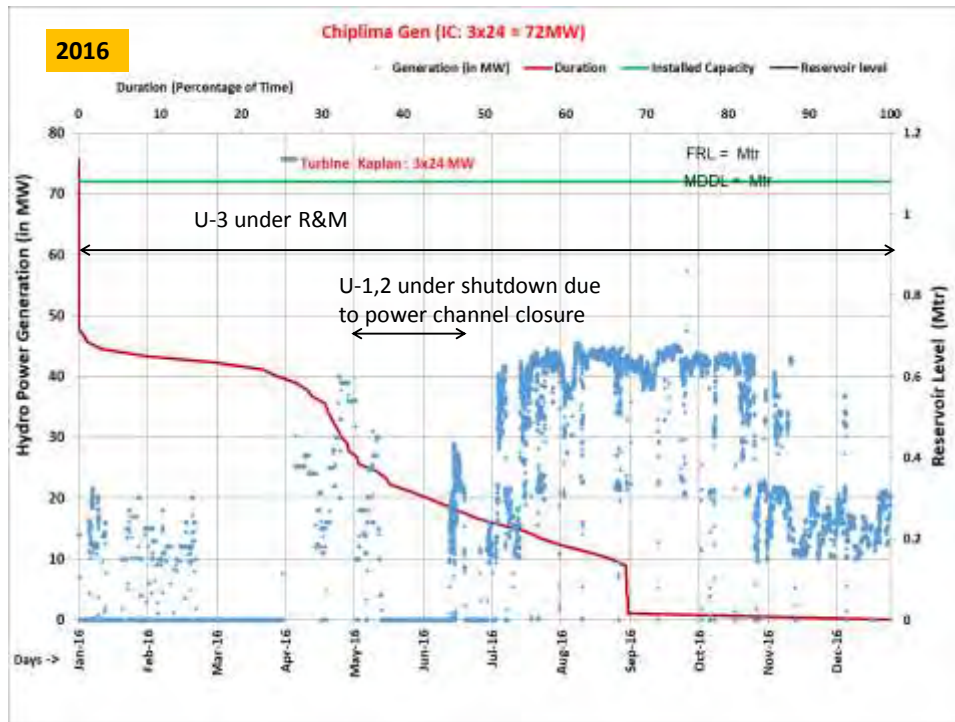


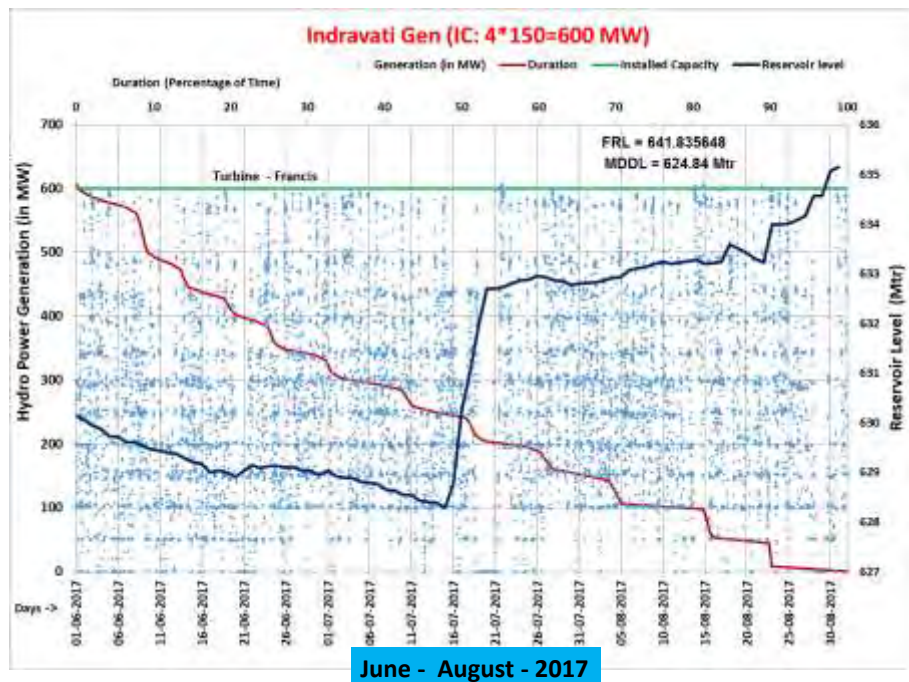
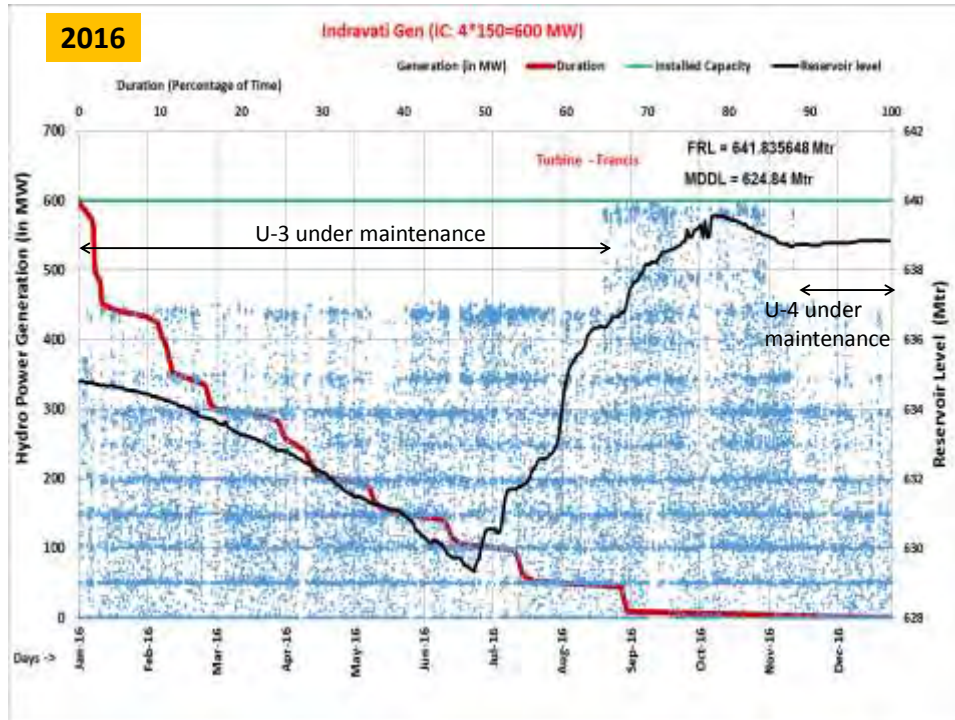


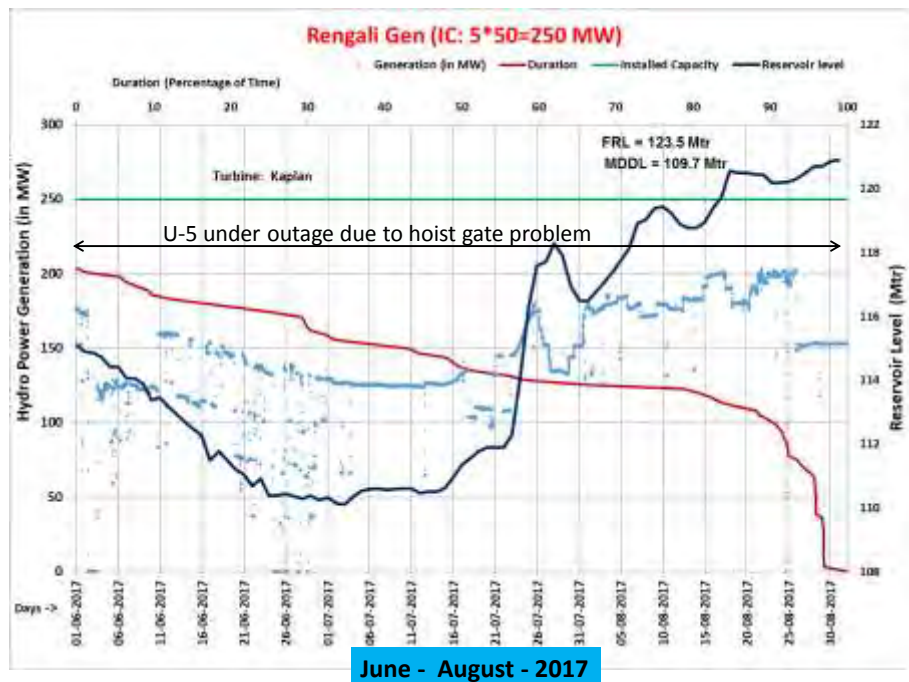
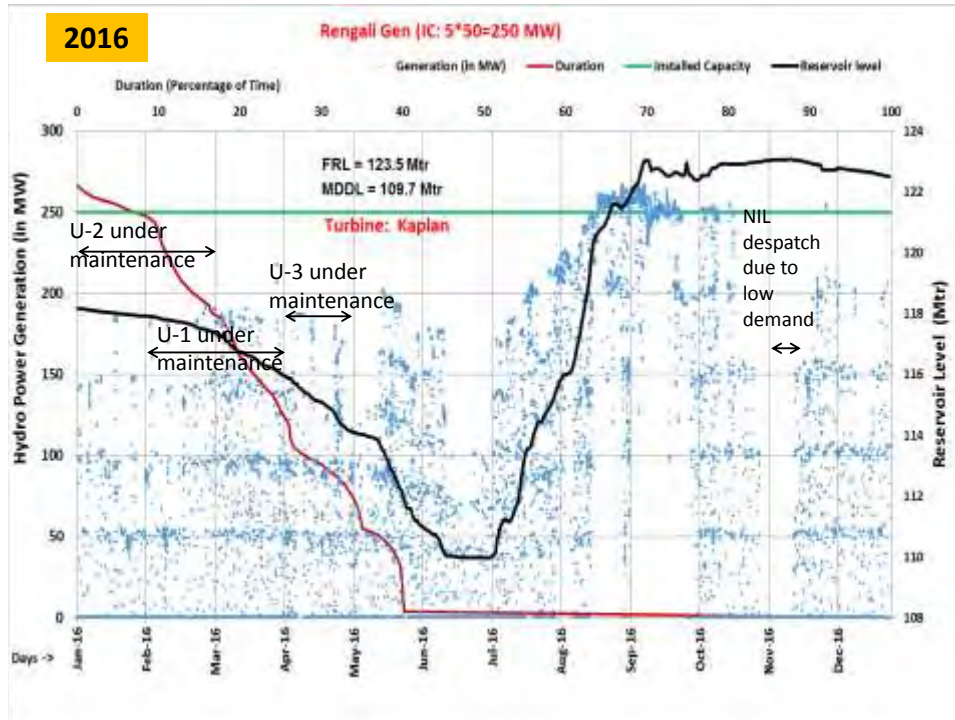
Time Series Plots of
ER Entities
Hydro Generation

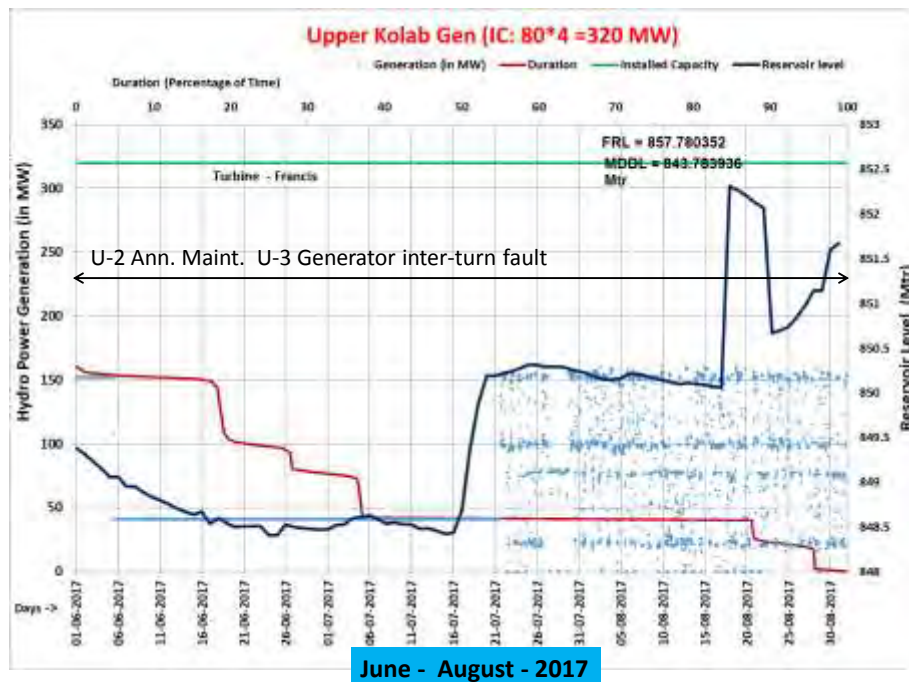
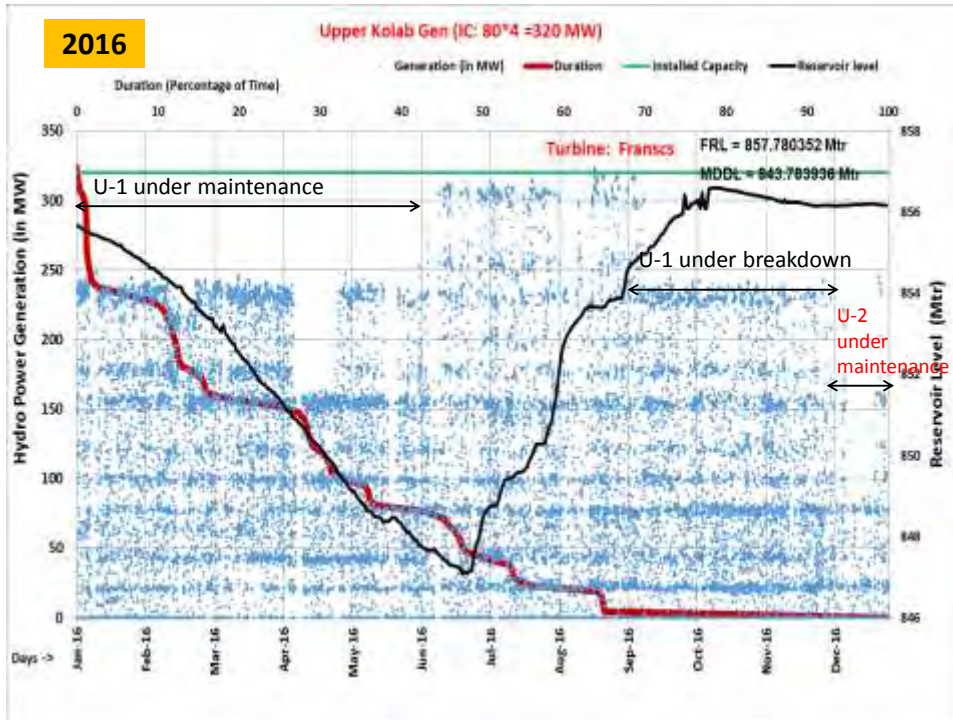


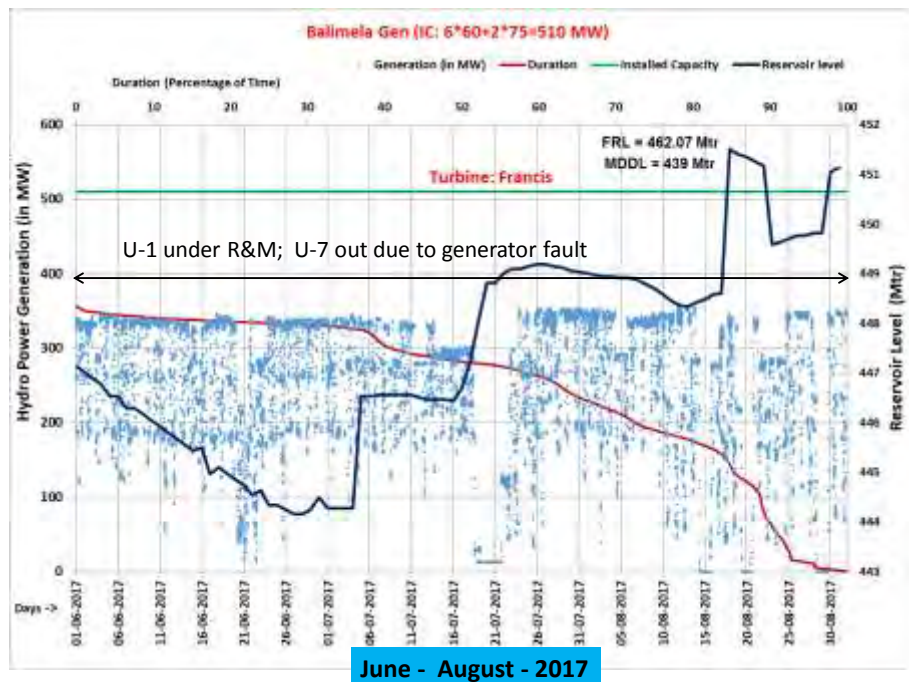
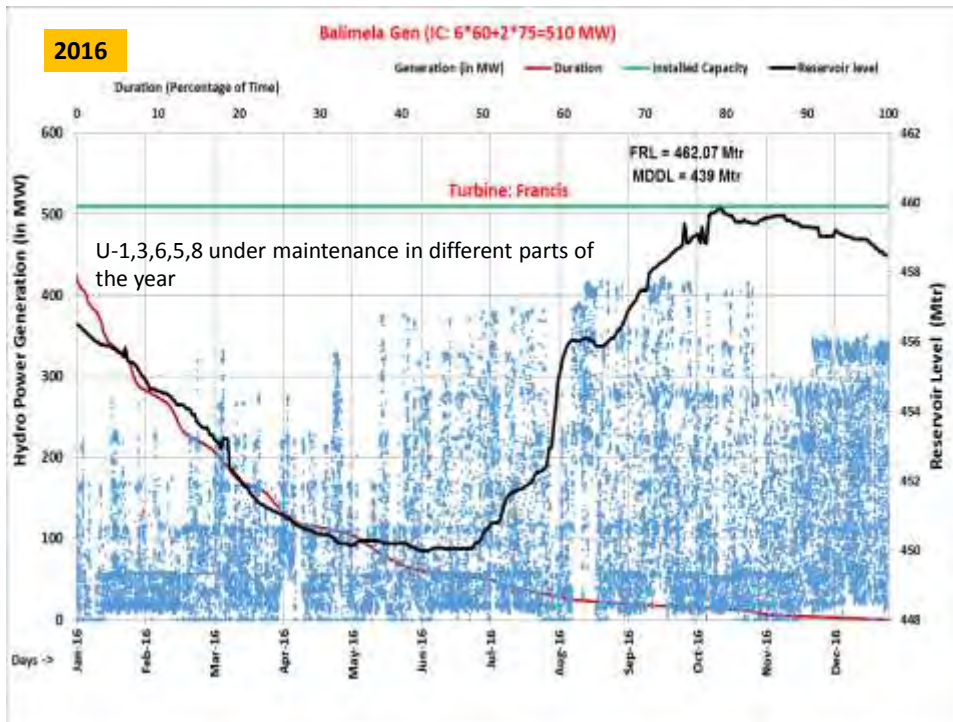
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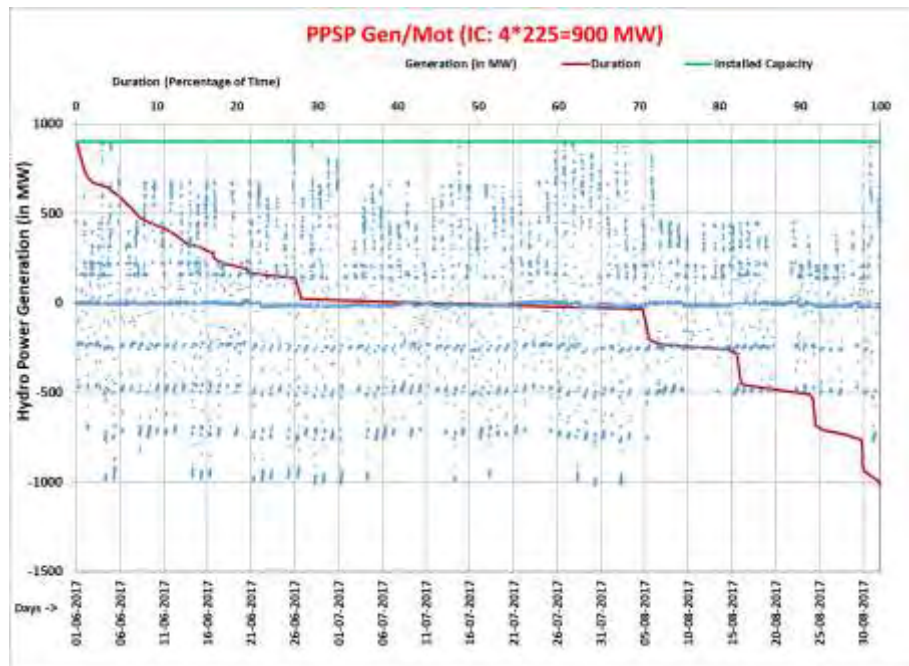




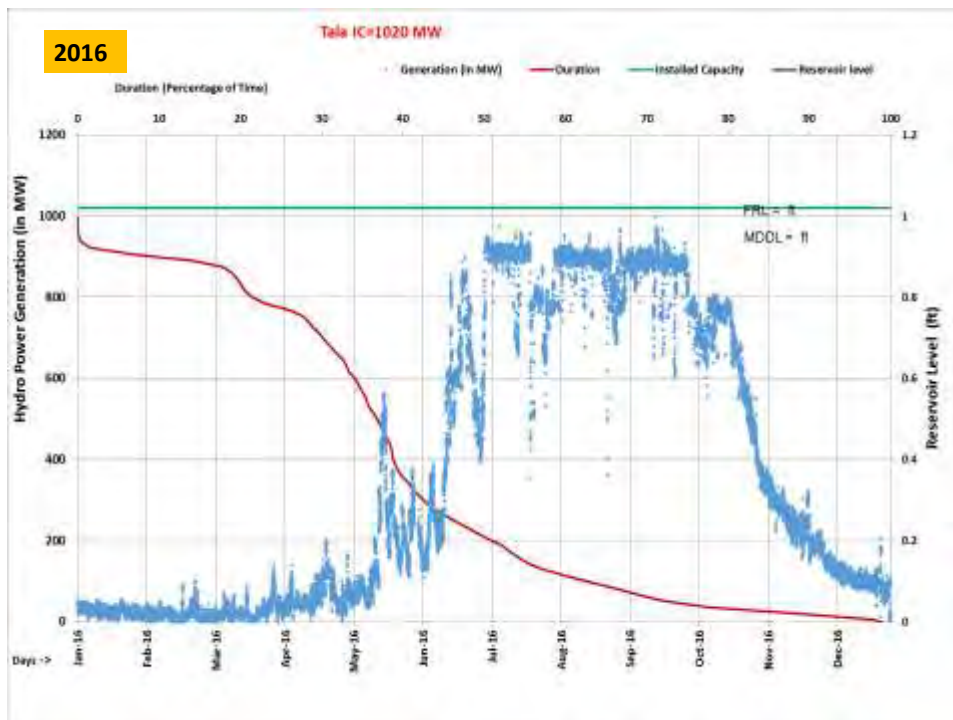
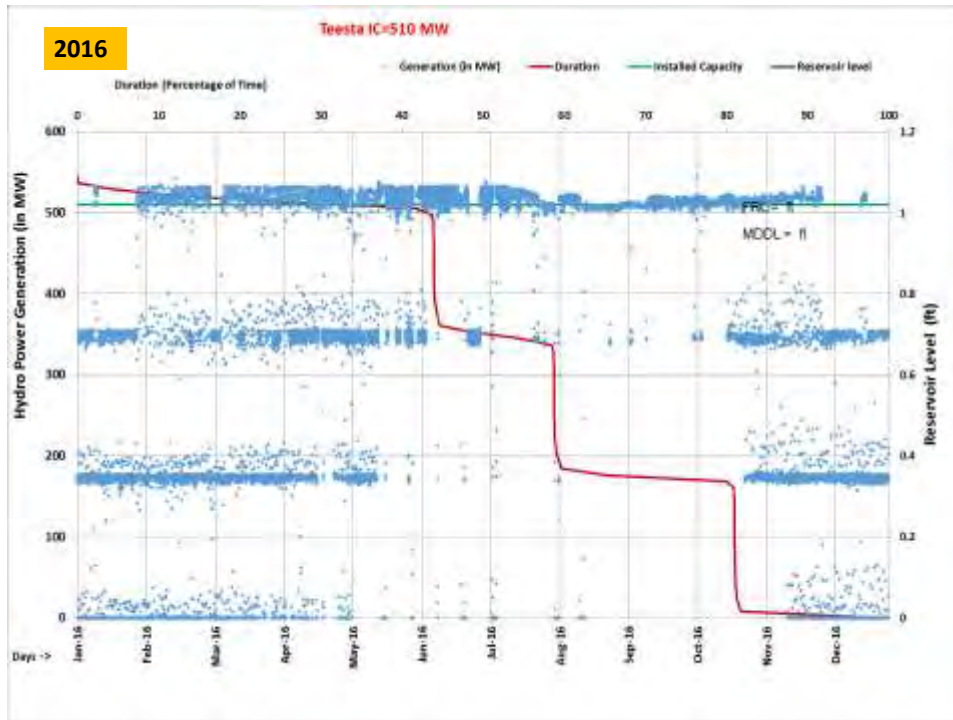


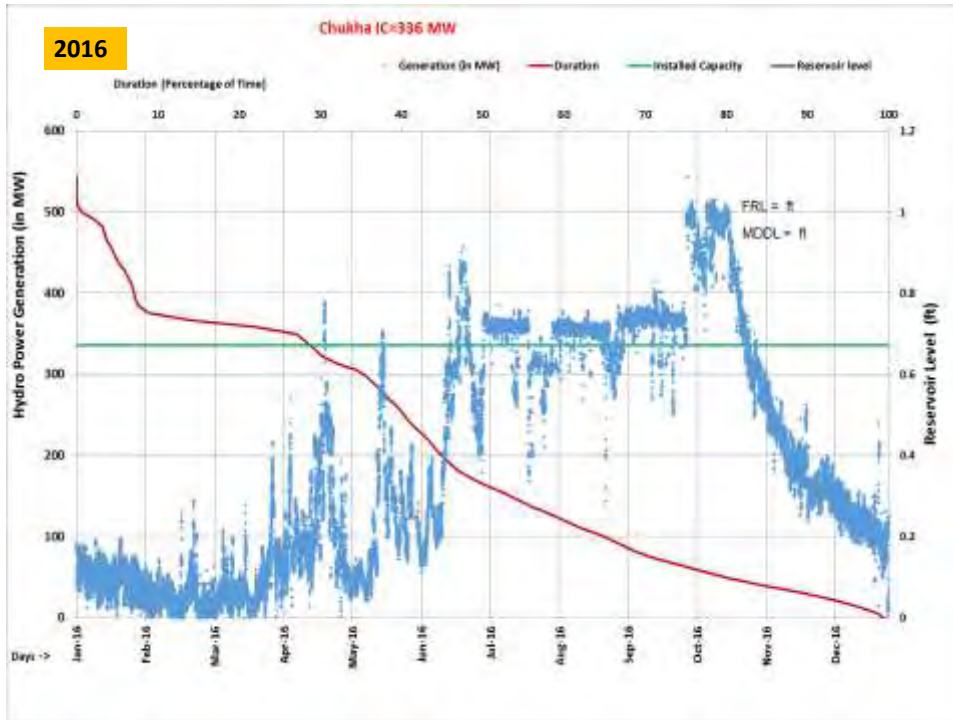






June - August - 2017





S No.	Station	IC	Peaking (%)	CUF (%)	Ramp-up (%/5min)	Rank-Ramp Down(%/5 min)
1	BURLA	275	110	22	24	23
2	TEESTA	510	107	62	38	40
3	RENGALI	250	107	26	33	36
4	CHUZACHEN	110	105	52	82	80
5	CHIMPLIMA	72	105	28	34	28
6	UPPER KOLAB	320	101	24	54	56
7	INDRAVATI	600	100	25	44	43
8	PPSP Gen	900	100	22	33	28
9	BALIMELA	510	83	18	32	30



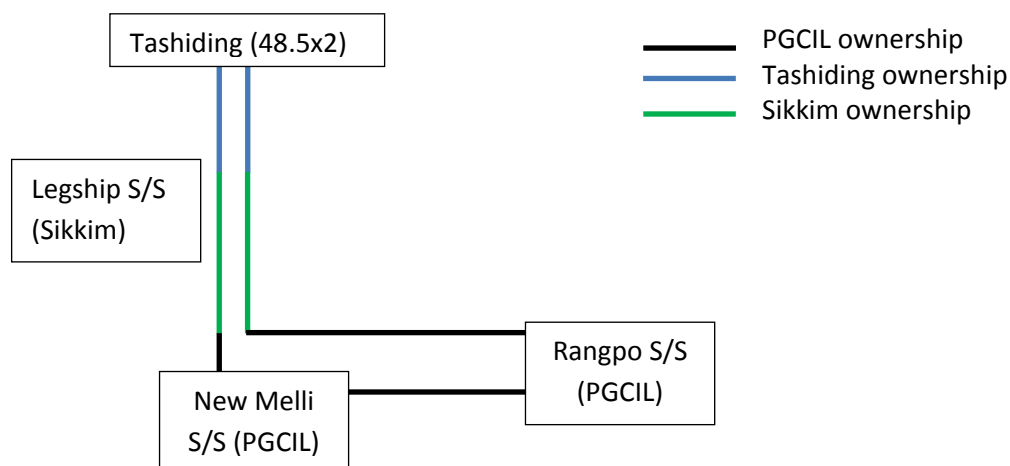
Thank You !!



Brief Note on Scheduling methodology of Tashiding HEP: Control Area Jurisdiction

1. BACKGROUND

1. Block diagram of Tashiding evacuation:



- Legship substation of Sikkim is not yet ready.
- Tashiding is connected at New Melli with LILO of 220 kV Rangpo- New Melli circuit-1.

2. Connection agreement of Tashiding:

- No information is available regarding connection agreement between Tashiding and Sikkim for Tashiding-Sikkim portion.
- No information is available regarding connection agreement between Sikkim and New Melli, Rangpo portion.

3. Long Term Access:

There is no Long Term Access or Medium Term Open Access taken by Tashiding HEP.

2. Regulatory Provision:

- Provision in Indian Electricity Grid Code regarding scheduling jurisdiction:

Clause 6.4.2 states that

Quote

"The following generating stations shall come under the respective Regional ISTS control Area and hence the respective RLDC shall coordinate the scheduling of the following

- a) Central Generating Stations (excluding stations where full Share is allocated to host state),*
- b) [Ultra Mega Power Projects including projects based on wind and solar resources and having capacity of 500 MW and above]*
- c) In other cases, the control area shall be decided on the following criteria:*
 - (i)*
 - (ii) If a generating station is connected only to the State transmission network, the SLDC shall coordinate scheduling, except for the case as at (a) above.*
 - (iii)*
 - (iv) “*

Unquote

3. Control area demarcation and scheduling:

- a)** Connectivity with STU or Power Department has to be done on priority to start the process of scheduling.
- b)** As Tashiding HEP has got connected with the Inter State Transmission System (ISTS) through intervening dedicated line and line owned, operated, maintained by state Sikkim so Tashiding HEP is embedded customer of Sikkim.
- c)** As per IEGC clause 6.4.2.ii, if scheduling responsibility is taken by ERLDC approval has to be taken from CERC. No Objection Certificate (NOC) is also required from Sikkim.
- d)** In this regard Tashiding has to file a petition at CERC for necessary approval.
- e)** ERLDC fees and charges will be applied on the installed capacity of Tashiding.
- f)** Sikkim should intimate upfront if any scheduling charges and transmission charges are required for transaction in Short Term Open Access market, supported by relevant orders from SERC.
- g)** In case Tashiding applies for LTA or MTOA, ERLDC will consider the schedule figure at ISTS injection point after the STU loss of Sikkim.

**Gist of discussion held at ERPC, Kolkata on 4th September, 2017
regarding metering and scheduling methodology of Tashiding HEP**

3. Tashiding is getting connected at Inter State Transmission System (ISTS) at 400/220/132 kV Rangpo substation and 220 kV New Melli substation of POWERGRID through dedicated transmission line of generator (220 kV Tashiding Legship Pool D/C) and state transmission network of Sikkim (220 kV Legship Pool New Melli D/C) as an interim arrangement as per decision of 18th SCM of ER. Therefore, the metering and scheduling point of Tashiding for 220 kV Tashiding – New Melli line will be New Melli end and 220 kV Tashiding – Rangpo line will be Rangpo end.
4. There exists no connectivity with State Transmission Utility -STU (SIKKIM) for Tashiding HPS.
5. Therefore, the scheduling responsibility could be taken up by ERLDC as per clause 6.4.3 of Indian Electricity Grid Code (IEGC) under operational expediency, after getting unconditional no objection certificate (NOC) from Sikkim SLDC. In this regard, Tashiding has to file a petition at CERC for necessary approval.
6. Sikkim should intimate upfront applicable charges required for transaction from Tashiding.
7. ERLDC fees and charges will be applicable on Tashiding.
8. Tashiding will be liable to share ISTS Transmission charges and losses as per relevant regulations.
9. In case of Chuzachen HPS also, which is connected to ISTS through interim arrangement, the metering and scheduling point of Chuzachen for 132 kV Chuzachen – Gangtok line would be considered at Gangtok end and 132 kV Chuzachen – Rangpo line will be Rangpo end.

Annexure- B25

Sr. No.	Developer	Name of Project	Sector	State	Unit No	Total Capacity	Date of Commissioning	Age in years	Whether FGD Installed	Whether CFBC	Whether ESP retrofit required	Identified for retirement	Phasing Plan for Implementation	Phase out plan	Comments of GM Division
1	BSEB	BARAUNI TPS	State Sector	Bihar	6	105	01-05-1983	34	N	N	N			to be decided	TO BE PHASED OUT
2	BSEB	BARAUNI TPS	State Sector	Bihar	7	105	31-03-1985	32	N	N	N			to be decided	TO BE PHASED OUT
3	NTPC	BARH II	Central Sector	Bihar	4	660	20-11-2013	4	N	N	N		30/09/2021		FGD POSSIBLE
4	NTPC	BARH II	Central Sector	Bihar	5	660	04-03-2015	2	N	N	N		31/03/2022		FGD POSSIBLE
5	NTPC	KAHALGAON TPS	Central Sector	Bihar	1	210	31-03-1992	25	N	N	Y		31/12/2023		FGD POSSIBLE
6	NTPC	KAHALGAON TPS	Central Sector	Bihar	2	210	17-03-1994	23	N	N	Y		31/12/2023		FGD POSSIBLE
7	NTPC	KAHALGAON TPS	Central Sector	Bihar	3	210	24-03-1995	22	N	N	Y		31/12/2023		FGD POSSIBLE
8	NTPC	KAHALGAON TPS	Central Sector	Bihar	4	210	18-03-1996	21	N	N	Y		31/12/2023		FGD POSSIBLE
9	NTPC	KAHALGAON TPS	Central Sector	Bihar	5	500	31-03-2007	10	N	N	N		31/12/2022		FGD POSSIBLE
10	NTPC	KAHALGAON TPS	Central Sector	Bihar	6	500	16-03-2008	9	N	N	N		31/12/2023		FGD POSSIBLE
11	NTPC	KAHALGAON TPS	Central Sector	Bihar	7	500	31-07-2009	8	N	N	N		31/12/2023		FGD POSSIBLE
12	NTPC	NABI NAGAR TPP	Central Sector	Bihar	1	250	20-03-2016	1	N	N	N		31/12/2021		FGD POSSIBLE
13	NTPC	NABI NAGAR TPP	Central Sector	Bihar	2	250	04-04-2017	0							FGD POSSIBLE
14	NTPC & Bihar	MUZAFFARPUR TPS	Central Sector	Bihar	1	110	31-03-1985	32	N	N	Y			31/12/2023	TO BE PHASED OUT
15	NTPC & Bihar	MUZAFFARPUR TPS	Central Sector	Bihar	2	110	17-03-1986	31	N	N	Y			31/12/2024	TO BE PHASED OUT
16	NTPC & Bihar	MUZAFFARPUR TPS	Central Sector	Bihar	3	195	31-03-2015	2	N	N	Y		31/12/2022		FGD POSSIBLE
17	NTPC & Bihar	MUZAFFARPUR TPS	Central Sector	Bihar	4	195	24-03-2017	0	N	N	Y		31/12/2022		FGD POSSIBLE
18	APNRL	MAHADEV PRASAD STPP	Private Sector	Jharkhand	1	270	19-11-2012	5	N	N	N		30/06/2022		FGD POSSIBLE
19	APNRL	MAHADEV PRASAD STPP	Private Sector	Jharkhand	2	270	29-03-2013	4	N	N	N		30/06/2022		FGD POSSIBLE
20	D.V.C	BOKARO 'A' TPS	Central Sector	Jharkhand	1	500	22-03-2016	1	N	N	Y		30/06/2022		FGD POSSIBLE
21	D.V.C	BOKARO 'B' TPS	Central Sector	Jharkhand	1	210	24-03-1986	31	N	N	Y			to be decided	TO BE PHASED OUT
22	D.V.C	BOKARO 'B' TPS	Central Sector	Jharkhand	2	210	01-11-1990	27	N	N	Y			to be decided	TO BE PHASED OUT
23	D.V.C	BOKARO 'B' TPS	Central Sector	Jharkhand	3	210	01-08-1993	24	N	N	N			to be decided	TO BE PHASED OUT
24	D.V.C	CHANDRAPURA(DVC)	Central Sector	Jharkhand	1	130	30-09-1964	53	N	N	N	Y			IDENTIFIED FOR RETIREMENT
25	D.V.C	CHANDRAPURA(DVC)	Central Sector	Jharkhand	2	130	30-11-1964	53	N	N	N	Y			IDENTIFIED FOR RETIREMENT
26	D.V.C	CHANDRAPURA(DVC)	Central Sector	Jharkhand	3	130	30-06-1968	49	N	N	N	Y			IDENTIFIED FOR RETIREMENT
27	D.V.C	CHANDRAPURA(DVC)	Central Sector	Jharkhand	7	250	04-11-2009	8	N	N	N		31/03/2023		FGD POSSIBLE
28	D.V.C	CHANDRAPURA(DVC)	Central Sector	Jharkhand	8	250	31-03-2010	7	N	N	N		31/03/2023		FGD POSSIBLE
29	D.V.C	KODARMA TPP	Central Sector	Jharkhand	1	500	20-07-2011	6	N	N	N		31/12/2021		FGD POSSIBLE
30	D.V.C	KODARMA TPP	Central Sector	Jharkhand	2	500	15-02-2013	4	N	N	N		31/12/2021		FGD POSSIBLE
31	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	1	40	01-10-1966	51	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
32	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	2	40	01-06-1967	50	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
33	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	3	40	01-02-1969	48	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
34	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	4	40	01-01-1970	48	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
35	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	5	90	17-12-1971	46	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
36	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	6	90	13-03-1972	45	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
37	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	7	105	17-01-1977	40	N	N	Y	Y		31/12/2017	IDENTIFIED FOR RETIREMENT
38	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	8	105	02-03-1978	39	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
39	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	9	110	30-03-1984	33	N	N	Y	Y		31/12/2017	IDENTIFIED FOR RETIREMENT
40	NTPC & Jh.S.E.B	PATRATU TPS	State Sector	Jharkhand	10	110	02-03-1986	31	N	N	Y	Y		31/12/2017	IDENTIFIED FOR RETIREMENT
41	TATA Power Co.	JOJOBBERA TPS	Private Sector	Jharkhand	2	120	02-01-2001	16	N	N	N				FGD INSTALLATION BEING EXPLORED
42	TATA Power Co.	JOJOBBERA TPS	Private Sector	Jharkhand	3	120	02-01-2002	15	N	N	N				FGD INSTALLATION BEING EXPLORED
43	TATA Power Co. MPL	MAITHON RB TPP	Private Sector	Jharkhand	1	525	01-09-2011	6	N	N	N		30/09/2021		FGD POSSIBLE
44	TATA Power Co.MPL	MAITHON RB TPP	Private Sector	Jharkhand	2	525	24-07-2012	5	N	N	N		30/06/2022		FGD POSSIBLE

Sr. No.	Developer	Name of Project	Sector	State	Unit No	Total Capacity	Date of Commissioning	Age in years	Whether FGD Installed	Whether CFBC	Whether ESP retrofit required	Identified for retirement	Phasing Plan for Implementation	Phase out plan	Comments of GM Division
45	TenughatVN Ltd	TENUGHAT TPS	State Sector	Jharkhand	1	210	14-04-1994	23	N	N	Y			to be decided	TO BE PHASED OUT
46	TenughatVN Ltd	TENUGHAT TPS	State Sector	Jharkhand	2	210	10-10-1996	21	N	N	N			to be decided	TO BE PHASED OUT
47	GMR	KAMALANGA TPS	Private Sector	Odisha	1	350	29-03-2013	4	N	N	N		31/12/2021		FGD POSSIBLE
48	GMR	KAMALANGA TPS	Private Sector	Odisha	2	350	28-09-2013	4	N	N	N		31/12/2021		FGD POSSIBLE
49	GMR	KAMALANGA TPS	Private Sector	Odisha	3	350	21-03-2014	3	N	N	N		30/09/2021		FGD POSSIBLE
50	Ind barath	IND BARATH TPP	Private Sector	Odisha	1	350	25-02-2016	1	N	N	Y			to be decided	TO BE PHASED OUT
51	JIPL	DERANG TPP	Private Sector	Odisha	1	600	10-04-2014	3	N	N	N		31/03/2021		FGD POSSIBLE
52	JIPL	DERANG TPP	Private Sector	Odisha	2	600	24-01-2015	2	N	N	N		31/03/2021		FGD POSSIBLE
53	NTPC	TALCHER (OLD) TPS	Central Sector	Odisha	1	60	17-12-1967	50	N	N	N			31/12/2023	TO BE PHASED OUT
54	NTPC	TALCHER (OLD) TPS	Central Sector	Odisha	2	60	28-03-1968	49	N	N	N			31/12/2023	TO BE PHASED OUT
55	NTPC	TALCHER (OLD) TPS	Central Sector	Odisha	3	60	11-07-1968	49	N	N	N			31/12/2023	TO BE PHASED OUT
56	NTPC	TALCHER (OLD) TPS	Central Sector	Odisha	4	60	11-04-1969	48	N	N	N			31/12/2023	TO BE PHASED OUT
57	NTPC	TALCHER (OLD) TPS	Central Sector	Odisha	5	110	24-03-1982	35	N	N	N			31/12/2023	TO BE PHASED OUT
58	NTPC	TALCHER (OLD) TPS	Central Sector	Odisha	6	110	24-03-1983	34	N	N	N			31/12/2023	TO BE PHASED OUT
59	NTPC	TALCHER STPS	Central Sector	Odisha	1	500	19-02-1995	22	N	N	N		31/12/2023		FGD POSSIBLE
60	NTPC	TALCHER STPS	Central Sector	Odisha	2	500	27-03-1996	21	N	N	N		31/12/2023		FGD POSSIBLE
61	NTPC	TALCHER STPS	Central Sector	Odisha	3	500	21-02-2003	14	N	N	N		31/12/2023		FGD POSSIBLE
62	NTPC	TALCHER STPS	Central Sector	Odisha	4	500	25-10-2003	14	N	N	N		31/12/2023		FGD POSSIBLE
63	NTPC	TALCHER STPS	Central Sector	Odisha	5	500	13-05-2004	13	N	N	Y		31/12/2023		FGD POSSIBLE
64	NTPC	TALCHER STPS	Central Sector	Odisha	6	500	06-02-2005	12	N	N	Y		31/12/2023		FGD POSSIBLE
65	OPGCLtd	IB VALLEY TPS	State Sector	Odisha	1	210	02-06-1994	23	N	N	Y		30/09/2021		FGD POSSIBLE
66	OPGCLtd	IB VALLEY TPS	State Sector	Odisha	2	210	22-10-1995	22	N	N	Y		30/09/2021		FGD POSSIBLE
67	Sterlite Energy Ltd	STERLITE TPP	Private Sector	Odisha	2	600	29-12-2010	6	N	N	N		31/03/2022		FGD POSSIBLE
68	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Beng	1	250	16-09-1997	20	N	N	N		31/12/2022		FGD POSSIBLE
69	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Beng	2	250	06-03-1999	18	N	N	N		31/03/2023		FGD POSSIBLE
70	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Beng	3	250	29-09-2009	8	N	N	N		31/12/2022		FGD POSSIBLE
71	C.E.S.C. Pvt.	SOUTHERN REPL. TPS	Private Sector	West Beng	1	68	10-04-1991	26	N	N	N		31/03/2022		FGD POSSIBLE
72	C.E.S.C. Pvt.	SOUTHERN REPL. TPS	Private Sector	West Beng	2	68	12-08-1990	27	N	N	N		31/12/2021		FGD POSSIBLE
73	C.E.S.C. Pvt.	TITAGARH TPS	Private Sector	West Beng	1	60	17-03-1985	32	N	N	N				TO BE PHASED OUT
74	C.E.S.C. Pvt.	TITAGARH TPS	Private Sector	West Beng	2	60	12-12-1982	35	N	N	N				TO BE PHASED OUT
75	C.E.S.C. Pvt.	TITAGARH TPS	Private Sector	West Beng	3	60	26-04-1983	34	N	N	N				TO BE PHASED OUT
76	C.E.S.C. Pvt.	TITAGARH TPS	Private Sector	West Beng	4	60	16-01-1984	33	N	N	N				TO BE PHASED OUT
77	D.P.L.	D.P.L. TPS	State Sector	West Beng	3	70	12-06-1964	53	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
78	D.P.L.	D.P.L. TPS	State Sector	West Beng	4	75	01-09-1964	53	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
79	D.P.L.	D.P.L. TPS	State Sector	West Beng	5	75	01-06-1966	51	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
80	D.P.L.	D.P.L. TPS	State Sector	West Beng	6	110	03-07-1985	32	N	N	Y		31/03/2022		FGD POSSIBLE
81	D.P.L.	D.P.L. TPS	State Sector	West Beng	7	300	24-11-2007	10	N	N	Y		30/06/2022		FGD POSSIBLE
82	D.P.L.	D.P.L. TPS EXT.	State Sector	West Beng	8	250	31-03-2014	3	N	N	Y		31/03/2022		FGD POSSIBLE
83	D.V.C	DURGAPUR STEEL TPS	Central Sector	West Beng	1	500	29-07-2011	6	N	N	N		30/06/2021		FGD POSSIBLE
84	D.V.C	DURGAPUR STEEL TPS	Central Sector	West Beng	2	500	23-03-2012	5	N	N	N		30/06/2021		FGD POSSIBLE
85	D.V.C	DURGAPUR TPS	Central Sector	West Beng	3	130	31-05-1967	50	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
86	D.V.C	DURGAPUR TPS	Central Sector	West Beng	4	210	05-12-1981	36	N	N	Y				TO BE PHASED OUT
87	D.V.C	MEJIA TPS	Central Sector	West Beng	1	210	01-03-1996	21	N	N	Y		31/03/2023		FGD POSSIBLE
88	D.V.C	MEJIA TPS	Central Sector	West Beng	2	210	24-03-1997	20	N	N	Y		31/03/2023		FGD POSSIBLE
89	D.V.C	MEJIA TPS	Central Sector	West Beng	3	210	25-03-1998	19	N	N	Y		31/03/2023		FGD POSSIBLE
90	D.V.C	MEJIA TPS	Central Sector	West Beng	4	210	12-10-2004	13	N	N	Y		31/03/2023		FGD POSSIBLE

Sr. No.	Developer	Name of Project	Sector	State	Unit No	Total Capacity	Date of Commissioning	Age in years	Whether FGD Installed	Whether CFBC	Whether ESP retrofit required	Identified for retirement	Phasing Plan for Implementation	Phase out plan	Comments of GM Division
91	D.V.C	MEJIA TPS	Central Sector	West Bengal	5	250	01-10-2007	10	N	N	Y		31/03/2023		FGD POSSIBLE
92	D.V.C	MEJIA TPS	Central Sector	West Bengal	6	250	31-03-2007	10	N	N	Y		31/03/2023		FGD POSSIBLE
93	D.V.C	MEJIA TPS	Central Sector	West Bengal	7	500	30-09-2010	7	N	N	Y		30/09/2021		FGD POSSIBLE
94	D.V.C	MEJIA TPS	Central Sector	West Bengal	8	500	26-03-2011	6	N	N	Y		30/09/2021		FGD POSSIBLE
95	D.V.C	RAGHUNATHPUR TPP	Central Sector	West Bengal	1	600	24-08-2014	3	N	N	N		31/03/2022		FGD POSSIBLE
96	D.V.C	RAGHUNATHPUR TPP	Central Sector	West Bengal	2	600	18-01-2016	1	N	N	N		31/03/2022		FGD POSSIBLE
97	Haldia Energy Ltd	HALDIA TPP	Private Sector	West Bengal	1	300	14-01-2015	2	N	N	N		31/12/2021		FGD POSSIBLE
98	Haldia Energy Ltd	HALDIA TPP	Private Sector	West Bengal	2	300	16-02-2015	2	N	N	N		31/03/2022		FGD POSSIBLE
99	Haldia Energy Ltd	India Power TPP	Private Sector	West Bengal	1	150	07-06-2017	0							FGD POSSIBLE
100	NTPC	FARAKKA STPS	Central Sector	West Bengal	1	200	01-01-1986	31	N	N	Y		31/12/2023		FGD POSSIBLE
101	NTPC	FARAKKA STPS	Central Sector	West Bengal	2	200	24-12-1986	31	N	N	N		31/12/2023		FGD POSSIBLE
102	NTPC	FARAKKA STPS	Central Sector	West Bengal	3	200	06-08-1987	30	N	N	N		31/12/2023		FGD POSSIBLE
103	NTPC	FARAKKA STPS	Central Sector	West Bengal	4	500	25-09-1992	25	N	N	Y		31/12/2023		FGD POSSIBLE
104	NTPC	FARAKKA STPS	Central Sector	West Bengal	5	500	16-02-1994	23	N	N	Y		31/12/2023		FGD POSSIBLE
105	NTPC	FARAKKA STPS	Central Sector	West Bengal	6	500	07-03-2011	6	N	N	Y		31/12/2022		FGD POSSIBLE
106	WBPDC	BAKRESWAR TPS	State Sector	West Bengal	1	210	07-06-2009	8	N	N	Y				NORMS COMPLIANT
107	WBPDC	BAKRESWAR TPS	State Sector	West Bengal	2	210	17-07-1999	18	N	N	N				NORMS COMPLIANT
108	WBPDC	BAKRESWAR TPS	State Sector	West Bengal	3	210	20-05-2000	17	N	N	N				NORMS COMPLIANT
109	WBPDC	BAKRESWAR TPS	State Sector	West Bengal	4	210	21-03-2001	16	N	N	N				NORMS COMPLIANT
110	WBPDC	BAKRESWAR TPS	State Sector	West Bengal	5	210	24-12-2007	10	N	N	Y				NORMS COMPLIANT
111	WBPDC	BANDEL TPS	State Sector	West Bengal	1	60	01-09-1965	52	N	N	Y				FGD INSTALLATION BEING EXPLORED
112	WBPDC	BANDEL TPS	State Sector	West Bengal	2	60	01-10-1965	52	N	N	Y				FGD INSTALLATION BEING EXPLORED
113	WBPDC	BANDEL TPS	State Sector	West Bengal	3	60	01-02-1966	51	N	N	Y				FGD INSTALLATION BEING EXPLORED
114	WBPDC	BANDEL TPS	State Sector	West Bengal	4	60	01-08-1966	51	N	N	N				FGD INSTALLATION BEING EXPLORED
115	WBPDC	BANDEL TPS	State Sector	West Bengal	5	210	08-10-1982	35	N	N	Y				FGD INSTALLATION BEING EXPLORED
116	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	1	210	16-01-1993	24	N	N	Y		30/06/2022		FGD POSSIBLE
117	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	2	210	13-08-1990	27	N	N	Y		31/03/2021		FGD POSSIBLE
118	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	3	210	16-12-1985	32	N	N	Y		30/09/2021		FGD POSSIBLE
119	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	4	210	24-01-1984	33	N	N	Y		31/03/2022		FGD POSSIBLE
120	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	5	210	28-12-1993	24	N	N	Y		30/06/2021		FGD POSSIBLE
121	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	6	210	17-03-1991	26	N	N	Y		31/12/2021		FGD POSSIBLE
122	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	1	300	20-07-2008	9	N	N	Y		31/12/2020		FGD POSSIBLE
123	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	2	300	21-12-2007	10	N	N	Y		31/03/2021		FGD POSSIBLE
124	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	3	500	14-12-2015	2	N	N	N		31/03/2022		FGD POSSIBLE
125	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	4	500	15-12-2016	1	N	N	N		31/03/2020		FGD POSSIBLE
126	WBPDC	SANTALDIH TPS	State Sector	West Bengal	1	120	01-01-1974	44	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
127	WBPDC	SANTALDIH TPS	State Sector	West Bengal	2	120	16-07-1975	42	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
128	WBPDC	SANTALDIH TPS	State Sector	West Bengal	3	120	06-12-1978	39	N	N	Y	Y			IDENTIFIED FOR RETIREMENT
129	WBPDC	SANTALDIH TPS	State Sector	West Bengal	4	120	30-03-1981	36	N	N	N	Y			IDENTIFIED FOR RETIREMENT
130	WBPDC	SANTALDIH TPS	State Sector	West Bengal	5	250	07-11-2007	10	N	N	Y		31/03/2021		FGD POSSIBLE
131	WBPDC	SANTALDIH TPS	State Sector	West Bengal	6	250	29-06-2011	6	N	N	Y		31/12/2021		FGD POSSIBLE

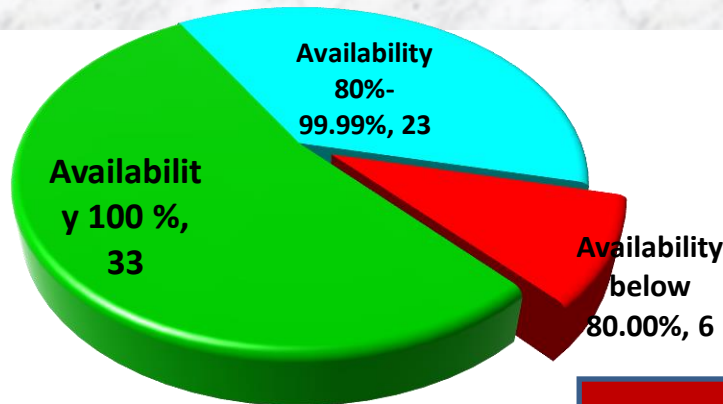
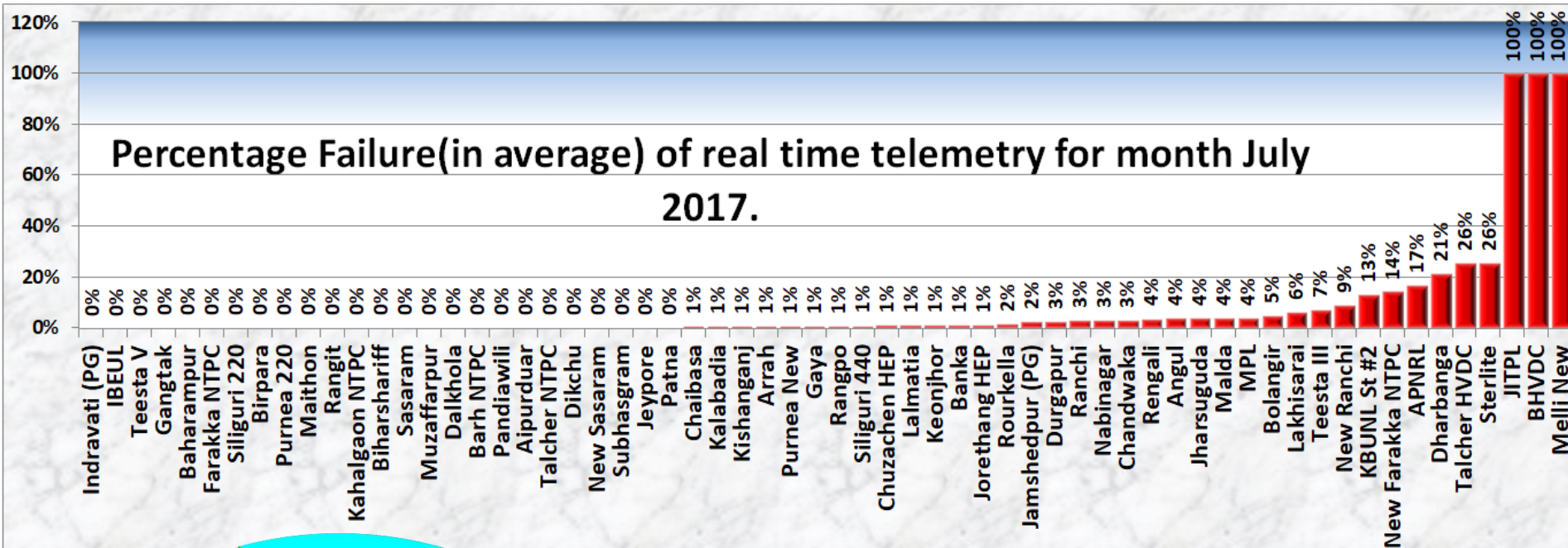
33175 MW

131 Units

Overview of real time telemetry of Eastern region for month July, 2017

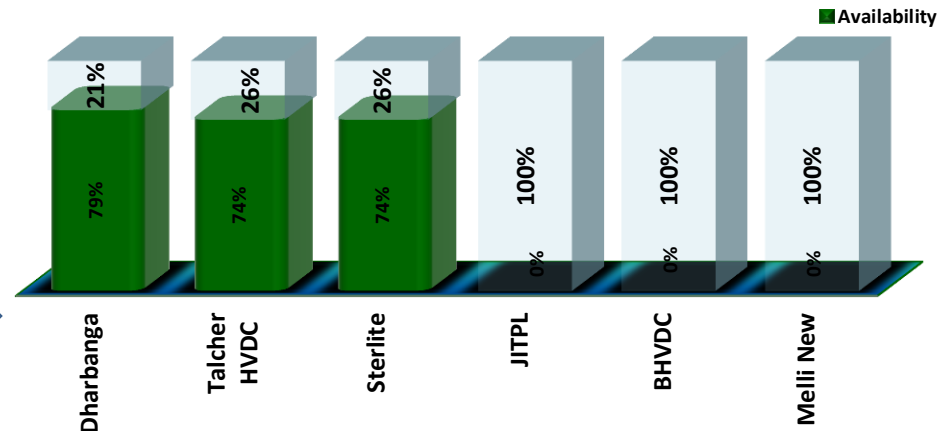
Annexure-C9

Percentage Failure(in average) of real time telemetry for month July 2017.

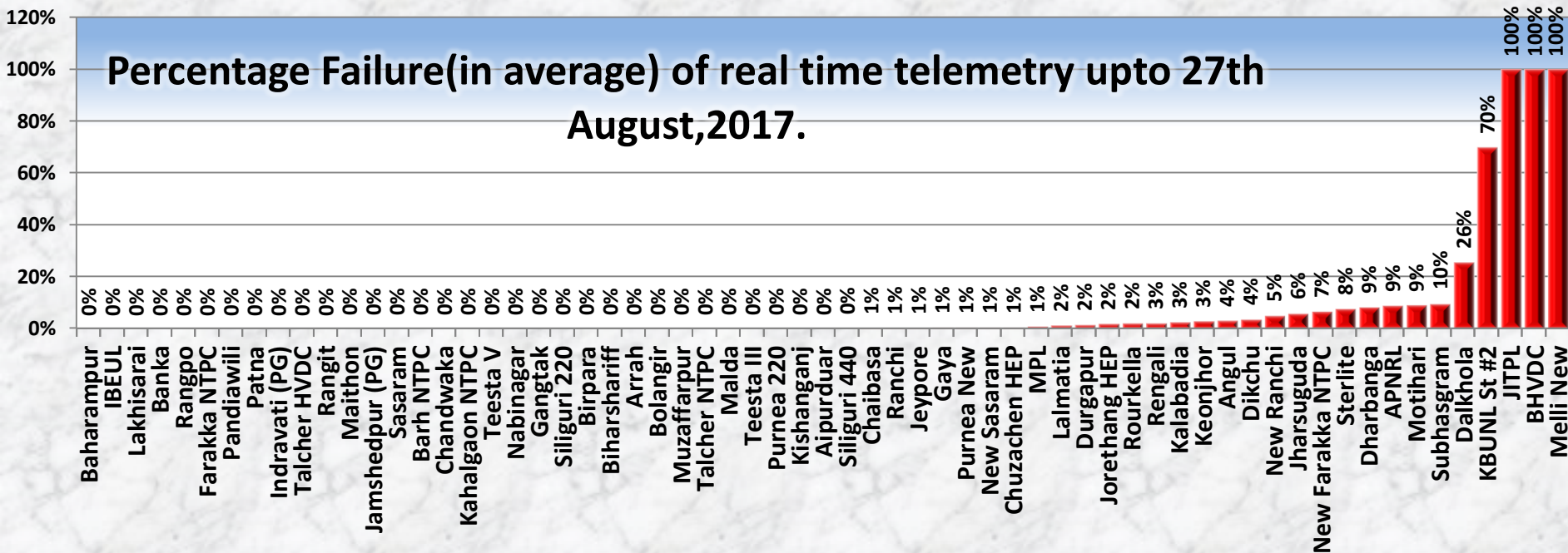


Reason for such poor availability:-

- Non availability of stand by link.
- Melli New, BHVDC not available since 19th June, 17.
- JITPL not reporting since 20th June, 17.

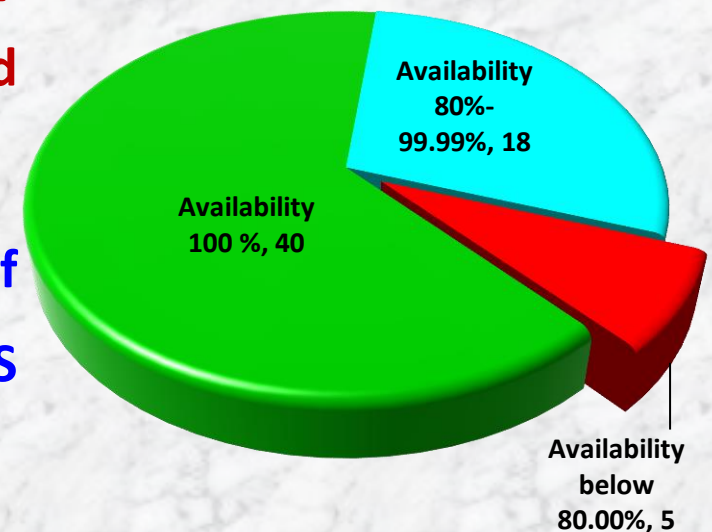


Overview of real time telemetry of Eastern region upto 27th August,2017



➤ All users has to provide stand by communication link to backup ERLDC located at New Delhi at the earliest.

➤ POWERGRID has to restore SCADA data of New Melli (down since 19-06-17, SAS configuration issue at New Melli end).



VOIP Status

Site name	01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug	08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug
Jaipur	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Daltonganj	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Indrabati	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pandiavil	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Purnia 220	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bolangir	0%	33%	100%	100%	100%	100%	100%	100%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Patna	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%	100%	100%	100%	100%	78%	55%	100%	60%	100%	95%	13%
kanthi	100%	99%	100%	100%	77%	97%	36%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	44%	100%	100%	100%
MALDA	0%	0%	0%	0%	0%	0%	0%	0%	55%	100%	99%	98%	97%	100%	98%	91%	100%	100%	99%	100%	73%
Dalkhola	99%	97%	99%	99%	100%	100%	99%	100%	99%	100%	99%	97%	63%	0%	0%	0%	0%	0%	0%	0%	0%
Kisanganj	100%	97%	100%	100%	100%	100%	99%	100%	100%	100%	99%	98%	49%	58%	0%	0%	0%	0%	0%	0%	0%
Kusai Colony	100%	99%	100%	100%	100%	100%	100%	100%	100%	48%	0%	0%	0%	0%	0%	36%	100%	100%	99%	100%	100%
Gangtok	100%	97%	100%	100%	43%	0%	0%	0%	0%	47%	99%	98%	98%	99%	76%	55%	100%	100%	100%	100%	100%
FSTPP	70%	68%	77%	96%	97%	94%	92%	73%	70%	70%	71%	72%	53%	49%	72%	59%	65%	80%	80%	90%	85%
Keonjhar	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	0%	0%	0%	0%	33%	100%	100%	100%	100%	100%
Rengali	0%	0%	23%	100%	100%	100%	100%	74%	64%	100%	67%	100%	100%	100%	77%	53%	100%	99%	100%	100%	100%
Siliguri	90%	85%	89%	90%	90%	92%	90%	94%	91%	85%	85%	85%	85%	90%	67%	45%	87%	90%	90%	89%	89%
SRLDC	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	27%	100%	100%	100%	74%	5%	38%	100%	98%	100%	100%
WRLDC	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	27%	100%	100%	100%	74%	5%	39%	100%	98%	100%	100%
Teesta NHPC	0%	34%	100%	100%	100%	100%	99%	100%	100%	100%	99%	98%	98%	100%	76%	54%	99%	100%	100%	100%	100%
NLDC	100%	100%	100%	100%	100%	100%	100%	100%	98%	99%	100%	100%	100%	99%	75%	5%	38%	100%	98%	100%	100%
Ranchi 765	100%	64%	100%	100%	100%	100%	100%	100%	80%	100%	100%	100%	100%	100%	76%	53%	100%	100%	100%	100%	100%
Angul	100%	91%	69%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	53%	100%	99%	100%	100%	100%
Talcher NTPC	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	47%	53%	100%	99%	100%	100%	89%
Darlipalli	100%	91%	69%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	78%	55%	100%	99%	100%	100%	100%

- Restoration/integration of VOIP for Jeypore, Kishanganj, Indravati, Pandiabili station by POWERGRID at the earliest.

Frequent failure of JITPL SCADA data to ERLDC

- Real time SCADA data from JITPL is frequently failing (**May-17: 24% & June-17 (up to 18th): 62%**).
- JITPL SCADA server stopped reporting to ERLDC since 20th June2017. 71 days passed but data yet to be restored.
- JITPL is requested to update OCC regarding—
 - Action plan and tentative date of restoration of SCADA data.
 - Route diversion.
 - VOIP integration.
 - Measures being taken to extend SCADA data to Back up ERLDC , New Delhi.

- **Major concern:-**

- Long outage of real time data →

- JITPL
 - New Melli
 - Bheramara HVDC.

- Non availability of VOICE →

- Patna, Jeypore, Kishanganj, Indravati, Pandiabili and Rengali

- Provision of stand by communication link.

- Non availability of Unit side data →

- Farakka STPS (Unit #6).
 - Teesta V HPS all unit (LV).
 - IBEUL (Unit #1 and Unit #2).
 - Rangit HPS (GT i.e. HV side data)

Elementary Data non availability at 400 kV Level:

➤ WBSETCL

- Kolaghat TPS: Kharagpur #1 MW/MVAR not available since 06-07-2016.

➤ OPTCL

- MW/MVAr flow of Meeramandali – GMR line at Meeramundali end since 29-11-2016.

POWERGRID

➤ Data Intermittent :

- Malda,Ranchi 400kV, Baripada, Gaya, Jharsuguda, Angul, Chaibasa ,Banka.

➤ VOIP for following station not yet provided:

- Indravati , Jeypore, Bolangir

➤ VOIP not Working:

- Purnea 220 , Baharampur 400kV , Rourkela , Rengali, Dalkhola , Kishanganj, ,Pandiabili.

IPP

- **IBEUL** : Stand by channel upto Back up ERLDC not yet provided.
- **JITPL** : No voice communication available between JITPL and ERLDC.

Important Stations with out real time telemetry:

➤ WBSETCL

- Dharampur 220, Krishnanagar 220, Hura 220, Foundry Park, 220 Dalkhola, Bantala, Lakshmikantapur, New Town.

➤ DVC:

- 220 kV Giridhi, 132 kV Kolaghat.

➤ OPTCL:

- 220kV Samangara, 220 kV Lapanga.

➤ JSUNL:

- Hatia New 220, Patratu, Deoghar, Garwh, Goelkera, Jamtarta, Kendoposi.

Annexure-C10.1**Interest Disbursement-I**

Date: 11/04/17

Int. Amt. received by ER Pool on 06.04.17 (₹ in Lacs) from JUVNL	Constituents' Name	Amt paid	Remarks
		(₹ in Lacs)	
326.68053	DVC	0.47887	Interest for FY 16-17
	GRIDCO	0.3993	Interest for FY 16-17
	WBSETCL	0.27612	Interest for FY 16-17
	SIKKIM	3.8917	Interest for FY 16-17
	NHPC	0.43765	Interest for FY 16-17
	MPL	0.15311	Interest for FY 16-17
	BRBCL	1.49138	Interest for FY 16-17
	WR POOL	6.62404	Interest for FY 16-17
	NR POOL	8.93238	Interest for FY 16-17
	SR POOL	39.8788	Interest for FY 16-17
	NER POOL	26.8909	Interest for FY 16-17
	NTPC (RRAS Provider)	237.22628	Payment for Wk-50(Part)
	Total	326.68053	

Interest Disbursement-II

Date: 03/05/17

Int. Amt. received by ER Pool on 29.04.17 (₹ in Lacs) from BSPHCL	Constituents	Amt paid	Remarks
		(₹ in Lacs)	
61.95308	NVVN(BD)	0.00386	Interest for FY 16-17
	GRIDCO	0.00065	Balance Interest for FY 16-17
	WR POOL	0.26482	Balance Interest for FY 16-17
	NR POOL	42.55948	Balance Interest for FY 16-17
	RRAS Provider	19.12427	For payment of RRAS Bill
	Total	61.95308	

Interest Disbursement-III

Date: 01/06/17

Int. Amt. received by ER Pool on 29.04.17 (₹ in Lacs)	Constituents	Amt paid	Remarks
		(₹ in Lacs)	
37.45106 (JUVNL)	WR POOL	20.22855	Balance Interest for FY 16-17(Till 31/01/17)
5.6533 (APNRL)	RRAS Provider	22.87581	For payment of RRAS Bill
43.10436		43.10436	

STATUS OF REACTIVE CHARGES

RECEIVABLE IN ER POOL AS PER PUBLISHED A/C UPTO 30.07.17
AS ON 25.08.2017

CONSTITUENT	AMOUNT RECEIVABLE IN THE POOL (Rs.)	AMOUNT RECEIVED IN THE POOL (Rs.)	OUTSTANDING (Rs.)
BSPHCL	378537	378537	0
JUVNL	1137688	1137688	0
DVC	357122	357122	0
GRIDCO	175949692	175949692	0
WBSETCL	435834066	413314483	22519583
SIKKIM	326155	325817	338
TOTAL	613983260	591463339	22519921

Note: (+ve) means payable by utility & (-ve) means receivable by utility



WEST BENGAL ELECTRICITY REGULATORY COMMISSION



Ref. No. WBERC/B-7/1/0470

Dated, Kolkata, the 16th June, 2017

From
Dr. Jiban Chandra Chakraborty, I.A.S.(Retd.)
Secretary

To
The Member Secretary
Eastern Regional Power Committee,
Government of India, Ministry of Power,
14 Golf Club Road, Tollygunge
Kolkata - 700 033

Sub: Submission of Inter-state Commercial issues for kind
consideration of the Commission

Ref : Your letter no. ERPC/COM-1/GEN/2017/1621 dated 31.01.2017

Sir,

In inviting a reference to the above, I am directed to state you as follows:

Issue 1: State transmissions utility charges for WBSETCL System.

Commission has taken note of the issue and will do the needful in due course.

**Issue 2: Outstanding reactive energy charge for WBSEDCL/WBSETCL to the tune of
Rs. 1,81,54,128/-**

- It appears from the available documents maintained at the Commission's office that a practice used to be followed prior to 04.01.2016 with regard to settlement of ERPC's reactive energy bills.
- Energy bills prior to 04.01.2016 shall be settled as per the practice as above.

Yours faithfully,


Secretary

SCANNED

Annexure - C10.3

SUMMARY OF RRAS CHARGE RECEIPT AND PAYMENT STATUS

BILL from 03.04.17 to 30.07.17 (upto Week - 16 of 2017 - 18)
Last Payment Disbursement Date -23.08.17

Figures in Rs. Lakhs

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
FSTPP STG-I & II	242.77367	242.77367	2131.96394	2131.96394	0.00000
KhSTPP STG-I	148.64894	144.99534	1157.21749	1153.56389	0.00000
KhSTPP STG-II	68.63842	68.63842	3778.70459	3778.70459	0.00000
TSTPP STG-I	127.40741	127.40741	192.43913	192.43913	0.00000
BARH STG-II	320.39393	320.39393	2002.59979	2002.59979	0.00000
TOTAL	907.86236	904.20875	9262.92494	9259.27134	0.00000

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

As on
 Payable
 Paid
 "+ ve" Receivable by ER pool

23.08.17
 Payable by ER POOL
 Paid by ER POOL

DETAILS OF DISBURSEMENT TO POWER SYSTEM DEVELOPMENT FUND

SI No	Nature of Amount	Amount transferred to PSDF (Rs in Lac)	Date of Disbursement	Cheque No	Remarks
1	Opening Balance (upto 31.03.16)	86464.58111			
2	Addl. Dev	83.33978	01.04.16		Addl Dev Charge 15-16
3	Addl. Dev	43.77416	05.04.16		Addl Dev Charge 15-16
4	Addl. Dev	31.83984	07.04.16		Addl Dev Charge 15-16
5	Addl. Dev	52.08622	11.04.16		Addl Dev Charge 15-16
6	Addl. Dev	107.23773	13.04.16		Addl Dev Charge 15-16
7	Addl. Dev	220.15330	19.04.16		Addl Dev Charge 15-16
8	Addl. Dev	76.84824	21.04.16		Addl Dev Charge 15-16
9	Addl. Dev	20.84026	26.04.16		DSM Interest 2014-15(Paid by APNRL)
10	Addl. Dev	10.01920	26.04.16		Addl Dev Charge 16-17
16	Addl. Dev	432.25696	28.04.16		Addl Dev Charge 16-17
17	Addl. Dev	117.08707	02.05.16		Addl Dev Charge 16-17
18	Addl. Dev	41.65418	04.05.16		Addl Dev Charge 16-17
19	Addl. Dev	114.33049	06.05.16		Addl Dev Charge 15-16 & 16-17
20	Deviation Interest	38.50018	06.05.16		Deviation Interest
21	Addl. Dev	35.54178	10.05.16		Addl Dev Charge 16-17
22	Addl. Dev	448.87953	31.05.16		Addl Dev Charge 16-17
23	Addl. Dev	170.51274	29.06.16		Addl Dev Charge 16-17
24	Reactive Charges	530.57497	28.09.16		Reactive Charges_15-16
25	Reactive Charges	1000.00000	26.12.16		Reactive Charges_16-17
26	Reactive Charges	779.39811	14.02.17		Reactive Charges_16-17
27	Reactive Charges	500.00000	29.03.17		Reactive Charges_16-17
28	Reactive Charges	203.61904	26.04.17		Reactive Charges_16-17
29	Reactive Charges	394.80618	30.05.17		Reactive Charges_16-17
279	Reactive Charges	256.53944	28.06.17		Reactive Charges_17-18
280	Reactive Charges	248.26904	31.07.17		Reactive Charges_17-18
	Total	92422.68955			

Status of Reconciliation of Deviation Pool Account

	2016-17				2017-18
Name of The Utility	Q1 (04.07.16)	Q2 (03.10.16)	Q3 (04.01.17)	Q4 (05.04.17)	Q1(04.07.17)
Inter Regional					
WR	NO	NO	YES	NO	NO
SR	YES	YES	NO	YES	YES
NER	NO	NO	YES	YES	YES
NR	NO	NO	NO	NO	NO
Intra Regional					
BSPHCL	YES	YES	YES	YES	YES
JUVNL	YES	YES	YES	NO	NO
DVC	YES	YES	YES	YES	YES
GRIDCO	YES	YES	YES	YES	YES
WBSETCL	YES	YES	YES	YES	YES
SIKKIM	YES	YES	YES	NO	NO
NTPC	YES	YES	YES	YES	YES
NHPC	YES	YES	YES	YES	YES
MPL	YES	YES	YES	NO	NO
VEDANTA	NO	NO	NO	NO	N/A
APNRL	YES	YES	NO	NO	NO
CHUZACHEN(GATI)	YES	NO	YES	YES	YES
NVVN(Ind-Bng)	YES	YES	YES	YES	YES
NVVN(Ind-Nep)	YES	YES	YES	YES	YES
GMR	YES	YES	YES	YES	YES
JITPL	YES	YES	YES	YES	YES
INBEUL	NO	NO	NO	NO	NO
TPTCL (DAGACHU)	YES	YES	YES	NO	NO
JLHEP(DANS ENERGY)	YES	YES	YES	YES	YES
BRBCL	NO	NO	NO	NO	YES
POWERGRID	N/A	N/A	YES	YES	YES
TUL (TEESTA-III)	N/A	N/A	N/A	NO	NO
DIKCHU	N/A	N/A	N/A	N/A	YES

Note:

- (1) The dates in the bracket indicates the date of sending the Reconciliation statements by ERLDC to utilities.
- (2) YES Indicates that signed reconciliation statement received by ERLDC
- (3) NO Indicates that signed reconciliation statement is not received by ERLDC

Annexure-C11.4

Reconciliation Between Open Access department of ERLDC and SLDCs, STUs				
Sl. No.	STUs / SLDCs Name	Apr-17	May-17	Jun-17
	Date of Issuance	17-May-17	15-Jun-17	14-Jul-17
1	West Bengal - SLDC and STU	YES	YES	YES
2	DVC - SLDC	NO	YES	YES
3	OPTCL-SLDC and STU	YES	YES	YES

Reconciliation Between Open Access department of ERLDC and Applicants						
Sl. No.	Applicants Name	2016-17				2017-18
		Quarter-I (Apr-16-June-16)	Quarter-II (Jul-16-Sep-16)	Quarter-III (Oct-16-Dec-16)	Quarter-IV (Jan-17-Mar-17)	Quarter-I (Apr-17-Jun-17)
	Date of Issuance	14-07-2016	18-10-2016	13.01.17	17.04.17	25.07.17
1	Calcutta Electric Supply Company	YES	YES	YES	YES	YES
2	Damodar Valley Corporation	YES	NA	NA	NO	NA
3	GMR Kamalanga Energy Limited	YES	YES	YES	YES	YES
4	Jindal India Thermal Power Limited	YES	YES	YES	YES	YES
5	Jharkhand State Electricity Board	YES	YES	YES	NO	NO
6	Maithon Power Limited	NA	NA	NA	YES	YES
7	SAIL Rourkela Steel Plant	YES	NO	NO	NO	NO
8	TATA Steel - Discom	NA	YES	YES	NA	NA
9	TATA Steel Ferro Alloy Plant Bamnibal	YES	YES	YES	NO	YES
10	TATA Steel Ferro Alloy Plant Joda	NA	NA	YES	YES	YES
11	Tata Steel Limited Kalinganagar	NA	YES	YES	YES	NO
12	West Bengal State Distribution Company Ltd.	YES	NA	NA	NO	NO

[illegible]

3rd Phase : 33 Locations

			S.No	ERLDC_ID	OLD MTR	NEW MTR	LOCATION	S.No	ERLDC_ID	OLD MTR	NEW MTR	LOCATION
1	BALIMELA(BLM)	GRIDCO	1	AP-03	NP-7438-A	NP-8642-A	APNRL	109	EN-51		NP-7887-A	LAKHISARAI(PG)
2	BANGRIPOSHI(BGR)	GRIDCO	2	AP-02	NP-7462-A	NP-8643-A	APNRL	110	EN-52		NP-7430-A	LAKHISARAI(PG)
3	BANKA(BNK)	PG	3	EN-93		NP-8742-A	ARA(PG)	111	EN-89		NP-7887-A	LAKHISARAI(PG)
4	CHAIBASA(CHB)	PG	4	EN-94		NP-8743-A	ARA(PG)	112	EN-90		NP-7430-A	LAKHISARAI(PG)
5	CHAIBASA(CHA)	JUVNL	5	ES-02		NP-8860-A	ARA(PG)	113	EN-51		NP-7888-A	LAKHISARAI(PG)
6	DUMKA(DUM)	JUVNL	6	ES-22		NP-8790-A	BOLANGIR(PG)	114	EN-52		NP-7431-A	LAKHISARAI(PG)
7	DARBHANGA(DBG)	DMTCL	7	ES-23		NP-8789-A	BOLANGIR(PG)	115	OR-23		NP-7915-A	DUBURI(GRIDCO)
8	GYALSHING(GSH)	SIKKIM	8	EP-99		NP-7560-A	BOLANGIR(PG)	116	JS-09		NP-8695-A	DUMKA(JUVNL)
9	HALDIA(HAL)	WBSETCL	9	ES-27		NP-8775-A	MALDA(PG)	117	JS-10		NP-8774-A	DUMKA(JUVNL)
10	IND-BARATH (IBR)	IPPR	10	ES-28		NP-8776-A	MALDA(PG)	118	SM-07		NP-8730-A	GYALSHING(SIKKIM)
11	JAMUI(JMU)	BIHAR	11	EN-87		NP-8727-A	MAITHON(PG)	119	WB-60		LT-0307-A	HALDIA CESC(WB)
12	JLHEP(DANS ENERGY)	IPPR	12	EN-88		NP-8739-A	MAITHON(PG)	120	WB-61		LT-0311-A	HALDIA CESC(WB)
13	KISANGANJ (KSN)	PG	13	ES-42		NP-7401-A	MAITHON(PG)	121	OR-15		NP-7991-A	BALIMELA(GRIDCO)
14	KATAPALLI(KTP)	GRIDCO	14	ES-01		NP-8874-A	MUZAFFARPUR(PG)	122	OR-16		NP-7992-A	BALIMELA(GRIDCO)
15	KUDRA(KUD)	BIHAR	15	ES-07		NP-8871-A	MUZAFFARPUR(PG)	123	OR-62		NP-5907-A	BANGRIPOSHI(GRIDCO)
16	KISANGANJ (KIS)	BSPTCL	16	ES-08		NP-8873-A	MUZAFFARPUR(PG)	124	NB-01		NP-8700-A	NABINAGAR
17	LAKHISARAI(LKS)	PG	17	ES-09		NP-8872-A	MUZAFFARPUR(PG)	125	NB-02		NP-8701-A	NABINAGAR
18	LAKHISARAI(LKK)	BIHAR	18	ES-43		NP-6077-A	MUZAFFARPUR(PG)	126	NB-05		NP-8662-A	NABINAGAR
19	NABINAGAR(NBN)	NTPC	19	ES-44		NP-6078-A	MUZAFFARPUR(PG)	127	NB-07		NP-8892-A	NABINAGAR
20	NEW DUBRI (DBR)	GRIDCO	20	OR-20	NP-5983-A	NP-7498-A	MENDHASAL(GRIDCO)	128	NB-11		NP-8891-A	NABINAGAR
21	NEW PUSAULI (NPS)	BIHAR	21	BI-72		NP-8748-A	BANKA(BSPTCL)	129	BI-56		NP-7690-A	NALANDA(BSPTCL)
22	NALANDA(NLN)	BIHAR	22	ES-40		NP-8692-A	PUSAULI(PG)	130	OR-22		NP-7916-A	NEW DUBURI(GRIDCO)
23	NEW MELLI (NML)	PG	23	ES-41		NP-8693-A	PUSAULI(PG)	131	EN-85		NP-8647-A	NEW MELLI(PG)
24	PANDIABILPNB)	PG	24	EN-83		NP-8673-A	BANKA(PG)	132	EN-86		NP-8640-A	NEW MELLI(PG)
25	RANCHI NEW(RNC)	PG	25	EN-84		NP-8675-A	BANKA(PG)	133	ES-51		NR-4621-A	NEW MELLI(PG)
26	SADIEPALI(SDP)	GRIDCO	26	ES-03		NP-8694-A	BANKA(PG)	134	ES-52		NR-4620-A	NEW MELLI(PG)
27	RANGPO(RGP)	PG	27	ES-04		NP-8696-A	BANKA(PG)	135	BI-27		NP-8698-A	JAMUI(BSPHCL)
28	SAGBARI(SGB)	SIKKIM	28	BH-22		NP-7482-A	BARH(NTPC)	136	BI-26		NP-8669-A	JAMUI(BSPHCL)
29	TEEST-III(TST)	TUL	29	ES-45		NP-8074-A	BARIPADA(PG)	137	BI-27		NP-8668-A	JAMUI(BSPHCL)
30	TALCHER SOLAR (TLS)	NTPC	30	EN-68		NP-8721-A	BERHAMPOR(PG)	138	JL-01		NP-8737-A	JORETHANG(JLHEP)
31	DIKCHU(DIC)	DICKCHU	31	EN-69		NP-8726-A	BERHAMPOR(PG)	139	JL-02		NP-8766-A	JORETHANG(JLHEP)
32	SONNAGAR NEW(SONN)	BSPTCL	32	ES-10		NP-8655-A	PATNA(PG)	140	JL-03		NP-8762-A	JORETHANG(JLHEP)
33	ALIPURDUAR	PG	33	RG-12		NP-8734-A	RANGIT(NHPC)	141	JL-04		NP-8763-A	JORETHANG(JLHEP)
34	MTPS KANTI(NTPC)	NTPC	34	RG-13		NP-8733-A	RANGIT(NHPC)	142	JL-05		NP-8764-A	JORETHANG(JLHEP)
35	KEONJHAR(KEO)	GRIDCO	35	RG-14		NP-8732-A	RANGIT(NHPC)	143	JL-06		NP-8765-A	JORETHANG(JLHEP)
36	ATRI(ATR)	GRIDCO	36	RG-15		NP-8736-A	RANGIT(NHPC)	144	OR-17		NP-7561-A	KATAPALI(GRIDCO)
37	PURI(PUR)	GRIDCO	37	RG-16		NP-8735-A	RANGIT(NHPC)	145	BI-32		NP-8664-A	PUSAULI NEW(BSPHCL)
			38	OR-55	NP-0624-B	NP-5938-A	JODA(GRIDCO)	146	BI-33		NP-8665-A	PUSAULI NEW(BSPHCL)
			39	EN-29		NP-7950-A	ANGUL(PG)	147	EN-10		NP-7847-A	RANCHI NEW(PG)
			40	EN-30		NP-7558-A	ANGUL(PG)	148	EN-11		NP-7876-A	RANCHI NEW(PG)
			41	EN-31		NP-7987-A	ANGUL(PG)	149	EN-12		NP-7849-A	RANCHI NEW(PG)
			42	EN-32		NP-7988-A	ANGUL(PG)	150	EN-13		NP-7866-A	RANCHI NEW(PG)
			43	EN-43		NP-7629-A	ANGUL(PG)	151	EN-14		NP-7865-A	RANCHI NEW(PG)
			44	EN-44		NP-7949-A	ANGUL(PG)	152	EN-19		NP-7875-A	RANCHI NEW(PG)
			45	EN-32	NP-7988-A	NP-7908-A	ANGUL(PG)	153	EN-91		NP-8755-A	RANCHI NEW(PG)
			46	EN-63		NP-8780-A	ANGUL(PG)	154	EN-92		NP-8754-A	RANCHI NEW(PG)
			47	EN-64		NP-8781-A	ANGUL(PG)	155	EN-99		NP-8753-A	RANCHI NEW(PG)
			48	EN-65		NP-8785-A	ANGUL(PG)	156	ES-46		NP-7013-A	KISHANAGNJ(PG)
			49	EN-66		NP-8786-A	ANGUL(PG)	157	ES-47		NR-4614-A	KISHANAGNJ(PG)
			50	EN-77		NP-8778-A	ANGUL(PG)	158	ES-48		NR-4444-A	KISHANAGNJ(PG)
			51	EN-78		NP-8779-A	ANGUL(PG)	159	ES-49		NR-4436-A	KISHANAGNJ(PG)
			52	EN-82		NP-8777-A	ANGUL(PG)	160	ES-50		NR-4440-A	KISHANAGNJ(PG)
			53	ES-06		NP-8788-A	ANGUL(PG)	161	ES-11		NP-8887-A	KISHANAGNJ(PG)

54	ES-05	NP-8787-A	NP-7995-A	ANGUL(PG)	162	ES-12		NP-8885-A	KISHANGANJ(PG)
55	ES-58		NP-8077-A	ANGUL(PG)	163	ES-13		NP-8856-A	KISHANGANJ(PG)
56	ES-59		NP-8076-A	ANGUL(PG)	164	ES-14		NP-8886-A	KISHANGANJ(PG)
57	EM-49		NP-7880-A	CHANDIL(JUVNL)	165	ES-15		NP-8858-A	KISHANGANJ(PG)
58	EP-18	NP-7471-A	NP-8660-A	GAYA(PG)	166	ES-16		NP-8889-A	KISHANGANJ(PG)
59	ES-26		NP-8659-A	GAYA(PG)	167	ES-17		NP-8859-A	KISHANGANJ(PG)
60	EP-19	NP-7470-A	NP-8658-A	GAYA(PG)	168	ES-18		NP-8855-A	KISHANGANJ(PG)
61	WB-30		NP-7403-A	KHARAGPUR(WB)	169	ES-19		NP-8880-A	KISHANGANJ(PG)
62	BS-38		NR-4442-A	KISHANAGNJ(BSPTCL)	170	ES-20		NP-8888-A	KISHANGANJ(PG)
63	BS-39		NR-4445-A	KISHANAGNJ(BSPTCL)	171	ES-21		NP-8857-A	KISHANGANJ(PG)
64	BI-28		NP-8653-A	SULTANGANJ(BSPHCL)	172	EN-22		NP-7933-A	RANGPO(PG)
65	BI-29		NP-8672-A	SULTANGANJ(BSPHCL)	173	EN-23		NP-7955-A	RANGPO(PG)
66	BI-61	NP-6019-B	NP-7400-A	SULTANGANJ(BSPHCL)	174	EN-24		NP-7956-A	RANGPO(PG)
67	EN-40		NP-7906-A	SUNDERGARH(PG)	175	EN-25		NP-7957-A	RANGPO(PG)
68	EN-41		NP-7634-A	SUNDERGARH(PG)	176	EN-33		NP-7922-A	RANGPO(PG)
69	EN-42		NP-7638-A	SUNDERGARH(PG)	177	EN-34		NP-7923-A	RANGPO(PG)
70	EN-57		NP-7907-A	SUNDERGARH(PG)	178	EN-35		NP-7924-A	RANGPO(PG)
71	EN-79		NP-7636-A	SUNDERGARH(PG)	179	EN-36		NP-7623-A	RANGPO(PG)
72	EN-95		NP-7635-A	SUNDERGARH(PG)	180	EN-39		NP-7622-A	RANGPO(PG)
73	WB-23		LT-0194-A	SAGARDIGHI(WBSETCL)	181	EN-38		NP-7621-A	RANGPO(PG)
74	WB-24		LT-0191-A	SAGARDIGHI(WBSETCL)	182	EN-54		NP-7619-A	RANGPO(PG)
75	WB-25		NP-8724-A	SAGARDIGHI(WBSETCL)	183	EN-55		NP-7620-A	RANGPO(PG)
76	WB-26		NP-8725-A	SAGARDIGHI(WBSETCL)	184	EN-59		NP-8710-A	RANGPO(PG)
77	WB-27		NP-8723-A	SAGARDIGHI(WBSETCL)	185	EN-60		NP-8711-A	RANGPO(PG)
78	WB-28		NP-8722-A	SAGARDIGHI(WBSETCL)	186	EN-80		NP-8714-A	RANGPO(PG)
79	BI-07	NP-6074-A	NP-7825-A	SABOUR(BSPHCL)	187	EN-81		NP-8715-A	RANGPO(PG)
80	BI-73		NP-8749-A	SABOUR(BSPHCL)	188			NP-7940-A	RANGPO(PG)
81	ES-31		NP-7442-A	PANDIABILI(PG)	189			NP-7941-A	RANGPO(PG)
82	ES-32		NP-7427-A	PANDIABILI(PG)	190	ES-24		NP-8712-A	RANGPO(PG)
83	ES-33		NP-7454-A	PANDIABILI(PG)	191	ES-25		NP-8713-A	RANGPO(PG)
84	ES-34		NP-7554-A	PANDIABILI(PG)	192	OR-18		NP-7944-A	SADEIPALI(GRIDCO)
85	ES-35		NP-7438-A	PANDIABILI(PG)	193	JS-11		NP-8865-A	CHAIBASA(JUVNL)
86	ES-36		NP-7407-A	PANDIABILI(PG)	194	JS-12		NP-8866-A	CHAIBASA(JUVNL)
87	ES-37		NP-7462-A	PANDIABILI(PG)	195	JS-13		NP-8867-A	CHAIBASA(JUVNL)
88	JS-50		NP-8644-A	KENDIPOS(JUVNL)	196	SM-05		NP-8797-A	SAGBARI(SIKKIM)
89	WB-29		NP-7381-A	KHARAGPUR(WB)	197	SM-06		NP-8798-A	SAGBARI(SIKKIM)
90	BI-50		NP-7869-A	KUDRA(BSPHCL)	198	BI-42		NP-7380-A	SONNAGAR NEW(BSPTCL)
91	BI-26		NP-8697-A	LAKHISARAI(BSPHCL)	199	BI-43		NP-7450-A	SONNAGAR NEW(BSPTCL)
92	BI-30		NP-8670-A	LAKHISARAI(BSPTCL)	200	IB-01		NP-8792-A	IBEUL
93	BI-31		NP-8671-A	LAKHISARAI(BSPTCL)	201	IB-02		NP-8793-A	IBEUL
94	EN-46		NP-7432-A	LAKHISARAI(PG)	202	IB-03		NP-8795-A	IBEUL
95	EN-27		NP-7433-A	LAKHISARAI(PG)	203	IB-04		NP-8794-A	IBEUL
96	EN-37		NP-7889-A	LAKHISARAI(PG)	204	IB-05		NP-8783-A	IBEUL
97	EN-26		NP-7885-A	LAKHISARAI(PG)	205	IB-06		NP-8782-A	IBEUL
98	EN-47		NP-7886-A	LAKHISARAI(PG)	206	IB-07		NP-8784-A	IBEUL
99	EN-50		NP-7429-A	LAKHISARAI(PG)	207	IB-08		NP-8796-A	IBEUL
100	EN-51		NP-7888-A	LAKHISARAI(PG)	208	TL-32		NP-7961-A	TALCHER SOLAR(NTPC)
101	EN-58		NP-8678-A	CHAIBASA(PG)	209	TL-33		NP-7626-A	TALCHER SOLAR(NTPC)
102	EN-67		NP-8637-A	CHAIBASA(PG)	210	TL-34		NP-7962-A	TALCHER SOLAR(NTPC)
103	EN-97		NP-8868-A	CHAIBASA(PG)	211	TL-35		NP-7628-A	TALCHER SOLAR(NTPC)
104	EN-98		NP-8869-A	CHAIBASA(PG)	212	TL-37		NP-7627-A	TALCHER SOLAR(NTPC)
105	ES-29		NP-7471-A	CHAIBASA(PG)	213	TL-38		NP-5968-A	TALCHER SOLAR(NTPC)
106	ES-30		NP-7467-A	CHAIBASA(PG)	214	TL-31		NP-7909-A	TALCHER SOLAR(NTPC)
107	DM-01		NP-8656-A	DARBHANGA(DMTCL)	215	TL-30		NP-5979-A	TALCHER SOLAR(NTPC)
108	DM-02		NP-8719-A	DARBHANGA(DMTCL)	216	TL-37	NP-7627-A	NP-7946-A	TALCHER SOLAR(NTPC)
					217	TL-40	NP-7618-A	NP-7945-A	TALCHER SOLAR(NTPC)
					218	TL-39	NP-7614-A	NP-7631-A	TALCHER SOLAR(NTPC)
					219	TL-41	NP-7615-A	NP-7633-A	TALCHER SOLAR(NTPC)
					220	TL-36	NP-7632-A	NP-7630-A	TALCHER SOLAR(NTPC)
					221			LT-0135-A	MTPS KANTI(NTPC)
					222			LT-0192-A	MTPS KANTI(NTPC)

223			LT-0129-A	MTPS KANTI(NTPC)
224			LT-0133-A	MTPS KANTI(NTPC)
225			LT-0093-A	MTPS KANTI(NTPC)
226			LT-0127-A	MTPS KANTI(NTPC)
227			LT-0126-A	MTPS KANTI(NTPC)
228			TP-0006-A	MTPS KANTI(NTPC)
229			LT-0132-A	MTPS KANTI(NTPC)
230			LT-0130-A	MTPS KANTI(NTPC)
231			LT-0092-A	MTPS KANTI(NTPC)
232			LT-0128-A	MTPS KANTI(NTPC)
233			LT-0125-A	MTPS KANTI(NTPC)
234			LT-0140-A	MTPS KANTI(NTPC)
235			LT-0131-A	MTPS KANTI(NTPC)
236			TP-0008-A	MTPS KANTI(NTPC)
237			LT-0246-A	MTPS KANTI(NTPC)
238			LT-0219-A	MTPS KANTI(NTPC)
239			LT-0214-A	MTPS KANTI(NTPC)
240			LT-0242-A	MTPS KANTI(NTPC)
241			LT-0187-A	MTPS KANTI(NTPC)
242			LT-0215-A	MTPS KANTI(NTPC)
243	ES-54		NR-4451-A	ALIPURDUAR(PG)
244	ES-55		NR-4452-A	ALIPURDUAR(PG)
245	ES-56		NR-4457-A	ALIPURDUAR(PG)
246	ES-57		NR-4458-A	ALIPURDUAR(PG)

List of drifted meters to be replaced in Phase-II

SNO	LOCATION	METER SNO	FEEDER NAME	Region
1	MUZAFFARPUR(PG)	NP-5074-A	400 KV MUZAFARPUR (PG)-GORAKHPUR(NR)-1	ER-I
2	MUZAFFARPUR(PG)	NP-9981-A	400 KV MUZAFARPUR (PG)-GORAKHPUR(NR)-2	ER-I
3	RANCHI(PG)	NP-5835-A	400 KV RANCHI-SIPAT-1 (WR)	ER-I
4	RANCHI(PG)	NP-5836-A	400 KV RANCHI-SIPAT-2 (WR)	ER-I
5	RANCHI NEW(PG)	NP-7847-A	765 KV RANCHI NEW -DHARAMJAYGARH-1	ER-I
6	RANCHI NEW(PG)	NP-8753-A	765 KV RANCHI NEW -DHARAMJAYGARH-2	ER-I
7	MEJIA(DVC)	NP-5226-A	MEJIA END OF MAITHON(PG)-1	ER-II
8	MEJIA(DVC)	NP-5227-A	MEJIA END OF MAITHON(PG)-2	ER-II
9	BINAGURI(PG)	NP-5884-A	BINAGURI END OF BONGAIGAON (NER)-1	ER-II
10	BINAGURI(PG)	NP-5885-A	BINAGURI END OF BONGAIGAON (NER)-2	ER-II
11	ROURKELLA(PG)	NP-5933-A	ROURKELA END OF TARKERA (GRIDCO)-2	ER-II
12	KHARAGPUR(PG)	NP-7563-A	400 KV KHARAGPUR -BARIPADA(PG)	ER-II
13	MPL	NP-7970-A	MAITHON RB END OF RANCHI (PG)-1 (MAIN)	ER-II
14	MPL	NP-7971-A	MAITHON RB END OF RANCHI (PG)-2 (MAIN)	ER-II
15	MPL	NP-7564-A	MAITHON RB END OF MAITHON (PG)-1 (MAIN)	ER-II
16	MPL	NP-6518-A	MAITHON RB END OF MAITHON (PG)-2 (MAIN)	ER-II
17	STERLITE	NP-7572-A	400 KV STERLITE - RAIGARH(WR)-II(MAIN)	ER-II
18	STERLITE	NP-7372-A	400 KV STERLITE - ROURKELLA(PG)-II(MAIN)	ER-II
19	ROURKELLA(PG)	NP-5928-A	400 KV ROURKELLA(PG)-RAIGARH(WR)	ER-II
20	MIRAMUNDALI(OPTCL)	NP-5977-A	400 KV MIRAMUNDALI-ANGUL-1	ER-II
21	MIRAMUNDALI(OPTCL)	NP-5976-A	400 KV MIRAMUNDALI-ANGUL-2	ER-II
22	SUNDERGARH(PG)	NP-7634-A	765 KV SUNDERGARH-DHARAMJAYGARH-1	ER-II
23	SUNDERGARH(PG)	NP-7638-A	765 KV SUNDERGARH-DHARAMJAYGARH-2	ER-II

ER-I								
S. No	S/Station	Loc ID	Meter No	Make	CTR	PTR	Remarks	Data Receipt
1	Banka	ES-88	NP-7458-A	L&T	50	33000/110		Yes
2	Lakhisarai	ES-94	NP-8870-A	L&T	50	33000/110		Yes
3	New Ranchi(765)	ES-87	NP-8752-A	L&T	50	33000/110		Yes
4	Ara(220)	ES-99	NP-8893-A	L&T	50	33000/110		Yes
5	Muzaffarpur	ET-02	NP-5231-A	L&T	1000	415/110		Yes
6	New Purnea	ES-98	NP-5249-A	L&T	50	33000/110		Yes
7	Pusauli	ET-06	NP-8646-A	L&T	50	33000/110		Yes
8	Gaya(765)	EM-99	NP-7472-A	L&T	50	33000/110		No
9	Kishanganj	ES-90	NP-8876-A	L&T	50	33000/110		No
10	Patna	ES-89	ER-1285-A	Genus	50	33000/110		No
11	Biharshariff	ET-01	NP-2355-A	SECURE	1000	415/110		No
12	Chaibasa						Detail not rcvd	No
13	Jamshedpur						Detail not rcvd	No
14	Ranchi(400/220)						Detail not rcvd	No
ER-II & Odhisa Project								
1	Angul	ES-95	NP-5942-A	L&T	1000	415/110		Yes
3	Pandiabili	ES-39	NP-7462-A	L&T	1000	415/110		Yes
4	Rangpo (33 kv TRF)	ES-96	NP-7940-A	L&T	1000	415/110		Yes
5	Rangpo (11 KV AUX TRF)	ES-97	NP-7941-A	L&T	1000	415/110		Yes
8	Sundergarh	ES-93	ER-1019-A	Genus	50	33000/110		Yes
9	Baripada	EM-69	NP-5909-A	L&T	1200	400/110		Yes
2	Bolangir	ET-03	NP-7951-A	L&T	50	33000/110		No
6	Durgapur	ET-04	NP-6024-B	L&T	200	400/110		No
7	Rengali	ET-05	NP-0629-B	Secure	200	415/110		No
10	Jeypore		NP-5695-A	L&T			Detail not rcvd	No
11	Keonjhar		NP-7921-A	L&T			Detail not rcvd	No
12	Maithon						Detail not rcvd	No
13	Birpara						Detail not rcvd	No
14	Siliguri						Detail not rcvd	No
15	Subhashgram						Detail not rcvd	No

Annexure-C22

Date of Commercial Operation(DOCO) of the Asstes						
						Annexure-XIII
A	Eastern Region Strengthening Scheme-V	DOCO	Approved Cost	Standing Committee Reference	RPC Meeting Reference	Sharing of Charges
01	1 no 80 MVAR Bus Reactor and associated 400kV bay at Gokrana	30/04/17	Rs.1364.52 Cr.(including IDC of Rs.59.11 Cr.).	SCM meeting of ER on 20.09.10	16th TCC & ERPC Meeting on 17.12.10 & 18.12.2010	As per New Sharing methodology of PoC
02	1 no 80 MVAR Switchable line Reactor and associated 400kV bay at Farakka	30/04/17				
03	Gokarna-Farakka portion of 400kV D/C Rajarhat-Purnea TL including LILO of one ckt of Rajarhat-Purnea TL at Farakka and LILO of other ckt of Rajarhat-Purnea TL at Gokrana and associated line bays at Farakka and Gokrana	31/03/17				
B	Common System associated with East Coast Energy Pvt. Ltd. and NCC Power Projects Ltd. LTOA Generation Projects in Srikakulamarea-Part A & Part C	DOCO	Approved Cost	Standing Committee Reference	RPC Meeting Reference	Sharing of Charges
01	765kV Double Circuit Angul-Srikakulam Transmission Line	01/02/17	Rs.1909.24 Cr.(including IDC of Rs.115.94 Cr.).	30th SCM Meeting of SR on 13.04.2010, 35th SCM meeting of SR on 04.01.2013 & SCM of ER on 28.12.2010	Special meetin of SRPC ON 25.11.2010	As per New Sharing methodology of PoC
02	765/400kV Substation at Srikakulam	01/02/17				
03	765kV bay extension at Angul and Srikakulam Substation along-with 2x240 MVAR switchable line reactors each & Angul S/s & Srikakulam S/s	01/02/17	Rs.514.20 Cr.(including IDC of Rs.28.79 Cr.).			
04	1x330 MVAR 765kV Bus Reactor at Srikakulam Substation	01/02/17				
C	Transmission System assocaiated with Darlipali TPS	DOCO	Approved Cost	Standing Committee Reference	RPC Meeting Reference	Sharing of Charges
01	Darlipali TPS(NTPC)-Jharsuguda(Sundargarh) Pooling station 765kV Double Circuit Transmission Line along-with 02nos 765kV Bays at Jharsuguda9Sundragarh)Pooling station	26/04/17	Rs.187.04 Cr.(including IDC of Rs.11.58 Cr.).	31st Meeting of empower committee on Transmission held on 18.02.13 at CERC New Delhi	Connectivity & Long Term Access with constituents of Eastern Region held on 05.01.13and 24th ERPC meeting on 27.04.13	# Mention in Note
D	ULDC Microwave link & Wide Band Communication Network	DOCO	Approved Cost	Standing Committee Reference	RPC Meeting Reference	Sharing of Charges
01	7 nos. OPGW links under Central Sector assocaiated with expansion of wideband communication network in Eastern Region		-	-	-	-
a)	Baripada-Keonjhar	01/03/17				
b)	Birpara-Alipurduar	01/03/17				
c)	Angul-Bolangir	01/03/17				
d)	Gaya-Chandwa	01/03/17				
e)	Purnea 400kV- Purnea 220kV	01/03/17				
f)	Rengali-Keonjhar	01/03/17				
g)	Uttara(Pandiabilli)-Mendhasal	01/03/17				
E	Fibre Optic Communication system in lieu of existing Unified Load Despatch & Communoication(ULDC) Microwave links in Eastern Region	DOCO	Approved Cost	Standing Committee Reference	RPC Meeting Reference	Sharing of Charges
DVC	i) Kalyaneshwari-Kalipahari	01/07/17				
	ii) LILO at Raghunathpur	01/07/17				
	iii) Koderma TPS-Koderma 400/220 S/s	01/07/17				
	iv) BTPS A- BTPS B	01/07/17				
	v) Ramgarh 220 - Ramgarh 132	01/07/17				
	i) LILO at Liluah-Rishra	01/07/17				

WBSEDCL	ii) Saltlake S/s to Abhikshan Bhawan(UGFO)	01/07/17				
	iii) Vidyut Bhawan to Saltlake GIS(UGFO)	01/07/17				
	iv) Bidhannagar 400- Bidhannagar 220	01/07/17				
OPTCL	i) Mancheswar-Bhubaneswar SLOC	01/07/17				
	ii) Bhubaneshwar SLOC-Vidyut Bhawan(Last Mile)	01/07/17				
BSPTCL	i) Jakkampur-SLDC Patna(UGFO)	01/07/17				
Central	i) ERLDC-Kasba(UGFO)	01/07/17				
F	Expansion & Upgradation of SCADA/EMS System at SLDCs of ER	DOCO	Approved Cost	Standing Committee Reference	RPC Meeting Reference	Sharing of Charges
BSPTCL	(b) Integration of RTUs to Main & Backup Control Centre	01/07/17				
	(f) RTU	01/07/17				
DVC	(b) Integration of RTUs to Main & Backup Control Centre	01/07/17				
	(f) RTU	01/07/17				
JUSNL	(b) Integration of RTUs to Main & Backup Control Centre	01/07/17				
	(f) RTU	01/07/17				
Sikkim	(b) Integration of RTUs to Main & Backup Control Centre	01/07/17				
	(f) RTU	01/07/17				
# Note :	6th Amendment to CERC (Connectivity and LTA/MTOA in ISTS & Related matters) Regulation 2009 was notified on 17.02.17 As per the amendment of Clause (8) of Regulation 8 "The transmission charges for the dedicated transmission line shall be payable by Generator from date of COD of the dedicated line till operationalisation of LTA of the generating station of the generating company". Hence NTPC Darlipalli will bear the transmission charges of the line till operationalisation of LTA.					