सत्यमेव जयते
भारत सरकार
Government of India
विद्युत् मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत् समिति
Eastern Regional Power Committee

सं /**NO. ERPC/TCC&ERPC COMMITTEE/2024/** 1083 दिनांक/**DATE: 26.09.2024**

सेवा में/To,

सूची के अनुसार./ As per list

विषय 6 सितंबर 2024 (शुक्रवार) को गोवा में भौतिक रूप से आयोजित 52वीं ईआरपीसी बैठक का कार्यवृत्त

Sub: Minutes of 52nd ERPC Meeting held on 6th September 2024 (Friday) physically at Goa - reg.

महोदय/ महोदया,
Sir/Madam,

कृपया 06.09.2024 (शुक्रवार) को गोवा में भौतिक रूप से आयोजित 52वीं ईआरपीसी बैठक के संलग्न कार्यवृत्त को अपनी जानकारी और आवश्यक कार्रवाई के लिए प्राप्त करें। यह ईआरपीसी वेबसाइट (**www.erpc.gov.in**)पर भी उपलब्ध है। ईआरपीसी के निर्णय के अनुसार गो-ग्रीन पहल के रूप में बैठक के कार्यवृत्त की हार्ड प्रतियों का वितरण बंद कर दिया गया है।

Please find enclosed minutes of 52nd ERPC Meeting held on 06.09.2024 (Friday) physically at Goa for your kind information and necessary action. The same is also available at ERPC website (**www.erpc.gov.in**). As per decision of ERPC, distribution of hard copies of the minutes of the meeting has been discontinued as Go-Green initiative.

संलग्न : उपरोक्त
Encl: As above

भवदीय / Yours faithfully

एन.एस.मंडल
26.9.2024

(एन. एस. मंडल) / **(N. S. Mondal)**
(सदस्य सचिव) / **(Member Secretary)**

14 गोल्फ क्लब रोड, टालीगंज, कोलकाता- 700033 | 14 Golf Club Road, Tollygunge, Kolkata- 700033
Telephone: 033-24239650 /24239659 / 24239656 | www.erpc.gov.in | E-mail: mserpc-power@nic.in

ERPC Members

1. Chairperson, ERPC & Principal Chief Engineer-cum-Secretary, Energy & Power Department, Govt. of Sikkim, Kazi Road, Gangtok – 737101, Sikkim.
2. Member (GO&D), Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. Chairman, GRIDCO Ltd., Janpath, Bhubaneshwar-751022.
4. Chairman-cum-Managing Director, Odisha Power Transmission Corporation Ltd., Janpath, Bhubaneswar- 751022.
5. Chairman-cum-Managing Director, OHPC Ltd., Orissa State Police Housing & Welfare Corporation Bldg. Vanivihar, Janpath, Bhubaneswar- 751022.
6. Managing Director, OPGC Ltd., Zone-A, 7th Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023.
7. Chairman-cum-Managing Director, Jharkhand Urja Vikas Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi-834004.
8. Chairman-cum-Managing Director, Jharkhand Urja Utpadan Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi-834004.
9. Managing Director, Jharkhand Urja Sancharan Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi-834004.
10. Managing Director, Jharkhand Bijli Vitaran Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi- 834004.
11. Managing Director, Tenughat Vidyut Nigam Ltd., Hinoo, Doranda, Ranchi – 834002
12. Chairman-cum- Managing Director, Bihar State Power Holding Company Ltd., Vidyut Bhavan, Bailey Road, Patna-800001.
13. Managing Director, Bihar State Power Transmission Company Limited, Vidyut Bhavan, Bailey Road, Patna- 800001.
14. Managing Director, South Bihar Power Distribution Company Limited, Vidyut Bhavan, Bailey Road, Patna- 800001.
15. Chairman & Managing Director, West Bengal State Electricity Distribution Company Ltd., Vidyut Bhavan, 7th Floor, Block-DJ, Sector-II, Bidhannagar, Kolkata-700091.
16. Managing Director, West Bengal State Electricity Transmission Company Ltd., Vidyut Bhavan, 8th Floor, Block- DJ, Sector-II, Bidhannagar, Kolkata-700091.
17. Chairman & Managing Director, West Bengal Power Development Corporation Ltd., Bidyut Unnayan Bhavan, 3/C, Block LA, Sector-III, Bidhannagar, Kolkata-700098.
18. Member (Finance), Damodar Valley Corporation, DVC Towers, VIP Road, Kolkata -700054.
19. Director (Commercial), NTPC Ltd., Core-7, SCOPE Complex, Lodhi Road, New Delhi -110003.
20. Director (Technical), NHPC Ltd., NHPC Office Complex, Sector-33, Faridabad, Haryana-121003.
21. Director (Operations), Power Grid Corporation of India Ltd., Saudamini, Plot No. 2, Sector-29, Gurgaon-122001.
22. Executive Director, ERLDC, GRID-INDIA, 14 Golf Club Road, Tollygunge, Kolkata – 700033.
23. Executive Director, NLDC, GRID-INDIA, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016
24. COO, CTUIL, Saudamini, 1st Floor, Plot-1, Sector-29, Gurgaon-122001
25. Director (C&O), PTC India Ltd., 2nd floor, NBCC Tower,15 Bhikaji Cama Place, New Delhi- 110066.
26. Managing Director, Tata Power Trading Company Limited, B12/13, 2nd Floor, Shatabdi Bhavan, Sector-4, Noida-201301, Uttar Pradesh.
27. Chief Executive Officer, NTPC Vidyut Vyapar Nigam Limited, SCOPE Complex, Core-3, 7th Floor, Lodhi Road, New Delhi-110003.
28. Managing Director (Generation), CESC Ltd., CESC House, 1 Chowringhee Square, Kolkata- 700001.
29. Chief Executive Officer, Maithon Power Ltd., Village-Dambhui, P.O. Barbindia, Dist.-Dhanbad, Jharkhand- 828205.
30. V.P (Plant Head), 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, Sikkim Urja Limited, 2nd Floor, Vijaya Building, 17 Barakhamba Road, New Delhi- 110001.
33. CEO, BRBCL, Nabinagar, Dist- Aurangabad, Bihar-824303.
34. CEO, DMTCL Ltd., 504 & 505, Off CST Road, Kalina, Santacruz(E), Mumbai-400098

TCC Members

1. Chairperson, TCC & Principal Chief Engineer-II, Energy & Power Dept., Govt. of Sikkim, Kazi Road, Gangtok-737101.
2. Chief Engineer (GM), CEA, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. Managing Director, GRIDCO Ltd., Janpath, Bhubaneswar-751022.
4. Director (Operation), Odisha Power Transmission Corporation Ltd., Janpath, Bhubaneswar - 751022.
5. Director (Operation), Orissa Power Generation Corporation Ltd, Zone-A, 7th floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023.
6. Director (Operation), Orissa Hydro Power Corporation Ltd, Orissa State Police Housing & Welfare Corporation Building, Vanivihar Chowk, Janpath, Bhubaneswar-751022.
7. Executive Director (Tech),, Jharkhand Urja Utpadan Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi-834004.
8. Director (Project), Jharkhand Urja Sancharan Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi- 834004.
9. Chief Engineer (S&D-JBVNL), Jharkhand Urja Vikas Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi-834004.
10. Chief Engineer (S&D), Jharkhand Bijli Vitaran Nigam Limited, Engineering Building, HEC, Dhurwa, Ranchi-834004.
11. General Manager, Tenughat TPS, Lalpania, Dist- Bokaro, Jharkhand-829149.
12. Director (Tech.), Bihar State Power Generation Company Limited, Vidyut Bhavan, Bailey Road, Patna-800001.
13. Chief Engineer (Commercial), Bihar State Power Holding Company Ltd., Vidyut Bhavan, Bailey Road, Patna-800001.
14. Director (Project), North Bihar Power Distribution Company Limited, Vidyut Bhavan, Bailey Road, Patna-800001.
15. Director (Operations), West Bengal State Electricity Transmission Company Ltd., Vidyut Bhavan, 8th Floor, Block-DJ, Sector-II, Bidhannagar, Kolkata-700091.
16. Director (R&T), West Bengal State Electricity Distribution Company Ltd., Vidyut Bhavan, 7th Floor, Block- DJ, Sector-II, Bidhannagar, Kolkata-700091.
17. Director (O&M), WBPDCL, Bidyut Unnayan Bhavan, 3C, Block-LA, Sector-III, Bidhannagar, Kolkata- 700098.
18. Executive Director (Commercial), Damodar Valley Corporation, DVC Tower, VIP Road, Kolkata-700054.
19. Regional Executive Director (ER-I), NTPC Ltd., 2nd floor, Lok Nayak Jai Prakash Bhawan, Dak Bunglow Chowk, Patna-800001.
20. Regional Executive Director (ER-II), NTPC Ltd., 3rd Floor, OLIC Building, Plot No.N-17/2, Nayapalli, Bhubaneswar-751012.
21. Executive Director (O&M), NHPC Ltd., NHPC Office Complex, Sector-33, Faridabad-121003, Haryana.
22. Executive Director (ER-I), Power Grid Corporation of India Ltd, Board Colony, Shastri Nagar, Patna- 800023.
23. Executive Director (ER-II), Power Grid Corporation of India Ltd, CF-17, Action Area-I, Newtown, Rajarhat, Near Axis Mall, Kolkata-700091.
24. Executive Director (Odisha Project), Power Grid Corporation of India Ltd, Plot No-4, Unit 41, Niladri Vihar, Chandrasekharpur, Bhubaneswar, Odisha-751021.
25. Executive Director, ERLDC, GRID-INDIA, 14 Golf Club Road, Kolkata –700 033.
26. Executive Director, National Load Dispatch Center, GRID-INDIA, B-9 Qutab Institutional Area, Katwaria Sarai,New Delhi-110016.
27. Dy COO, CTUIL, Saudamini, 1st Floor, Plot-1, Sector-29, Gurgaon-122001
28. Executive Director (Marketing), PTC India Ltd., NBCC Tower, 15 Bhikaji Cama Place, New Delhi-110066.
29. Head (Marketing), Tata Power Trading Company Limited, B-12/13, 2nd Floor, Shatabdi Bhavan, Sector-4, Noida-201301, Uttar Pradesh.
30. Chief General Manager, NTPC Vidyut Vyapar Nigam Limited, SCOPE Complex, Core-3, 7th Floor, Lodhi Road, New Delhi-110003.
31. Sr. Vice President (System Operation), CESC Ltd, CESC House, 1 Chowringhee Square, Kolkata-700001.
32. Station Head & General Manager (O&M), Maithon Power Ltd., Village-Dambhui, P.O. Barbindia, Dist.- Dhanbad, Jharkhand-828205.
33. GM (Head-Electrical), GMR Kamalanga Energy Ltd., AT/PO-Kamalanga, PS-Kantabania, Via-Meramundali, Dist.-Dhenkanal, Odisha-759121.
34. Chief Operating Officer, Jindal India Thermal Power Limited, Plot No-12, Sector-B1, Local Shopping Complex, Vasant Kunj, New Delhi-110070.
35. Managing Director, Sikkim Urja Limited, 2nd Floor, Vijaya Building, 17 Barakhamba Road, New Delhi- 110001.
36. CEO, BRBCL, Nabinagar, Dist- Aurangabad, Bihar-824303.
37. Chief Operating Officer, 504 & 505, Off CST Road, Kalina, Santacruz(E), Mumbai-400098

Non-Member Participants

1. Managing Director, Haldia Energy Limited, Haldia, West Bengal-721658
2. Director, JSW Energy (Utkal) Ltd, Sahajbahal, Jharsguda, Odisha-768211
3. Managing Director, Adhunik Power & Natural Resources Ltd., Lansdowne Towers, 5th Floor, 2/1A Sarat Bose Road, Kolkata-700020.
4. Managing Director, DANS Energy Pvt Ltd, DLF Cyber City, Phase-II, GURGAON – 122 002
5. Director, Shiga Energy Pvt. Ltd., 5th Floor, DLF Building No. 8, Tower-C, DLF Cyber City, Phase-II, Gurgaon – 122002
6. CEO, Sneha Kinetic Power Projects Pvt.Ltd. #31 -A, Behind SNOD building, Deorali, Gangtok, Sikkim-737102
7. CEO, Rongnichu HEP, MBPCL, Sikkim-737102.
8. Senior Vice President, Sikkim Power Transmission Limited, B2/1A, Safdarjung Enclave, Africa Avenue, New Delhi-110066
9. CEO, IndiGrid Limited, Mumbai-400079
10. CEO, Cross Boarder Power Transmission Limited, 3rd Floor, Niryat Bhawan, New Delhi-110057
11. CEO, Alipurdar Transmission Limited, 101, Part-III, G.I.D.C Estate, Gandhinagar, Gujrat-382028
12. CEO, SJVN Thermal Pvt Ltd, 169. Pataliputra Colony, Patna-800013
13. MD, Tata Steel UISL, Jamshedpur, Jharkhand-831001
14. Managing Director, India Power Corp. Ltd., Kolkata.

GOVERNMENT OF INDIA

MINISTRY OF POWER

Eastern Regional Power Committee

MINUTES

OF

52nd MEETING OF

EASTERN REGIONAL POWER COMMITTEE

Date: 06.09.2024

Time: 10:00 Hrs

Radisson Blue Resort, Goa

Contents

Eastern Regional Power Committee, Kolkata

MINUTES OF THE 52nd MEETING OF EASTERN REGIONAL POWER COMMITTEE

Date: 06th September ,2024(Friday) at 10:00 Hrs. **Goa**

- **In Chair: Shri Manas Ranjan Rout, Managing Director, OPGC(Odisha Power Generation Corporation)**
- **Host:** NTPC Ltd.

- *Meeting was convened physically at Goa.*
- *List of participants is attached at* ***Annexure-A.***

RED, NTPC *welcomed all esteemed members of ERPC, other participants and special invitees to the 52nd ERPC meeting. He gave a presentation on biodiversity activities taken up in their Bongaigaon TPS wherein some rare species of birds is being nurtured and requested all interested to visit the site at their suitable time. He once again expressed his gratitude for giving them the opportunity to host the 52nd TCC & ERPC Meeting and wished all the delegates a pleasant stay at Goa.*

Member Secretary, ERPC *in his welcome address thanked Shri Manas Ranjan Rout, Managing Director, OPGC for sparing his valuable time to chair the meeting. He expressed his gratitude to Member (GO & D), CEA , Chairman DVC, and other members of ERPC, TCC members, Special Invitees and other participants present in the meeting. He also thanked NTPC team for making an excellent arrangements in hosting the meeting at Goa. Thereafter a brief presentation(****Annex-I****) was delivered encompassing key facets and recent happenings of ER power sector.*

Shri Manas Ranjan Rout, Managing Director, OPGC in *his keynote address welcomed all the delegates to the 52nd Meeting of the Eastern Regional Power Committee. He further extended his sincere gratitude to all the participants for their valuable contributions towards the development of power sector in the Eastern Region. He thereby emphasized the following:*

- *Dominant role of thermal generation in meeting ER demand amid rare existence RE projects in Eastern Region.*
- *Eastern Region, having predominant pit head thermal projects and able to supply relatively cheaper power to the grid, generation backdown raises serious concern in regional as well as national perspective.*

With permission of the Chair the Agenda of the meeting was taken up.

1. PART-A: Confirmation of Minutes

A1. Confirmation of Minutes of 51st ERPC Meeting held on 12th January 2024 virtually through MS TEAMS online platform.

The minutes of 51st ERPC meeting held on 12.01.2024 virtually on MS TEAMS online platform was circulated vide letter no. ERPC/ TCC & ERPC COMMITTEE/2024/526 dated 25.01.2024.

Members may confirm the minutes of 51st ERPC meeting.

Deliberation in 52nd ERPC meeting

Members confirmed the minutes of 51st ERPC meeting.

A2. Sensitization of CEA Regulations :CEA

Representative of CEA would give a brief presentation on the various regulations of CEA.

Deliberation in 52nd ERPC meeting

*Chief Engineer (Regulatory Affairs Division),CEA delivered a comprehensive presentation(**Annex-A2**) highlighting salient features of various CEA regulations and technical standards as follows:*

- *Grid Standards, 2010*
- *Technical Standards for Connectivity to the Grid Regulations, 2007*
- *Technical Standards for Connectivity of the DGR Regulations, 2013.*
- *Installation & Operation of Meters Regulations 2006*
- *Flexible Operation of Coal based Thermal Power Generating Units Regulations, 2023*
- *Furnishing of Statistics, Returns & Information Regulations, 2007*
- *Technical Standards for Communication System in Power System Operations Reg., 2020*
- *Safety Requirements for Construction, O&M of Electrical Plants and Lines Reg., 2011*
- *Technical Standards for Construction of Electrical Plants and Electric Lines Reg., 2022*
- *Measures relating to Safety and Electric Supply Regulations, 2023*

*He further emphasized provisions of **Electricity (Rights of Consumers) Rules, 2020"** as laid down by Ministry of Power (MoP) with an aim to ensure quality delivery of consumer services.*

He requested all the stakeholders to organize technical workshops on relevant CEA regulations to enable knowledge sharing and subsequent implementation in practice.

2. PART-B: ITEMS FOR DISCUSSION

B.1 Issues referred to ERPC during the TCC meeting held on 05.09.2024.

The issues referred to ERPC by the TCC are placed below:

B.1.1 Operational Difficulties faced by DVC Generators in Complying to the FGMO Logic as per IEGC, 2023 and Delay in implementation of Incentive to Generators for providing PFR: DVC.

Referring to the provisions laid down under Cl. 10 on 'Primary Control' in the CERC (IEGC) Regulations, 2023, the generating Stations and units thereof needs to operate under Free Governor mode of Operation with an inherent deadband of +/- 0.03 Hz. The deadband is to be set with respect to the reference frequency of 50.000 Hz and not with respect to the tracking/ current frequency – clarified in the detailed Operating Procedure of NLDC. The scan rate of frequency input to the governor needs to be kept at minimum possible also.

❖ The above criteria deviate significantly from that of the earlier requirements for Governor Response, as per the IEGC, 2010 Regulations wherein a concept of "Ripple Filter" of +/-0.03 Hz introduced, and it was supposed to be measured w.r.t. the tracking/ current frequency and not against a fixed refence frequency. The purpose was to ignore the small changes in frequency in order to prevent governor hunting.

❖ It is agreed that the national grid frequency has stabilized over the years with reduction in Frequency Variation Index. However, it may also be appreciated that as on date the deviation is not being maintained strictly within +/- 0.03 Hz w.r.t. the Reference Frequency, (within 49.97Hz to 50.03 Hz) for most of the time in a day. Even, the 15-min avg. block frequency is found to remain ~38% of the time outside +/- 0.03 Hz Band on avg. in a day with a max. daily fig. of 52% (*derived considering the frequency data of June'24). For a finer time-resolution, the above figures expected to be even

❖ large and frequent and hence the FGMO logic remains activated for a significant period of time in a day.

❖ Even outside the band, the back-and-forth movement of frequency within a short span of time, accounts for frequent reversal of FGMO influence and thus results in hunting of Turbine Control Valve and machine parameters. A sample illustration of DSTPS U#2 is being shown in below table showing frequent change in FGMO correction input and its effect on various plant parameters.

Parameters	**15:54:30**	**16:01:30**	**16:05:00**	**16:08:30**
Actual load	426	413	416	420
Load SP	420	420	420	420
Drum Pressure	172.96	186.81	188.26	180.09
MS pressure	158.20	176.65	173.34	165.0
MS Pr. Set Point	161.64	163.19	161.11	161.11
Coal flow	244	222	225	226
FGMO correction	7.7MW	-17.3	-12	00
Drum Level	-7	-75	-92	-167
MS temp.	547	528	491	497
HPBP Opening	0	0	25%	0

The situation even gets worsened when the Load setpoint (SP) variation, on account of revised despatch instruction of SLDC, is in opposite direction of FGMO output. For example, say the case when Load SP has been increased at higher Frequency excursion outside the +/-0.03 Hz band. Under such

case, the additional fuel-flow due to increase in Load SP will cause MS pressure increase after a boiler dead time of 3-4 mints. However, at the same time the Turbine control valves will get closing command due to FGMO effect, resulting an increase in Main Steam Pressure. The Deviation of Main Steam pressure (∆P) sometimes exceeds the Main steam Pressure set-point of 12 Kg/cm2 for this dual effect causing opening of HP Bypass valve in auto. Which in terms causes significant instability in drum level control and SH temperature control.

❖ Such type of incidents is appearing roughly 3-4 times daily in each of the unit, resulting unstable operation of the units and increase chances of unit tripping on Drum Pressure fluctuation. Further, such stressed operation of various equipment/ components due to fluctuating FGMO commands on persistent basis, may account for significant damage in long run.

❖ Earlier, there was no specific incentive allowed to generators for providing Primary Frequency Response. However, as per maximum response limit of FRC i.e. upto 105%, generators were allowed to declare their DC upto 105%. In that way, generators were benefitted in terms of excess DC, if %availability falls short of 85% on annual basis. However, the same has been restricted in the CERC (IEGC) Regulations, 2023 by way of limiting DC upto 100%.

The provision of performance linked incentive to the generators, ceiling upto 10% of annual Capacity Charge of the station, is still not implemented due to delay in finalisation of the detailed procedure of NLDC.

❖ Under such scenario, the plants are deprived of any financial benefit in spite of providing grid support through Primary Response.

➢ In 218th OCC Meeting, DVC was advised to coordinate with NTPC and ERLDC for pin- pointing the exact cause behind instability of units on comparing with NTPC units where FGMO operation is successful.
➢ OCC advised ERLDC to take up the matter with NLDC & expedite the process of finalizing the procedure of incentivizing Generators for supporting grid through Primary Frequency Response.
➢ OCC referred the matter to TCC for further deliberation.

Deliberation in 52nd TCC meeting

DVC representative submitted the following points:

- *Operational constraints faced by their generating units due to frequent reversal of FGMO logic.*
- *There was no specific incentive allowed to generators for providing Primary Frequency Response in the current regulations and the plants are deprived of financial benefit despite providing grid support through Primary Response.*

After detailed deliberation, TCC suggested DVC to take up the issue with CEA and referred the matter to ERPC for further deliberation.

ERPC may discuss.

Deliberation in 52nd ERPC meeting

DVC representative briefed the issue to the forum underlining following:

➢ *Consequent to wide frequency excursions, DVC generating units are encountering unstable operation owing to generator and turbine hunting. A technical solution to address this issue was*

requested to the forum.

- *As adequate reserve needs to be continually ensured i.r.o generating units for supporting the grid by primary frequency response in exigency, incentivizing generators through computation of Beta factor only in those months witnessing grid disturbance is resulting in significant financial loss to the generators.*
- *In this regard, provision of providing compensation to generators even in absence of grid disturbance as per previously existing methodology was requested.*

Member (GO&D),CEA underscored the following:

FGMO in generators is essential for reliable system operation and all generating utilities were requested to cooperate in this regard.

CEA, being a statutory body shall not encroach upon the jurisdiction of another regulatory body i.e CERC. Regarding alteration from draft to final CERC regulations and consequent financial loss incurred by DVC generators, DVC was suggested to seek assistance from CERC directly for resolution.

RED NTPC apprised:

Parametric deviations could be evaded to significant extent through continuous fine tuning of control loops in 200 MW and 500 MW units.On the contrary, fine tuning is under process to control the deviations i.r.o 660 MW units.

❖ ***ERPC decision:***

- *DVC was advised for consultation with NTPC for mitigating the operational constraints in their generating units related to FGMO logic. NTPC was requested to extend necessary technical assistance in this regard.*
- *DVC was also suggested to approach CERC directly for providing adequate performance linked incentive to generators i.r.o primary frequency response.*

B.1.2 Spare Reactor procurement under Eastern Regional Pool as per CEA norms – Powergrid ER-II.

Spare Reactor proposal was forwarded from POWERGRID in 202nd OCC and further referred to special meeting convened on 05.02.2024 for feasibility study.

❖ Based upon outcome of the special meeting, the subject agenda put up in 29th CMETS (By ERLDC), where in CTU provides its views for operational aspects/planning perspective only.

In 29th CMETS-ER:

➢ After detailed deliberations, all stakeholders agreed that some candidate reactors can be kept identified for use as spare or for replacement of failed reactor. As and when need arises, based on merit of the case and considering all techno- economic issues, use of reactors as spare or for replacement can be decided.

➢ In view of above, POWERGRID was requested to finalize the spare reactor quantity, such that necessary procurement could be finalized.

Original list of spare Reactors proposed were as follows: -

STATE	VOLTAGE	SIZE	STORAGE PLACE
WEST BENGAL	400 KV	125 MVAR	DURGAPUR SS
		80 MVAR	BINAGURI SS
		63 MVAR	BINAGURI SS
SIKKIM	400 KV	80 MVAR	RANGPO SS
	220 KV	31.5 MVAR	NEW MELLI SS
BIHAR	400 KV	125 MVAR	BIHARSARIFF SS
		80 MVAR	PATNA SS
		63 MVAR	MUZAFFARPUR SS
JHARKHAND	400 KV	125 MVAR	NEW RANCHI SS
		80 MVAR	RANCHI SS
ODHISSA	400 KV	63 MVAR	ROURKELLA SS

After detailed deliberation in 217th OCC, OCC consented to the proposal of reactor spares as follows:

STATE	VOLTAGE	SIZE	STORAGE PLACE
WEST BENGAL	400 KV	125 MVAR	DURGAPUR SS
		80 MVAR	BINAGURI SS
SIKKIM	220 KV	31.5 MVAR	NEW MELLI SS
JHARKHAND	400 KV	125 MVAR	NEW RANCHI SS
ODHISSA	400 KV	63 MVAR	ROURKELLA SS

OCC advised Powergrid ER-II to submit revised cost estimate as per revised spares requirement as given above in the upcoming CCM.

In 51st CCM:

❖ Representative of Powergrid submitted that the tentative rates mentioned against each reactor have taken by considering the average rate of several LOA placed across India by Powergrid. The transportation rate for New Melli S/s has been considered on a slightly higher side.

❖ Also, the rates for 31.5 MVAR reactor have been considered on a pro-rata basis as the production of these reactors are not very common. Cost approval may be accorded for the time being as the actual cost would be detailed during the tendering process. The Commercial Committee agreed with the estimated cost Rs. 55.67 Crores (details provided at Annexure 2.6) and referred for concurrence of 52nd TCC & ERPC.

POWERGRID ER-II may explain. TCC may concur.

Deliberation in 52nd TCC meeting

TCC agreed with the proposal of procurement of spare reactor under ER pool with the estimated cost Rs. 55.67 Crores (exclusive of GST) and referred to ERPC for approval.

ERPC may approve.

Deliberation in 52nd ERPC meeting

Powergrid ER-II summarized the techno-commercial background of spare reactor procurement in ER, alluding to the study conducted by CTU and deliberations held in CMETS-ER as well as several OCC meetings.

Member (GO&D), CEA informed:

- *In line with MOP directives, CEA has developed DRIPS (Disaster Resource Inventory for Power Sector) portal for spare inventory management of all Generation,Transmission and distribution utilities and the same is integrated with National Power Portal(NPP).*
- *In this regard all utilities were requested to update spares availability on DRIPS portal so that the dearth of spares in contingency can be seamlessly taken care of on pan-India basis.*

❖ ***ERPC decision:***

- *Assessing merit of the proposal, ERPC concurred estimated expenditure of Rs. 55.67 Crores (exclusive of GST but including transportation cost) towards procurement of spare reactors in ER pool by Powergrid ER-II as per CEA spare norms.*
- *All utilities (Genco/Transco/Discoms) were directed to furnish information regarding availability of spares on DRIPS portal developed by CEA to ensure reliable grid operation in event of contingency. This consolidated database of spare inventory shall aid all utilities in early system restoration during contingency through seamless identification and shifting of spares.*

B.1.3 Upgradation of AMR system Network into Layer-3 in Eastern Region (Addition to Scope for AMR Phase-5)- Powergrid ER-II.

Synopsis:

❖ AMR system implementation in Eastern Region was started from year 2013 onwards. At the beginning, data communication from Sub Station DCUs and ERLDC data center was via GPRS/SIM card-based communication. In the year 2018, as per regulation of CEA/CERC on cyber security, the AMR system communication gradually started migrating in LAN/Intranet based communication channel. We had been provided a LAN port at Sub Stations, where the DCU was physically connected. From the Sub Station to ERLDC, LAN based connection was already present using which SEM data was communication in AMR system. In 2022, 100% AMR system was migrated into LAN/Intranet based setup.

❖ While the LAN ports were assigned for AMR data communication during the implementation phase, it was observed that the proper network design and logical segregation was missing. Only one VLAN setup was created for the entire AMR, due to which all the AMR DCUs was assigned IP address from a single IP Subnet. In this setup, if any unprecedent issue occurs at any of the locations, the entire AMR network will be choked. Also, in the AMR VLAN, if any other non-AMR devices (like Switch, Router etc.) are getting connected at any of the Sub Stations and that device is using same IP address of AMR VLAN, a data packet loop is getting created resulting entire AMR VLAN out of service. Additionally, due to lack of proper Network Management System (NMS), finding the exact location of these devices are also not being done.

Proposed Solution:

As stated above, the entire AMR network is operating in a single VLAN and in the Layer2. So, any control mechanism of unprecedent scenarios is not feasible. To implement a proper network of AMR, the existing AMR network needs to be upgraded in Layer3. The detailed solution is described below.

Upgradation of AMR Network in Layer3:

•In existing AMR of Eastern Region, there are total 05 states (WB, SIKKIM, ODISHA, BIHAR & JHARKHAND) along with 3 Central Sectors (PGCIL, NTPC, DVC & IPPs).

•For each of the zones, the AMR data should be dropped in a single location/node. Example: In WEST BENGAL state, we have total 22 number of AMR DCUs. So, it is requested that all these DCU communication should be dropped in a single station SDH (may be WB SLDC). PGCIL/ULDC/SLDC has to ensure the same.

•From the state wise/sector wise AMR data dropping location, the data traffic of these AMR DCUs will be connected with ERLDC using point to point connection (not another hopping/data dropping point). PGCIL/ULDC/SLDC has to ensure the same.

•A new Layer3 Device (Router) will be installed at the zone station. This router will be placed in between the SDH ports of that station. So, eventually the router will be connected with the AMR DCUs and the ERLDC channel.

•At ERLDC central Data Centre, a centralized Router device will be installed. This will be connected with all the station level Router & the existing AMR network at ERLDC.

•Like one state (WB) as mentioned above, new Router will be installed at each zones/state levels for different sectors. (in this proposal we have considered 08 numbers i.e 05 states and 3 Central Sectors).

•All the zones will be assigned new IP address from different subnet of Ips, that means the DCU IP address will be different for different zones. This will significantly reduce the chances of occurring any IP loop in the Network.

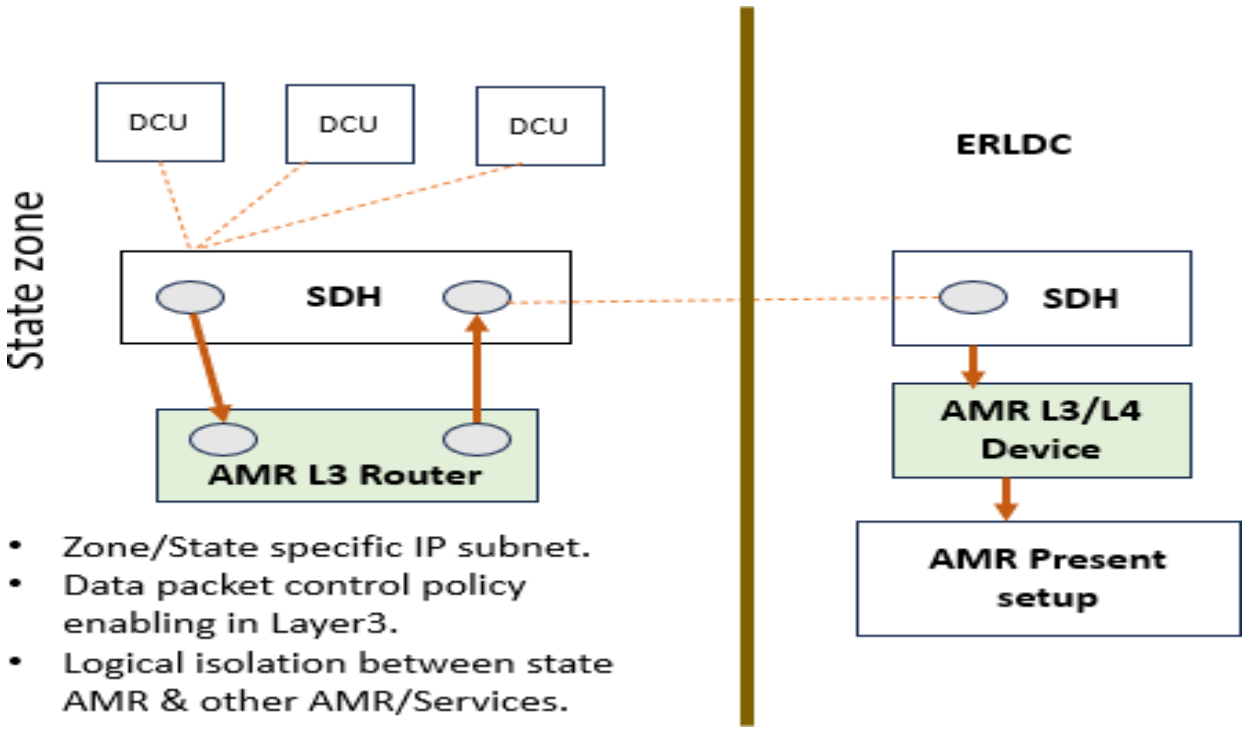
•All these different routers (installed at different zones) will have network level security. That means if any unprecedent situation occurs at any zone(s), that issue will be blocked at the router installed for this zone. This will not be transmitted to the central AMR zone thus the other AMR zones will be working without any disruption.

•Monitoring of the zone level routers will be done Centrally from ERLDC.

The matter was discussed in 15th TeST Committee Meeting. The TeST committee advised POWERGRID, ERLDC & WBSETCL to jointly implement the interim measure proposed by POWERGRID till approval of the permanent solution proposed by TCS team.

All utilities agreed to the proposal of M/S TCS as a long-term solution. Accordingly, Test committee advised Powergrid to put up a detailed scheme on logical segmentation of AMR network along with cost estimate in next TeST meeting.

Proposed design diagram for upgrading AMR Network in Layer3



As per the solution proposed in above section, following will be the scope of work for us.

- Procurement of hardware.
- Installation of hardware at respective locations. New AMR router will be installed at Rack (Rack space must be provided by the respective zone station) and physically connected with the SDH ports.
- Configuration of the hardware as per network design and requirements.
- Re-Configuration of AMR DCUs, as per upgraded network design setup & new IP addresses.
- Testing of the entire AMR system with upgraded network design.
- AMR DCUs will be migrated to new network setup zone wise. (Means one zone will be migrated and testing will be done. Once one zone data communication is successful, the next zone will be migrated).
- During the AMC phase, dedicated network team will be sitting at ERLDC Data Centre for monitoring of the system. (Adequate sitting arrangement at Data Centre has to be provided).
- AMC support window will be 5 working days/9hrs per day for a week.
- Exclusions/ To be provided by Client:
- PGCIL/respective utility has to ensure that AMR data communication for their stations must be dropped at a single station.
- From station to ERLDC, point to point connectivity must be provided.
- Dedicated RJ45 ports (02nos) to be provided at each SDH for each locations/zone.
- PGCIL/Other utility has to ensure that the IP subnet being used for AMR Network, that will be logically separated from any other network that the state/zone using presently or may be using in future. (We will share the IP subnet details with PGCIL beforehand).
- Each Zone/Utility has to be ensured that no Layer2 protocol in their existing Network shall have access to AMR Network or vice e versa.
- At each station, the respective utility has to provide a Rack space for installation of the new Router of AMR. Also, dual channel power supply has to be provided.
- Each station/utility has to ensure that the physical distance between the SDH & the place where new AMR router will be installed, shall not be more than 80mtr.

➢ At ERLDC, one dedicated SDH port (RJ45) with minimum 100MBPS bandwidth has to be provided this new AMR network.

Project Timeline (tentative):

As per the proposed solution mentioned above, below is the estimated timeline of the project scope.

Procurement of Hardware	Installation & Configuration of the hardware	Testing and Go-Live	AMC Support
03 months (M1 to M3)	02 months (M4 to M5)	01 month (M6)	36 months (M7 to M42)

Project Commercial Details:

Supply of Hardware:

Item Description	Make & Model	Quantity	Unit Price	Total Price
Router- for each zone	Cisco Catalyst 8200L	08	198930	2111171
Router- for central ERLDC	Cisco Catalyst 8200L	01	198930	198930
Total Cost of Hardware (without Taxes)				**23,10,101**

Services:

Installation, Configuration, Testing & Go-Live (without Taxes)	**46,86,162**
03 years comprehensive AMC Support (without Taxes)	**92,36,593**

Total Cost (without Taxes): INR **1,62,32,855 /-.**

Deliberation in 52nd TCC meeting

TCC agreed on the technical requirement of the proposal for upgradation of AMR system network into Layer-3.
TCC concurred the estimated cost of Rs.46.86 lakhs (without Taxes) for Installation, Configuration, Testing & Go-Live, However for estimated AMC cost component, Powergrid was advised to negotiate with the concerned vendor and intimate the negotiated value in OCC.

TCC referred the issue to ERPC for further discussion and approval.

ERPC may discuss.

Deliberation in 52nd ERPC meeting

➢ *Powergrid ER-II summarized the issue as:*
- *Presently Eastern region AMR is operating solely on LAN (point-to-point connectivity) without any internet connectivity or with IT system.*
- *Latency caused in AMR network due to broadcasting of data from one of the states.*
- *Presently only two AMR ports available at ERLDC end: one for Central sector and the other port catering to entire ER state sector as a whole.*

- *Due to paucity of physical ports, logical isolation of ports is proposed. There will exist a centralized drop point of AMR data for each state node at SLDC and thereafter directly transmitted to ERLDC. Upgradation of existing AMR network from Layer-1 & 2 to Layer-3 is proposed to achieve logical segmentation.*

➢ *Powergrid ER-II also affirmed of negotiating the cost against comprehensive AMC with the vendor to curtail it to the minimum possible extent.*

❖ ***ERPC decision:***

- *ERPC granted in-principle consent to the proposal and approved the estimated cost of Rs.46.86 lakhs (without Taxes) for AMR upgradation project while the AMC cost component needs to re-examined.*
- *Powergrid ER-II was advised to negotiate the cost of comprehensive AMC support with concerned vendor and submit the negotiated value in CCM for concurrence.*
- *Meanwhile Powergrid ER-II should proceed with installation, commissioning and testing activities of existing AMR network upgradation to Layer-3.*
- *Member (GO & D),CEA suggested that the solution for AMR network upgradation as explored by Powergrid ER-II should also form part of the upcoming pan-India AMR system. In this regard relevant inputs may be shared with CTU by Powergrid.*

B.1.4 Update URTDSM Phase-I: Cyber Security & Performance issues in URTDSM system POWERGRID

A. Obsolescence of Windows Server 2012 Operating System: Windows 2012 R2 Operating system, whose support from windows is expired on 10th October- 2023:

1. M/s GE informed that Win OS (Servers) upgrade is not feasible under current circumstances owing to following reasons: (Copy of letter from GE attached at **Annexure- 2.8.1**

a. GE WAMS application Roadmap is heading for GridOS WAMS.

b. Associated applications of 3rd party tools will get impacted.

2. In view of above, a system upgrade on existing infra is not feasible in current set-up. As an alternate and secure arrangement, POWERGRID proposes the following methods to ensure the security of existing WAMS system until Phase-II systems are in place:

a. URTDSM WAMS System being maintained air-gapped with perimeter protection at Firewall level and available updated Anti-virus patches for system robustness and security.

b. Additionally, at HIPS level, option for Virtual patching to take care of the obsolete Windows Server OS is explored by POWERGRID. Virtual patching protects operating systems and third-party applications from known vulnerabilities and protects legacy systems and end- of-life software that no longer receive updates, ensuring ongoing security and helping organizations meet compliance requirements.

c. POWERGRID discussed with the OEM of Antivirus, M/s TrendMicro and obtained budgetary estimation. The OEM quoted approximately Rs. 1.5 Crores for all 500+ Servers installed in URTDSM System pan India (for 3 years license support). **For Eastern Region, for approximately 50 servers, the estimated cost for all SLDCs and RLDC would be Rs. 15 Lakhs**(exclusive of GST).

POWERGRID proposes to procure this virtual patching solution through the AMC contractor M/s GE on Cost sharing basis to address the obsolescence of the Windows Server OS.

B. **PMU Data Streaming through Firewall:**

1. A new requirement for PMU data streaming through Firewall in existing URTDSM system, is raised by multiple SLDCs and RLDC. This requirement was not included in the scope of services Annual maintenance contract being provided by M/s GE T&D India Ltd. Hence, it is proposed to use the existing internal firewalls (by configuring separate VLAN for PMU data streaming) and addition of two new switches. Accordingly, a commercial offer was obtained from M/s for Supply of new LAN switches and configuration of Internal Firewalls for PMU data streaming. The cost per each RLDC/SLDC is **Rs. 15.35 Lakhs** excluding GST. (**Copy of the offer from GE is attached at Annexure-2.8.2).**

POWERGRID proposes to procure this solution from M/s GE on Cost sharing basis.

C. **Retention of logs up to 6 months:**

1. A new requirement for retention of system logs for up to 6 months in the existing URTDSM system was requested by multiple SLDCs and RLDC. This is also a new requirement, which is not covered under the scope of existing AMC contract.

2. Hence, POWERGRID obtained a techno-commercial offer from M/s GE for procuring additional 6TB storage at each RLDC/SLDC at a cost **of Rs. 19.35 Lakhs (excluding GST**). **(Copy of the offer from GE is attached at Annexure-2.8.3).**

POWERGRID proposes to procure this solution from M/s GE on Cost sharing basis.

Upon concurrence of RPC for cost sharing of these additional scope (Sl. No. 1,2 & 3 above), POWERGRID shall initiate the process for award of the above three solutions for execution by M/s GE.

Deliberation in 52nd TCC meeting

TCC in principally agreed on the proposal of Powergrid for cyber security and performance related update in URTDSM-I, thereby referred to ERPC for approval.

Deliberation in 52nd ERPC meeting

❖ *Powergrid informed:*

- *The AMC support from the OEM for URTDSM project will be available till end of its life i.e Jan 2027.*
- *Instead of replacing the operating software, M/S Trend Micro has come up with special arrangement to extend the use of existing operating software, taking cybersecurity aspects into consideration. In this regard, POC was also conducted at NRLDC to affirm the feasibility of this option.*
- *PMU data streaming through firewall was proposed during cybersecurity audit.*
- *Presently logs are retained for 1 month but needs to extended upto 6 months based on requirement of RLDC/SLDCs.*
- *Minimum gestation period of the entire project is 24 months.*
- *In absence of PSDF funding and implementation under RTM mode , cost optimization is under progress with RLDCs/SLDCs and thus URTDSM phase-II project shall take some time to be operational.*

❖ ***ERPC decision:***

- *ERPC approved the capital expenditure to be incurred in various cybersecurity works as detailed above.*
- *ERPC advised Powergrid to keep AMC for 4 years , i.e upto 2028 with a provision of short closure*

of contract to ensure uninterrupted service of URTDSM project. Powergrid agreed to the same.

- *Powergrid was directed to expedite commissioning of URTDSM phase-II project adhering to stringent timelines to evade requirement of further extension of AMC.*
- *Powergrid was advised to update the progress in TeST forum of ERPC.*

B.1.5 Connectivity of upcoming units of Koderma and Raghunathpur TPS Phase-II - DVC

- Ministry of Power has given target towards setting-up 1600 MW (2x800 MW) and 1320 MW (2X660 MW) Thermal Power Plant at **Koderma** and **Raghunathpur** respectively. Both the projects are required to be set-up within the timeline as set by MOP and both the locations have got adequate infrastructure within the switchyard for evacuation of power for existing units as well as upcoming units.
- To summarize, existing 400 KV switchyard for RTPS Phase-1 and KTPS Phase-1 were conceived considering the power evacuation for both Phase-1 and proposed Phase-2 in both the plants. The matter can well be validated taking reference from the MOM of the Standing Committee Meeting on Power System Planning in Eastern Region held at Puri on 05-05-2007.
- The relevant points are reproduced below:-

Ref Point 4.4 : "*Member (PS), CEA clarified that considering right of way constraints and forest area the transmission scheme of Kodarma and Bokaro Extn had been planned considering possible extension by DVC at their Kodarma TPS at a future date. To a query from Member (PS), CEA Chief Engineer, DVC confirmed that they had no proposal for future expansion at Bokaro but expansion at Kodarma was not ruled out and could be contemplated at a future date.*"

Ref Point No 4.4: "*Chief Engineer, DVC also enquired that with Raghunathpur-Ranchi 400 kV line with quad conductor, whether the system would be adequate to evacuate additional power from Stage-II without any further evacuation network. Chief Engineer (SP&PA) stated that with new generation capacity planned the flow pattern may undergo change and it would be appropriate to examine it again at the time when Raghunathpur Stage-II was firmed up*".

- From the above deliberation, it is clear that the switchyard along with outgoing lines at both Koderma and Raghunathpur were conceived considering the provision of future expansion at both the project locations at a suitable time in future.
- Moreover, as on date there is enough margin available for evacuation of power from both the Project locations which is evident from the load flow study (PSSE base case).
- Now, construction of Direct Transmission Line (DTL) from Phase-II units to nearest ISTS Substation without utilizing the available margin in existing infrastructure will underutilize the existing asset and will be burden to end consumers.
- Both the projects are in advance stage to meet the timeline. Hence, any delay in power evacuation process will create national loss.

❖ With the above deliberations and future discussion on GNA connectivity for Phase-II of Koderma and Raghunathpur, the following is proposed to be discussed-

(1) The existing outgoing transmission line may be reoriented, so that additional line (DTL) may not be required to be constructed for KTPS Ph-II against DVC's application for connectivity.

(2) The existing RTPS (DVC)- Ranchi (PG) line be terminated to Phase-II, so that additional line (DTL) may not be required to be constructed for RTPS Ph-II against DVC's application for connectivity.

DVC may explain. TCC may discuss.

Deliberation in 52nd TCC meeting

DVC apprised:

- *PPA and LOA of the upcoming projects are already in advance stage. The projects need to be completed as per MOP directed timeline which is feasible by utilizing the existing transmission network.*
- *Also, the loading of existing lines is well below SIL, having adequate margin available for power evacuation.*

TCC opined that existing transmission infrastructure needs to be optimally utilized prior to commissioning of additional DTL.

Further DVC was advised to submit fresh connectivity application for Raghunathpur TPP to CTU for further study and consideration in CMETS-ER.

TCC referred to ERPC for deliberation.

Deliberation in 52nd ERPC meeting

❖ *Member (GO&D) submitted:*

- *The delay in upcoming Thermal projects due to non-availability of matching evacuation path cannot be accepted at any cost and accordingly requested CTUIL to settle the issue in consultation with DVC & ERPC Secretariat.*
- *Considering difficulty in addressing the ROW issues , utilization of existing transmission capacity would be prudent instead of construction of new DTL.*

Chairman, DVC informed that construction of lines in Bankura, Midnapur & Koderma area has severe ROW issues as well as Forest clearance issues. During discussions, Chairman, DVC also discussed about similar application for upcoming DTPS (1X800 MW) units for which CTU advised to construct DTL upto 'Bishnupur (ISTS)' Sub-Station which also involves forest land and probable ROW issue and it is impossible to match the DTPS project schedule if the same DTL is considered.

❖ ***ERPC decision:***

- *ERPC opined that all possible measures should be taken to avoid bottling up of power evacuation from generating stations.*
- *In view of ROW issues and unnecessary burden on consumers, ERPC recommended for optimal utilization of existing transmission network for power evacuation rather than construction of DTL.*
- *CTU was directed to conduct a joint study with DVC and update the outcome in next CMETS-ER for deliberation.*

B.1.6 Scheme for deployment of SDH equipment and amplifier at Alipurduar S/s of Eastern Region : CTU

MD, PHPA-II requested CEA to provide necessary communication to the concerned Authority so as to enable purchase and commissioning of OPGW based communication, control and protection system of transmission lines connecting Alipurduar substation and Bhutan, vide their letter reference no. PHPA- IUMD/CEA/2023/206 dated 04.12.2023.

CEA after deliberation with all stakeholders has directed POWERGRID to provide necessary equipments at Alipurduar end vide its file ref no. CEA-PS-12- 17(15)/1/2018-PSPA-II Division dtd. 14.03.2024.

CTU vide letter dated 06.06.2024 has sought ERPC views on the proposed scheme so that the same may be put up in NCT for necessary approval.

Objective / Justification of the scheme

a)OPGW has been installed on Alipurduar- Jigmeling and Punatsagnchhu-II/ Punatsagnchhu-I - Alipurduar 400 kV lines.

b) SDH technology-based Fiber Optic Terminal Equipment (FOTE) is deployed in Indian Grid including Alipurduar substation, as it provides a highly reliable and synchronized communication infrastructure. However, Bhutan is implementing MPLS-TP in their whole system including at Punatsangchhu-II for data and teleprotection.

c) There will be issue in protection and data communication between SDH at one end i.e Alipurduar, India and MPLS-TP at other end i.e. Punatsangchhu-II, Bhutan.

d) Considering the necessary capabilities to ensure the accurate coordination of devices between India and Bhutan as well as to cater to cybersecurity issue of the Indian Grid, the proposed scheme for Alipurdwar S/s end needs to be implemented.

Further at the Alipurduar end, communication between the existing SDH equipment and the newly proposed equipment will occur over the El Interface. This will provide a layer of isolation between interfacing node at landing location and ISTS Communication Network.

Scope of the scheme (Estimated cost: Rs. 65,00000/- (Sixty-Five lacs) only)

- Deployment of FOTE (SDH Equipment) and amplifier solutions at Alipurduar S/s end for OPGW based communication and Teleprotection for 400kV lines from PHEP-II, PHEP-I and Jigmeling of Bhutan to Alipurduar, India:
- a)1 set of STM-4 SDH equipment along with panel supporting minimum five directions with MSP (Multiplex Section Protection 1+1) & equipped with E1 and Ethernet interfaces.
- b)6 sets of 175 km Amplifiers solutions: 2 directed towards Punatsangchhu-II(PHEP-II), 2 directed towards Punatsangchhu-I(PHEP-I) and 2 directed towards Jigmeling.
- POWERGRID to coordinate with Bhutan ends while procuring the equipment to avoid any non-compatibility issues.

- The 225 km solution proposed under the scheme shall work with STM-4 equipment freed on upgradation to STM-16.
- The STM-4 equipment freed on upgradation to STM-16 will be compatible with Bhutan end as suggested by CEA."

Cost estimate for the proposed scheme as shared by PowerGrid attached at **Annexure B.2.12.**

As per Deliberation in the **216th OCC** meeting

OCC advised PowerGrid to explore the following options:

- Utilization of the the STM-4 equipment freed on upgradation to STM-16 under the "Scheme on requirement of Additional FOTE at ISTS nodes in ER" for reliable communication with Bhutan from Alipurduar S/S.

- The existing SDH equipment (STM-4) (as per specifications of the scheme)may be upgraded at Alipurduar S/S to improve necessary redundancy in addition to the existing PLCC line as an interim measure in view of the synchronization of PHEP-II by Mid-August. In this regard cybersecurity issues must be duly addressed by deployment of additional firewall or other suitable measures.

❖ OCC advised Powergrid to update the status along with revised cost estimate in next CCM meeting.

As per deliberation in the **51st CCM**:

- Representative of Powergrid submitted that the revised cost estimate after consideration of the STM-4 equipment freed under the congestion scheme as per the decision taken in the 216th OCC Committee is around Rs. 60.29 lakhs as against the initial estimated cost of Rs. 65 lakhs (in case of new STM equipment)
- Representative of Powergrid highlighted that as there is not much of difference in the total cost in case STM-4 equipment freed under congestion scheme is used and keeping in view the importance of the scheme as being an international connectivity, initial cost estimate of Rs. 65 lakhs considering new equipment may be considered. The same would ensure enhanced life of the equipment and the scheme may be implemented without waiting for completion of the congestion scheme.
- Representative of CTU was also of the view that the scheme may be implemented by procurement of new equipment.
- Representative of Bhutan raised their concern about timely implementation of the scheme as the commissioning of PHEP would be done by September 2024. Also, BPSO has already taken up the implementation work of SDH at Bhutan end.
- Upon enquiring about the timelines for procurement of new equipment, it was informed that 6 months would be required after receipt of NCT approval.
- 51st Commercial Committee were of the view that installation of new equipment would ensure better reliability therefore agreed for the proposal of procurement of new equipment for implementation of above scheme with an **estimated cost of Rs. 65 lakhs.**

  The matter was referred for concurrence of 52nd TCC & ERPC.

Deliberation in 52nd TCC meeting

TCC agreed with the scheme of deployment of SDH & Amplifies at Alipurduar S/s with new equipment with the cost estimate of Rs. 65 lakhs (inclusive of taxes) and referred it to ERPC for approval.

Deliberation in 52nd ERPC meeting

Bhutan representative submitted :

- *Though MPLS-TP is being deployed in Bhutan, SDH equipment is installed in trans-national link with India for seamless connectivity and compatibility. SDH has already been commissioned at their end.*
- *Absence of reliable data communication may affect the newly enforced DSM modalities between India and Bhutan.Thus it was requested to commission SDH at Alipurduar (PG) end.*

CTU updated the progress in consideration of MPLS technology in Indian ISTS communication network by the Joint Committee (under NPC) amid constraints of inter-operability and compatibility.

Powergrid intimated the timeline for implementation of the proposed scheme as 6 months from NCT approval.

❖ ***ERPC decision***

- *ERPC approved estimated cost of Rs. 65 lakhs (inclusive of taxes) for procurement of SDH equipment along with amplifier at Alipurduar S/S of Eastern region.*
- *In view of uninterrupted data communication with Bhutan, Powergrid was advised to expedite the installation of proposed SDH at Alipurduar S/S.*

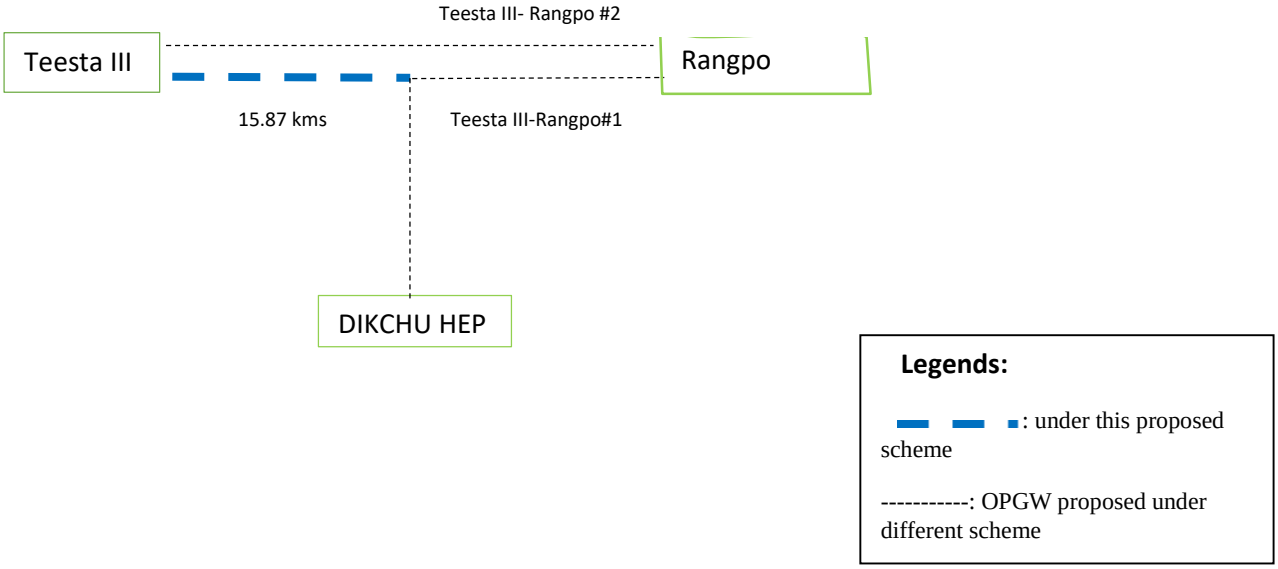
B.1.7 Revised connectivity for redundant path of Teesta-III- CTU

S. No.	Items	Details
1.	Scope of the scheme	Laying of OPGW with required terminal equipments from Teesta III to LILO point(15.87km) to establish 400kV Teesta III-Rangpo#1link.Presently Teesta III-Rangpo#1line is LILOed at Dikchu HEP.
2.	Objective / Justification	In the 51st ERPC meeting held on 12.01.2024, ERPC gave the decision as follows: i. The scheme for the revised connectivity of the redundant path of Teesta-III is accorded for in principle approval. ii. CTU was directed to provide a cost estimate for the revised scheme in the next CCM Meeting of ERPC. Accordingly, cost estimate is proposed in ERPC CCM meeting.
3.	Estimated Cost	Rs. 1,12,36,000/- (approx.) (One crore Twelve Lakhs Thirty-Six Thousand only)
4.	Implementation time frame	18 months from date of allocation.
5.	Implementation mode and agency	Line Ownership of the proposed section for OPGW laying in the instant scheme is with TPTL. To be implemented by POWERGRID in RTM mode.
6.	Deliberations	The scheme was revised and OPGW laying is proposed on Teesta III to LILO point for Dikchu HEP (15.87 km) on Teesta III-Rangpo ckt 1. The revised scheme was deliberated in 51st ERPC meeting held on 12.01.2024. In the 51st ERPC meeting held on 12.01.2024, ERPC gave the decision as follows:

		i. The scheme for the revised connectivity of the redundant path of Teesta-III is accorded for in principle approval. ii. CTU was directed to provide a cost estimate for the revised scheme in the next CCM Meeting of ERPC. As directed in 51st ERPC meeting, the revised scheme with cost estimate is being put up for CCM committee of ERPC for review. This scheme after CCM committee review shall be put up to NCT for approval.

- The revised diagram for the scheme is as below:

Schematic diagram of FO connectivity of Teesta III



In the **51st CCM**:

- Representative of CTU submitted that in-principle approval for the scheme has already been accorded in the 51st ERPC meeting. The cost estimate of Rs. 1,12,36,000/- (approx.) (One crore Twelve Lakhs Thirty-Six Thousand only) submitted by Powergrid is also in order.

The 51st Commercial Committee agreed with the proposed cost estimate and referred for concurrence of 52nd TCC & ERPC.

TCC may concur.

Deliberation in 52nd TCC meeting

TCC agreed in-principally on the proposed scheme of OPGW connectivity of Teesta-III with cost estimate of Rs. 1,12,36,000/- (One crore Twelve Lakhs Thirty-Six Thousand only).
However, CTU was advised to explore possibility of implementing the redundant communication link by utilizing the existing fiber optics.

TCC referred it to ERPC for discussion and approval.

ERPC may deliberate and approve.

Deliberation in 52nd ERPC meeting

❖ ***ERPC decision***

- *ERPC opined that in view of ROW issues and bleak chance of revival of Teesta-III HEP in short duration, Powergrid may explore use of spare fibres of existing OPGW for connectivity of Dikchu(LILOed portion) to Teesta-III .*
- *Powergrid agreed to explore the suggestion of ERPC.*
- *The feasibility of the same shall be intimated to ERPC at the earliest.*

B.1.8 VOIP Communication system for Grid-Operation of all Five Regions: NR, NER, SR, WR, ER on PAN India basis –CTU

- Hot Line Speech Communication System (VOIP based PABX system) was implemented in 2016 by POWERGRID in all five regions after grid disturbance in 2012 where grid operators faced problem of fast communication due to unavailability of dedicated speech communication **PAN India** between NLDC, RLDCs, SLDCs, important state and ISTS substations and generators. The said PABX was implemented by M/s Orange through Alcatel Lucent as OEM. The lead region for the existing VoIP system is Northern Region of POWERGRID. After execution of the project cost of the same booked under regional communication schemes. As per CERC tariff regulations useful life of system is 15 years.
- In the 67th NRPC meeting dtd. 30.06.2023, POWERGRID representative stated that the scheme executed by M/s ORANGE was with a provision of AMC of 7 years as part of the contract and the same is expiring in July' 2023 for most of the sites.
- AMC of the same was extended and approved in the 67th NRPC for further 2 years upto July'25 with financial implication and shall be booked under ULDC O&M charges as per the CERC norms. After July'25 there is no support shall be extended by Alcatel (OEM). POWERGRID stated they are not able to maintain the system beyond that AMC expiration. MS-NRPC advised CTU to plan upgradation/ new system in view of expiration of AMC in July'25.
- Grid-India in 23rd NRPC- TeST meeting (held on dtd. 21.09.2023) stated that VOIP system is utmost requirement of Grid-Operation and shall be planned by CTU in advance as there is no support of OEM after July'25.
- During 24th TeST Meeting of NRPC held on 09.02.24, it was agreed in Forum that Hot Line exchange should be considered as part of communication system and CTU shall take up scheme in all RPCs for approval and then in the NCT.
- In this regards CTU discussed the requirements with utilities & various VOIP system suppliers/OEMs and acquired inputs from the utilities in the various meetings of CPM, COM/ TeST/SCADA of all five regions (reference are given in the scheme). For the utilities those have provided inputs we have considered the same in the cost estimate purpose. Further a combined CPM (Communication planning meeting) of all five region was also held on 12.06.2024 to obtain uniformity of features and functions of the VoIP system among all regions. After incorporating the comments of all utilities MoM is issued same is attached at **Annexure-2.14.1**.

- It is proposed that being a Nationwide PAN India project, the total cost of five regions including NLDC and international Exchange (Cross border links) VoIP system shall be put up in all five regions for RPC/s review followed by NCT approval as single Scheme and package PAN India Basis for seamless integration.
- Tentative Region-wise cost breakup of the scheme is given below:

Cost Breakup Between Regions and Central Sector and State Sector

Region	Central Sector (ISTS) (in Crs.)	State Sector (in Crs.)	Total (in Crs.)
NR	₹18.54	₹15.92	₹ 34.46
SR	₹15.3	₹ 12.68	₹ 27.98
WR	₹14.61	₹ 11.74	₹ 26.35
ER	₹12.32	₹ 7.44	**₹ 19.76**
NER	₹16.91	₹5.45	₹ 22.36
National Portion (NLDC Ex, International exchange and Cyber audit)	₹ 6.55	₹ 0	₹ 6.55

Grand Total: ₹ 137.46 Cr. (excluding GST/TAXES)

➢ **Modalities of Cost sharing:**

❖ There are three types of cost involved, Regional Central Sector, National Central Sector, State Sector. The sharing of cost shall be done as per following mechanism between constituents:

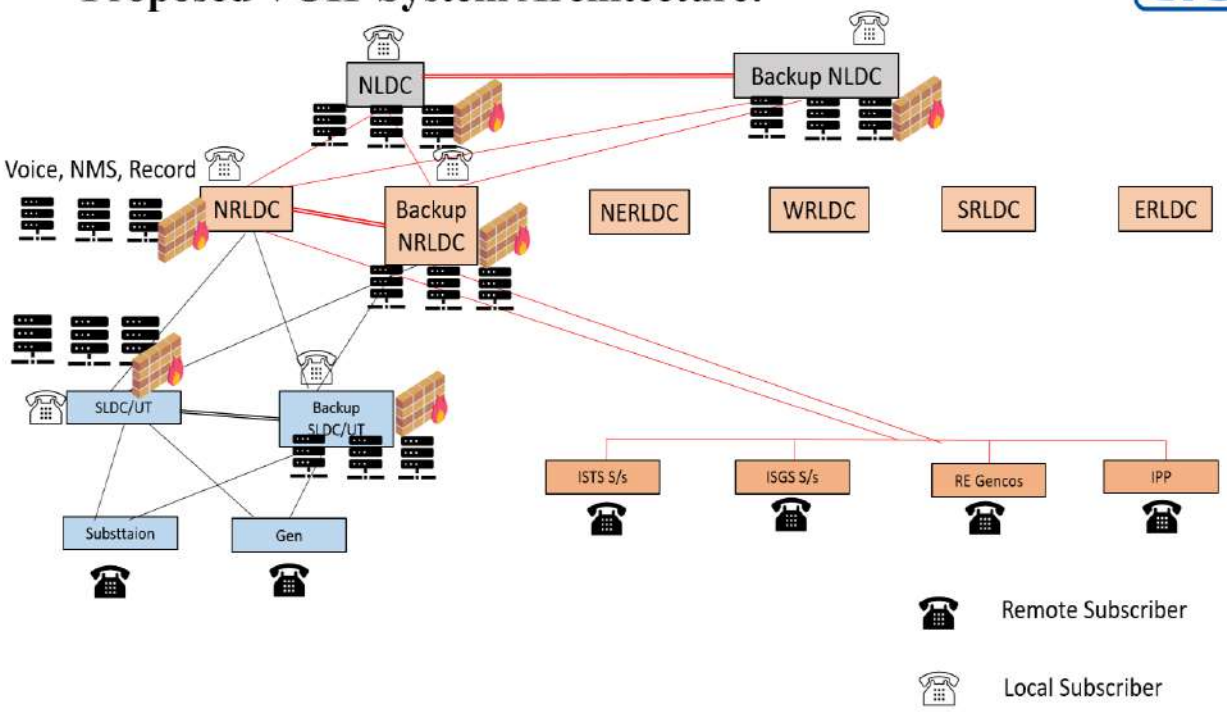
(i) **Regional Central Sector Cost** to be shared by respective region DICs as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 under Regional Component.

(ii) **National Central Sector Cost** to be shared by all regional DICs as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 under National Component.

(iii) **State Sector Cost** shall be shared by respective state/s for their portion as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020.

(iv) **AMC for State Sector** shall be shared by respective states for their portion as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020.

Proposed VOIP System Architecture:



S. No	Present VOIP Exchange	Proposed VOIP system
1	Exchange based system	Server based system
2	Star based architecture and no redundancy between exchanges (SLDC/RLDC/NLDC)	Multiple level of Redundancy kept. At phone level two channels are proposed for main and backup exchanges of SLDCs and RLDCs. For State sector four level Hardware redundancy has been considered as e.g. Main SLDC/ Back Up SLDC/ Main RLDC/ Backup RLDC For Central sector four level Hardware redundancy has been considered as e.g. Main RLDC/ Back Up RLDC/ Main NLDC/ Backup NLDC
3	Proprietary License based system	SIP based open source licenses

4	The IP Phones connected at NLDC, RLDC and SLDC are proprietary IP Phones of Alcatel	IP Phones shall not be proprietary in nature.
5	No PoE Switches	POE switch with dual redundancy considered
6	NA	Firewall are considered for cyber security
7	NA	Cyber Security Audit is considered
8	NA	Provision of video phones at Control Centre for higher officials
9	NA	Sufficient numbers of licenses considered to cater future RE/ ISTS/ ISGS/ IPP and STU substations locations.
10	Recording done at one location	Recording at each Control Centre shall be done locally and later at regular intervals transferred to a backup server for storage and archival

Details of proposed scheme is given at **Annexure-2.14.2.**

Deliberation in 52nd TCC meeting

TCC agreed in-principle to the technical requirement of VOIP communication system as proposed above.

TCC advised CTU to furnish the cost breakup of Eastern region in next TeST Committee Meeting after incorporating requirements of all ER utilities.

TCC referred to ERPC for deliberation.

Deliberation in 52nd ERPC meeting

- *CTU briefed the proposed VOIP system architecture along with regional and state-wise cost breakup, thereby highlighted the necessity of finalization and implementation of the scheme before expiry of the AMC with existing vendor i.e July 2025.Cost w.r.t NLDC exchange and cybersecurity audit of VOIP network to be shared amongst all regions as per CERC regulations.*
- *Powergrid submitted that the OEM is not ready to extend the AMC further. Implementation timeline for newly proposed VOIP connectivity is 24 months from NCT approval.*
- *Member (GO&D),CEA suggested CTU to share such newly proposed schemes with RPCs beforehand for deliberation in concerned sub-committee prior to being placed for final approval.*
- *MS, ERPC expressed his concern for inordinate delay in the part of CTU for placing the matter at ERPC forum in due time.*

❖ ***ERPC decision:***

- *Taking into account the necessity of VOIP communication for real time grid operation, ERPC in-principle consented to the proposed scheme.*
- *CTU was advised to furnish details regarding cost of each components in proposed architecture. In this regard, a special meeting shall be convened to re-examine the BOQ of the scheme and requirements submitted by ERLDC/SLDCs and expedite the implementation. ERPC Secretariat was advised to convene a special meeting at the earliest to resolve the issues.*

- *In case the timely implementation of proposed VOIP doesn't materialize, Powergrid was advised on exploring alternate interim arrangement or further extension of existing vendor to sustain seamless VOIP communication, essential for grid operation.*

B.1.9 Requirement of additional FOTE at various ISTS nodes in ER due to exhaustion of existing capacity-CTU

S. No.	Items	Details
1.	Scope of the scheme	Requirement of additional FOTE for upgradation of capacity(bandwidth) at various Eastern region stations due to exhaustion of existing capacity at these stations is as follows: a)Thirteen(13) numbers of FOTE STM-64 along with amplifiers as required as per **Appendix I**. b) Dismantling of 4 nos. of STM-16 equipment freed after conversion of STM-16 equipment to STM-64 equipment and their transportation, installation, configuration, commissioning, and integration of the same equipment at STM-4 location for the upgradation of capacity of these stations as per **Appendix I.**
2.	Depiction of the scheme on FO Map	NA
3.	Objective / Justification	• In Eastern region, the communication network has STM-16 link capacity at most of the places, however at few links/nodes have STM-4 or lesser capacity. It has been observed that for the few links /nodes, the capacity has been utilised for more than 75 percent. The detail of such nodes/links was intimated by POWERGRID which are having congestion in terms of traffic/bandwidth so that planning for capacity enhancement of the node/link may be done. • **4th Communication Planning meeting (CPM) deliberation**: CEA suggested that the upgradation of capacity may be taken up considering change of technology to MPLS. CTUIL welcomed the suggestion and stated that the MPLS implementation shall take longer time in view of committee report and subsequent approvals. In view of this, out of the above links provided by POWERGRID only links with congestion of approximately 90% and above & few other important stations shall be taken up on priority for upgradation. • Accordingly, the list of nodes in ER with capacity utilisation of approximately 90% and above & few other important stations is enclosed as Appendix-I.

		• As per list, capacity upgradation of four numbers of STM-4 FOTE(Fiber Optic Terminal Equipment) to STM-16 FOTE and thirteen nos. of STM-16 FOTE to STM-64 FOTE is required.
4	Estimated Cost	**Rs. 9.78 crores (approx.) (Nine crores & Seventy Eight lakhs only)**
5.	Implementation time frame	12 months from date of allocation.
6.	Implementation mode	To be implemented by POWERGRID in RTM mode.
7.	Deliberations	The proposed scheme was deliberated in the 3rd and 4th Communication Planning meeting (CPM) of CTUIL held on 26.12.2022 & 27.07.2023 respectively. POWERGRID informed that for existing FOTE capacity cannot be upgraded by upgradation of cards and new FOTE are required at all these locations. i)51st ERPC approved the conversion of 13 nos. STM 16 FOTE to STM 64 FOTE. ii) Advised POWERGRID to explore the feasibility of reusing the surplus STM16 equipment (13 units post STM16 to STM64 conversion) for the conversion of STM4 to STM16 and update the same in the next TeST Meeting of ERPC. POWERGRID informed vide email dtd. 21.02.2024 that they will utilize four no. of STM16 equipment freed from STM16 to STM64 upgradation as mentioned above for capacity upgradation of four no of STM-4. Also, estimated cost for dismantling of STM-16 equipment from existing location and transportation, installation, configuration, integration & commissioning of the same equipment to STM-4 location is Rs 4 lakhs per site. Further, POWERGRID requested in 5th CPM of ER that the time frame for implementation which has been taken as six months in the scheme may be changed to twelve months .Further, scheme involve dismantling of existing equipment and transportation to new location which shall also take considerable time in implementation. POWERGRID also suggested that nine(9) no. STM-16 FOTE left spare after conversion/upgradation of STM-4 and STM-16 FOTEs may be used for O&M purpose and meeting directions for any new upcoming stations. Accordingly, scope of the scheme is modified as follows:

		i) Conversion of 13 nos. STM-16 FOTE to STM-64 FOTE as per enclosed Appendix I. ii)The conversion of STM-4 FOTE to STM-16 FOTE by utilizing four nos. FOTEs freed from upgradation of STM-16 FOTE to STM-64 FOTE. iii)Cost Estimate: Rs. 9.78 crores (approx.) (Nine crores & Seventy Eight lakhs only); Implementation time frame: 12 months from date of allocation This revised scheme post ERPC review shall be put up to NCT for approval.

Appendix-I

Sr No.	Node Name(with approx 90% capacity exhausted)	Upgradation/replacement required	Detail of ard/Equipment required for upgradation	Estimated Cost
1	Kasba	STM 16 to STM 64	Existing Equipment Cannot be upgraded. New STM 64 SDH Equipment Required	74 Lakhs
2	ERLDC	STM 16 to STM 64		74 Lakhs
3	Jeerat	STM 16 to STM 64		74 Lakhs
4	Subhashgram	STM 16 to STM 64		74 Lakhs
5	Farakka	STM 16 to STM 64		74 Lakhs
6	Kahalgaon	STM 16 to STM 64		74 Lakhs
7	Saharsa	STM 16 to STM 64		74 Lakhs
8	Binaguri	STM 16 to STM 64		74 Lakhs
9	Purnea	STM 16 to STM 64		74 Lakhs
10	Kishenganj	STM 16 to STM 64		74 Lakhs
11	Sasaram	STM 16 to STM 64		74 Lakhs
12	AB380 Repeater	STM 16 to STM 64		74 Lakhs
13	Allahabad	STM 16 to STM 64		74 Lakhs
Total Cost for conversion of 13 nos. of STM16 equipment to STM64:A				**9.62 Cr**
14	Gaya	STM 4 to STM 16	Upgradation to be done by utilizing four no of STM16 equipment freed in above list after upgradation to STM64.	4 Lakhs
15	Essar Chandwa	STM 4 to STM 16		4 Lakhs
16	Darbhanga(KPTL)	STM 4 to STM 16		4 Lakhs
17	Arrah	STM 4 to STM 16		4 Lakhs
Total Cost for conversion of 04 nos. of STM4 equipment to STM 16: B				**16 Lakhs**
Total Cost for conversion of 13 nos. of STM16 to STM 64 and 04 nos. of STM4 equipment to STM 16: A+B				**9.78 Cr**

❖ **14th TeST decision:**

- TeST committee accepted the proposal of CTU and POWERGRID ER-II for optimal utilization of remaining 9 nos. of STM-16 after conversion of STM-16 to STM-64 as well as from STM-4 to STM-16 with **cost estimate of Rs. 9.78 crores (approx.)** (Nine crores & Seventy Eight lakhs only)
- Powergrid was requested to execute the work within 9 months from approval of competent authority.

- TeST committee further referred the "revised scheme on additional FOTE requirement at ISTS nodes of ER" to TCC/ERPC meeting for concurrence.

Deliberation in 52nd TCC meeting

TCC agreed on the proposal of requirement of additional FOTE at various nodes of ER with the estimated cost of Rs. 9.78 crores (approx.) (Rupees Nine crores & Seventy-Eight lakhs only) and referred it to ERPC for approval.

ERPC may approve

Deliberation in 52nd ERPC meeting

❖ ***ERPC decision:***

- *ERPC approved the proposal with cost implications as consented by TCC.*
- *Powergrid was advised for implementation within a timeframe of 12 months from the date of work allocation.*

B.1.10 Establishment of State-of-the-Art National Unified Network Management System (N-UNMS) in main & backup configuration integrating all the Regional UNMS- for ISTS Communication System - CTU

Background:

- In line with CERC, CEA Regulations and RPC approvals, the Regional UNMS scheme integrating ISTS communication system along with State sector network, is being deployed in each region.
- Now, all five (5) Regional UNMS servers shall be integrated in the next layer to the National UNMS server integrating all the regional ones; in main & backup configuration.
- This will facilitate centralized reporting/collection of PAN India communication Network of ISTS as well as State level system including cross border links at National Level. The scope & technical aspect of the National UNMS scheme shall be broadly in line with Technical Specification of Regional UNMS while including features for National aspects, as per the deliberations held in all RPC/NCT forums.

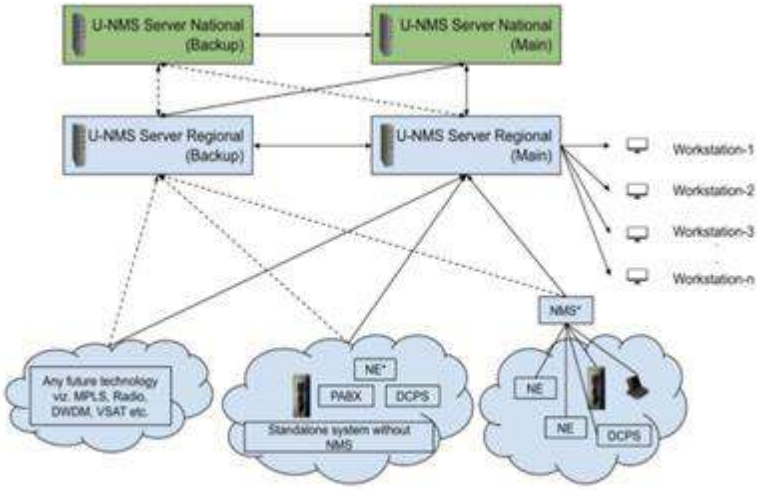
Summary of relevant approvals in various forums:

- The scheme for National UNMS was deliberated in all RPC forums earlier during deliberation of respective Regional UNMS projects.
- Further, the National UNMS scheme was also deliberated in the 14th NPC meeting held on 03.02.2024 in Bangalore.
- It is to be noted that the agenda of N-UNMS has already been approved in NRPC, WRPC and SRPC.

❖

Sl. No.	Items	Details
1.	Name of Scheme	Establishment of State-of- the-Art National Unified Network Management System (N-UNMS) in main & backup configuration integrating all the regional UNMSs.

2.	Scope of the scheme	● Supply and Installation of Main & Backup National-UNMS system hardware and software along with associated items at respective UNMS Centres. The new system shall be deployed in such a way that the operation of the existing systems should not be disturbed. ● Supply and Installation of hardware & software for workstation, network switches, firewall & IDPS, Printer, Furniture etc. ● Integration of existing Regional UNMS (In Main & Backup config) with Main and Back up N-UNMS System. One channel of each Regional UNMS to Main and Back up UNMS centre shall be used for redundancy of respective UNMS Centres. ● Development of complete Database, displays and reports either from scratch or by extracting existing database, displays and reports, also for creating integrated national communication system overview and inter regional system details for the modules. ● Supply of all FCAPS features with advance planning tool. ● Import and Adaption of database & displays made for Regional UNMS system including import of historical data stored in existing servers for integration in new system also for creating national dashboard and inter regional system dashboards for the required system details. ● Auxiliary Power Supply System Comprising of UPS with Battery set along with all necessary distribution board. ● Integration & Testing with any new UNMS coming up during implementation and AMC period of this Project. ● Supply of Spares identified under AMC along with main items to meet the contingency during installation period and during AMC period. ● All cabling, wiring, and interconnections to the items being supplied and to be integrated including power supply. ● The project scope shall include customization of its database, such as configuration of database, scan period and all other database parameters required to integrate existing system successfully. ● Additional Hardware, software and services necessary to ensure compatibility with existing equipment. ● Auditing of Cyber Security implementation by CERT-In listed Auditors during AMC & ensuring its compliance.

		● Training of personnel and Users of the System. ● Comprehensive Maintenance of the supplied system for seven (7) years including one (1) year defect liability period as per specification, including integration with future UNMS (if any), Database configurations, Maintaining Spare inventory etc. ● Integration with third party Applications: The N-UNMS Systems being supplied shall have provision to exchange data with the existing and or to be purchased third party applications of in standard formats like ODBC, OPC & XML etc. ● GI/Aluminium cable trays/trace ways with covers shall be supplied in the project for laying cables so that cable can be protected from rodents. These cable trays/trace ways shall be screwed/ fixed on the floor. ● The system shall have remote console along with connectivity and shall be under AMC for; CEA- PCD & NPC Division, NLDC- Grid India, CTUIL, GA&C- POWERGRID. Additionally, UNMS control room in CTUIL shall be equipped with a 85 Inch TV/Monitor.
3.	Architecture	 **Proposed U-NMS Topology for Data Flow (Typical)**
4.	Objective/ Justification	☐ In line with CERC, CEA Regulations and RPC approvals, the Regional UNMS scheme integrating ISTS communication system along with State sector network, is being deployed in each region. Now, all five (5) Regional UNMS servers shall be integrated in the next layer to the National UNMs server integrating all the regional ones; in main & backup configuration. This will facilitate centralized reporting/collection of PAN India communication Network of ISTS as well as Intra State level system including cross border links at National Level. The scope & technical aspect of the

		National UNMS scheme shall be broadly in line with Technical Specification of Regional UNMS while including features for National aspects, as per the deliberations held in all RPC/NCT forums. ☐ The proposed National UNMS (N-UNMS) System shall provide the multi-tiered solution for Network Management System Functions with modules such as Network Resource/Discovery/Inventory, configuration management, Planning, Fault/Alarm Management, Performance Management, Trouble Ticket with application security, reporting, simulation, Artificial Intelligence & Analytics etc. and common dashboards also for integrated national network and for inter-regional systems including cross border. ☐ The N-UNMS shall also provide a Pan India visualization of power system communication network. This shall facilitate Centralized Supervision and Quick Fault detection and restoration for ISTS Communications systems for National, Inter-Regional and Cross-Border communication system and the network. The N-UNMS shall additionally have advanced planning tool having features for Long, Medium & Short-Term Planning for preparing planning projections for ISTS Communication System (for National/ Regional/ State) for 2 years, 5 years and 10 years. ☐ The proposal of N-UNMS was deliberated in all the RPCs during approval of respective Regional UNMS scheme and the in-principle technical approval has been given by the forum. The relevant extract of 15th NCT meeting is also attached as **Annexure-2.16.**
5.	Estimated Cost	**Rs. 101* Crores.** (approx.) and **19.07 Crores.** AMC charges for 7 years. The cost of national UNMS shall be **recovered on POC basis.** *Cost has been derived from awarded package of regional UNMS Scheme
6.	Implementation timeframe	**24 Months** from date of project allocation based on NCT approval.
7.	Implementation Mode	Through **RTM** to **POWERGRID**
8.	Location of National UNMS	Main UNMS at **NLDC**, Katwaria Sarai, and Backup UNMS at **ERLDC**, Kolkata

Deliberation in 52nd TCC meeting

TCC in principally agreed to the need of National UNMS project

TCC advised CTU to furnish the cost breakup of the National NMS project having detailed scope along with cost allocation for Eastern region.

This was referred to ERPC for further deliberation.

Deliberation in 52nd ERPC meeting

- *CTU explained the utility of the proposed N-UNMS project i.r.o availability computation of inter-regional as well as trans-national links and holistic overview of integrated communication system deployed in power sector.*

❖ ***ERPC decision:***

- *ERPC opined to convene a special meeting in presence of CTU and all ER states to finalize the modalities of cost sharing among ER constituents.*
- *ERPC accorded in-principle approval to the National UNMS project.*
- *CTU was advised to share detailed cost breakup i.r.o proposed N-UNMS project (as per the scope) along with share of Eastern region in the same.*
- *CTU was also advised to share the implementation plan of N-UNMS with all RPCs once it gets approved in NCT forum.*

B.1.11 Scheduling of power by GRIDCO from IBEUL (Unit #1): JSWEL.

As per PPA dated 04.01.2011 and MoU dated 24.11.2023, GRIDCO has right to purchase 12% of power sent out from the JSWEL power project (Unit#1 339.6 MW). Relevant extract of the PPA & MoU clauses are reproduced below:

PPA dated 04.01.2011

2.2. Entitlement of Power to GR/OCO:

2.2.1 GRIDCO shall at all times have the right on behalf of Government of Odisha to receive from the Station 14 (Fourteen) percent of the power sent out from the thermal power station (s) if Coal B/ock(s) is allocated with the State of Odisha. Otherwise, ***GRIDCO shall receive 12 (Twelve) percent of the power sent out from*** *the thermal power station(s). /BEUL shall duly incorporate a term in the agreements with other beneficiaries for sale of electricity or capacity pertaining to the Station, confirming the above rights of GR/OCO.*

MoU dated 24.11.2023:

1 Sharing of Power:

ii A nominated agency(s) authorised by the State Government shall have the ***right to purchase 12%ofpower sent out from*** *the Thermal Power Plant at Variable Cost /Energy Charge Rate (ECR) from the IPP who have been allocated coal blocks within the State . .*

Despite of repeated request vide letters and emails, State Load Despatch Centre (SLDC), Odisha is continuing to punch schedule considering 12% of the Unit#1 capacity i.e. 38.205 MW instead of 12% of the power sent out from the Unit#1 which is being also accepted by ERLDC.

The issue was deliberated in 51st CCM in which Commercial Committee was of the view that the issue being legal and bilateral in nature, is beyond the scope of this Committee and may be resolved by the concerned parties mutually.

JSWEL vide letter dated 22.08.2024 submitted that even after various communications and discussions with GRIDCO, the issue is still persisting till date. On account of wrong submission of schedule by Odisha SLDC, excess power is being drawn by GRIDCO against their entitlement. They requested that the issue may be discussed in TCC/ERPC Meeting.

TCC may discuss.

Deliberation in 52nd TCC meeting

Representative from IBEUL briefed forum about the issue and stated that IBEUL is submitting its block wise declared capacity for 'D' day as per provisions of IEGC 2023 to GRIDCO, Odisha SLDC and in WBES portal on 'D-1' day.

However, SLDC Odisha is not revising the schedule on real time basis and punching a constant schedule of 38.205 MW i.e. 12% of the net installed capacity of IBEUL Unit#1. This is impacting IBEUL as it is facing DSM penalty on account of excess energy drawn by GRIDCO.

After detailed deliberation, the followings were agreed upon:

- *IBEUL to submit its block wise declared capacity considering GRIDCO's entitlement as per the applicable provisions of Clause 49 (1) (Procedure for Scheduling and Despatch For Inter-State Transaction) of the IEGC 2023.*
- *SLDC Odisha to consider the scheduled generation of IBEUL from WBES software in real time and revise the schedule as per the Clause 49 (4) (Procedure for Scheduling and Despatch for Inter-State Transaction) of the IEGC 2023.*
- *GRIDCO agreed that SLDC, Odisha should consider real time scheduled generation of IBEUL for scheduling GRIDCO's entitlement.*

ERPC may discuss.

Deliberation in 52nd ERPC meeting

OPTCL and GRIDCO apprised that the discrepancy in scheduling of power has been resolved bilaterally with IBEUL. IBEUL also endorsed the same.

ERPC acknowledged and noted this outcome.

B.1.12 Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme "5 min Interface Energy Meter along with AMR system"-For all five regions as PAN India level:CTU

S. No.	Items	Details
1.	Name of Scheme	Supply and installation of AMR compatible 5 min Interface Energy Meter along with AMR Systems- For all five regions NER, ER, NR, WR & SR.as PAN India.
2.	Scope of the scheme	• Supply of AMR compatible 5 min Interface Energy Meters for all ISTS metering points of All five regions,

		• Installation of new AMR compatible IEMs by replacing existing meters in case of existing points and for newly added metering points. (Replacement work & New Installation work) • Supply and installation of AMR systems in dual LAN configuration at central location along with DCU, Ethernet Switch and other accessories at substation end and AMR software along with servers, consoles, historian software, database, printer, firewall, furniture, etc. at RLDC end to receive 5 min load profile data in auto mode. • Provision of streaming online instantaneous MW data at a user configurable rate (minimum 1 min) via AMR system for viewing purpose. • AMC includes Operations & Maintenance work (including data processing & report generation from AMR) for complete AMR system for 7 years. • Online Data storage of Raw Data & processed data for three years. ☐ The complete scope of IEM & AMR scheme shall be broadly in line with the Technical Specification (Section 1 & 2 of Part 1) circulated by NPC Division, CEA vide letter dtd. 6th July 2022. ☐ ***Note: MDP system which is also part of the above TS mentioned shall be implemented by respective RLDC and would match the timeline schedule with IEM & AMR project.***
3.	Conceptual Architecture of AMR connectivity of ISTS Meters	**Appendix-I**

4.	Objective/ Justification	• For Indian Power system, commercial settlements of energy generation and consumption are being computed through Availability Based Tariff (ABT) and Deviation Settlement Mechanism (DSM) which are in vogue for energy accounting. Availability Based Tariff was implemented in India in 2002/2003 considering the settlement period as 15-min. • Government of India (GoI) has set a Renewable Energy (RE) target of 500 GW by 2030. In the last few years approximately since a decade, the need for implementing 5-minute meters along with AMR system for regional energy accounting and settlement at the Inter State level has been discussed and deliberated in various apex level forums & Committees. • A PAN India pilot project on 5-minute metering was implemented as per the directive from Hon'ble CERC in 2018. A report on the pilot project covering implementation aspects, challenges and suggested way forward has been submitted by POSOCO for perusal of the Hon'ble Commission • This issue was discussed in OCC/TCC/RPC meetings at regional level and it was discussed to replace the existing SEMs (15-min Block) with AMR compatible Interface Energy Meters (5-min Block) and implementation of Automated Meter Reading (AMR) and Meter Data Processing (MDP) system for efficient and faster accounting. Moreover, there is a need expressed by States to get streaming online instantaneous MW data at a user configurable rate (minimum 1 min) at SLDCs via AMR system for viewing purpose to manage their drawl. • A Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. • This Technical specification includes: • All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time Block

		data to 15 min Time block data (in line with regulations). • Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose only. • CTUIL sent a letter dtd. 27.06.2023 to CERC stating that nodal agency for AMR system implementation may be identified. CTUIL also informed NPC division, CEA vide letter dtd. 24.07. that JC TS calls for 5 min Time block recording by ISTS IEMs whereas as per CEA metering regulation it is 15 min time block. • In this regard, Grid-India NLDC specified to NPC, CEA that 5-minute time block could be considered for procurement of new ISTS IEM, AMR & MDP. Subsequently NPC CEA, coordinated a joint meeting amongst the stakeholders comprising of CERC, Grid India (NLDC, RLDCs) & CTUIL, chaired by CEA Regulatory division dated 18th August'23 to check the feasibility for amendment of the CEA metering regulation in line with the ongoing developments and requirements of 5 min time block recording in IEMs. • In view of the above-mentioned system requirement of 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above-mentioned project proposal.
5.	Deliberations in RPCs	The PAN India scheme was discussed in all the RPCs and the status is as below: **50th SRPC:** In-principle approval accorded. **49th WRPC:** In-principle approval accorded with a request to CTU to seek PSDF funding which may be available in the next financial year. **74th NRPC:** Approval accorded. **26th NERPC:** In-principal approval accorded with a request to CTU to seek PSDF funding for the same for NER as special case.
6.	Estimated DPR Cost	**Rs. 444.87 Cr.** excluding AMC & **Rs 152.62 Cr.** for 7 yr AMC *Costing to be updated considering latest no. of meters and locations at the time of tendering.

7.	Implementation timeframe	Approx. 24 months from gazette Notification.
8.	Implementation Mode	To be deliberated

Earlier 90% of the project cost was allocated for PSDF grant. But grant for the FY 24-25 is not available as per MoP order. **Accordingly, the modality of funding is also to be deliberated.**

Deliberation in 52nd TCC meeting

TCC in principally consented to the requirement of 5 min IEMs with AMR, however the exact requirement of meters needs to be worked out on consultation at ER OCC meeting.

TCC opined:

- CTU needs to re-examine the requirement of meters in Eastern region in view of compliance of the existing meters with 5 min data recording to latest technical specifications and also furnish the cost breakup of each metering point along with AMR.
- Since AMR is already operational in ER, final cost may be arrived at by considering only those locations where AMR is yet to be implemented.

TCC referred to ERPC for further deliberation.

Deliberation in 52nd ERPC meeting

Member (GO &D),CEA apprised:

- *Need for common technical specifications on pan-India basis for seamless procurement, replacement and maintaining inventory of the meters.*
- *Execution of the project on pan-India basis will cut down the cost incurred as well as maintenance of extensive inventory of meters.*
- *Meters envisaged in the upcoming AMR project shall have provision for both 5 min as well as 15 min data recording.*

❖ ***ERPC decision:***

- *CTU was advised to review the quantity of meters proposed for installation and thereby submit revised BOQ particularly for Eastern region with appropriate cost justification. The detailed cost breakup should be furnished factoring in the existence of AMR compatible IEMs in major portion of Eastern region.*
- *ERPC opined that existing AMR integrated meters in ER possessing capability of energy recording at 5 min interval shall not be replaced in implementation phase.*
- *CTU was also advised to explore minimization of estimated capital cost prior to placing for NCT approval.*
- *ERPC opined to convene a special meeting.*

B.1.13 Third party protection audit for critical substations

- As per IEGC 2023 Clause 15.2, “All users shall also conduct third party protection audit of each sub-station at 220 kV and above (132 kV and above in NER) once in five years or earlier as advised by the respective RPC.”
- Further, IEGC 2023 Clause 15.3 states that “After analysis of any event, each RPC shall identify a list of substations / and generating stations where third-party protection audit is required to be carried out and accordingly advise the respective users to complete third party audit within three months.”
- In 138th PCC Meeting, ERPC secretariat informed that as per SOP for Third Party Protection Audit finalized by NPC, Third Party Protection Audit shall be carried out by the third party designated agencies in line with the IEGC Regulations 2023 or by the audit teams constituted by RPCs with the members from other states (at least two) who opt for the RPC coordinated third party protection audit.
- PCC advised all utilities to submit plan for third party protection audit of their substations within a month to ERPC along with their choice to carry out protection audit either through ERPC coordinated third party protection audit or by third party designated agencies.
- Member Secretary, ERPC informed that after receiving audit plan from all utilities, ERPC will communicate to concerned utilities the substations for which protection audit can be done through the audit team of ERPC.
- He further proposed that ERPC Secretariat would identify critical substations in consultation with ERLDC for which the protection audit will be carried out by ERPC along with the members from ERLDC & other utilities with help of third party agencies (to be hired by ERPC).
- PCC agreed with the proposal made by Member Secretary, ERPC.
- It is proposed that for FY 2024-25, third party protection audit of around 7 nos is proposed to be carried out by ERPC for which **Rs 30-35 lakh** will be required for expenses involved in hiring third party agency, expenses in boarding, lodging and travel etc.

Deliberation in 52nd TCC meeting

TCC agreed with the proposal of outsourcing services through an agency to assist in carrying out third party protection audit of critical substations of ER and its monitoring of implementation with an estimated cost of Rs. 35 lakhs and referred it to ERPC for approval. The substations facing frequent protection related issues shall be chosen on priority basis.

TCC opined that ERPC Secretariat may closely monitor the implementation of recommendations of protection audit.

Deliberation in 52nd ERPC meeting

ERPC approved expenditure of Rs. 35 lakhs (including taxes) for hiring of outsourcing services through an agency to assist in carrying out third party protection audit in some of the critical substations of ER in FY 2024-25.

B.1.14 Modification in the capacity of proposed 500MVA ICT (to be installed in place of 3x105 MVA ICT at Jeypore S/S under ADD-CAP 2019-24 block) to 315 MVA ICT

- Replacement with upgradation of 400/220kV, 3x105 MVA BHEL make ICT-1 with 500MVA ICT under the JTTS ADD-CAP 2019-24 block was approved in the 45th ERPC meeting.

Subsequently LOA have been issued to M/s Toshiba dtd. 17.03.2023 for manufacture and supply of the new ICT.

- M/s Toshiba has informed vide their mail dtd: 08/03/2024 that they carried out route survey of six different routes for transportation, but no feasible route has been identified by the transporter for the smooth transportation of 500MVA ICT to Jeypore S/S. However, they mentioned that transportation of 315 MVA ICT is partially feasible at Site. Copy of mail communication and route survey reports are attached herewith for reference (**Annex B.2.2**).
- Meanwhile, it is pertinent here to mention that another spare 315 MVA ICT is under transit from M/s Toshiba factory, Hyderabad to Rourkela S/S.
- In view of above difficulties in transportation and as the proposed ICT at Jeypore S/S is to be commissioned under ADD-CAP 2019-24 block, the only possibility is to install a 315 MVA ICT in place of earlier approved 500MVA ICT at Jeypore S/S. This can be done by interchanging the procured 500MVA ICT for Jeypore & 315 MVA ICT for Rourkela SS.
- Therefore, it is requested to accord approval for reduction of capacity of 500MVA ICT to 315MVA ICT at Jeypore S/S for commissioning under ADD-CAP 2019-24 block.

As per deliberation in the **217th OCC** meeting:

- The Representative of Powergrid Odisha apprised the forum:
- Non-feasibility of transportation of 500MVA ICT which was supposed to be installed in place of 3*105MVA ICT at Jeypore S/S. Several constraints were highlighted in the detailed route survey carried out in six different routes.
- On the other hand, transportation of 315 MVA ICT was found feasible as per the route survey.
- Accordingly, 315 MVA ICT has been transported to Jeypore S/S. **Now the ICT is ready for commissioning after completion of necessary foundation works by end of August 2024**.

OCC Decision:

- OCC took serious view on transportation of the said 315 MVA ICT by PowerGrid Odisha without prior consent of OCC Forum & advised Powergrid to refrain from such practices in future.
  ERLDC may issue FTC as and when requested by Powergrid Odisha.
- OCC referred the matter to TCC for information.

The modification in capacity of ICT from 500 MVA to 315 MVA is put before TCC for post-facto approval.

Deliberation in 52nd TCC meeting

In view of practical difficulties in transportation, TCC agreed to the modification in capacity of Jeypore ICT from earlier approved capacity of 500 MVA to 315 MVA.

TCC referred to ERPC for according post-facto approval.

ERPC may approve.

Deliberation in 52nd ERPC meeting

ERPC accorded post-facto approval for installation of 315 MVA ICT at Jeypore S/S instead of earlier approved capacity of 500 MVA.

B.1.15 Recovery of Outstanding Dues from Government of Sikkim– WBSEDCL.

➢ Background and Context:

- The Energy and Power Department of the Government of Sikkim has an agreement with WBSEDCL for the purchase of power at a tariff based on the generation cost of the Rammam Hydel project operated by WBSEDCL.
- In line with this arrangement, the Government of Sikkim has been drawing power from WBSEDCL on a regular basis but has been reluctant to settle the bills since 2017.
- Additionally, WBSEDCL previously purchased power from the Government of Sikkim on a consumer basis until June 2023. The volume of power purchased by WBSEDCL was significantly less compared to the amount of power sold to the Government of Sikkim.
- After accounting for adjustments related to purchases and sales, as well as surprise payments made by Sikkim for November and December 2021(amounting to Rs. 1.087Crs), the current outstanding dues as on 31.07.2024 from the Government of Sikkim amount to approximately Rs. 94.90 Crores. This figure includes a Late Payment Surcharge (LPSC) of Rs. 42.02 Crores.

The issue of the outstanding dues was raised in 42nd Commercial Committee Meeting & in 43rd TCC & ERPC Meetings however, the matter remains unresolved till date.

Till date WBSEDCL has made several attempts to resolve this issue of outstanding but has found

no satisfactory remedy. **WBSEDCL reached out to PFC** also for assistance in resolving this outstanding issue, however, **PFC i**ndicated that they are unable to help, citing limitations in the **PRAPTI** portal. In view of the prolonged nature of this issue and the substantial outstanding amount, WBSEDCL is placing the following proposal for consideration of the forum.

1. Intervention of this platform towards prompt realisation of outstanding dues of WBSEDCL from Sikkim and if necessary, take up the issue with higher authorities such as CEA and MOP, to facilitate prompt payment of the outstanding dues to WBSEDCL.

2. Initiative of this platform to address the issue of realisation of outstanding dues of DISCOMs' from other state/ discom/ generator (as applicable) utilize the **PRAPTI** portal through intervention of MOP (if necessary), ensuring a more comprehensive and inclusive portal.

WBSEDCL may explain. Sikkim may respond.

Deliberation in 52nd TCC meeting

WBSEDCL intimated about the huge outstanding dues from Sikkim and requested Sikkim for early clearance of the pending dues. Further he submitted that provision may be incorporated in PRAPTI portal of MoP for realisation of outstanding dues of DISCOMs' from other state/ discom/ generator (as applicable).
TCC opined that the matter of provision in PRAPTI portal needs to be taken up at appropriate level. TCC referred the issue to ERPC for discussion.

Deliberation in 52nd ERPC meeting

➢ *WBSEDCL submitted :*

- *Seamless supply of power to the state of Sikkim is being ensured by WBSEDCL (Rammam hydel project) as per the agreement between Governor WB and Governor of Sikkim.*
- *Outstanding dues against the power drawn is pending from Sikkim since 2018.*
- *All possible avenues of recovery of the dues had been explored in a series of communication to Govt of Sikkim.*

➢ *Sikkim representative assured that the dues shall be cleared off at the earliest after approval of finance dept. of Govt of Sikkim.*

❖ ***ERPC decision:***

- *ERPC advised Sikkim to expedite clearance of the outstanding dues to WBSEDCL at the earliest.*
- *ERPC opined that Praapti portal , as of now, which is being utilized only by the Central sector utilities should also be accessible to state sector utilities for raising grievance against clearance of outstanding dues.*

B.1.16 Strengthening of SLDCs

Following to the deliberations in 50th ERPC meeting at Lonavala held on 11.08.2023, Manpower Strengthening drive was carried out by SLDCs in line the committee recommendation. Further, a communication was sent on 03.05.2024 by ERLDC to heads of SLDCs regarding improvement in manpower strength across SLDCs. All SLDCs shared the status of current manpower.

Present Status of Manpower across all SLDCs:

Name of the SLDCs	Committee's 1st Meeting dtd. 10.02.23	Manpower details received from State as on 10.05.24	Sanctioned Manpower (To be implemented)
Bihar	46	53	70
Jharkhand	22	24	-
Odisha	42	42	75
WB	39	54	57
Sikkim	21	24	-
DVC	**25**	**31**	**64**

To handle the fast-track energy transition, New IEGC has mandated various additional work and compliances.

Further, age old SCADA system is being replaced with new SCADA which requires additional manpower. The SCADA/EMS project is of high importance as the entire operation of SLDCs are dependent on this major infrastructure.New SCADA/EMS packages for SLDCs and ERLDC are being taken up for implementation by M/s GE T&D India ltd.Some tools/applications(RTCA,optimal power flow, short circuit analysis,etc) are very vital, and it is required to make them completely functional at SLDCs/ERLDC during this project execution/implementation.

There has already been an increase in manpower at all SLDCs and further strengthening measures such as an increase of sanctioned posts, recruitments etc. are in pipeline. However, the same may be expedited to meet the minimum requirement as per CABIL report.

ERLDC may update. ERPC may deliberate.

Deliberation in 52nd ERPC meeting

➢ *ERLDC highlighted :*

- *Existing and additional manpower required i.r.o individual SLDCs. Inadequate manpower is adversely affecting various responsibilities of SLDCs as entrusted in IEGC 2023 i.e timely demand forecasting, post-despatch analysis, tripping analysis,operational planning,etc.*
- *Decision taken for enhancement of SLDC manpower as per CABIL report adopted in 49th ERPC*

forum.

❖ ***ERPC decision:***

ERPC agreed with the proposal and advised all States to deploy sufficient manpower at respective SLDCs for smooth execution of all entrusted responsibilities.

B.1.17 SOP regarding Procurement and Installation of ISTS Interface Energy Meter (IEM):- CTU

As per CEA metering regulations, 2006 and its amendments thereafter, all interface meters installed at the points of interconnection with Inter-State Transmission System (ISTS) for the purpose of electricity accounting and billing shall be owned by CTU. As per IEGC, 2023, CTU shall be responsible for procurement and installation of Interface Energy Meters and responsible for replacement of faulty meters.

In line with the above and to maintain uniformity as PAN India, a draft 'SOP regarding Procurement & Installation of ISTS Interface Energy Meter (IEM)' was prepared by CTUIL which was floated on CTUIL website on 02.05.2024 for comments/feedback from various stakeholders. Same was also shared with all RLDCs and Member Secretary of all RPCs vide e-mail dated 15.05.2024.

Comments were received from BBMB, SRLDC, SRPC, SLDC JSEB, Ranchi and POWERGRID which were suitably incorporated in the final SOP.

The SOP was attached at **Annexure-2.17**

The SOP is submitted for information and adoption by ERPC

52nd TCC noted and referred to ERPC for adoption.

ERPC may note.

Deliberation in 52nd ERPC meeting

❖ ***ERPC decision:***

- *ERPC raised concern on finalization of standardized rates for supply and installation of IEMs jointly by CTU and Powergrid under clause no: D.1 of the SOP (attached at **Annex-2.17)***
- *All states were advised to go through the SOP and submit their comments, if any.*

B.1.18 Default details of constituents pertaining to Deviation, Reactive, Fees and Charges, Opening of LC and Interest due to delayed payment of deviation charges- ERLDC

A. Default details of constituents pertaining to Deviation, Reactive, Fees and Charges.

The details of major defaulters as on 21.08.2024 considering the ERPC bills dated 13/08/24 (Wk-29/07/24 to 04/08/24) for DSM charges, Reactive charges and RLDC Fee and charges are tabulated below-

Jharkhand:

	JBVNL
DSM (in Cr)	₹ 124.33 Cr /-
Reactive	Nil
Fee & Charges	Nil
LC for DSM	No Valid LC available

Due date of expiry of LC	NA
Reconciliation of Statements of	**DSM:** Pending from Q2 of FY 2020-21
	Reactive: Pending from Q1 of FY 2019-20
	FnC: Pending from Q1 of FY 2021-22

Bihar:

	Bihar
DSM (in Cr)	₹ 153.01 Cr /-
Reactive	Nil
Fee & Charges	Nil
LC for DSM	No Valid LC available
Due date of expiry of LC	NA
Reconciliation of Statements of	**DSM:** Pending from Q1 of FY 2023-24
	Reactive: Pending from Q1 of FY 2023-24
	FnC: Pending from Q1 of FY 2023-24

Sikkim:

	Sikkim
DSM (in Cr)	**₹ 29.91 Cr /-**
Reactive	**Nil**
Fee & Charges	**5.9 Lakhs/-**
LC for DSM	**No Valid LC available**
Due date of expiry of LC	**NA**
Reconciliation of Statements of	**DSM: Pending from Q2 of FY 2019-20** **Reactive: Pending from Q1 of FY 2019-20** **FnC: Pending from Q1 of FY 2021-22**

The Table below presents information regarding the rise in outstanding amounts pertaining to DSM, following the 51st TCC, which was held on 11.01.24, below:

Further, the details of other pool members are enclosed as **Annexure 2.42.1 and Annexure 2.42.2.**

CCM advised all the constituents to clear the outstanding dues at the earliest.

Entity	Outstanding as on 04.01.24 (as per 51st TCC)	Amount Receivable by Pool after 04.01.24 till 21.08.24	Amount Received by pool after 04.01.24 till 21.08.24	Present outstanding as on 21.08.24
Bihar	29.42	197.59	74	153.01
Jharkhand	54.54	128.3	58.51	124.33
Sikkim	22.95	8.46	1.5	29.91

B. Opening of LC by ER Constituents for DSM Payments.

As per regulation 10.2 of **CERC(DSM) Regulations 2022**:

Quote

Any regional entity which at any time during the previous financial year fails to make payment of charges for deviation within the time specified in these regulations, shall be required to open a Letter of Credit (LC) equal to 110% of their average payable weekly liability for deviations in the previous financial year in favour of the concerned Regional Load Despatch Centre within a fortnight from the start of the current financial year.

Unquote

The details of LC amount required to be opened, as per ERLDC letter dated 29/04/2024 (and reminder dated 26/06/2024), for default in FY 2023-24 by ER constituents is given in table below:

Sl No	ER Constituents	LC Amount (110% of Average weekly Deviation Charge liability) in ₹	Remarks
1	BSPTCL	₹ 3,70,50,927	No Valid LC
2	JUVNL	₹ 2,65,67,573	No Valid LC
3	DVC	₹ 2,03,05,615	No Valid LC
4	Sikkim	₹ 55,16,800	No Valid LC
5	NTPC	₹ 8,14,71,412	No Valid LC
6	CHUZACHEN	₹ 3,91,733	No Valid LC
7	GMR	₹ 5,27,184	No Valid LC
8	NVVN-Nepal	₹ 1,96,45,399	No Valid LC
9	BRBCL	₹ 17,88,965	No Valid LC
10	ECR	₹ 7,40,236	No Valid LC

11	IBEUL	₹ 27,67,148	No Valid LC
12	Tashiding	₹ 42,887	No Valid LC

Further, the details of other pool members are enclosed as **Annexure-2.42.3.**

Concerned Utilities may update.

Deliberation in 52nd ERPC meeting

❖ ***ERPC decision:***

- *ERPC advised all concerned constituents to clear outstanding dues (as detailed above) at the earliest.*
- *ERPC advised all the constituents to open the requisite amount of LC at the earliest as per prevailing CERC regulation.*

B.2 Membership of ERPC on annual basis for the FY 2024-25.

Membership of Electricity Trader:

- As per GoI Resolution on ERPC, one electricity trader is eligible to become member of ERPC representing electricity traders in the region on yearly basis. As per existing practice, CEA recommends the name of the trader.
- In this context, it is to inform that for the FY-2024-25, CEA has notified Adani Enterprises Ltd.as a member on account of membership of Electricity Trader for Eastern Region.

Members may note.

Deliberation in 52nd ERPC meeting

ERPC noted.

Membership of Private Transmission Licensee:

- As per GoI Resolution on ERPC, one private transmission licensee is eligible to become member of ERPC in the region on yearly basis.
- On receipt of the recommendation from CEA, it is to inform that for the FY-2024-25, DMTCL as a member on account of membership of Private Transmission licensee for Eastern Region.

Members may note.

Deliberation in 52nd ERPC meeting

ERPC noted.

B.3 Contribution to ERPC Establishment Fund for The FY 2024-25 by Members.

- For the FY 2023-24 contribution of Rs.15 Lakh per member towards ERPC Establishment fund and Rs 1 lakh for ERPC Fund was approved by ERPC. It is proposed to keep the contribution

unchanged for the FY 2024-25 and total amount of Rs 16 Lakh may be approved as Membership Contribution. Same may be deposited to below mentioned account –

- 'ERPC Establishment Fund' under A/c no. 6512022941 at Indian Bank, Tollygunge.

- ERPC shall issue a Demand Note to the respective Members which may be deposited to the ERPC Establishment Fund within 3 Months from the issue of the note. After depositing the amount member organising shall intimate the same to ERPC secretariat within 15 days positively mentioning transaction numbers etc.

Members may approve contribution of Rs.16 Lakh per member for the FY 2024-25.

Deliberation in 52nd ERPC meeting

ERPC approved contribution of Rs.16 lakh per member for the FY 2024-25.

B.4 Contribution to ERPC Establishment Fund for the FY 2024-25 by Non-Member Participant.

- On request of various utilities, in the 33rd ERPC meeting held on 25th June 2016, it was decided that 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. Same was subsequently amended during 43rd ERPC meeting and it was decided that 50% of the contribution amount of the members of ERPC towards ERPC establishment Fund and 100% of the contribution amount of the members of ERPC towards ERPC Fund ERPC to be deposited by Non-Member participants.
- For the FY 2023-24 contribution of Rs.7.5 Lakh per non-member towards ERPC Establishment fund and Rs 1 lakh for ERPC Fund was approved by ERPC. It is proposed that 50% of the contribution amount of Members i.e Rs 8 Lakh may be approved for Non-Member participation Contribution. Same may be deposited to below mentioned account –
- 'ERPC Establishment Fund' under A/c no. 6512022941 at Indian Bank, Tollygunge.
- ERPC shall issue a Demand Note to the respective Non-Member participant which may be deposited to the ERPC Establishment Fund within 3 Months from the issue of the note. After depositing the amount member organising shall intimate the same to ERPC secretariat within 15 days positively mentioning transaction numbers etc.

  Members may approve contribution of Rs.8 Lakh per member for the FY 2024-25.

Deliberation in 52nd ERPC meeting

ERPC approved contribution of Rs.8 lakh for non-member participants of ERPC for the FY 2024-25.

B.5 Reporting of Audit for the FY-2022-23 and FY-2023-24.

- The Draft Books of Accounts of ERPC Funds has been prepared by the CA firm engaged for ERPC Secretariat and as per ERPC CBR-2022 under clause no.9 & 7 of ERPC Establishment Fund and ERPC Fund Regulations-2022, *"Internal audit of the "ERPC Establishment Fund" shall be carried out every year by a team of three officers; one officer nominated by incumbent*

Chairperson from his own organization, second officer nominated by Chairperson of previous year from his own organization and third officer to be nominated by Member Secretary, ERPC from ERPC Secretariat at Director level who is not dealing with any administration matter of ERPC Secretariat."

- The Books of Accounts has been checked and verified by the Audit officers nominated from incumbent Chairperson organization i.e. Sikkim, Power Department, Govt. of Sikkim & pervious Chairperson Organization i.e. GRIDCO Ltd. and one officer from ERPC Secretariat. The same has been approved by the audit team. The Books of Account is attached at **Annexure-B5.**

Members may approve.

Deliberation in 52nd ERPC meeting

ERPC approved the internal audit report of the Books of Accounts of ERPC Funds prepared for the FY 2022-23 & FY 2023-24.
The final audit observations of CA, if any, shall be placed in the next meeting.

B.6 Outstanding contribution to ERPC Funds.

Contributions from the following organisations are still due:

Membership Fees (Rs 15 Lakh + Rs 1 Lakh)

1. Sikkim (From FY-2021-22, 2022-23 and 2023-24) (Total Rs.48 lakhs).
2. JUVNL (For FY- 2023-24) (Total Rs.16 lakhs).
3. JBVNL (For FY- 2023-24) (Total Rs.16 lakhs).

Non- Member Participation Fees (Rs 7.5 Lakh + Rs 1 Lakh)

1. JSW (Ind-Barath Energy (Utkal) Ltd), Odihsa. (For FY-2017-18 to 2021-22)
2. Gati Infrastructure Ltd.
3. Vedanta Ltd. (FY-2022-23 and FY-2023-24)

Concerned member may update.

Deliberation in 52nd ERPC meeting

- *On JSWUL, ERPC decided that as outstanding amount pertains to the period before the transfer of the asset to JSW by NCLAT and the outstanding due was not reported to NCLAT during insolvency proceedings of IBEUL, the same shall be written off from outstanding contribution of ERPC.*
- *On Gati Infrastructure Ltd. of Chuzachen HEP, Representative of Greenko intimated that they have acquired the assets of Chuzachen HEP and they would look into the matter at the earliest.*

❖ ***ERPC decision:***

ERPC advised all other utilities for clearance of the outstanding dues at the earliest.

B.7 Informal Deputation of Middle Level officers from State Constituents:

- As per GoI Resolution no.F.No.23/1/2004-R&R dated 25th May 2005 and subsequent amendments has established ERPC where the ERPC Secretariat is primarily manned by CEA. However, as and when CEA is unable to depute the requisite number of Group A and Group B officers, the vacant posts other than Member Secretary, shall be got filled by drawing officers

from constituents on deputation basis. It has been seen that many a times some post both in Executive and Non-executive against the sanctioned post remains vacant which makes it difficult for ERPC to deliver its functions in time bound manner.

- It is worth to mention that new assignments have also been entrusted by CEA from time to time viz. coal stock monitoring, load generation data, environmental norms, power supply position,
- It is also to mention that there is a need for close interaction and communication between ERPC secretariat and States utilities, and for this in earlier also ERPC was manned by State utilities on informal deputation basis.
- Engineers stationed at ERPC Secretariat from State utilities, acting as liaison with State, would get wider exposer on power system operation, commercial issues, protection related issues etc.

- Thus, in view of the aforesaid it is proposed to designate one or two engineers from State organization who would work as liaison with ERPC Secretariat along with the works assigned by ERPC.
- In addition to above, the audit team has suggested that considering the huge corpus fund involved, person having accounts background may be appointed on regular basis or on deputation from State Organization.
- If approved, ERPC Secretariat shall approach the states accordingly.

Members may discuss and approve.

Deliberation in 52nd ERPC meeting

- *Member(GO&D), CEA supported the proposal of ERPC Secretariat and stated that work of Secretariat has increased to many fold in recent times due to additional role and responsibilities entrusted to RPC secretariat by CERC/CEA. Moreover, it would be highly beneficial for the executives of state utilities to get an insight of functioning of RPC secretariat in dealing with techno-commercial issues related to ER grid by deputing the officers of their organisation to ERPC Secretariat. He requested members from state utilities to depute some of their engineers to ERPC Secretariat on rotation basis.*

❖ ***ERPC decision:***
ERPC advised secretariat to approach the state constituents requesting for deployment of their officers at ERPC Secretariat on informal fixed tenure basis.

B.8 Maintenance of Single Bank Account towards contribution against membership fee of ERPC:

As per present scenario, for contribution to ERPC, its Secretariat maintains two (02) nos. bank account in two different PAN as given below-

1. 'ERPC Establishment Fund' under A/c no. 6512022941 at Indian Bank, Tollygunge / PAN-AACAE3137B.
2. 'ERPC Fund' under A/c No. 1676102000005203 at IDBI Bank, Prince Anwar Shah Road / PAN - AAAJE0920H.

For the ease of operation and to minimize confusion, it is proposed to close the ERPC Fund account at IDBI Bank and transfer the balance amount to 'ERPC Establishment Fund'. This will help in ease of operating the account and single PAN will be utilized for all official transactions.

Members may discuss and approve.

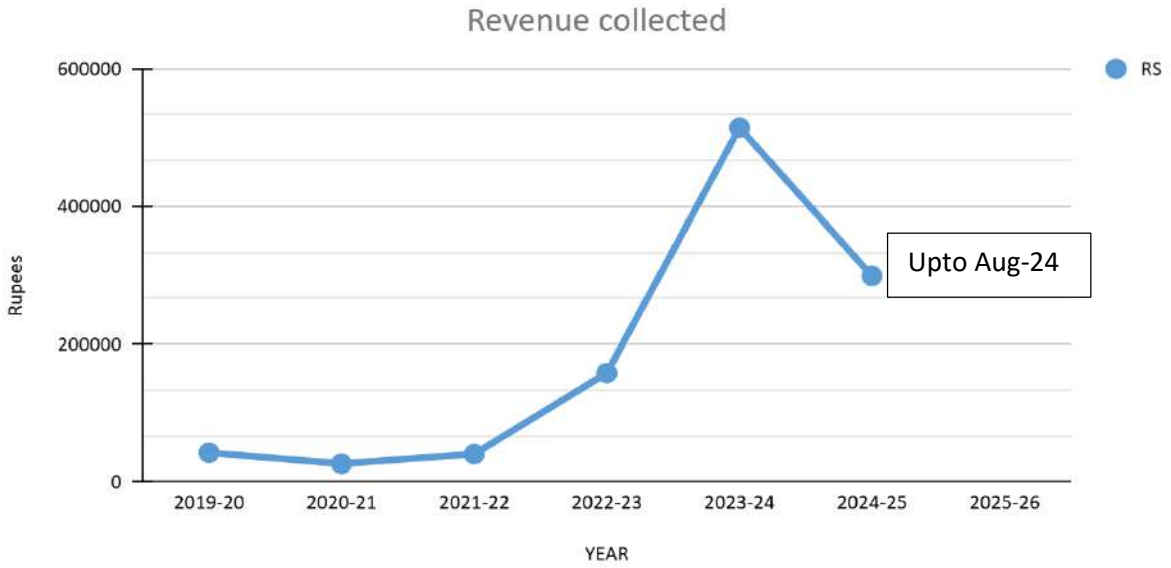
Deliberation in 52nd ERPC meeting

❖ ***ERPC decision:***

- *ERPC approved the proposal of ERPC Secretariat to maintain a single bank account for receiving the contribution amount towards membership fees of ERPC. Accordingly, it advised secretariat to close the "ERPC Fund" account.*
- *Regarding PAN, it was decided that PAN No. AAJE0906F in the name of ERPC Establishment Fund will be used for all official transactions henceforth and all other PAN,if any, shall be surrendered.*

B.9 Maintenance of Account for ERPC Guest House

It is to apprise that revenue collection from the ERPC Guest house has increased considerably during last couple of years which is depicted in the following graph-



It is suggested by the audit team that the expenditure of ERPC guest house may be booked separately to ascertain the actual expenses vis-à-vis revenue earned from ERPC Guest House. Accordingly, a separate account may be opened at Indian Bank Tollygunge Kolkata.

Deliberation in 52nd ERPC meeting

ERPC approved the proposal for opening of new bank account for operation of ERPC Guest House.

B.10 Auction of Office Vehicle with Registration No – WB02AD9028.

ERPC Secretariat purchased one vehicle of Mahindra Xylo make in the year of 2013 and expenditure was made from ERPC Establishment Fund. Till date vehicle has run for 69,620 KM and at present laying in non-working condition for last one year. Authorised service centre checked the vehicle thoroughly and given a projection of Rs 1,36,797/- for repair. Thereafter, as the vehicle was old, Transport Department of West Bengal was requested to inspect the vehicle for its Health check and to provide suggestion on the matter of its condemnation. Vehicle department vide its Inspection report no 182/CSTC (L.D) dated 30.05.2024 has recommended that the condition of vehicle is

"Beyond Economic Repair" and "may be declared CONDEMNED". Further decision on the vehicle is required to be taken. **(Report in Annexure B11)**

Members may discuss and finalise.

Deliberation in 52nd ERPC meeting

ERPC approved the proposal of auctioning of the vehicle and advised ERPC Secretariat to take necessary action for the same.

B.11 Reclassification of quarters at ERPC Residential Complex as per plinth are specified for different categories of Govt employee.

The present status of the quarters at Residential Complex is given below:

SL No	Type of Quarter	Plint area of existing quarters (in sq.m.)	No of Quarters	Vacant Quarters
1	B	35.04	15	15
2	C	41.70	16	9
3	D	79.37	12	3
4	E	127.14	2	1

Issues:

The plinth area of existing quarters is way less than the existing criteria prescribed by CPWD.

As per present norms, the type B quarters are not eligible for allotment. Also Type-III quarters are not available in the existing quarters.

Some of the officials staying in ERPC Residential Complex have submitted application for allotment of quarters as per the plinth area specified by MoH & UA.

Proposal:

Reclassification of the existing staff quarters in line with the prescribed norms as per the OM dated 23.01.2024 of Ministry of Housing & Urban Affairs by amalgamation of existing quarters. No major structural modification is required. Amalgamation of quarter is possible with minor modifications.

The matter was discussed in a meeting taken by Chairperson, CEA with Member Secretary of RPCs on 07.08.2024. As per the MoM, ERPC secretariat may do such reclassification with the approval of ERPC Forum and any other relevant government bodies like CPWD etc.

An internal committee was constituted in this regard. The committee has suggested the reclassification as per the following:

Sl. No.	Type of Quarters	Plinth Area as per GoI Norms (in sq. meter)	Conversion of Existing Quarters	Plinth Area after proposed modification (in sq. meter)	No of quarters after proposed modification
1.	Type-I	49.5	Type-C	41.70	4
2.	Type-II	75.0	Combining two Type-B Qtrs	70.08	5

3.	Type-III	85.0	Type-D or combining two Type-C	79.37/83.4	5
4.	Type-IV	110.0	Combining Type-D with Type-B or Type -D with Type-C	114.41/121.07	10

ERPC may discuss and approve.

Deliberation in 52nd ERPC meeting

❖ ***ERPC decision:***

- *ERPC approved the proposal of ERPC Secretariat on reclassification of staff quarters of ERPC Residential Complex.*
- *ERPC Secretariat further intimated that the guest house at ERPC Residential Complex has been fully operational and there was no provision for kitchen and dining facilities for guest house. It was proposed that two nos. of type-C quarter at ground floor which remained vacant since long and presently being used as kitchen& dining for ERPC Guest House on temporary basis needs minor modification to use this area as permanent space to accommodate the same. ERPC consented with above proposal.*
- *It was clarified by ERPC Secretariat that the expenditure associated with the modification work on account of reclassification/canteen facilities, if any would be made from the allocated budget for FY 2024-25. No additional fund is required for this purpose*

B.12 Approval of final expenditure incurred for organizing the 50th TCC & ERPC Meetings at Ambey Valley, Lonavala, Maharashtra:

As decided in 49th ERPC meeting ERPC Secretariat to organise the 50th TCC ERPC Meeting and as discussed with the then Chairperson ERPC Lonavala Maharashtra was selected for venue of the said meeting. The meeting was held on dated 11th August 2023. The final expenditure incurred was Rs.1,02,91,757/- and the same has been verified by the internal audit team of ERPC Funds. The above amount may be approved.

Members may approve.

Deliberation in 52nd ERPC meeting

ERPC approved the final expenditure of Rs. 1,02,91,757/- incurred to organize 50th TCC & ERPC Meeting by ERPC Secretariat.

B.13 Proposal for Payment of Arbitration award to CPWD.

In the year of 2016, repair and renovation work of ERPC Office building and ERPC Residential quarter was conducted by CPWD. Vendor namely M/s Gora Chand Bose 10A, B N Sen Road, PO-Khagra, Murshidabad, Pin – 742103 went to the arbitration court. Vide letter number 58(2)/KCD-II/ CPWD/Kol/ERPC/2024-25/411(H) dated 15.04.2024 and subsequent letter number 58(2)/KCD-II/ CPWD/Kol/ERPC/2024-25/668(H) dated 03.07.2024 CPWD stated that the honourable Ld Arbitrator, Shri Bhagwan Singh made an award to Rs 69,35,721/- (Amended amount) in favour of M/s Gora Chand Bose. However, through latest communicated CPWD has intimated that they are challenging the arbitration award as per the suggestion of Ministry of Law and Justice and their Government council. However, they have requested to deposit the amount before court to avoid any

further interest on arbitration amount when CPWD file the challenge. ERPC secretariat has requested CPWD to submit the advice copy of the Government council for processing the amount. Reply is awaiting from CPWD. Once ERPC Secretariat receive the requisite document payment may be made to CPWD. A budget of Rs 75 Lakh may be kept for the same.

Members may discuss and approve ERPC Secretariat to incur the expenditure as per CPWD demand.

Deliberation in 52nd ERPC meeting

ERPC approved the budgetary allocation of Rs. 75 lakh(Rupees Seventy Five Lakhs) in the FY 2024-25 towards payment of arbitration award to CPWD.

B.14 Internal Budget of ERPC Secretariat for FY 2024-25

The internal budget of ERPC Secretariat was approved in 51st ERPC Meeting.

A. **Re-apportionment of Budget of FY 2024-25**

The re-apportionment is proposed in the budget for FY 2024-25 as per the following:

Name of Head	Approved BE of 2024-25 (in ₹)	BE after proposed reapportionment (in ₹)
Minor civil and Electrical works	30,00,000 /-	15,00,000 /-
Repair and Maintenance	22,00,000 /-	37,00,000 /-

B. **Additional Budget Requirement under DTE Head**

As on 31st Aug 2024, total expenditure of Rs 5,22,019/- has been made under DTE head out of approved budget of 12 lakh i.e. 43.5% of approved budget. It is observed that due to higher number of transfers held in FY 2024-25, most of the expenditure was made in settlement of Transfer TA bills. To meet future expenditure on account of transfer/tour etc. of ERPC officials, **additional budget of Rs 5,00,000/- is required under DTE head.**

ERPC may approve.

Deliberation in 52nd ERPC meeting

ERPC approved the proposed reapportionment as given in the above table. And approved the additional budget of Rs. 5,00,000/- (Rupees Five Lakh only) under DTE head for FY 2024-25.

B.15 Budget under separate head for organising Meeting/Training/Workshop from ERPC Establishment Fund.

- The proposal of discontinuing the ERPC Fund account and transferring of the available fund to ERPC Establishment Fund has been placed before 52nd ERPC for consideration. After transferring of the balance amount to ERPC Establishment fund, there is a need for maintaining a separate head in ERPC Establishment Fund for organizing meeting/training/seminar & other associated expenditures which was earlier being done through ERPC Funds.

- An amount of **Rs. 50,00,000 /- (Rupees Fifty Lakh**) may be sanctioned for FY 2024-25 for the above purpose.

ERPC may approve.

Deliberation in 52nd ERPC meeting

ERPC approved Rs. 50,00,000 /- (Rupees Fifty Lakh) under the head "OE-Meeting" for organising Meeting/Training/Workshop/Hospitality etc. for FY 2024-25.

B.16 Budget for installation of Rooftop Solar Installation.

- Installation of solar rooftop projects on all Government buildings has been mandated by the Government of India (GoI). ERPC Secretariat has intimated CEA for implementation of Rooftop Solar by ERPC Secretariat on top of the Technical Building of ERPC which is being used by ERLDC as well as in the building of ERPC Residential Complex.
- In this regard, a budget **of Rs. 30,00,000 /- (Rupees Thirty Lakh) may** be sanctioned under capital head for FY 2024-25 for installation of rooftop solar at ERPC Building.

ERPC may approve.

Deliberation in 52nd ERPC meeting

ERPC approved Rs. 30,00,000 /- (Rupees Thirty Lakh) towards installation of rooftop solar at ERPC Building.

B.17 Finalisation of dates and venue for the next ERPC & TCC meetings.

The roster for hosting of ERPC meetings is given below**:**

Sl. No	Host Organization
1	ODISHA
	- hosted 31st ERPC Mtg. on 14.11.2015
2	JHARKHAND
	- hosted 32nd ERPC Mtg. on 20.02.2016
3	BIHAR
	- hosted 33rd ERPC Mtg. on 25.06.2016
4	CESC
	- hosted 34th ERPC Mtg. on 19.11.2016
5	TPTCL
	- hosted 35thERPC Mtg. jointly on 25.02.2017
6	MPL
	- hosted 35thERPC Mtg. jointly on 25.02.2017
7	GMRKEL

	-hosted 36th ERPC Mtg. on 26.08.2017
8	POWERGRID
	- hosted 37thERPC Mtg. on 17.06.2018
9	DVC
	-hosted 38th ERPC Mtg. on 30.06.2018
10	NVVN
	- hosted 39th ERPC Mtg. Om 17.11.2018
11	NHPC
	- hosted 40th ERPC Mtg. on 16.03.2019
12	NTPC
	- hosted41st ERPC Mtg. on 27.03.2019
13	PTC
	- hosting42nd ERPC Mtg. on 13.12.2019
14	ERPC Sectt. hosted 43rd, 44th, 45th ,47th ERPC Mtg.
15	WEST BENGAL hosted 46th ERPC Mtg.
16	Power Dept, Sikkim hosted 49th ERPC Meeting
17	Sikkim Urja Limited
	hosted 49th ERPC Meeting
18	JITPL - yet to host ERPC Mtg.

ERPC may finalize.

Deliberation in 52nd ERPC meeting

- *Member from Odisha intimated that they are willing to host next TCC& ERPC Meeting tentatively in the month of Jan' 25.*

❖ ***ERPC decision:***

- *ERPC decided that the next meeting will be hosted by Odisha while the exact date and venue for the same shall be intimated in due course.*

****

Annex-A

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
Adani	Sh. Abhishek Kukreja	Lead -O&M	6359956492	abhishek.kukreja@adani.com		
Adani	Sh. Nihar Raj	Sr. Vice President and He	9724334162	nihar.raj@adani.com		
BERC	Sh. A K Sinha	Member (Technical)	9955055886			
Bhutan	Sh. Chophel	Chief Manager				
Bhutan	Sh. Padam Chamlagai	Chief Engineer	99/0138916	cetojmd@dhpa2.gov.bt		
Bhutan	Sh. Samten	Senior Engineer				
BSPHCL	Sh. Murtaza Helal	Chief Engineer (PMC)	7763813834	murtaza.helal@gmail.com		
BSPHCL	Sh. Nadeem Ahmad	ESE(PMC)	7763814046	nade 786@gmail.com	05.09.24	06.09.24
BSPHCL	Sh. Sanjay Kumar	ESE-Cum-OSD to CMD	7763813824	skumarsbpdcl@gmail.com		
BSPTCL	Sh. A.K Singh	Director (Operations)	9264477220	alg.lalfanie@gmail.in		
BSPTCL	Sh. Ratan Kumar	Chief Engineer (Project I)	7763817701			
CEA	Sh B. LEE LYNGKHOI	Chief Engineer GM Division				
CEA	Sh Hemant Jain	Member (GO&D)	9818301995			

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
CEA	Sh Vikram SIngh	Chief Engineer	9868893051	VIKRAMSINGH-CEA@GOV.IN		
CESC Limited	Sh. Brajesh Singh	Managing Director (Gene	9099995744	brajesh. singh@rpsg.in		
CESC Limited	Sh. Koushik Banerjee	General Manager (Systen	9831003281	koushik. banerjee@rpsg.in	5/9/24.	6/9/24.
CESC Limited	Sh. Sandip Pal	Sr. Vice President (Syste	9831054651	sandip.pal@rpsg.in		
CTUIL,Gurgaon	Ms.Sangeeta	Chief Manager	9560850202	jama.sangita@powergrid.in		
CTUIL,Gurgaon	Sh H.S Kaushal	Sr.GM(commn)	9599291535	hsk@powergrid.in		
CTUIL,Gurgaon	Sh. Atul Agarwal	CGM	9910378059	atul_ag@powergrid.in		
Damodar Valley C	Sh . Arup Sarkar	Member-Finance, DVC	9425294115	memberfinance@dvc.gov.in		
Damodar Valley C	Sh. Debiprasad Puitandi	Chief General Manager, S	9434745905	debiprasad.puitandi@dvc.gov.in		
Damodar Valley C	Sh. S Suresh Kumar, IAS	Chairman, DVC	9449596083	chairman@dvc.gov.in		
Damodar Valley C	Sh. Samit Mandal	General Manager, Coml.	7980933540	samit.mandal@dvc.gov.in		
Damodar Valley C	Sh. Sanjiv Srivastava	Executive Director(Coml.)	9433727107	sanjiv.shrivastava@dvc.gov.in		
DANS Energy Pvt	Sh. Abhilash Gour	Manager	9561258986	abhilash.gour@dansenergy.com		

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
DANS Energy Pvt	Sh. Vimal Saxena	Vice President	9811988482	vimal.saxena@dansenergy.com		
DMTCL	Sh. Krishnajith M U	AVP		krishnajith.mu@energy-sel.com		
DMTCL	Sh. Vanraj Dodia	AVP	96662540731	vanrajsinh.dodia@energy-sel.com		
ER-II, NTPC Ltd.	Sh. S.K.Pradhan	AGM (Commercial)	9437049168	skpradhan02@ntpc.co.in		
ERLDC	Mrs. Kritika Debnath	Asst Manager (SO)	9402102354	kritika@grid-india.in		
ERLDC	Sh. Gaurav Verma	Chief Manager (SO)		gauravverma@grid-india.in		
ERLDC	Sh. Rajib Sutradhar	ED				
ERLDC	Sh. Rishav Kumar	Asst Manager(SCADA)		rishav@grid-india.in		
ERLDC	Sh. Shyamal Konar	Sr. GM (SO)	8697621130	skonar_se@grid-india.in		
ERLDC	Sh. Sourav Mondal	Chief Manager (MO)	9402102354	souravmondal@grid-india.in		
ERPC	Sh. A Basu	Executive Engineer	7070939184	abasu.nitsilchar@gmail.com	05/09/24	06/09/24
ERPC	Sh. A Chatterjee	Assistant Director	9831054494	agriva.cea@gov.in	05/09/24	
ERPC	Sh. A Das	Deputy Director	9681214774	anup.das@nic.in	5.9.24	6.9.24

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
ERPC	Sh. D Khuntia	Assistant Director	7683889161	dilip.khuntia@gov.in		06/09/2024
ERPC	Sh. N. S. Mondal	Member Secretary	9958389967			
ERPC	Sh. P. P. jena	Deputy Director	9776198991	ppjena.erpc@gov.in		
ERPC	Sh. S R Swain	Assistant Director	9337791451	Saswat.ranjan@gov.in		
ERPC	Sh. S. Kejriwal	Suptd. Engineer	9831919509	Shyam.kejriwal@gov.in		
GMR Kamalanga	Sh. Pradeep Kumar Mohanty	GM	7894450332	pradeep.mohanty@gmrgroup.in		
Greenko Group	Sh. Pratul Gupta	DGM (Comm)	99104 08668	pratul.g@greenkogroup.com		
GRIDCO	Mrs. Susmita Mohanty	DGM (Electrical)	9437231456	ell.emohanty@gridco.co.in		
GRIDCO	Sh Srikanta Sahoo	CFO	8596037104	Srikanta.gridco@gmail.com		
GRIDCO	Sh. Umakanta Sahoo	Director T&BD	9348909857	dir.trading@gridco.co.in		
India Grid Trust (I	Sh. Vivek Karthikeyan	AGM - Regulatory Operat	8966903034	vivek.karthikeyan1@indigrid.com		
JBVNL	Sh. Satyajeet Ghosh	GM (IA&FM-cum-P&FM)	8210972284			
JBVNL	Sh. Saurav Kumar Sinha	Director(Commercial)	9431118207			

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
JITPL	Sh. Sanjay Mittal	Director Powersales	9811314080	sanjay_mittal@jindalgroup.com		
JITPL	Sh. Shubhnag Nandan	Head Powersales & Regu	8102699777	head.powersales@jindalgroup.com		
JITPL	Sh. Vijay Bhaskar Reddy	CEO	9701008282	vijayabhaskar.d@jindalgroup.com		
JSW Energy	Sh. Arpit Tandon	DGM - Regulatory & Pow	9099038536	arpit.tandon@jsw.in		
JSW Energy	Sh. Jyotiprakash Panda	Senior Vice President - R	9449849739	jyotiprakash.panda@jsw.in		
JUSNL & SLDC	Sh. A. K. Bhartiyam	GM (Engineering)	7033991202	gmengineering.jusnl@gmail.com		
JUSNL & SLDC	Sh. Arun Kumar	GM (SLDC)	7070816390	sldcranchi@gmail.com		
JUSNL & SLDC	Sh. M.K. Karmali	Director (Project)	8987581081	dir.p.jusnl@gmail.com		
JUSNL & SLDC	Sh. Mukesh Kumar Singh	GM (Transmission)	9430153891	gmtzone5hzb@gmail.com		
JUSNL & SLDC	Sh. Praween Kumar	GM (C&M, NWBP)	8987421011	praween.jseb@gmail.com		
JUUNL	Sh. Kumud Ranjan Sinha	GM (Technical)	8210263836	cegenjuunl@gmail.com		
JUUNL	Sh. Rakesh Pandey	Senior Manager (Technic	9110183517	cegenjuunl@gmail.com		
JUVNL	Sh. Kumar Sambhav	Estate Officer	7903702681	eo.juvnl@gmail.com		

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
JUVNL	Sh. Rakesh Kumar Lakhotiya	DGM (F&A)	7209663666	ddojuvnl@gmail.com		
Maithon Power Ltd	Sh. Sudip Dash	Head, Commercial	9204652869	sudipdash@tatapower.com		
NHPC	Sh. S K Mishra	GM (O&M)	9910103478	swandamishra@nhpc.nic.in		
NHPC	Sh. Jagannath Pani	SM (O&M)	8800021271	jagannathpani@nhpc.nic.in		
NRPC	Sh. V.K. Singh	Member Secretary	9810177609	msnrpc@nic.in		
NTPC Ltd	Sh. Rahul Anand	DGM(O)	9425823430	rahulanand@ntpc.co.in		
NTPC Ltd	Sh. Shankar Sharan	GM(Commercial)	9650990818	shankarsaran@ntpc.co.in		
NTPC Ltd	Sh. Sudip Nag	RED(ER-I)			D	
NVVN	Ms. Renu Narang	CEO	9650991965	ceonvvn@ntpc.co.in		
NVVN	Sh. Arvind Patle	AGM (Commercial)	9425178284	arvindpatle@ntpc.co.in		
Odisha Power Tra	Sh. B B Mehta	Director (Operation)	9438907008	dir.operation@optcl.co.in	D	
Odisha Power Tra	Sh. Chitta Ranjan Mishra	GM (Elect.)	9438907305	ele.crmishra@optcl.co.in		
Odisha Power Tra	Sh. Santosh Kumar Das	DGM (Elect.)	9438907316	ele.santoshdas@optcl.co.in		

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
OERC	Sh. S K MOHAPATRA	Hon'ble Member, OERC			(51) Issued	
OHPCL	Sh. Amiya Kumar Mohanty	Sr. General Manager	7328840019	akm_678@yahoo.co.in		
OHPCL	Sh. Dillip Kumar Swain	General Manager	7328840348	dillipkumarswain56@gmail.com		
OPGC	Sh. Manasa Ranjan	MD	9777296075	manas.rout@opgc.co.in		
POWERGRID	Dr. Sunita Chohan	CGM(GA&C)	9873549019	chohan@powergrid.in		
POWERGRID	Sh. A Barat	Executive Director, ER-II	9434735952	abarat@powergrid.in		
POWERGRID	Sh. Arvind Kumar Pandey	Chief GM (AM)	7042396703	arvind.pandey@powergrid.in		
POWERGRID	Sh. Partha Gosh	DGM (AM), ER-II	9434748263	partha.ghosh@powergrid.in		
PTC India Limited	Sh. Bikram Singh Guram	Executive Vice President	9810626742	bikramsingh@ptcindia.com		
PTC India Limited	Sh. Manoj Kumar Jhawar	CMD (Addl. Charge)	8319959092	manoj.jhawar@ptcindia.com		
SBPDCL	Sh. Irshad Akhtar	Electrical Executive Engir	7763814050	irsh35new@gmail.com		
SBPDCL	Sh. Purushottam Prasad	Chief Engineer(Commerc	7763814744	cecom.sbpdcl22@gmail.com		
Sikkim	SH. ASHISH LAMICHANEY	DIVISIONAL ENGINEER	9615878284	a.lamichaney@gmail.com		

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
Sikkim	SH. NAMGYAL TASHI, SLDC	SUPERINTENDING ENG	7797672743	namgyaltashi2k@gmail		
Sikkim	SH. SONAM RINCHEN BHUT	PRINCIPAL CHIEF ENGI	9679784844	sorinchen@rediffmail.com		
Sikkim	SH. T.T. LEPCHA.	PCE CUM SECRETARY	99330 98887			
Sikkim Power Trar	Sh. Y K DIXIT	Director	9811309921	ykd@sikkimurjalimited.in		
Sikkim Urja Limite	Sh. Prabhat Kumar	Chief General Manager P	9431241313	pk@sikkimurjalimited.in	5/9/24	6/9/24
Sikkim Urja Limite	Sh. Rupesh Sood	Chief General Manager F	9810145341	rs@sikkimurjalimited.in		
SLDC, Bihar	Sh. Arvind Kumar	ESE (SLDC)	7763817777	pires.arvind@gmail.com		
SLDC, Odisha	Sh. Subhas Chandra Dash	Sr.General Manager	9438907966	ele.scdash@optcl.co.in		
Tenughat Vidyut N	Sh. Anil Kumar Sharma	MD, TVNL	9031051155	aksttps@gmail.com		
Tenughat Vidyut N	Sh. Ashish Kumar Sharma	ESE, TTPS	9031049922	ashishtvnl@gmail.com		
WBPDCL	Sh. Kausik Datta	Executive Director(OS)	8336903895	kdatta@wbpdcl.co.in		
WBPDCL	Sh. Manoj Podder	AGM(OS)	8336904077	mpodder@wbpdcl.co.in		
WBSEDCL	Sh. Jibanlal Mallick	Superintending Engineer/	9007606419	jibanlal@gmail.com		

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024
WBSEDCL	Sh. Preetam Banerjee	Additional Chief Engineer	7003871189	preetam.banerjee@wbsedcl.in		
WBSEDCL	Sh. Santanu Roy	Superintending Engineer/	9733256232	santanu.roy@wbsedcl.in	Santanu Roy	Santanu Roy
WBSETCL	Sh. Debashis Chaki	C.E., CPD	9434910019	cpd.wbsetcl@gmail.com		
WBSETCL	Sh. Sabyasachi Roy	Director(Operations)	9432316727	sabya_60@yahoo.com		
WBSETCL	Sh. Shouvik Banerjee	A.C.E., SLDC	9434910379	sldcshutdown@gmail.com	5/9/24	6/9/24
WBSETCL	Smt. Rita Chakraborty	C.E., SLDC	9434910030	ce.wbsldc@gmail.com	5/9/24	6/9/24
WRPC	Sh Deepak Kumar	Member Secretary	9999231466	deepak.cea@gmail.com		
NTPC	Manish Jain	Mgr. ER-I	9650993493	MANISHJAIN02@ntpc.co.in		
~~NTPC~~	Rahul Anand	DGM OS ER-I	9425834[illegible]	rahulanand@ntpc.co.in		

Attendance

Organization	Name of guest	Designation	Contact No.	Email ID	(TCC) 05.09.2024	(ERPC) 06.09.2024

Annex-A2

Sensitization on CEA Regulations

52nd TCC/ERPC

Goa

Background of Agenda

- Cases of non compliance of CEA Regulations were reported- Particularly Grid Standards, Grid Connectivity and flexibilization of thermal plants etc.
- Compliance reqd for Electricity (Rights of Consumers) Rules 2020.
- Directions of Hon'ble Minister of Power and NER in the RPM meeting on 10-11th July 2023.
- CEA Wrote to Chief Secretaries of States/ Administrators of UTs in Oct 2023 abt importance of familiarization of CEA Regulations and capacity building.
- Matter was discussed in NRPC (17/18th Nov 2023), SR (8/9th Dec 2023), WR (April 2024) and NER in July 2024.
- Workshops at Regional and State level are being organized by CEA.
- Delhi for NR constituents in Dec 2023
- Telangana -April MP in June and Gujarat in Aug 2024
- States in ER may plan the capacity building of their officers on CEA technical standard Regulations

Workers restore power infrastructure after Cyclone Fani in Bhubaneswar in May 2019

Power restoration in Odisha after the disastrous Fani cyclone

CEA (Grid Standards) Regulations 2010 provides as under :

22. Emergency Restoration System.- Each transmission licensee shall have an arrangement for restoration of transmission lines of 400 kV and above and strategic 220 kV lines through the use of Emergency Restoration System in order to minimise the outage time of the transmission lines in case of tower failures.

How many of transmission licensees have ERS with them?

CEA ((Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023: notified in Jan 2023,
Provides that the generating units which are not capable of achieving minimum power level of fifty-five percent, shall achieve the same within one year of the notification of these regulations.

Notified Regulations

Notified Regulations

- Metering Regulations
- Construction Standards
- Transaction of Business
- Statistics and Returns Standards
- Safety Regulations
- Grid Standards
- Grid Connectivity
- Communication Regulations

Central Electricity Authority Regulations

- CEA, in exercise of powers conferred under section 177 and other various sections of the Electricity Act, 2003 has **notified 11 regulations** out of which 10 regulations are applicable to all the power utilities
- Since these Regulations are concerning various aspects of power sector, including safety, integrity, reliability of grid, connected equipment/plants and consumers, it is essential that all these regulations should be complied
- These regulations are available on CEA's website.

https://cea.nic.in/regulations-category/notified-regulations/?lang=en

- We have requested all the States to comply with these regulations.
- it's a requirement from CERC regulations as well.
- Further U/s 146 of EA 2003 requires that non compliance of any of the provisions of this Act or any rules or regulations made thereunder, shall be punishable with imprisonment for a term which may extend to three months or with fine, which may extend to one lakh rupees, or with both in respect of each offence and in the case of a continuing failure, with an additional fine which may extend to five thousand rupees for every day during which the failure continues after conviction of the first such offence".

Brief on **Electricity (Rights of Consumers) Rules, 2020**

The Ministry of Power (MoP) laid down **“Electricity (Rights of Consumers) Rules, 2020”** in December 2020, with an aim to ensure quality delivery of consumer services by laying down the rights of consumers to minimum standards of service for supply of electricity.

Key Provisions of Rights of Consumer Rules, 2020 (1/5)

01

Issuance of New Service Connection

- *Application forms to be available at all the local offices/website free of cost.*
- *Web portal and mobile app for submission of online application forms*
- *Within 7 days- metros, 15 days- other municipal, 30 days- rural*
- *Only two mandatory documents i.e. identity proof and proof of applicant's ownership for new connections (upto 10 kW)*

02

Metering

- *Smart pre-payment meter or pre-payment meter for all categories.*
- *Provision for sending meter reading picture for post payment meters, if meter is inaccessible*
- *Testing of meters for addressing complaints within 30 days*
- *Provision for 3rd party meter testing in case of dispute*

03

Billing and Payment

- *Tariff to be displayed on distribution licensee's website*
- *Change in tariff to be notified through website/energy bills*
- *Online portal/ mobile App, collection centers or drop boxes for bill payment*

04

Reliability of Supply

- *24x7 power to all consumers.*
- *Automated mechanism for monitoring and restoring outages*
- *SERCs to have online mechanism for reviewing and monitoring of reliability indices.*

Key Provisions of Rights of Consumer Rules, 2020 (2/5)

05 **Consumer as Prosumer**

- *DISCOMs to facilitate rooftop solar and distributed RE*
- *Commissioning of Solar PV system within 30 days from date of submission of installation certificate.*

06 **Grievance Redressal**

- *Consumer Grievance Redressal Forum (CGRF) at different levels -sub- division, division, circle, zone, company level*
- *Centralized 24x7 toll-free call center*
- *Facilities for SMS, email alerts, notifications and offices for complaint tracking*

07 **Compensation Mechanism**

- *Automatic compensation for SOP parameters which can be monitored remotely*
- *Online facility for registering and claiming the compensation amount for other cases*

08 **General Provisions**

- *Access to various services - application submission, monitoring status of application, payment of bills, status of complaints raised etc., through web portal, mobile app and designated offices*
- *All services at door-steps for senior citizens*

Key Provisions of Rights of Consumer Rules, 2020 (Amendment-1) (3/5)

Consumer as Prosumer

- *Net-metering, gross-metering, net-billing or net feed-in to be in accordance with the regulations made by SERCs*
- *Net metering for loads up to 500 kW or upto the sanctioned load, whichever is lower and net-billing or net feed-in for other loads*
- *Provisions for ToD tariffs for prosumers*

Key Provisions of Rights of Consumer Rules, 2020 (Amendment-2) (4/5)

Reliability of Supply

- *Replacement of DG sets with cleaner technology within 5 years*
- *Temporary connections process to be simplified and-*
  - *To be given not later than 48 hours;*
  - *Within 7 days in case augmentation is required; and*
  - *Shall avoid use of DG sets*

Key Provisions of Rights of Consumer Rules, 2020 (Amendment-3) (5/5)

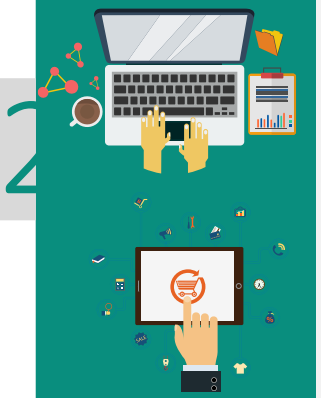
01

Metering

- *After installation of smart meters, no penalty to be imposed based on Max Demand recorded for the period before installation date.*
- *If Max Demand recorded exceeds Sanctioned Load in a month, the bill, for that billing cycle, shall be calculated based on the actual recorded Max Demand.*

02

Billing and Payment



- *ToD Tariff for Commercial and Industrial consumers having MD more than 10kW shall be made effective from 1st April 2024 and for other consumers except agricultural consumers, from 1st April 2025*
- *ToD Tariff for Commercial and Industrial consumers during peak period shall not be less than 1.20 x normal tariff and for other consumers, it shall not be less than 1.10x normal tariff*
- *Tariff for solar hours to be at least 20% less than the normal tariff for that category of consumers*

CEA Regulations

1. Grid Standards Regulations, 2010
2. Technical Standards for Connectivity to the Grid Regulations, 2007
3. Technical Standards for Connectivity of the DGR Regulations, 2013.
4. Installation & Operation of Meters Regulations 2006
5. Flexible Operation of Coal based Thermal Power Generating Units Regulations, 2023
6. Furnishing of Statistics, Returns & Information Regulations, 2007
7. Technical Standards for Communication System in Power System Operations Reg., 2020
8. Safety Requirements for Construction, O&M of Electrical Plants and Lines Reg., 2011
9. Technical Standards for Construction of Electrical Plants and Electric Lines Reg., 2022
10. Measures relating to Safety and Electric Supply Regulations, 2023

CEA (Grid Standards) Regulation, 2010

- Notified u/S 34, 73 (d) and 177 (2) of EA on 26.06.2010
- Applicable for: Entities, RLDCs, NLDC, SLDCs, CTU, STUs, RPCs
- Standards for Operation and Maintenance of Transmission Lines
- Operation planning and Maintenance planning
- Coordination in operations, Operating instructions
- Islanding schemes, and Automatic frequency relays
- Categorization of grid incidents and grid disturbances, and their Reporting declaration of records
- Restoration following GD/GI
- Failure Analysis……

CEA (Technical Standards for Connectivity to the Grid) Reg., 2007

- Notified u/S 73 (b) and 177 (2) of the EA, on 09.03.2007
- Two Amendments- Oct, 2013 and Feb, 2019
- Applicable for: All the users, requesters, CTU, STUs
- Objectives:
  1) The aim of these regulations is to ensure the safe operation, integrity and reliability of the grid.
  2) The new connection shall not cause any adverse effect on the grid. The grid shall continue to perform with specified reliability, security and quality as per the CEA(Grid Standards) Regulations, as and when they come into force.
  3) A requester is required to be aware, in advance, of the standards and conditions his system has to meet for being integrated into the grid

CEA (Technical Standards for Connectivity below 33 kV)

- Notified u/S 177 (1) of the EA, on 07.10.2013
- One Amendment in Feb 2019 ,

“Distributed Generation Resource (DGR) means a generating station feeding electricity into the electricity system at voltage level of below 33 kV.”

- Applicable to: Generating companies or persons owning DGR, Charging Stations, Prosumers or persons connected to or seeking connectivity at below 33 kV-
- General Connectivity Conditions
- Standards and code of practices
- Safety, grounding etc
- Standards for Charging stations
- Standards for Prosumers

CEA (Installation & Operation of Meters), Regulations 2006

- Notified u/S 55 (1), 73 (e) and 177 (2) of EA on 22.03.2006
- Four Amendments June, 2010, Dec, 2014, Dec, 2019 and Feb, 2022,
- Applicable for: Meters installed and to be installed by all the generating companies and licensees who are engaged in the business of generation, transmission, trading, distribution, supply of electricity and to all categories of consumers.
- These regulations provide for type, standards, ownership, location, accuracy class, installation, operation, testing and maintenance, access, sealing, safety, meter reading and recording, meter failure or discrepancies, anti tampering features, quality assurance, calibration and periodical testing of meters, additional meters and adoption of new technologies in respect of Interface, Consumer and Energy accounting audit Meters for correct accounting, billing and audit of electricity.

CEA (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023

- Notified u/S 73 (b) and 177 (2) of the EA on 30.01.2023
- Applicable to: All coal based thermal power generating units owned or under control of the Central/ State Governments or any private company, connected with grid and LDCs
- **Minimum power level capabilities of coal based thermal power generating units for flexible operation.-** The coal based thermal power generating units shall have flexible operation capability with minimum power level of forty percent.

Provided that the generating units which are not capable of achieving minimum power level of fifty-five percent, shall achieve the same within one year of the notification of these regulations.

Provided further that the generating units which are not capable of achieving minimum power level of forty percent, shall achieve the same as per phasing plan mentioned.

CEA (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023

Ramp rates capabilities of coal based thermal power generating units for flexible operation.- (1) The coal based thermal power generating units shall have ramp rate capability of minimum three percent per minute for their operation between seventy percent to hundred percent of maximum continuous power rating and shall have ramp rate capability of minimum two percent per minute for their operation between fifty-five percent to seventy percent of maximum continuous power rating. Provided that the generating units which are not capable to comply with this regulation, shall comply with the same within one year of the notification of these regulations.

CEA (Furnishing of Statistics, Returns & Information) Reg., 2007

- Notified u/S 73 (i), 74 and 177 (2) of EA on 19.04.2007
- Two Amendments- in Mar, 2022 & July, 2023
- Applicable to: All the licensees, generating companies, person(s) generating electricity for its own use and person(s) engaged in transmission, distribution, trading and utilization of electricity.
- Sources of statistics, returns and information- All licensees, generating companies and person(s) mentioned in the regulations but not limited to, shall furnish to the Authority such statistics, returns or other information relating to generation, transmission, distribution, trading and utilization of electricity at such times and in such form and manner as specified under these regulations.

CEA (Technical Standards for Communication System in Power System Operations) Regulations, 2020

- Notified u/S 73 (b) and 177 (1) of EA on 27.02.2020
- Applicable to: All the users, NLDC, RLDCs, SLDCs, DLDCs, CTU, STUs, RPCs, REMCs, forecasting service provider and power exchanges
  1) For reliable data and voice communication and tele-protection for power system at national, regional, inter State level and intra State level
  2) To be capable to provide integration with SCADA, WAMS, AMR, video conferencing, automatic meter reading, voice over internet protocol and tele protection
- Performance and interface requirements
- Standards and code of practices
- Reliability, Design and planning of Communication systems
- Cyber security, Access to data, and Data retention
- Centralized monitoring
- Fiber Optic communication, PLCC, VSAT, Radio freq communication

CEA (Safety Requirements for Construction, O&M of Electrical Plants and Electric Lines) Reg., 2011

- Notified u/S 73 (c) and 177 (1) of EA on 14. 02. 2011
- One Amendment- in Nov, 2022
- Applicable to: All generating stations, CTU, STUs, DISCOMs, Trans Licensee
- Safety provisions relating to Owner, Contractor
- Safety manual, and Emergency management plan
- Safety officer and safety committee
- Reporting of accidents
- Medical facilities
- Safety training and awareness, Audit
- Safety of Boiler and BoP

CEA (Measures relating to Safety and Electric Supply) Regulations, 2023

- Notified u/S 53 and 177 (2) of the EA on 12 06 2023
- Applicable to Electrical installation including electrical plant and electric line, and the person engaged in the generation or transmission or distribution or trading or supply or use of electricity
- Designated Person, Chartered Electrical Safety Engineer, Electrical Safety Officer, Training and Certification
- Safety measures for operation and maintenance of generating station
- Safety measures for operation and maintenance of transmission and distribution systems
- Training and Certification of personnel engaged for operation and maintenance at Load Despatch Centres
- General safety requirements pertaining to construction, installation, protection, operation and maintenance of electric supply lines and apparatus.

CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022

- Notified u/S 73 (b) and 177 (2) of EA on 27.12.2022
- Applicable to: GENCOs, TRANSCOs, DISCOMs, CTU, STUs for all Electrical Plants and Electric Lines
- Standards for construction of Thermal Generating Stations
- Standards for construction of Hydro Electric Generating Stations
- Standards for:
  - Sub stations and Switchyards 66 kV and above)
  - Sub stations 33 11 kV, 33 22 kV and 22 11 kV)
  - Distribution sub stations (DSS)
  - Electric Lines 66 kV and above)
  - Electric Lines 33 kV and below)

- Questions ??
- Suggestion

- **Thanks**s!!

-Vikram Singh, Chief Engineer (Regulatory Affairs), CEA
vikramsingh-cea@gov.in ,
Phone- 011-26732613, 9868893051 (M)

BOQ FOR PROCUREMENT OF REGIONAL RECATOR SPARES EASTERN REGION **Annexure- B2.6**

SL No.	Activity Description	Substation	Item Description	Unit	Qty	Unit Price as per march2024 SOR (Excl. GST)	GST @ 18%	Unit Price as per march2024 SOR (Excl. GST)	Freight/Insuranace/Loading/Unloading @ 4% ON SUPPLY	TOTAL Price
1	420KV, 3 Ph , 125 MVAR Reactor	**DURGAPUR/ NEW RANCHI**	420KV , 3Ph , 125 MVAR Reactor without Insulating Oil	EA	2	92190713	18%	108785041.3	3687628.52	224945339.7
2	420KV, 3 Ph , 125 MVAR Reactor		Insulating Oil for 3Ph , 125 MVAR Reactor	LOT	2	8000000	18%	9440000	320000	19520000
3	420KV, 3 Ph , 125 MVAR Reactor		Online Dissolved Gas & Moisture Analyser	EA	2	2084518	18%	2459731.24	83380.72	5086223.92
4	420KV, 3 Ph , 125 MVAR Reactor		Online Insulating Oil Drying System (Cartridge type)	EA	2	836500	18%	987070	33460	2041060
5	420KV, 3 Ph , 125 MVAR Reactor		SPARE FOUNDATION	EA	2	3500000	18%	4130000		8260000
									TOTAL	**259852623.6**
1	420KV,3 Ph , 80 MVAR Reactor	**BINAGURI**	420KV , 3Ph , 80 MVAR Reactor without Insulating Oil	EA	1	75048982	18%	88557798.76	3001959.28	91559758.04
2	420KV,3 Ph , 80 MVAR Reactor		Insulating Oil for 3Ph , 80 MVAR Reactor	LOT	1	6000000	18%	7080000	240000	7320000
3	420KV,3 Ph , 80 MVAR Reactor		Online Dissolved Gas & Moisture Analyser	EA	1	2084518	18%	2459731.24	83380.72	2543111.96
4	420KV,3 Ph , 80 MVAR Reactor		Online Insulating Oil Drying System (Cartridge type)	EA	1	836500	18%	987070	33460	1020530
5	420KV,3 Ph , 80 MVAR Reactor		SPARE FOUNDATION	EA	1	3000000	18%	3540000		3540000
									TOTAL	**105983400**
1	420KV,3 Ph , 63 MVAR Reactor	**ROURKELA**	420KV , 3Ph , 63 MVAR Reactor without Insulating Oil	EA	1	67043335	18%	79111135.3	2681733.4	81792868.7
2	420KV,3 Ph , 63 MVAR Reactor		Insulating Oil for 3Ph , 63 MVAR Reactor	LOT	1	5500000	18%	6490000	220000	6710000
3	420KV,3 Ph , 63 MVAR Reactor		Online Dissolved Gas & Moisture Analyser	EA	1	2084518	18%	2459731.24	83380.72	2543111.96
4	420KV,3 Ph , 63 MVAR Reactor		Online Insulating Oil Drying System (Cartridge type)	EA	1	836500	18%	987070	33460	1020530
5	420KV,3 Ph , 63 MVAR Reactor		SPARE FOUNDATION	EA	1	2700000	18%	3186000		3186000
									TOTAL	**95252510.66**

SL No.	Activity Description	Substation	Item Description	Unit	Qty	Unit Price as per march2024 SOR (Excl. GST)	GST @ 18%	Unit Price as per march2024 SOR (Excl. GST)	Freight/Insuranace/Loading/Unloading @ 4% ON SUPPLY	TOTAL Price
1	220KV,3 Ph ,31.5 MVAR Reactor	NEW MELLI	220KV , 3Ph , 31.5MVAR Reactor without Insulating Oil	EA	1	64796879	18%	76460317.22	6479687.9	82940005.12
2	220KV,3 Ph , 31.5 MVAR Reactor		Insulating Oil for 3Ph , 31.5 MVAR Reactor	LOT	1	5200000	18%	6136000	520000	6656000
3	220KV,3 Ph , 31.5 MVAR Reactor		Online Dissolved Gas & Moisture Analyser	EA	1	2084518	18%	2459731.24	208451.8	2668183.04
4	220KV,3 Ph , 31.5 MVAR Reactor		Online Insulating Oil Drying System (Cartridge type)	EA	1	836500	18%	987070	83650	1070720
5	220KV,3 Ph , 31.5 MVAR Reactor		SPARE FOUNDATION	EA	1	2000000	18%	2360000		2360000
									TOTAL	**95694908.16**
									Grand Total	**556783442.5**

GE VERNOVA

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03rd Jul '24
Ref. No. GE/URTDSM/AMC/209A

To,
Sr. General Manager,
Power Grid Corporation of India Limited
Gurgaon (Haryana) – 122001

Kind Attn: Mr. A. K Singh

Sub: Obsolescence of Windows Server Operating System of URTDSM System
Ref:

1. C: GAC: URTDSMPh1: Cyber security dated 28.06.2024
2. GE e-mail dated Apr 02nd, 2024 and March 27th, 2024 (subject: URTDSM: OS upgrade viz-a-viz ULDC)

Dear Sir,

This refers to discussions and communication received related to Windows Server OS under URTDSM system.

We would like to convey that any sort of upgrade & related testing is outside the ambit of existing contract.

Further, we reiterate that Win OS (Servers) upgrade is not feasible under current circumstances owing to following reasons:

- GE WAMS application Roadmap is heading for GridOS WAMS.
- Associated applications of 3rd party tools will get impacted.

In view of above, a system upgrade on existing infra is not feasible in current set-up. Moreover, URTDSM WAMS System is air-gapped with perimeter protection and available updated Anti-virus patches for system robustness and security.

We hope to have addressed your concerns on the subject matter.

Sincerely yours
For GE T&D India Ltd.

Vivek Aggarwal
M&S Lead: India Region

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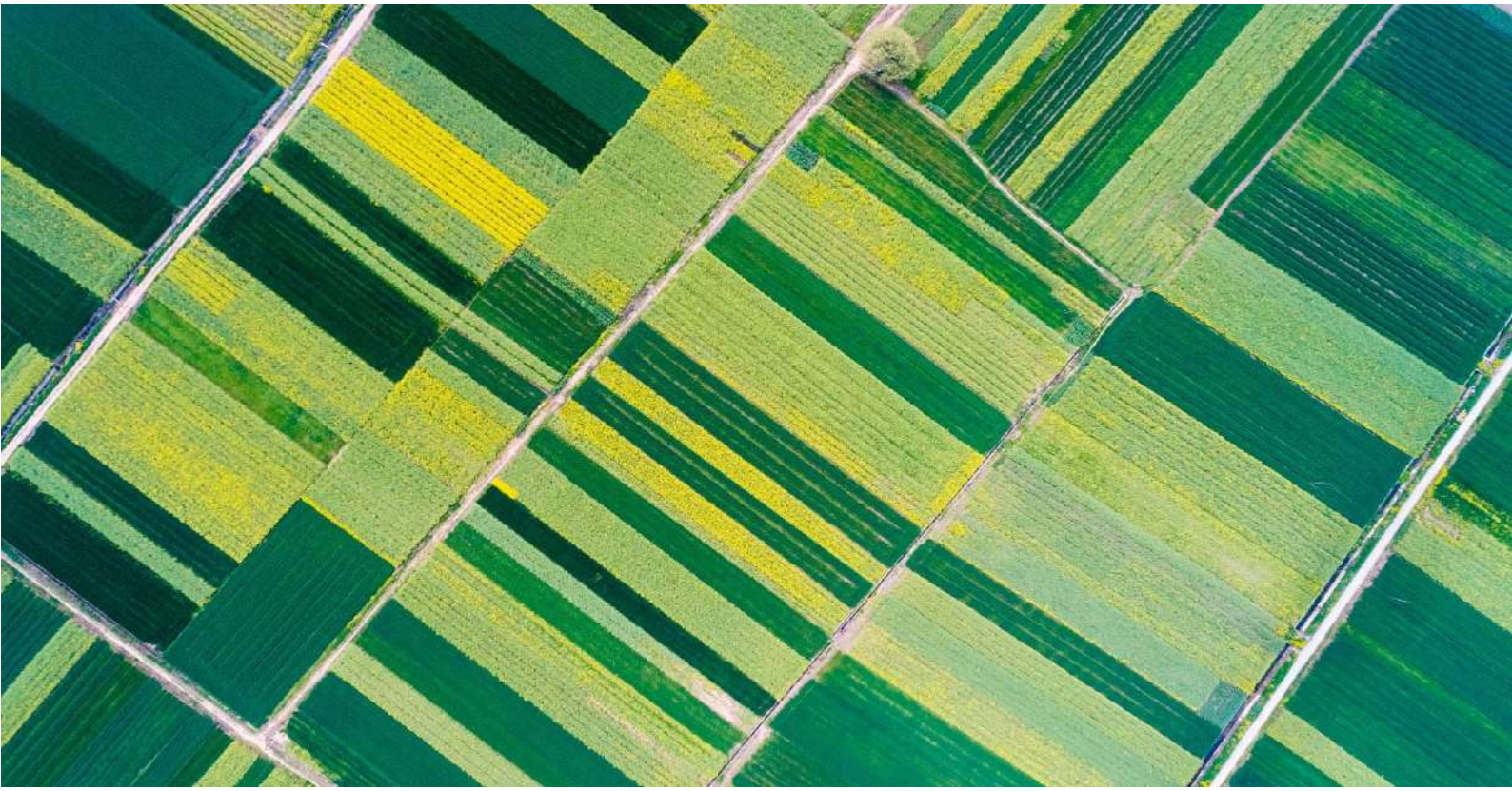


Power Grid Corporation of India Limited

Offer for supply of Switch & Firewall Configuration

Techno Commercial Offer

Validity: Forty-Five (45) Days

July 30th, 2024

GE Document – GE/OP24POWIN0000548924/V3

Configuration Management: Documentation

Document and Revision Level	Publication Date
GE/OP24POWIN0000548924/V3	July 30th, 2024

Revision History

Date	Revision	Revision Details
Feb 09, 2024	V0	Initial publication
May 01st, 2024	V1	Initial publication
June 26th,2024	V2	Initial publication
July 30th. 2024	V3	Initial publication

Contents

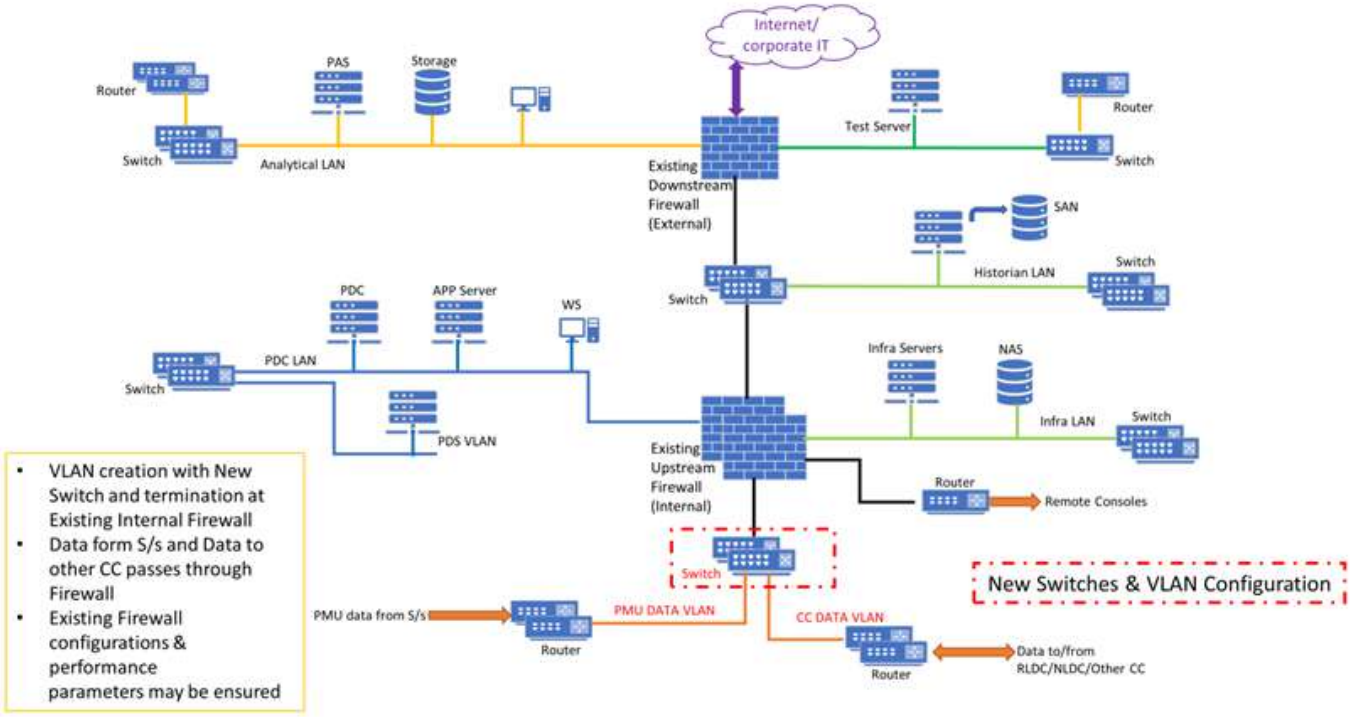
Figures

No Table or figure entries found

Tables

No Table or figure entries found

1 Proposed Architecture



The PMU data is proposed to be routed through existing internal firewalls in the existing URTDSM system.

The scope includes the supply of new LAN switches and the configuration of existing firewalls to allow reasonable streaming of PMU data.

2 Price Schedule- Per RLDC

Sl. no.	Description	Proposed Make	Qty	Unit Price (INR)	Total Price (INR) excl. GST
1	24 Port LAN Switch (L3)-1G CU ports	HP/DELL/ CISCO/JUNIPER	2 nos.	575,000	1,150,000
	Total supply price excluding GST (in INR)				**1,150,000**
	Total services price excluding GST (in INR)				**3,85,000**

Price Schedule- Per SLDC

Sl. no.	Description	Proposed Make	Qty	Unit Price (INR)	Total Price (INR) excl. GST
1	24 Port LAN Switch (L3)-1G CU ports	HP/DELL/ CISCO/JUNIPER	2 nos.	575,000	1,150,000
	Total supply price excluding GST (in INR)				**1,150,000**
	Total services price excluding GST (in INR)				**3,85,000**

Note: Rates for internal firewall configuration are included under the service section of each control center.

Special Terms & Conditions

1) Taxes shall be Extra at Actuals at the time of ordering.
2) Offer to be read in conjunction with attached EM-104
3) Validity – 45 days from offer date
4) Currency of Quotation: Indian Rupees (INR)
5) Payment Term: 100% advance of the contract value with PO
6) INCOTERMS: Ex-Works, Noida
7) Delivery Lead time – 3 -4 months from receipt of advance in GED's bank account or PO date whichever is later.

All sort of statutory variation including change, addition, deletion, abolition, repeal or reclassification due to change in Law and/ or directive or interpretation of authorized agency, shall be exclusively to the owner/purchaser's account.

Appendix A: Standard Terms & Conditions

EM-104

GE T&D India Limited
A-225, Sector-83
Noida – 201 305
Uttar Pradesh, India

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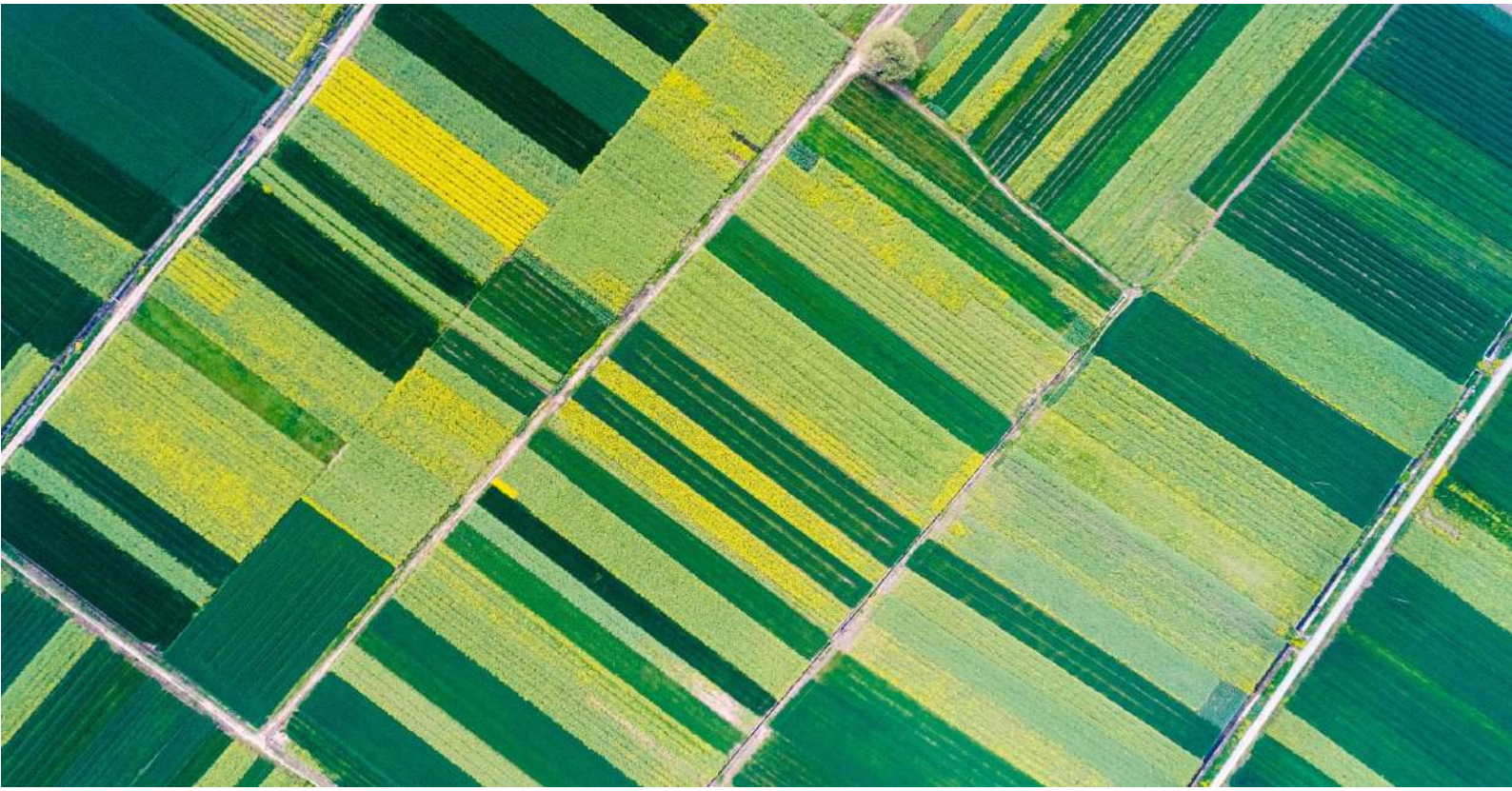

Power Grid Corporation of India Limited Offer of Additional Storage for Log Retention Techno Commercial Offer

Validity: Forty-Five (45) Days

July 30th, 2024

GE Document – GE/OP24POWIN0000548924/V3

Configuration Management: Documentation

Document and Revision Level	Publication Date
GE/OP24POWIN0000548924/V3	July 30th, 2024

Revision History

Date	Revision	Revision Details
Feb 09, 2024	V0	Initial publication
May 01st, 2024	V1	Initial publication
June 26th,2024	V2	Initial publication
July 30th, 2024	V3	Initial publication

Contents

Figures

No Table or figure entries found

Tables

No Table or figure entries found

1 Price Schedule- Per RLDC

Sl. no.	Description	Proposed Make	Qty	Unit Price (INR)	Total Price (INR) excl. GST
1	Storage- 6TB- Dual Controller, 10K SAS Drive, 4X1G CU port (6 Months data storage capacity)	HP/DELL/LENOVO/NETAPP	1 no.	1,160,000	1,160,000
	Total supply price excluding GST (in INR)				**1,160,000**
	Total service price excluding GST (in INR)				**7,75,000**

Price Schedule- Per SLDC

Sl. no.	Description	Proposed Make	Qty	Unit Price (INR)	Total Price (INR) excl. GST
1	Storage- 6TB- Dual Controller, 10K SAS Drive, 4X1G CU port (6 Months data storage capacity)	HP/DELL/LENOVO/NETAPP	1 no.	1,160,000	1,160,000
	Total SUPPLY Price excluding GST (in INR)				**1,160,000**
	Total SERVICES Price excluding GST (in INR)				**7,75,000**

Special Terms & Conditions

1. Taxes shall be Extra at Actuals at the time of ordering
2. Offer to be read in conjunction with attached EM-104
3. Validity – 45 days from offer date
4. Currency of Quotation: Indian Rupees (INR)
5. Payment Term: 100% advance of the contract value with PO
6. INCOTERMS: Ex-Works, Noida
7. Delivery Lead time – 3 -4 months from receipt of advance in GED's bank account or PO date whichever is later.

All sort of statutory variation including change, addition, deletion, abolition, repeal or reclassification due to change in Law and/ or directive or interpretation of authorized agency, shall be exclusively to the owner/purchaser's account.

Appendix A: Standard Terms & Conditions

EM-104

GE T&D India Limited
A-225, Sector-83
Noida – 201 305
Uttar Pradesh, India

Annexure B.2.12

Cost Estimate For Equipment at Alipurduar

Sl. No.	Description	Amount (in Lakhs (Rs.)
	Equipment Cost	
A	**Supply**	**42.00**
	Sub- Total A	
B	**Services/Installation incl training, testing and commissioning**	**0.55**
C	**Inland Freight and Insurance**	**4.20**
	Subtotal (A to C)	**46.75**
D	**Taxes and Duties**	
i	GST on Supply	**7.56**
ii	GST on Service / Installation incl. Training	**0.10**
	Subtotal (D)	**7.66**
	Subtotal (A to D)	**54.41**
E	Incidental Expenditure during Construction	**5.85**
F	Contingency	**1.63**
	Total (A to F)	**61.89**
G	Interest During Construction (IDC)	**3.09**
	Grand Total	**64.98**
H	Annual maintenance charges for 1 year during warranty period and 6 years after warranty period incl. GST*	**0.71**

S.No	Items	Units	Quatity	Supply (Rs	Total	F&I (Rs.	Services(Rs.)		Total price (Rs.)
1	SDH EQUIPMENT (STM-4 MADM UPTO 5 MSP PROTECTED DIRECTIONS)-BASEEQUIPMENT (COMMON CARDS, CROSS CONNECT/CONTROL CARDS, OPTICAL BASECARDS, POWER SUPPLY CARDS, POWER CABLING, OTHER HARDWARE ANDACCESSORIES INCLUDING SUB	EA	1	700012	700012		52434	52434	752446
2	SFP S16.1	EA	2	15120	30240		136	272	30512
3	optical Line interface card- STM4 - 225 KM	EA	6	446784	2680704		120	720	2681424
4	TRIBUTARY INTERFACE- E1 INTERFACE (MINIMUM 16 NOS.)	Set	2	71876	143752		72	144	143896
5	ETHERNET INTERFACE 10/100 BASE T WITH LAYER-2 SWITCHING (MIN 8 INTERFACES PER	EA	2	94740	189480		124	248	189728
6	TRIBUTARY INTERFACE-GIGABIT ETHERNET INTERFACES 10/100 MBPS WITH LAYER-2 SWITCHING (MINIMUM 2 NOS.)	SET	1	35223	35223		72	72	35295
7	Equipment Cabinets For SDH	EA	1	463714	463714		1188	1188	464902
					4243125		**54146**		**4298203**

Minutes of meeting for VOIP Communication System for all regions held in virtual mode (MS-Teams) on 12th June 2024

The meeting for VOIP Communication System for all regions held in virtual mode (MS-Teams) on 12th June 2024.

The list of participants is attached at ***Annexure-I***.

Sr. GM (CTU) welcomed all the participants at the meeting and proceeded with the agenda items. CTUIL emphasised that as the existing VoIP system is under extended AMC till July 2025, so a new system has to be designed and planned by this time. Further CTUIL stated that as the proposed VoIP system shall be PAN India single package, the purpose of this meeting is to make all the functional requirement of the system uniformly in all the region. The agenda of the meeting is attached at ***Annexure-II.***

With reference to ***Annexure-II ;*** 6 . iv) GRID-INDIA requested for discussion on features technical specification etc before optimization of the Cost. CTUIL agreed for the same and discussed all the possible options of design during the meeting and stated that whatever is agreed by the participants in the meeting shall be taken up.

CTUIL shared a presentation (attached at ***Annexure-III***) and explained the present and proposed VOIP architecture. The proposed VOIP architecture is a server-based system with 4 level of redundancy through hierarchical control centre servers for each user including RLDC subscribers. The broad aspects and basic features of the proposed VOIP system were explained in detail by CTUIL. Tentative BoQ & Cost of the proposed VOIP system for all regions was presented with three different options in view of cost optimisation.

NRLDC (GRID-INDIA)/ TSTRANSCO enquired about the number of licenses required for each subscriber to achieve 4 level of redundancy in the proposed VOIP system. CTUIL replied that only a single license will be sufficient for each subscriber, regardless of the number of servers they register with, as the proposed VOIP system achieves four levels of redundancy through software configuration and IP mapping and only the capacity of servers shall be enhanced to cater the requirement rather than requiring multiple licenses. Further, GRID-INDIA inquired about the necessity of a hierarchical control centre with multiple levels of redundancy for servers instead of within the utility control centres wise redundancy in line with other ULDC schemes like SCADA, WAMS systems. Further, each Main or Backup Control Centre shall have redundant server (HA Mode) for each function (communication, voice server and NMS etc..). GRID-INDIA also requested for Voice recording System redundancy at each control centre at both application and Hardware level . AEGCL stated that in case of failure of STUs VoIP server the switches (to be procured under VoIP project and connected to VoIP server) which will be connected to STUs FOTE and ISTS FOTE, the VoIP traffic from state GSS will be routed to RLDC VoIP server and accordingly redundancy of VoIP services will be maintained. AEGCL further emphasized that with such design aspect redundant STU VoIP server may not be required . CTUIL replied that this VOIP system is operational PAN India and is instrumental in managing the regional and national grids through voice commands exchanged among various control centres. This calls for a high redundancy especially for the remote stations under central and state sector. Hence 4 level redundancy for all remote subscribers is

very much required. However, CTUIL stated that it was already decided in previous meetings with all constituent of all regions.

SRLDC (GRID-INDIA) enquired about whether the multiple level of redundancy planned is for Voice Recording Failure / application-level failure or supply failure or communication channel failure etc. at SLDC and its routing to the next level i.e RLDC. CTU explained that at SLDC level both hardware and channel level redundancy for STUs subscribers is considered but at RLDC level only hardware level redundancy for these subscribers is envisaged. In the similar fashion central sector and local subscribers of RLDC have both hardware and channel level redundancy but at NLDC level only hardware level redundancy is considered. .

TSTRANSCO further enquired about the voice recording backup of STUs at RLDC level. CTUIL replied that voice recording is limited to state level only as STUs/SLDC have already stated in the various meetings of all regions that there voice recording backup should not be kept at RLDC/other utility.

TANTRANSCO enquired about the number of servers whether single server will be used for communication, voice and NMS functions or separate for all functions. CTUIL replied that a set consisting of 3 separate servers shall be used at each control centre. This was discussed and agreed in various meetings of all regions. TANTRANSCO further asked that whether exchanges will be required along with servers in the proposed VOIP system. CTUIL replied that exchanges are not required in the proposed VOIP system. TANTRANSCO asked whether any special feature are required in VOIP phones to connect with RLDC. CTUIL replied that no extra feature is required in VOIP phones to connect with RLDC. TANTRANSCO asked that whether VOIP phones in the upcoming Scheme can connect with the existing exchange of STUs. CTUIL replied that they have discussed the same with the OEMs and it was clarified that once the existing exchange gets integrated with proposed VoIP system, all subscribers of existing exchange shall also be registered in upcoming system. So the existing subscribers can be connected in this manner. TANTRANSCO asked that whether UPS are considered with servers. CTUIL replied that UPS are not considered in the scope of the upcoming VOIP scheme. TANTRANSCO informed that they will revise their inputs and provide to CTUIL. SRLDC (GRID-INDIA) requested to explore the architecture/solution of other OEMs also for better participation and competition. CTUIL stated that proposed solution is complied by many OEMs and the cost of other prospective vendors is also expected soon and shall be taken into consideration in final proposal at RPC.

WRLDC (GRID-INDIA) enquired about the connectivity of VOIP phone with both (Main & Backup Control centre) and also informed that RLDC shall be operating as Main I and II Control Centre philosophy with Active-Active Mode and remote subscriber call shall be routed to acting Main control Centre by VOIP system itself based on the designated as acting Main Control Centre. This feature shall be incorporated in the detailed feature by the implementing agency. CTUIL replied that there are two different cards in the FOTE, one reports to main control centre and other reports to Backup Control Centre or Main II Control Centre. Through a switch VOIP phone is connected to the two different ports in the FOTE which are reporting to both main and backup control centre. Two different channels will be in active- active mode. WRLDC (GRID-INDIA) asked whether routers are considered in the scope of this scheme. CTUIL replied that routers are not required as present communication system is TDM based. Further CTUIL clarified that the L3 switches being used which shall work like routers.

WRLDC (GRID-INDIA) also enquired whether cyber security audit is considered in the scope of AMC. CTUIL replied that revised cost estimate with cyber security audit cost will be shared. WRLDC (GRID-INDIA) also requested to make VLANs for different channels for seamless operation. CTUIL replied that these aspects shall be covered under detailed engineering while implementation.

GRID-INDIA emphasized that managing a large network in a flat manner (Layer 2) would be extremely challenging for troubleshooting network issues, particularly network loops, which are common due to the involvement of multiple stakeholders across thousands of sites. This is because the network has a massive broadcast domain, this issue is also observed in the existing VOIP system which is designed back in the year 2013. To mitigate this, routers/firewalls at the SLDCs/RLDCs and NLDCs levels should be implemented with Access Control Limits for each utility Electronic Security Boundary (ESB) in line with the CEA Cyber Security Guidelines 2021GRID-INDIAFurther, the network should be segmented using VLANs with proper subnetting to prevent lateral movement and ensure need basis logical reachability among sites and control centres. GRID-INDIA has also informed that this suggestion is given to CTUIL from SRLDC as part of comments in format shared by CTUIL for sizing of the Exchange.. CTUIL stated that the detailed specifications shall be prepared by the implementing agency in consultation with stakeholders and shall be in accordance with the CEA cyber security guidelines 2021.

NERLDC (GRID-INDIA) requested to include various aspects for AMC period such as Patch Management of Servers, Firewalls, Switches and other devices of the system. Moreover, it is requested that responsibility of complying with cyber security guidelines and advisories during the maintenance phase should be of the implementing agency the system and it should in scope of AMC. GRID-INDIA suggested to include the scope work for AMC in line with the other ULDC Schemes like SCADA/EMS upgradation. CTUIL clarified that such aspects shall be covered in the bidding documents prepared by the implementing agency in consultation with stakeholders.

GRID-INDIA also requested for Provision (Optional Rate) of integration of all VOIP /phones etc with 3rd Party Voice Recording System during contract period . CTUIL stated that such feature is not envisaged in the present scope because any integration with 3rd party equipment /system may lead to cyber threats.

ERLDC (GRID-INDIA) enquired whether voice recording shall be stored at hot standby redundant the servers at each control centre. CTUIL replied that recording will be stored in the server through which call is connected and both main and backup servers will get synchronised periodically. CTUIL also clarified that if both main and backup servers at SLDC are down even then also, remote subscribers can connect with RLDC level server, but voice recording shall be restricted to SLDC servers due to administrative reasons. ERLDC (GRID-INDIA) also asked that NMS server that will be used here is for VOIP or complete communication system. CTUIL replied that NMS server proposed here is solely for proposed VOIP system.

ERLDC (GRID-INDIA) suggested that two number of VoIP phones along with two POE switches can be considered at remote subscriber end for better redundancy. CTUIL replied that such arrangement is not available with switching of 2 phones along-with POE switches. If

multi-port single POE switch is used for switching of the two phones may result in single point failure of the combined switch, hence the same will not result in better design. ERLDC (GRID-INDIA) requested to include the complete cabling at control centres in the scope of the scheme. CTUIL replied that local cabling at control centre level is included in the scope.

ERLDC /POWERGRID requested to include remote site installation also in the scope of this scheme. CTUIL stated that it will increase the cost further so if all constituents agree, this can be included. WRLDC & NRLDC (GRID-INDIA) informed that remote installation may not be included in the scope of this scheme but POWERGRID,ERLDC & NERLDC were of view that remote installation should be included. CTUIL stated that after taking cost of remote installation from OEMs, revised tentative cost estimate will be shared with the MoM. NERLDC MePTCL/ERLDC also requested to consider cordless VOIP phones for their remote generation plants. CTUIL replied that they have explored this aspect with various OEMs/suppliers. The OEMs suggested that a local tower will be required connecting the wireless users. This is not a feasible solution for the stations and involves high cost as compared to the normal cordless phones. In view of this this aspect is not advisable to be adopted with the said scheme.

Maha TRANSCO raised query that they do not have separate media from all substations which can provide redundant path upto SLDC. CTUIL suggested Maha TRANSCO to take up this as a separate agenda in the TeST meeting of the region. Maha TRANSCO further asked that whether existing Alcatel phones will be utilised in the upcoming scheme. CTUIL replied that existing Alcatel phones are proprietary in nature so they may not be used in the upcoming VOIP scheme. Maha TRANSCO asked about the configuration of despatcher console. CTUIL replied that configuration of despatcher console shall be taken care at the time of detailed engineering.

NLDC asked regarding the provision of international exchange for cross border links. CTUIL replied that a separate server set (with Voice, NMS and recording) with desired capacity shall be considered for the NLDC/Backup NLDC and RLDCs shall be Remote Subscribers for cross border voice communications. Tentative Cost of international exchange along with phones shall be included in the cost estimate shared with the MoM.

HVPNL also raised query regarding integration of their exchange. CTU replied that in case of integration, only servers are required at control centres as suggested by the OEMs, and the cost for integration of existing exchange will be added in the cost estimate shared with the MoM. HVPNL also asked the basis of cost estimate. CTUIL replied that the tentative cost is based on the budgetary quotes received from prospective OEMs/supplier.

MePTCL raised query regarding redundancy of fibre paths for FXS & FXO i.e. 2W phones.. CTUIL asked MePTCL to take up separate agenda in this regard in the TeST meeting.

AEGCL asked that if both switch and FOTE fails at a node then how it will route to SLDC, CTUIL explained that if both the switch and FOTE fails than it will not route to SLDC/RLDC.

POWERGRID asked whether POE switch and DC-AC converter are required for remote as well as local subscribers. CTUIL replied that POE switch and DC-AC converter are required only for remote sites and for remote sites installation, remote support shall be provided by OEM/vendor for installation purpose. AEGCL also informed that the switches required at both GSS

end and SLDC/RLDC end may be considered with dual source DC supply POWERGRID also suggested to take DC (48V) operated POE switch with 2 sources of supply instead of DC-AC converter. CTUIL replied that after taking cost of such DC operated POE switch, revised tentative cost estimate shall be shared with the MoM.

NERLDC (GRID-INDIA) requested that the inclusion of various minor components such as Rack for PoE Switches, MCB for DC connections etc., should also be considered in the project. CTUIL responded that the same will be done during detailed engineering by implementing agency.

NERLDC (GRID-INDIA) requested that PoE switch with AC Supply should be provided at SLDCs, RLDCs and NLDCs also for powering up the IP based local subscriber of LDCs, as connecting the individual phones with power adapter will not be feasible at all the desks. SRLDC (GRID-INDIA) also seconded the fact that PoE with AC Supply switch is very much required for LDCs. CTUIL clarified that covering of this feature shall be costlier than providing the adapters for the phones at these control centres which are already equipped with UPS/ battery banks/ DG Set hence it is not recommended. Further at the time of deliberation of final technical specification with the stakeholders by implementing agency same shall be taken care in agreement with all stakeholders.

KSEB enquired that two phones can be considered if one phone is engaged, call can be made on the other phone. CTUIL stated that overriding facility is considered in the upcoming VOIP system.

APTRANSCO enquired regarding sharing of cost for the server required for the integration of existing exchange and how the cost will be shared among various utilities. CTUIL informed that project shall be under Regulated Tariff Mode (RTM) and cost will be shared as per CERC sharing of ISTS charges regulation 2020.

MS,SRPC suggested that tentative cost breakup of phones at STU locations may be worked out and during RPC agenda same shall be presented accordingly. CTUIL agreed for the same and shall provide the Central sector (CS) and State sector (SS) cost and the cost shall be borne by the constituent as per the CERC Regulation.

Following was concluded in the meeting:

1. Draft Technical Specifications shall be prepared by implementing agency in which the scheme details along with BoQ shall be shared with all stakeholders before finalization..
2. Provision of separate international exchange server with phones to be considered.
3. Remote location cabling and installation shall be included in the scope
4. Cordless VOIP phones for ER/NER is not advisable with said scheme..
5. POE switch with dual DC input source shall be considered as per site condition and DC-AC converters shall be deleted.
6. Cyber security audit cost of VoIP system shall be considered.
7. Central Sector (CS) and State Sector (SS) wise cost breakup shall be shared.
8. Proposed System shall comply with the CEA Cyber Security Guidelines 2021.

Revised Cost estimate is prepared after incorporating inputs received from the utilities and is attached at **Annexure-IV**

Meeting ended with vote of thanks.

Annexure -I

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32	Dileep kumar rathore		POWERGRID		
33	Mayank dhar shukla		POWERGRID		
34	Biplo Sarkar		POWERGRID		
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50	Sh.Ramesh		TSTRANSCO		
51	Arup Sarmah		AEGCL		
52	K.Sridhar	Executive Engineer	APTRANSCO		
53	Representative from BBMB	Xen	BBMB		
54	Pongmei		SLDC Nagaland		
55	Representative from SLDC Panipat	Xen	SLDC Panipat		
56	N.K Patel	SE	GETCo		
57	Representative from SLDC Chattisgarh		SLDC Chattisgarh		
58	Niranjan Dalal		MahaTRANSCO		

Annexure-II

Agenda for combined meeting

VOIP System (Hotline speech communication)

1. Hot Line Speech Communication System (VOIP based Exchange system) was implemented in 2016 by POWERGRID in all the five regions for faster communication due to unavailability of dedicated **PAN India** speech communication between NLDC, RLDCs, SLDCs, important state and ISTS substations/generators. The said PABX was implemented by M/s Orange through Alcatel Lucent as OEM.

2. In the 67th NRPC meeting, POWERGRID representative stated that the scheme executed by M/s ORANGE was with a provision of AMC of 7 years as part of the contract and the same is expiring in July' 2023 for most of the sites.

3. AMC of the same was extended and approved in the 67th NRPC for further 2 years upto July'25. After July'25 there is no support shall be extended by Alcatel (OEM).

4. In 67th NRPC Meeting, MS, NRPC advised CTU to plan upgradation/ new system in view of expiry of AMC of existing VOIP System in July'25.

5. As life of existing system is 15 years as per CERC tariff petition, POWERGRID shall file petition to CERC for revised depreciation, after which new project shall be awarded.

6. CTU has discussed the requirement with various VOIP system suppliers and proposed VOIP System Architecture is attached at **Annexure-I**.

   Salient features of proposed VOIP system are given below as below:

   i. Server based architecture:
      Multiple level (4) of redundancy as compared to no redundancy in existing system.
   ii. SLDC & RLDC servers has Local (Central Sector phones) and Remote (Substation, generators) Phone support. However, at NLDC only local phone support will be there.
   iii. Power over ethernet switches proposed for all VOIP pone at stations for redundancy and powering the phones. In place of POC injectors, Switches with POE output are considered (additional DC to AC convertor will be required as switches operates at AC voltage)

   iv. For cost optimization single servers are proposed for Voice, NMS & Call Recording.

   v. There are no duplication of licenses for backup servers.

vi. Server size and software has been considered by taking future requirement of phones.

vii. Support for integration of future exchange of other utilities considered (their control centres).
viii. NMS for adding/ deleting users shall be provided at RLDC/ SLDC levels
ix. Operator console shall be provided to manage calls at RLDC/SLDC
x. Call recording features shall be provided at RLDC & SLDC level
xi. VOIP, Digital, Analog, Four Wire E&M (at PLCC locations) phones are considered
xii. Video Phones at RLDC/ SLDC for Senior officials
xiii. Sufficient numbers of licenses to cater future RE/ ISTS/ ISGS/ IPP and STU substations locations. The licenses for present and future requirement of the phones are considered under the scope of project, however phones for present requirement only shall be procured.
xiv. Firewall at control centres is considered
xv. Exchanges are not required at STUs where STUs have their own existing exchange, only integration shall be required which can be done through SIP/PRI lines
xvi. One Exchange for international connection at NLDC main and Backup of NLDC (25 lines) to be decided.
xvii. 1 year of warranty with 6 year of AMC which can be extendable up to 3 years
xviii. VOIP phones are to be installed at Control Centre Level, at Stations levels phones/ gateways to be handed over to utilities and remote support shall be provided.
xix. Cat-6 cable of 100 meter has been considered for remote locations.

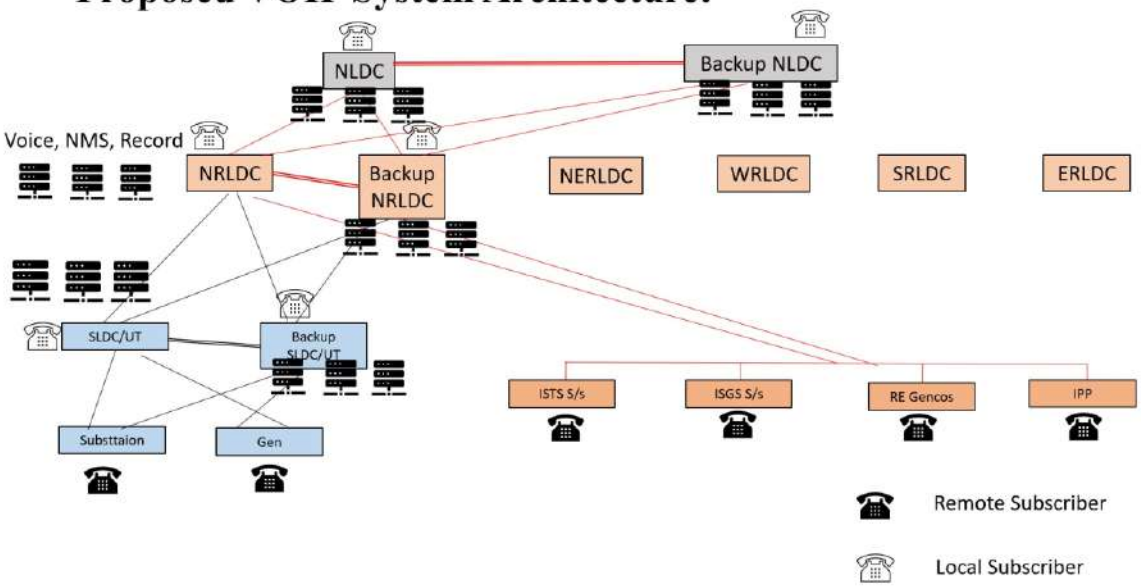
7. In this regard inputs were received from the utilities in the various meetings of CPM/ TeST of all five regions. For the utilities those have provided inputs we have considered the same in the cost estimate purpose. For the utilities where inputs are not available the present exchange license sizes have been considered for the cost estimate purpose.
8. Tentative cost estimate based on the budgetary quotation from prospective suppliers has been obtained and shall be presented during the meeting.
9. It is proposed that being a Nation wise project, the total cost of five regions including NLDC shall be put up in all five regions RPCs/NPC thereafter, getting views of RPCs scheme shall be put in the NCT for approval.

Tentative Region wise Cost estimates:

S. No.	**Region**	**Tentative Cost (in Cr.)**
1	NR	27.61
2	SR	24.71
3	WR	21.61
4	ER	16.69
5	NER	17.71
6	NLDC	2.63
Grand Total		**110.96**

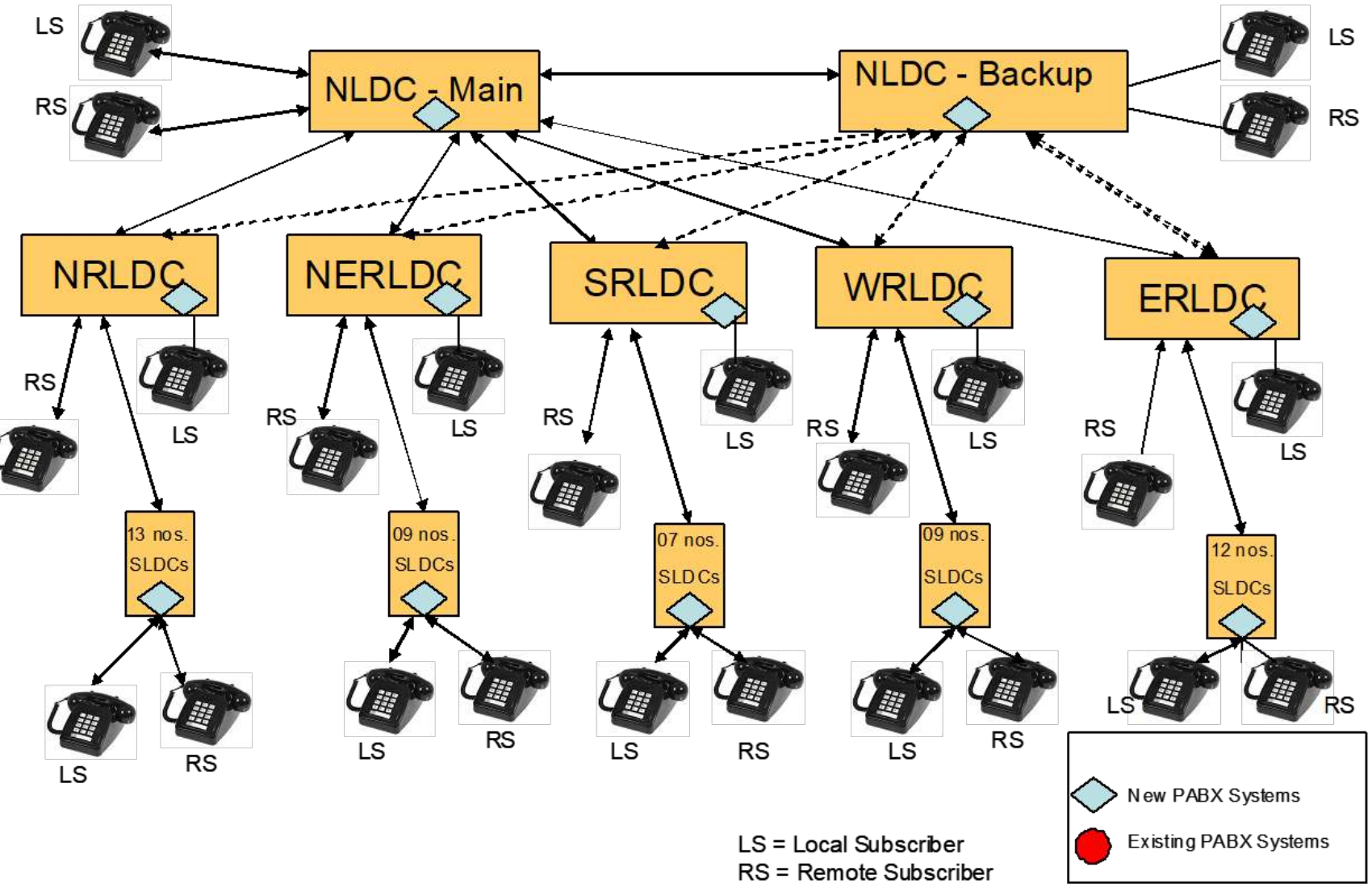
Annexure-I

Proposed VOIP System Architecture:



Annexure-III

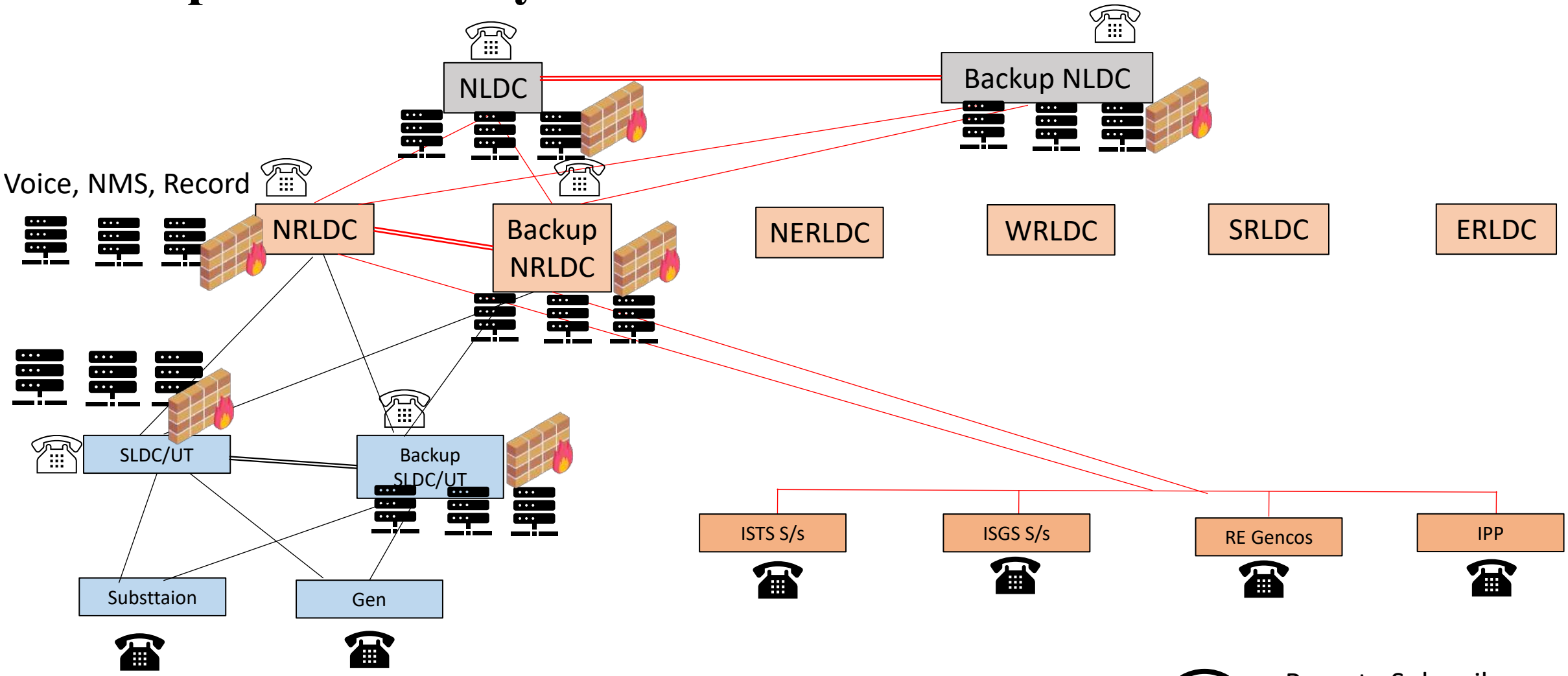
Combined CPM VOIP Communication System 12.06.2024



Present Hotline PABX Architecture

Proposed VoIP System Architecture

Proposed VOIP System Architecture:



Design Aspects

Each control center (Main & Backup) has 3 Servers

Voice NMS Recording

The main and its backup servers of the control centres (SLDC, RLDC & NLDC) shall be placed respectively at their physical locations.

Each Remote Subscriber of STU/UT shall be registered at four voice servers i.e. remote subscriber of SLDC will be registered at main SLDC, backup SLDC, Main RLDC and Backup RLDC in view of redundancy.

Call recording servers shall be provided at all main and backup control centres and will be sync through network periodically.

Configuration and management servers (NMS server) shall be provided at both main and backup SLDC, RLDC, NLDC individually.

Design Aspects

- The redundancy of subscriber channels between SLDC and RLDC shall be met by two discrete wide channels (similar to ICCP channel) containing the data of all SLDC subscribers. Similar is the case with backup SLDC and RLDC.
- The voice recording of subscribers of each utility shall be limited to that utility control centres only.
- In case communication link failed between subscriber to main SLDC server, subscriber will be switched automatically to the already active backup server and if both main and backup SLDC servers failed, subscriber will be connected with the already active Main RLDC server.
- Hardware level redundancy of SLDC servers has been considered at RLDC level.
- In case of central sector subscribers, similar redundancy has been planned for RLDC and NLDC level.

Design Aspects – Contd.

- VOIP as well as anolog both phones are considered at SLDC, RLDC, NLDC locations.
- Provision of Video phones for higher officials
- POE based switched at remote site for power supply to IP phones
- DC-AC converter for remote sites.
- Trunk/SIP lines integration is considered for outside network calls on mobile or another landline and the cost towards this shall be billed and settled by the respective utility.
- (4 wire E&M) phones are also planned through PLCC integration for few locations at SLDC level
- Integration with proposed Exchanges is kept at RLDC/ SLDC
- For Cyber Security Firewall are considered at each (main and backup) Control Centre
- Sizing of servers has been done as per the no. of subscribers at each control centres
- Cat-6 cable (100m) has been considered at each remote locations for VOIP phone/Gateway connection with FOTE

Features in Proposed VOIP system

- All Control Centres (NLDC, RLDCs and SLDCs) shall be provided with dispatcher console with advanced features such as touch screen dialing, directory sorting, user friendly display etc. The directory display in touch screen shall be configurable.
- A flexible closed numbering scheme shall be developed. The numbering scheme adopted shall take into account future network expansion so that introduction of new exchanges and subscribers shall require configuration of only those exchanges directly involved in the expansion.
- The proposed VOIP system is a PAN India system where any user can call to any user in Nation Wide.
- It will be possible to intrude on and/or disconnect ongoing calls of lower priority if free trunks are not available or if the called subscriber is engaged.
- Seamless network wherein existing multi-vendor Exchange/VOIP system of utilities are networked together.
- The equipment shall have flexibility to add/delete/modify Service Features and other facilities without requiring extensive modification and service discontinuity.

SIP based open sources VOIP phones can be integrated

Cost & BoQ of Proposed VOIP System for all regions (Option-1)

Region	Server Set		Phone (No.)		POE Switch	DC-AC Converter	Cat 6 cable (100m set)	NGFW (No.)	Grand Total (with AMC) (in Crs.)
	Main	Backup	VOIP	Analog Phone (including gateway)					
NR	10	10	2479	951	2368	2368	2368	20	**₹ 27.61**
SR	7	7	2875	252	2517	2517	2517	14	**₹ 24.02**
WR	8	6	2192	1044	2092	2092	2092	14	**₹ 21.62**
ER	7	7	1079	1059	942	942	942	14	**₹ 15.96**
NER	8	8	1424	619	1311	1311	1311	16	**₹ 19.19**
NLDC	1	1	42	400				2	**₹ 2.63**

Grand Total **₹ 110.62**

Cost & BoQ of Proposed VOIP System for all regions (Option-2)

Region	Server Set		Phone (No.)		POE Switch	DC-AC Converter	Cat 6 cable (100m set)	Remote VOIP Phone with POE injector	NGFW (No.)	Grand Total (with AMC) (in Crs.)
	Main	Backup	VOIP	Analog Phone (including gateway)						
NR	10	10	2479	951	0	0	4736	4736	20	₹ 18.65
SR	7	7	2875	252	0	0	5034	5034	14	₹ 15.23
WR	8	6	2192	1044	0	0	4184	4184	14	₹ 13.53
ER	7	7	1079	1059	0	0	1884	1884	14	₹ 12.41
NER	8	8	1424	619	0	0	2622	2622	16	₹ 14.23
NLDC	1	1	42	400					2	₹ 2.63
									Grand Total	₹ 76.71

Cost & BoQ of Proposed VOIP System for all regions (Option-3)

Region	Server Set		Phone (No.)		POE Switch	DC-AC Converter	Cat 6 cable (100m set)	Remote VOIP Phone with POE injector	NGFW (No.)	Grand Total (with AMC) (in Crs.)
	Main	Backup	VOIP	Analog Phone (including gateway)						
NR	10	10	2479	951	0	0	4736	4736	0	₹ 15.80
SR	7	7	2875	252	0	0	5034	5034	0	₹ 13.10
WR	8	6	2192	1044	0	0	4184	4184	0	₹ 11.54
ER	7	7	1079	1059	0	0	1884	1884	0	₹ 10.42
NER	8	8	1424	619	0	0	2622	2622	0	₹11.96
NLDC	1	1	42	400						₹ 2.35
									Grand Total	₹ 65.2

Thank you

Annexure-IV Revised Cost estimate

Tentative Cost & BoQ of Proposed VOIP System for All regions CS +SS(Option-1 revised)

Region	Server Set		Phone (No.)		POE Switch (with dual DC)	Cat 6 cable (100m set)incl. installation	NGFW (No.)	Grand Total (with AMC) (in Crs.)
	Main	Backup	VOIP	Analog Phone (including gateway)				
NR	10	10	2479	951	2368	2368	20	**₹ 34.3227**
SR	7	7	2875	252	2517	2517	14	**₹ 32.8099**
WR	8	6	2022	1044	1882	1882	14	**₹ 26.1236**
ER	7	7	1032	1093	822	822	14	**₹ 17.8878**
NER	8	8	1599	326	1138	1138	16	**₹ 22.0682**
NLDC	1	1	42	400	0	0	2	**₹ 2.6325**
Intl.	1	1	29	0	0	0	2	**₹ 1.209754**
Cyber Audit of complete VoIP network for 7 years								**₹ 2.8**

Grand Total **₹ 139.85**

Tentative Cost & BoQ of Proposed VOIP Syst. for NR SS(Option-1)

State	Server Set		Phone (No.)		POE Switch (with dual DC)	Cat 6 cable (100m set)incl. installation	NGFW* (No.)	Grand Total (with AMC) of SS (in Crs.)
	Main*	Backup*	VOIP	Analog Phone (including gateway)				
SLDC DTL, Minto Road	1	1	226	0	193	193	2	1.61
SLDC,RRVPNL, Heerapura	1	1	24	49	0	0	2	0.081
SLDC,BBMB, Chandigarh	1	1	182	116	182	182	2	1.57
SLDC,PSTCL, Patiala	1	1	203	8	197	197	2	1.64
SLDC,HPSEBL, Shimla	1	1	182	164	182	182	2	1.59
SLDC, UPPTCL, Lucknow	1	1	820	0	800	800	2	6.49
SLDC, HVPNL, Panipat	1	1	0	0	0	0	2	0
SLDC, JKPTCL, Jammu	1	1	182	148	182	182	2	1.58
SLDC, PTCUL, Dehradun	1	1	182	116	182	182	2	1.57
						Grand Total		₹16.14

* This BoQ pertains to Central Sector(CS) and has not been included in the cost.

Tentative Cost & BoQ of Proposed VOIP System for SR SS (Option-1 revised)

Region	Server Set		Phone (No.)		POE Switch (with dual DC)	Cat 6 cable (100m set)incl. installation	NGFW* (No.)	Grand Total (with AMC) of SS (in Crs.)
	Main*	Backup*	VOIP	Analog Phone (including gateway)				
KSEB, Kalamessary	1	1	563	0	546	546	2	4.49
TSTRANCO, Hyderabad	1	1	862	20	800	800	2	6.73
KPTCL, Bangaluru	1	1	2	0	0	0	2	0.0015
Puducheery	1	1	75	64	41	41	2	0.50
TANTRANSCO, Chennai	1	1	141	18	130	130	2	1.14
APTRANSCO, Vijaywaya	1	1	0	0	0	0	2	0.00

* This BoQ pertains to Central Sector(CS) and has not been included in the cost.

Grand Total **₹ 12.86**

Tentative Cost & BoQ of Proposed VOIP System for WR SS (Option-1 revised)

Region	Server Set		Phone (No.)		POE Switch (with dual DC)	Cat 6 cable (100m set)incl. installation	NGFW* (No.)	Grand Total (with AMC) of SS (in Crs.)
	Main*	Backup*	VOIP	Analog Phone (including gateway)				
SLDC,Panjim/Madgo	1	1	100	84	100	100	2	0.89
SLDC,Bhopal	1	1	440	220	400	400	2	3.40
SLDC,Raipur	1	1	400	148	400	400	2	3.34
SLDC,Vododara	1	1	200	244	200	200	2	1.77
SLDC,Mumbai	1	1	182	244	182	182	2	1.62
SLDC Daman & Diu	1	0	50	84	50	50	1	0.49
SLDC DNH	1	0	50	0	50	50	1	0.40

* This BoQ pertains to Central Sector(CS) and has not been included in the cost.

Grand Total ₹ 11.92

Tentative Cost & BoQ of Proposed VOIP System for ER SS (Option-1 revised)

Region	Server Set		Phone (No.)		POE Switch (with dual DC)	Cat 6 cable (100m set)incl. installation	NGFW* (No.)	Grand Total (with AMC) of SS (in Crs.)
	Main*	Backup*	VOIP	Analog Phone (including gateway)				
SLDC,Ranchi	1	1	60	100	60	60	2	0.59
OPTCL ,Bhubneshwar	1	1	108	85	92	92	2	0.85
SLDC Bihar Patna	1	1	182	212	182	182	2	1.61
SLDC WB Howrah	1	1	182	212	182	182	2	1.61
SLDC DVC backup Maithan	0	1	87	150	70	70	1	0.71
SLDC DVC Kolkata	1	0	81	150	54	54	1	0.60
SLDC Sikkim	1	1	182	84	182	182	2	1.56

* This BoQ pertains to Central Sector(CS) and has not been included in the cost.

Grand Total **₹ 7.53**

Tentative Cost & BoQ of Proposed VOIP System for NER SS (Option-1 revised)

Region	Server Set		Phone (No.)		POE Switch (with dual DC)	Cat 6 cable (100m set)incl. installation	NGFW* (No.)	Grand Total (with AMC) of SS (in Crs.)
	Main*	Backup*	VOIP	Analog Phone (including gateway)				
SLDC Imphal	1	1	70	24	40	40	2	0.47
SLDC,Meghalay (Nehu)	1	1	108	63	92	92	2	1.03
SLDC Guwahati-kahilipara	1	1	265	10	180	180	2	1.68
SLDC Mizoram(Aizwal)	1	1	68	23	38	38	2	0.45
SLDC (Nagaland)Diamapur	1	1	74	26	44	44	2	0.50
SLDC Agartala	1	1	90	34	60	60	2	0.65
SLDC Itanagar	1	1	114	46	84	84	2	0.76

* This BoQ pertains to Central Sector(CS) and has not been included in the cost.

Grand Total **₹ 5.54**

Tentative Cost & BoQ of Proposed VOIP System for All regions CS +SS(Option-1 revised)

Region	CS(ISTS) (in Crs.)	SS(in Crs.)	Total(in Crs.)
NR	₹18.18	₹16.14	₹ 34.3227
SR	₹19.95	₹ 12.86	₹ 32.8099
WR	₹14.20	₹ 11.92	₹ 26.1236
ER	₹10.36	₹ 7.53	₹ 17.8878
NER	₹16.53	₹5.54	₹ 22.0682
NLDC	₹ 2.64	₹ 0	₹ 2.6325
Intl.	₹ 1.20	₹ 0	1.209754
Cyber Audit	₹ 2.8	₹ 0	₹ 2.8
	₹ 85.86	₹ 53.99	₹ 139.85

Annexure-B2.14.2

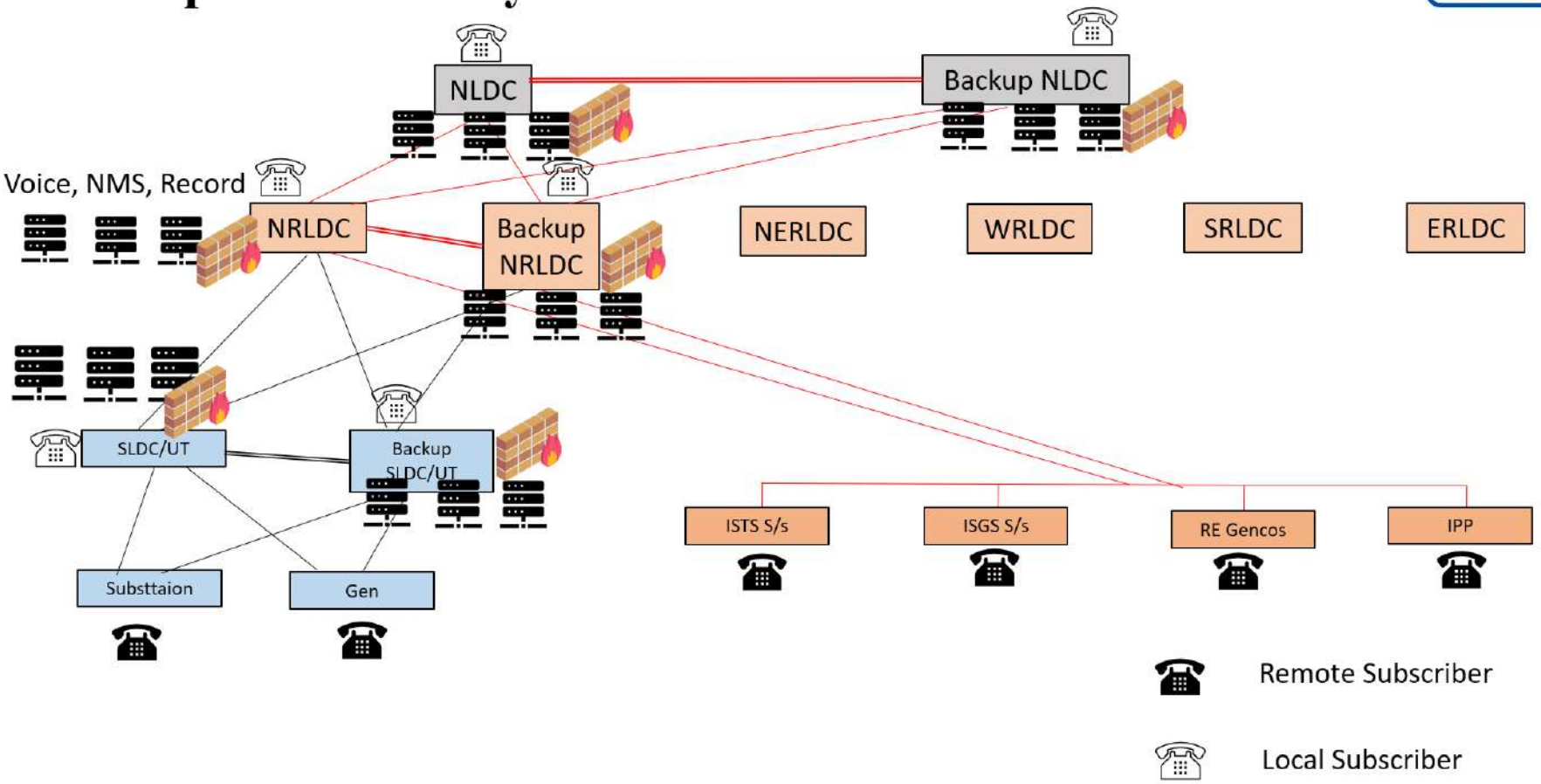
GS. No.	Items	Details
1.	Name of Scheme	VOIP Communication system for Grid-Operation for all Five Regions NR, NER, SR, WR, ER as PAN India
2.	Scope of the scheme	Supply and installation of VOIP Communication system including Phones, Voice Recorder etc. for Grid-Operation for all Five Regions NR, NER, SR, WR, ER as PAN India at NLDC, RLDCs, SLDCs
3.	Objective / Justification	1. Hot Line Speech Communication System (VOIP based PABX system) was implemented in 2016 by POWERGRID in all five regions after grid disturbance in 2012 where grid operators faced problem of fast communication due to unavailability of dedicated speech communication **PAN India** between NLDC, RLDCs, SLDCs, important state and ISTS substations and generators. The said PABX was implemented by M/s Orange through Alcatel Lucent as OEM. The lead region for the existing VoIP system is Northern Region of POWERGRID. 2. In the 67th NRPC meeting, POWERGRID representative stated that the scheme executed by M/s ORANGE was with a provision of AMC of 7 years as part of the contract and the same is expiring in July' 2023 for most of the sites. 3. AMC of the same was extended and approved in the 67th NRPC for further 2 years upto July'25 with financial implication and shall be booked under ULDC O&M charges as per the CERC norms. After July'25 there is no support shall be extended by Alcatel (OEM). POWERGRID stated they are not able to maintain the system beyond that AMC expiration. MS-NRPC advised CTU to plan upgradation/ new system in view of expiration of AMC in July'25.

GS. No.	Items	Details
		4. Grid-India in 23rd NRPC- TeST meeting stated that as VOIP system is utmost requirement of Grid-Operation and shall be planned by CTU parallel as POWERGRID has to file petition in the CERC for revised depreciation of existing VOIP System in view of 15 years of useful life. 5. In this regards CTU discussed the requirements with utilities & various VOIP system suppliers/OEMs and proposed the VOIP System Architecture which is attached at **Annexure-IIA**. 6. Comparison between present and proposed VOIP System is attached at **Annexure-IIB**. 7. Broad Specifications of the proposed VOIP system is attached at **Annexure-IIC** 8. In this regard inputs are acquired from the utilities in the various meetings of CPM, COM/ TeST/SCADA of all five regions. For the utilities those have provided inputs we have considered the same in the cost estimate purpose. Further a combined CPM(Communication planning meeting) of all five region was also held on 12.06.2024 to obtain uniformity of features and functions of the VoIP system among all regions. After incorporating the comments of all utilities MoM was issued. 9. The project is of utmost importance for grid management and operation by grid operators and also time critical. As the AMC of existing system is expiring by July,2025 the proposed system needs to be placed before that.

GS. No.	Items	Details
		10. It is proposed that being a Nation wide project, the total cost of five regions including NLDC and international Exchange (Cross border links) VoIP system shall be put up in all five regions for RPC/s review followed by NCT approval as single Scheme and package PAN India Basis for seamless integration and installation purpose. 11. Tentative cost of the scheme is **Rs. 137.46 Crs.** (including 6 years AMC after completion of 1 year warranty period) Excluding taxes & Duties 12. There are three types of cost involved, Regional Central Sector, National Central Sector, State Sector. The sharing of cost shall be done as per following mechanism between constituents: (i) Regional Central Sector Cost to be shared by respective region DICs as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 under Regional Component. (ii) National Central Sector Cost to be shared by all regional DICs as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 under National Component. (iii) State Sector Cost shall be shared by respective state/s for their portion as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020. (iv) AMC for State Sector shall be shared by respective states for their portion as per CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020.

GS. No.	Items	Details
4.	Estimated Cost	Total project cost : 137.46 Crs. (including 6 years AMC after completion of 1 year warranty period) (Excluding taxes & Duties) NR – Rs. 34.46 Crs ER – Rs. 19.76 Crs. SR – Rs. 27.98 Crs. NER- Rs. 22.36 Crs. WR – Rs. 26.35 Crs. National – Rs. 6.55 Crs. Breakup of estimated cost and tentative BoQ at Regional, National and State Sector wise is attached at **Annexure-IID.** After approval of the scheme POWERGRID shall prepare detailed BoQ as per actual requirement.
5.	Implementation timeframe	9 months from the date of allocation
6.	Implementing Agency / Mode	**POWERGRID/ RTM**
7.	Deliberations in different meetings	i. 67th NRPC dtd. 30.06.2023 ii. Joint CPM of all Region dtd. 12.06.24 iii. 23rd NRPC TeST dtd. 21.09.2023 iv. 24th NRPC TeST dtd. 09.02.2024 v. NR CPM 5th ,6th dated 20-03-2024 & 23.04.2024 respectively. vi. 44th COM SR dtd.21.03.2024 vii. 46th COM SR dtd.22.05.2024 viii. SR CPM 4th ,5th dated 31.07.2023 & 18.04.2024 respectively ix. WR 4th ,5th CPM dated 26-07-2023 & 28-03-2024 respectively. x. 28th NETeST meeting dtd. 14.05.2024 xi. 4th CPM of NER region dtd. 28.07.2023 xii. 14th ER TeST dtd. 16.04.24 xiii. ER 4th CPM dtd. 27.07.2023

Proposed VOIP System Architecture:



Annexure-IIB

Comparison of features between present and proposed VOIP System

S. No	Present VOIP Exchange	Proposed VOIP system
1	Exchange based system	Server based system
2	Star based architecture and no redundancy between exchanges (SLDC/RLDC/NLDC)	Multiple level of Redundancy kept. At phone level two channels are proposed for main and backup exchanges of SLDCs and RLDCs. For State sector four level Hardware redundancy has been considered as e.g. Main SLDC/ Back Up SLDC/ Main RLDC/ Backup RLDC For Central sector four level Hardware redundancy has been considered as e.g. Main RLDC/ Back Up RLDC/ Main NLDC/ Backup NLDC
3	Proprietary License based system	SIP based open source licenses
4	The IP Phones connected at NLDC, RLDC and	IP Phones shall not be proprietary in nature.

	SLDC are proprietary IP Phones of Alcatel	
5	No PoE Switches	POE switch with dual redundancy considered
6	NA	Firewall are considered for cyber security
7	NA	Cyber Security Audit is considered
8	NA	Provision of video phones at Control Centre for higher officials
9	NA	Sufficient numbers of licenses considered to cater future RE/ ISTS/ ISGS/ IPP and STU substations locations.
10	Recording done at one location	Recording at each Control Centre shall be done locally and later at regular intervals transferred to a backup server for storage and archival

Annexure-II C

Broad Specifications of proposed VOIP System

1. Server based architecture: Multiple level (4 level) of redundancy as compared to no redundancy in existing system.
2. SLDC & RLDC servers has Local (Control Centre phones) and Remote (Substation, Generators) Phone support. However, at NLDC only local phone support has been considered.
3. Power over ethernet (PoE) switches with dual DC supply ports has been considered for all VOIP phones at remote stations for redundancy and powering the phones.
4. One set of three servers are proposed for Voice (VOIP), NMS & Call Recording at each control centre.
5. There is no duplication of licenses for backup servers.
6. Server size and software has been considered by taking future requirement of phones.
7. Support for integration of future exchange of other utilities considered (their control centres).
8. NMS for adding/ deleting users shall be provided at RLDC/ SLDC levels
9. Operator console shall be provided to manage calls at RLDC/SLDC
10. Call recording features shall be provided at RLDC & SLDC level with backup.
11. VOIP, Analog & Four Wire E&M (at PLCC locations) phones are considered
12. Video Phones at RLDC/ SLDC for Senior officials
13. Sufficient numbers of licenses to cater future RE/ ISTS/ ISGS/ IPP and STU substations locations. The licenses for present and future requirement of the phones are considered under the scope of project, however phones for present requirement only shall be procured.
14. Firewall at control centres is considered
15. Installation with 100m Cat-6 cable considered at remote locations.
16. Integration with existing STU exchanges has been considered.
17. One Exchange for international communication for cross border links has been considered at NLDC main and Backup NLDC.
18. **6 year of AMC has been considered after 1 year warranty.**
19. Cyber Security Audit has been considered.

Annexure-IID

Cost Breakup Between Regions and Central Sector and State Sector

Region	Central Sector (ISTS) (in Crs.)	State Sector (in Crs.)	Total (including 6yr AMC after completion of 1 yr warranty period & excluding taxes) (in Crs.)
NR	₹18.54	₹15.92	₹ 34.46
SR	₹15.3	₹ 12.68	₹ 27.98
WR	₹14.61	₹ 11.74	₹ 26.35
ER	₹12.32	₹ 7.44	₹ 19.76
NER	₹16.91	₹5.45	₹ 22.36
National Component (NLDC, International exchange and Cyber audit)	₹ 6.55	₹ 0	₹ 6.55

Grand Total ₹ 137.46 Crs. (including 6year of AMC after completion of 1 yr warranty period) (excluding GST/TAXES)

Northern Region Cost Breakup

Northern Region Utility	Servers		Phones			POE Switch (with dual DC) (No.)	Cat 6 cable (100m set) incl. installation (No.)	NGFW* (No.)	Total Cost with AMC (6 Yr after 1 Yr. warranty (in Crs.)	Total cost (in Crs.)	Central Sector (CS)/State Sector (SS)
	Main (No.)	Backup (No.)	VOIP (Local) (No.)	VOIP (Remote) (No.)	Analog Phone (including gateway) (No.)						
NRLDC	1	1	28	450	350	450	450	2	18.44	**18.44**	**CS***
SLDC DTL	1*	1*	33	193	0	193	193	2*	1.59	**16.02**	**SS**
SLDC, RRVPNL	1*	1*	24	0	49	24	25	2*	0.180		
SLDC, BBMB	1*	1*	30	152	116	152	152	2*	1.55		
SLDC, PSTCL, Patiala	1*	1*	6	197	8	197	197	2*	1.62		
SLDC, HPSEBL	1*	1*	30	152	164	152	152	2*	1.57		
SLDC, UPPTCL	1*	1*	20	800	0	800	800	2*	6.40		
SLDC, HVPNL	1*	1*	0	0	0	0	0	2*	0		
SLDC, JKPTCL	1*	1*	30	152	148	152	152	2*	1.56		
SLDC, PTCUL	1*	1*	30	152	116	152	152	2*	1.55		

***Servers and NGFW shall be physically placed at SLDCs for STUs but their cost has been included in Central Sector Portion**

Grand Total ₹34.46 Crs. (including AMC) (excluding GST/TAXES)

Cost breakup of Southern Region

Southern Region Utility	Servers		Phones			POE Switch (with dual DC) (No.)	Cat 6 cable (100m set) incl. installation (No.)	NGFW* (No.)	Total Cost with AMC (6 Yr after 1 Yr. warranty (in Crs.)	Total cost (in Crs.)	Central Sector (CS)/State Sector (SS)
	Main (No.)	Backup (No.)	VOIP (Local) (No.)	VOIP (Remote) (No.)	Analog Phone (including gateway) (No.)						
SRLDC	1	1	232	400	150	400	400	2	15.30	**15.30**	**CS***
KSEB	1*	1*	17	546	0	546	546	2*	4.43	**12.68**	**SS**
TSTRANCO	1*	1*	62	800	20	800	800	2*	6.64		
KPTCL	1*	1*	2	0	0	0	0	2*	0.0015		
Puducheery	1*	1*	34	41	64	41	41	2*	0.49		
TANTRANSCO	1*	1*	11	130	18	130	130	2*	1.12		
APTRANSCO	1*	1*	0	0	0	0	0	2*	0.00		

***Servers and NGFW shall be physically placed at SLDCs but cost has been included in Central Sector Portion**

Grand Total **₹27.98 Crs. (including AMC) (excluding GST/TAXES)**

Cost breakup of Western Region

Western Region Utility	Servers		Phones			POE Switch (with dual DC) (No.)	Cat 6 cable (100m set) incl. installation (No.)	NGFW* (No.)	Total Cost with AMC (6 Yr after 1 Yr. warranty (in Crs.)	Total cost (in Crs.)	Central Sector (CS)/State Sector (SS)
	Main (No.)	Backup (No.)	VOIP (Local) (No.)	VOIP (Remote) (No.)	Analog Phone (including gateway) (No.)						
WRLDC	1	1	100	500	20	500	500	2	14.61	**14.61**	**CS***
SLDC, Panjim	1*	1*	10	48	84	48	48	2*	0.87		
SLDC, Bhopal	1*	1*	30	400	220	400	400	2*	3.35		
SLDC, Raipur	1*	1*	30	400	148	400	400	2*	3.30		
SLDC, Vadodara	1*	1*	30	150	244	150	150	2*	1.75	**11.74**	**SS**
SLDC, Mumbai	1*	1*	30	200	244	200	200	2*	1.60		
SLDC Daman & Diu	1*	0	10	40	84	40	40	1*	0.48		
SLDC DNH	1*	0	10	40	0	40	40	1*	0.39		

***Servers and NGFW shall be physically placed at SLDCs but their cost has been included in Central Sector Portion**

Grand Total ₹26.35 Crs. (including AMC) (excluding GST/TAXES)

Cost breakup of Eastern Region

Eastern Region Utility	Servers		Phones			POE Switch (with dual DC) (No.)	Cat 6 cable (100m set)incl. installation (No.)	NGFW* (No.)	Total Cost with AMC (6 Yr after 1 Yr. warranty (in Crs.)	Total cost (in Crs.)	Central Sector (CS)/State Sector (SS)
	Main (No.)	Backup (No.)	VOIP (Local) (No.)	VOIP (Remote) (No.)	Analog Phone (including gateway) (No.)						
ERLDC	1	1	150	200	100	200	200	2	12.32	**12.32**	**CS***
SLDC, Ranchi	1*	1*	10	50	100	60	60	2*	0.58	**7.44**	**SS**
OPTCL	1*	1*	16	92	85	92	92	2*	0.84		
SLDC Bihar Patna	1*	1*	30	152	212	152	152	2*	1.59		
SLDC WB Howrah	1*	1*	30	152	212	152	152	2*	1.59		
SLDC DVC backup Maithan	0	1*	17	70	150	70	70	1*	0.70		
SLDC DVC Kolkata	1*	0	27	54	150	54	54	1*	0.60		
SLDC Sikkim	1*	1*	30	152	84	152	152	2*	1.54		

***Servers and NGFW shall be physically placed at SLDCs but their cost has been included in Central Sector Portion**

Grand Total ₹19.76 Crs. (including AMC) (excluding GST/TAXES)

Cost breakup of North Eastern Region

Northern Eastern Region Utility	Servers		Phones			POE Switch (with dual DC) (No.)	Cat 6 cable (100m set) incl. installation (No.)	NGFW* (No.)	Total Cost with AMC (6 Yr after 1 Yr. warranty (in Crs.)	Total cost (in Crs.)	Central Sector (CS)/State Sector (SS)
	Main (No.)	Backup (No.)	VOIP (Local) (No.)	VOIP (Remote) (No.)	Analog Phone (including gateway) (No.)						
NERLDC	1	1	210	600	100	600	600	2	16.91	**16.91**	**CS***
SLDC Imphal	1*	1*	30	40	24	40	40	2*	0.46	**5.45**	**SS**
SLDC, Meghalaya	1*	1*	16	92	63	92	92	2*	1.01		
SLDC Guwahati	1*	1*	85	180	10	180	180	2*	1.66		
SLDC Mizoram	1*	1*	30	38	23	38	38	2*	0.44		
SLDC (Nagaland)	1*	1*	30	44	26	44	44	2*	0.49		
SLDC Agartala	1*	1*	30	60	34	60	60	2*	0.64		
SLDC Itanagar	1*	1*	30	84	46	84	84	2*	0.75		

***Servers and NGFW shall be physically placed at SLDCs but cost has been included in Central Sector Portion**

Grand Total **₹22.36 (including AMC) (excluding GST/TAXES)**

National Component of VOIP System

Utility	Servers		Phones			POE Switch (with dual DC) (No.)	Cat 6 cable (100m set)incl. installation (No.)	NGFW (No.)	Total Cost with AMC (6 Yr after 1 Yr. warranty (in Crs.)	Central Sector (CS)/State Sector (SS)
	Main (No.)	Backup (No.)	VOIP (Local) (No.)	VOIP (Remote) (No.)	Analog Phone (including gateway) (No.)					
NLDC	1	1	42	0	400	0	0	2	2.60	**CS**
International Exchange	1	1	30	0	0	0	0	2	1.19	
Cyber Audit Cost									2.76	
Grand Total ₹6.55 (including AMC) (excluding GST/TAXES)										

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग- II
Power System Planning & Appraisal Division-II

सेवा में /To

As per list of Addresses

विषय:ट्रांसमिशन पर राष्ट्रीय समिति (एनसीटी) की पन्द्रहवी बैठक का कार्यवृत - के सम्बन्ध में ।

Subject: Minutes of the 15th Meeting of National Committee on Transmission (NCT) – regarding.

महोदया (Madam) / महोदय (Sir),

The 15th meeting of the "National Committee on Transmission" (NCT) was held on 25th August, 2023. The minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,

Rakesh Goyal 18/9/2023

(राकेश गोयल / Rakesh Goyal)
मुख्य अभियन्ता एवं सदस्य सचिव,एन.सी.टी.
/ Chief Engineer & Member Secretary (NCT)

प्रतिलिपि / **Copy to:**

Joint Secretary (Trans), Ministry of Power, New Delhi

4.5 **North Eastern Region Expansion Scheme-XXI Part-B (NERES-XXI Part-B)**

4.5.1 The existing 132 kV Badarpur (POWERGRID) switching station was commissioned in 1999 and shall be completing 25 years in service by 2024. POWERGRID, the owner of the substation has informed that they are facing issues in O&M of the switching station and to improve the reliability it would be prudent to upgrade the switching station from single main and transfer bus scheme to double main transfer bus scheme by converting from AIS to GIS.

4.5.2 The scheme was also discussed in the 23rd TCC & NERPC meetings held on 18th-19th November 2022 wherein the subject upgradation was agreed to be carried out in Green GIS.

4.5.3 Chairperson, CEA, opined that life of sub-stations is generally about 35 years and hence, the reasons for replacement/upgradation of switching station after 25 years needs to be ascertained.

4.5.4 After detailed deliberations, it was decided to review the scheme subsequently.

4.6 **Implementation of Unified Network Management System (UNMS) in the Western Region**

4.6.1 Representative of CTUIL informed that Central Electricity Regulatory Commission (Communication System for inter-State transmission of Electricity) Regulations 2017, mentions that, CTU shall in due consideration of the planning criteria and guidelines formulated by CEA be responsible for planning and coordination for development of reliable National communication backbone for Inter-State Transmission System (ISTS). CEA Technical Standards 2020 calls for centralized monitoring by integrating its network management system with network management system of other users and standalone network elements on regional and national basis. Further, CTUIL shall implement centralized supervision for quick fault detection and restoration.

Accordingly, communication scheme i.e. Establishment of State-of Art Unified Network Management System (U-NMS) for ISTS and State Utility Communication System for all the Regions have been envisaged for five Regional systems and one National system integrating all the regional ones; in main & backup configuration. This will facilitate centralized supervision of ISTS as well as Intra-state communication system at State level, Regional level and Inter-Regional Communication system at national level.

CTUIL updated status for nationwide UNMS Scheme implementation being undertaken by POWERGRID; UNMS for Northern, Eastern and Northeastern Regions are scheduled for commissioning in year 2023/ 2024. And Southern Region scheme approved in 13th NCT meeting in May'23 is under bidding stage.

4.6.2 WRPC has approved implementation of the WR-UNMS project in RTM mode in 47th WRPC meeting held on 14th & 15th June 2023.

4.6.3 Representative of PCD Division, CEA, stated that a workstation console with redundant connectivity would be required under UNMS-WR scheme at WRPC. It was also suggested to include feature for Long, Medium & Short Term Planning for preparing planning projections while including user configurable inputs such as topology, congestion status, utility/ area wise, type of network, product life cycle, sector growth etc. and provision for import of data in .xls or other similar forms for consuming in preparing the planning projection for 2 years, 5 years, 10 years.

4.6.4 It was also discussed that UNMS workstation console with its associated hardware & software along with redundant connectivity is required at all RPC locations for the previously approved regional UNMS Scheme for NER, NR, ER and SR.

4.6.5 Chairman, NCT, started that central planning of the communication network for ISTS and State system shall take the leverage from these Regional & National UNMS having the details of both ISTS and State sector communication network. He also emphasized that National UNMS system should be planned at the earliest to have a holistic view of the network comprising of regional, intra-regional and intra state network and this scheme shall have additional scope of Planning Software tool having features as enlisted by representative of PCD Division.

He also emphasized that SOP for Centralized supervision & Maintenance of ISTS Communication system should be finalized at the earliest while specifying the roles & responsibilities of concerned entities/ agencies for smooth implementation of the hierarchical UNMS Scheme situated in state, regional & national level.

4.6.6 After detailed deliberations, the followings were approved:

- WR UNMS scheme as per agenda along with additional scope listed below to be implemented under RTM mode by POWERGRID.
  a. Inclusion of Workstation Console and associated HW & SW along with redundant communication link & AMC at WRPC location.
  b. Additional feature of Planning Tool

- The National UNMS project proposal to be taken up at the earliest, as all regional systems have been approved for implementation. The national UNMS scheme shall have additional scope of Planning Software tool having features for Long, Medium & Short Term Planning for preparing planning projections while including user configurable inputs such as topology, congestion status, utility/ area wise, type of network, product life cycle, sector growth etc and provision for import of data in .xls or other similar forms for consuming in preparing the planning projection for 2 years, 5 years, 10 years., along with Workstation Console and associated hardware/software with redundant connectivity at PCD Division, CEA.

- Additional scope for Supply, Installation & AMC for UNMS workstation console with its associated hardware & software with redundant connectivity at all four RPC locations for the previously approved regional UNMS Scheme for NER, NR, ER and SR.

4.6.7 Summary of the WR UNMS scheme is as given below:

Sl.No.	Name of the scheme and implementation timeframe	Estimated Cost (Rs. Crores)	Remarks
1.	Establishment of State-of Art Unified Network Management System (U-NMS) for ISTS and State Utility Communication System for Western Region Tentative Implementation timeframe: 24 months from date of allocation	Rs. **84*** Crs. (approx.) and 19.07 Crs. AMC charges for 7 years.	Approved to be implemented under RTM mode by POWERGRID

4.6.8 Detailed scope of the scheme is as given below:

Sl. No.	**Scope of the scheme**	**Estimated Cost (Rs. Crs)**
1.	• Main & Back-up UNMS software and hardware along with required Application software including Video Projection System (VPS), firewall and IDPS. • Remote Workstation for SLDCs. • Video Projection System (VPS), Printer, furniture etc. at main & back-up U-NMS location. • Integration of existing NMS/NEs of ISTS and State Utility in a region in the proposed UNMS. • Integration of upcoming U-NMS for National & other regions and upcoming NMS/NEs of ISTS and State Utility in a region during implementation and AMC period of the project. • Operational support, training & maintenance for proposed UNMS software and hardware. • Auxiliary Power System for U-NMS system. • Workstation Console along and other associated software and hardware such as firewall, router, switch etc. at WRPC, CTUIL HQ and WRLDC location • Bandwidth connectivity & Its recurring charges for WRPC & CTUIL HQ Office.	Rs. **84*** Crs. (approx.) and 19.07 Crs. AMC charges for 7 years.

Standard Operating Procedure (SOP)

Procurement & Installation of ISTS Interface Energy Meter (IEM/SEM)

Introduction:

This Standard Operating Procedure (SOP) for Procurement and Installation of Interface Energy Meter (IEM/SEM) will be applicable only for the IEM/SEM falling under the purview of CTU as per the provisions under Regulations 49.12 (a) of CERC (Indian Electricity Grid Code), Regulations, 2023 and as per clause 6 (1)(a) of CEA (Installation and Operation of Meters) Regulations and amendments thereof. The Regulation 49.12(a) & 6 (1) is re-produced below:

"*49.12* ***Energy Metering and Accounting:***

(a) The CTU shall be responsible for procurement and installation of Interface EnergyMeters (IEM/SEM), at the cost of respective entity, at all the ISTS interface points, points of connections between the regional entities, cross border entities and other identified points for recording of actual active and reactive energy interchanged in each time-block through thosepoints, and its operation and periodic calibration shall be done by the respective entity. CTU shall be responsible for replacement of faulty meters."

"6. ***Ownership of meters-***

(1) ***Interface meters*** *(a) All interface meters installed at the points of interconnection with Inter-State Transmission System (ISTS) for the purpose of electricity accounting and billing shall be owned by CTU.*

The objective of this procedure is to ensure timely installation of IEM/SEM in the new ISTS system and timely replacement of the defective IEM/SEM by CTU or their authorized agency. The procedure also aims for timely payment by the respective entities to authorized agency of CTUIL against supply & installation of the IEM/SEM.

Presently, POWERGRID is the authorized agency for procurement of IEM/SEM, installation of new IEM/SEM and replacement of defective IEM/SEM. Any mention of POWERGRID in this procedure shall also mean any other agency authorized by CTUIL, if any, to carry out the aforesaid functions. CTUIL may authorize any other agency to carry out the aforesaid functions in future. Replacement/Installation of IEM/SEM shall mean all the activities including supply of new IEM/SEM, its installation, testing and commissioning.

The complete cycle of installation/replacement of IEM/SEM has been divided in various steps as described in Part A & B. Since timely procurement and availability of sufficient no. IEM/SEM is the key requirement, Part D of this procedure deals with timely estimation of requirement & procurement of IEM/SEM. Part C and Part F are for payment & warranty and inventory management respectively.

Applicability:

The procedure shall be applicable for the entities which are in the RLDCs control area and whose metering and energy accounting is done at the regional level. Thus, all Gencos including RE generators and all other utilities connected to ISTS Grid are the entities for the purpose of this procedure.

Effectiveness:

The date of effectiveness of this procedure shall be notified separately on CTUIL website.

A. Procedure for replacement of Faulty ISTS IEM/SEM

1. Identification of faulty IEM/SEM and communication to CTU:

1.1 Any Entity who wants IEM/SEM replacement shall inform concerned RLDC about such requirement along with the reasons thereof. RLDC also identify inconsistent SEM/IEM based on its observations on IEM/SEM data (received through AMR system or otherwise). The RLDC shall send a communication to the entity within 3 working days from the detection of inconsistent data or defective IEM/SEM.

1.2 The Entity shall take immediate steps to get all the issues rectified within 7 working days from receipt of above communication from RLDC. If the issue is not rectified within 7 working days or if it is established that IEM/SEM needs to be replaced, the Entity shall send a communication (through letter or e-mail) to CTUIL, within next 3 working days requesting replacement of the defective IEM/SEM. The said communication shall include the followings:

a. The location, serial no., make and model of the defective IEM/SEM along with accessories (required if any)
b. The date of installation of the above IEM/SEM
c. The observations w.r.t. the said defective IEM/SEM
d. Consent for payment, as per the provision of this procedure, towards supply and installation of IEM/SEM

A copy of this communication shall be sent to respective RLDC and regional nodal officer of POWERGRID. The contact details of POWERGRID Nodal officers shall be made available on CTUIL's website. The amount to be charged by POWERGRID towards Supply & Installation of the IEM/SEM shall be made available on CTUIL website.

1.3 In line with applicable Regulations, the replacement of IEM/SEM shall be on a chargeable basis. The Entity shall undertake in the said communication that they will make payment for supply & installation of the IEM/SEM, in accordance with the provisions of this procedure, as per the invoice raised by POWERGRID.

2. Communication to POWERGRID:

2.1 On receipt of the above communication from the Entity, CTUIL within 3 working days from receipt ofthe said communication, shall advise POWERGRID to replace the defective IEM/SEM. A copy of the advice shall also be sent to the respective Entity.

3. Replacement of Faulty IEM/SEM:

3.1 The POWERGRID shall raise the invoice on the concerned Entity within 7 working days from the receipt of the advice from CTUIL and shall replace the defective IEM/SEM within 8 working days from date of acceptance of invoice by the entities. POWERGRID shall inform CTUIL after replacement of the defective IEM/SEM.

3.2 After replacement of faulty IEM/SEM, the entity shall inform respective RLDC & CTUIL about the same with necessary details (Meter Sl.No, Make, Model, Date of replacement and meter location) within 2 days. The verification testing with respective RLDC shall be ensured by the Entity.

B. Procedure for Installation of ISTS IEM/SEM for new systems

1. The Entity shall request CTUIL for installation of new IEM/SEM along with the Metering Scheme Letter issued by respective RLDC in line with the scheme approved by RPC, if any. Entity shall make such request to CTUIL at least three months in advance of the anticipated COD of the new system.

2. On receipt of the above request from the Entity, CTUIL within 5 working days from receipt ofthe said request, shall advise POWERGRID to install the IEM/SEM in the new system as per the scheme suggested by RLDC. A copy of the advice shall also be sent to the respective Entity.

3. The entity shall approach POWERGRID along with the CTUIL letter regarding requirement of IEM/SEM along with required accessories, intimating the timeframe for IEM/SEM installation. Accordingly, POWERGRID shall raise the invoice on the Entity. The entity shall accept the invoice in next 7 days thereafter.

4. The entity shall approach POWERGRID regarding requirement of IEM/SEM and the accessories along with the CTUIL letter intimating the timeframe for IEM/SEM installation. Accordingly, POWERGRID shall raise the invoice on the Entity. The entity shall accept the invoice in next 7 days thereafter.

5. POWERGRID shall install IEM/SEM in the new system at least 15 days before anticipated COD of the new system. POWERGRID shall inform CTUIL after installation of the IEM/SEM in the new system.

6. After installation of IEM/SEM, the entity shall inform respective RLDC & CTUILabout the same with necessary details (Meter Sl.No, Make, Model, Date of replacement and meter location) within 2 days. The verification testing with RLDC shall be ensured by the Entity.

C. Payment and Warranty:

1. The Entity shall make payment to POWERGRID within 45 days from the date of replacement of IEM/SEM failing which the late payment surcharge @ 0.04% of the invoice amount per day shall be payable for the delayed period. In no case, the delayed period shall exceed 60 days. In case, any payment is pending even after 60 days from the date of last IEM/SEM replaced for the particular entity, no further supply/replacement of any IEM/SEM for that entity will be carried out. In such a case, the onus of continuing with the defective IEM/SEM shall solely be on the entity.

2. IEM/SEM once replaced, shall be under warranty for a period of 1 year from the date of installation. During this warranty period, the entity shall take up the matter directly with POWERGRID's nodal officers with a copy to CTUIL. POWERGRID's nodal officer shall arrange to replace such faulty IEM/SEM within 15 working days from the date of intimation by the entity.

D. Standardized charges for Supply, and Supply and Installation of IEM:

1. CTU, in consultation with POWERGRID, shall device region wise standardized rate for Supply, and Supply and Installation of IEM for each Financial Year.

E. Bulk Procurement of ISTS IEM/SEM

1. By the end of September of each year, CTUIL/STU shall provide the details of ISTS projects coming up in the next 2 years to respective RLDC.

2. RLDC shall work out the metering scheme for total requirement of IEM/SEM under the following heads:

   i. For new ISTS system
   ii. Spares @10% of the IEM/SEM population in the region
   iii. Projected requirement towards replacement of defective IEM/SEM based on past 2-year trend.

   RLDC will get the total IEM/SEM quantity approved by respective RPCs and inform to CTUIL by November end.

3. On receipt of the IEM/SEM quantity from RLDCs, CTUIL shall aggregate the requirement on PAN India basis and issue procurement advice to POWERGRID by December end.

F. Inventory Management

Each month RLDC would furnish the report on working, suspect and defective IEM/SEM in respective region to CTUIL. POWERGRID would furnish the region-wise numbers of the IEM/SEM available with them to CTUIL.
Based on this input CTUIL may issue suitable directions for diversion of spares from one region to another or initiate timely action for procurement of spares.

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AUDITOR'S REPORT

To the members of ERPC Establishment Fund and ERPC Fund

We have examined the accounts of ERPC Establishment Fund and ERPC Fund for the Financial Year 2022-23. The accounts are the responsibility of the management. We have expressed our views on these accounts based on our Audit.

During the course of our audit, our observations are as follows:

1. Estimation to be on a realistic basis. Deviation beyond 15% be discouraged.
2. A committee comprising of at-least 03 (three) officers to be constituted for procurement of goods and services. The said committee should witness the opening of bids / sealed quotations with a threshold limit of more than Rs. 50,000/-.
3. Cashbook date should be considered for expenditure and monthly reconciliation with the Bank needs to be done invariably.
4. Interest on Fixed Deposits needs to be monitored regularly. Discrepancies, if any, may be clarified from the bank.
5. Tax is deductible either at the time of payment or at the time of passing credit entry in the books of payer, whichever is earlier. TDS deducted from No Holds Barred Hospitality Pvt. Limited for Rs. 1092/- only was deposited on 05-01-2023. The same should have been deposited within 7th December 2022.
6. Cash in Hand may be reduced to the extent possible.
7. Efforts should be made to minimize the deficit
8. The membership amount receivable from member constituents and the non-member participants to be followed up on regular basis.
9. It is suggested to book the expenditure of ERPC Guest House separately so as to ascertain the actual expenses vis-à-vis revenue earned from ERPC Guest House.
10. Balance Sheet and Income & Expenditure account to be presented with previous years Data.
11. It is suggested that a policy for hiring through outside agency under ERPC which should inter-alia incorporate sanctioned strengths, definition of work, terms and conditions of appointment, honorarium/ wages/consolidated salary to the outsourced personnel, tenure of engagement etc. should be framed. The policy may also identify the appointing authority.
12. Considering the huge corpus fund involved, person having accounts background may be appointed on regular basis or on deputation from Government Organisation.

Place: Kolkata

Date: 28-08-2024

(B. B. Bardewa), SF&AS
Chief Accounts Officer, Power Department
Government of Sikkim

Chief Accounts Officer
Power Department
Govt. of Sikkim, Gangtok

S. Samal
Dy. General Manager(Finance)
GRIDCO Ltd.

(I K Mehra)
Director, ERPC, Secretariat
(SE)

AUDITOR'S REPORT

To the members of ERPC Establishment Fund and ERPC Fund

We have examined the accounts of ERPC Establishment Fund and ERPC Fund for the Financial Year 2023-24. The accounts are the responsibility of the management. We have expressed our views on these accounts based on our Audit.

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2. Interest on Fixed Deposits needs to be monitored regularly. Discrepancies, if any, may be clarified from the bank.
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6. The membership amount receivable from member constituents and the non-member participants to be followed up on regular basis.
7. It is suggested to book the expenditure of ERPC Guest House separately so as to ascertain the actual expenses vis-à-vis revenue earned from ERPC Guest House.
8. Considering the huge corpus fund involved, person having accounts background may be appointment on regular basis or on deputation from Government Organisation.

Place: Kolkata

Date: 29-08-2024

(B. B. Bardewa), SF&AS
Chief Accounts Officer, Power Department
Government of Sikkim

Chief Accounts Officer
Power Department
Govt. of Sikkim, Gangtok

S. Samal
Dy. General Manager(Finance)
GRIDCO Ltd.

(I K Mehra)
Director, ERPC, Secretariat
(SE)

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) Balance Sheet as on 31st March, 2023

Liabilities	Amount in Rs.		Assets	Amount in Rs.
Capital Funds			***Fixed Assets:-***	
Establishment Fund :		*9,51,11,002.25*	*As per schedule*	*70,59,106.00*
As per last A/c	*8,43,38,966.80*			
Less :Capital Expenses made	*(5,49,841.00)*		***Investments:-***	
Add : Net Surplus for the year	*1,13,21,876.45*		*Fixed Deposit*	*10,47,08,354.12*
			Interest accrued on FD	*7,642.70*
Movable Properties Fund:-		*70,59,106.00*		
As per Last A/c.	*76,29,762.00*			
Add :Transfer From Capital Fund	*5,49,841.00*		***Current Assets:-***	
Less :Depreciation (Contra)	*(11,20,497.00)*			
			Loans and Advances	
ERPC Fund		*34,17,390.12*		
As per last A/c	*88,90,250.00*		*Sundry Debtors*	*82,23,946.00*
Less: Deficit for the year	*54,72,859.88*			
			Tax Deducted at Sources	
Current Liabilities:-			*A.Y. 2022-23*	*59,755.50*
Unspent Grant-in-Aid			*A.Y. 2023-24*	*53,375.70*
PRDB-PSDF		*5,85,927.00*		
As per last A/c	*75,83,873.38*		*Cash at Bank*	*28,21,902.35*
Net Surplus for the year	*-*			
Less: Deficit for the year	*69,97,946.38*		*Cash in Hand*	*72,933.00*
PSDF Study Programme Foreign		*1,01,58,463.00*		
As per last A/c	*1,55,28,370.00*			
Less: Deficit for the year	*53,69,907.00*			
PSDF Training Programme		*11,33,682.00*		
As per last A/c	*25,73,397.00*			
Less: Deficit for the year	*14,39,715.00*			
Other Liabilities		*55,41,445.00*		
Accounting Charges	*1,30,000.00*			
Audit Fees	*20,000.00*			
GST Payable	*73,214.00*			
Expenses payable (Govt A/c)	*52,16,886.00*			
Canteen Deposit	*15,000.00*			
TDS - Payable	*86,345.00*			
Total		**12,30,07,015.37**	**Total**	**12,30,07,015.37**

Annexure :Statement of Significant Accounting Policies

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) Income & Expenditure A/c. for the year ended 31st March 2023

Expenditure	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Amount in Rs.	Income	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Amount in Rs.
To Accounting Charges	1,05,000.00	-	-	-	-	1,05,000.00	By Fees & Charges	6,07,50,000.00	48,00,000.00	-	-	-	6,55,50,000.00
Accounting Software	21,240.00												
" Advertisement	-	-	-	-	-	-	" Canteen sale	-	9,53,694.00	-	-	-	9,53,694.00
" Audit Fees	10,000.00	-	-	-	-	10,000.00	" Interest on FD	18,29,288.00	92,813.00	1,67,011.62	4,13,479.00	51,058.00	25,53,649.62
" Bank Charges	1,540.55	23,611.88	-	-	-	25,152.43	" Movable Prop Fund						-
" Books & Periodicals	-	-	-	-	-	-	" Grant-in-Aid			-			-
" Canteen Expenses	-	8,69,915.00	-	-	-	8,69,915.00	Depreciation reversal	11,20,497.00					11,20,497.00
" Car Expenses	3,87,066.00	-	-	-	-	3,87,066.00							
" Consultancy Charges	13,15,300.00	-	-	-	-	13,15,300.00							
" Documentation Expenses	2,65,058.00	-	-	-	-	2,65,058.00							
" Cultural Program	-	-	-	-	-	-							
" Depreciation	11,20,497.00					11,20,497.00							
" Electricity Charges	2,98,060.00	-	-	-	-	2,98,060.00							
" Expenses Govt. A/c.	3,03,37,592.00	-	-	-	-	3,03,37,592.00							
" Gardening Expenses	4,88,520.00	-	-	-	-	4,88,520.00							
" General Expenses	1,49,237.00	-	-	-	-	1,49,237.00							
Celebration Expenses		46,296.00				46,296.00							
Independence Day Celebration		17,794.00				17,794.00							
" Internet Charges	-	-	-	-	-	-							
Legal Fees	3,000.00					3,000.00							
" Meeting Expenses	15,08,961.00	72,97,460.00	-	-	-	88,06,421.00							
" Messing Expenses	-	-	-	-	-	-							
Misc Expenses		4,629.00				4,629.00							
" Parliament Committee Visit Exp	81,026.00	-	-	-	-	81,026.00							
Postage		1,000.00				1,000.00							
" Printing & Stationery	60,493.00	21,490.00	-	-	-	81,983.00							
" Repair & Maintance	17,61,526.00	-	-	-	-	17,61,526.00							
" Refreshment Expenses	-	54,248.00	-	-	-	54,248.00							
" Sanitation Expenses	-	-	-	-	-	-							
" Security & Manpower	1,35,33,549.00	-	-	-	-	1,35,33,549.00							
" Staff Welfare	-	-	-	-	-	-							
" Telephone Expenses	10,611.00	2,358.00				12,969.00							
Training Expenses		34,520.00				34,520.00							
" Travel & Comveyance	6,500.00	21,840.00	-	-	-	28,340.00							
" Wages	67,380.00	-	-	-	-	67,380.00							
" Website & IT Expenses	8,45,752.00					8,45,752.00							
" Workshop Expenses	-	29,24,205.00	-	-	-	29,24,205.00							
" Expenses for Project			71,64,958.00	57,83,386.00	14,90,773.00	1,44,39,117.00							
" Surplus for the year	1,13,21,876.45					1,13,21,876.45	Deficit for the year		54,72,859.88	69,97,946.38	53,69,907.00	14,39,715.00	1,92,80,428.26
	6,36,99,785.00	1,13,19,366.88	71,64,958.00	57,83,386.00	14,90,773.00	8,94,58,268.88		6,36,99,785.00	1,13,19,366.88	71,64,958.00	57,83,386.00	14,90,773.00	8,94,58,268.88

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) Receipts & Payments A/c for the year ended 31st March 2023

Receipts	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Total	Payments	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Total
To Opening Balance							By Capital Expenses Made	5,49,841.00					5,49,841.00
Bank	7,30,55,593.80	78,13,850.00	1,19,221.00	2,14,682.70	5,32,010.40	8,17,35,357.90							-
Cash	-	37,210.00				37,210.00	" Tax Deducted at Source		9,281.30		38,988.60	5,105.80	53,375.70
						-	Interest accrued on FD				6,706.80	765.90	7,472.70
" Closing Current Laibilities						-	" Opening Current Liabilities	50,000.00					50,000.00
Canteen Deposit						-	Advance to Officials	20,000.00	20,000.00				40,000.00
" Sundry Debtors	6,67,49,952.80	57,47,202.00				7,24,97,154.80	" Sundry Debtors		54,88,495.00				54,88,495.00
Fixed Deposit Maturity	4,39,58,341.00	74,35,710.88	69,50,170.00	55,68,703.30	9,58,815.70	6,48,71,740.88	Sundry Creditors	20,00,000.00					20,00,000.00
Loans and Advances (Contra)	5,000.00	15,00,000.00				15,05,000.00	Fixed Deposit made	13,68,49,288.00	75,83,531.70		3,67,783.60	45,186.30	14,48,45,789.60
Advance to Officials	6,270.00	75,000.00				81,270.00	Loans and Advances (Contra)	5,000.00	15,00,000.00				15,05,000.00
Meeting Expenses		1,23,10,255.00				1,23,10,255.00	Expenses for Project			71,64,958.00	57,83,386.00	14,90,773.00	1,44,39,117.00
GST Payable	2,98,340.00	3,31,098.00				6,29,438.00	GST Payable	3,50,224.00	2,69,562.00				6,19,786.00
TDS Payable	2,82,453.00	3,14,679.00				5,97,132.00	TDS Payable	3,02,756.00	2,76,906.00				5,79,662.00
													-
							By Revenue Payments						-
To Revenue Income							Accounting Charges						-
Fees & Charges		47,00,000.00				47,00,000.00	Accounting Software	21,240.00					21,240.00
Canteen sale		9,53,694.00				9,53,694.00	Advertisement						-
Interest on FD	18,29,288.00	92,813.00	1,67,011.62	4,13,479.00	51,058.00	25,53,649.62	Audit Fees						-
Accured Interest on FD			42,842.38			42,842.38	Bank Charges	1,493.35	23,611.88				25,105.23
						-	Books & Periodicals						-
Prior Period Income		1,00,000.00				1,00,000.00	Canteen Expenses		8,69,915.00				8,69,915.00
							Car Expenses	3,87,066.00					3,87,066.00
							Consultancy Charges	13,15,300.00					13,15,300.00
							Cultural Program						-
							Documentation	2,65,058.00					2,65,058.00
							Electricity Charges	2,98,060.00					2,98,060.00
							Expenses Govt. A/c.	2,51,20,706.00					2,51,20,706.00
							Gardening Expenses	4,88,520.00					4,88,520.00
							General Expenses	1,35,507.00					1,35,507.00
							Holi Celebration		46,296.00				46,296.00
							Independence Day Celebration		17,794.00				17,794.00
							Internet Charges						-
							Legal Fees	3,000.00					3,000.00
							Meeting Expenses	15,08,961.00	1,96,07,715.00				2,11,16,676.00
							Messing Expenses						-
							Misc Expenses		4,629.00				4,629.00
							Parliament Committee Visit Exp.	81,026.00					81,026.00
							Postage		1,000.00				1,000.00
							Printing & Stationery	60,493.00	21,490.00				81,983.00
							Repair & Maintance	17,61,526.00					17,61,526.00
							Refreshment Expenses		54,248.00				54,248.00
							Sanitation Expenses						-
							Security & Manpower	1,35,33,549.00					1,35,33,549.00
							Staff Welfare						-
							Telephone Expenses	10,611.00	2,358.00				12,969.00
							Training Expenses		34,520.00				34,520.00
							Travel & Comveyance	6,500.00	21,840.00				28,340.00
							Wages	67,380.00					67,380.00
							Website & IT Expenses	8,45,752.00					8,45,752.00
							Workshop Expenses		29,24,205.00				29,24,205.00
													-
							By Closing Balance						-
							Bank	1,23,280.25	25,84,282.00	1,14,287.00		53.10	28,21,902.35
							Cash	23,101.00	49,832.00				72,933.00
	18,61,85,238.60	4,14,11,511.88	72,79,245.00	61,96,865.00	15,41,884.10	24,26,14,744.58		18,61,85,238.60	4,14,11,511.88	72,79,245.00	61,96,865.00	15,41,884.10	24,26,14,744.58

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

Statement of (Consolidated) Cashflow (Indirect Method) for the year ended 31st March, 2023

Particulars	*For the year ended 31.03.2023*		*For the year ended 31.03.2022*	
Cash flows from operating activities				
Net profit before taxation, and extraordinary item	*(9,60,605.43)*		*81,07,631.68*	
Adjustments for :				
Add: Depreciation	*11,20,497.00*		*11,62,302.00*	
	1,59,891.57		*92,69,933.68*	
Less: Depreciation (Contra)	*11,20,497.00*		*11,62,302.00*	
Operating profit before working capital changes	*-9,60,605.43*		*81,07,631.68*	
Increase / (Decrease) in Trade Payable			-	
Decrease/ (Increase) in Trade Receivable	*62,58,707.00*		*-73,32,653.00*	
Decrease / (Increase) in Short Term Loans & Advances	*55,000.00*		*-55,000.00*	
Increase / (Decrease) in Other Current Liabilities	*33,09,008.00*		*2,32,437.00*	
Decrease / (Increase) in Unpent Grant-in-Aid			*-71,64,951.00*	
Cash generated from operations	*86,62,109.57*		*-62,12,535.32*	
Income taxes paid	*53,375.70*		*59,755.50*	
Cash flow before extraordinary item	*86,08,733.87*		*-62,72,290.82*	
Add: Extraordinary Items			-	
Net cash from operating activities		*86,08,733.87*		*-62,72,290.82*
Cash flows from investing activities				
Increase in Fixed Assets	*(5,49,841.00)*		*-11,81,100.00*	
Decrease / (Increase) in Non-Current Investment	*(7,99,38,679.04)*		*-77,77,317.78*	
Decrease in Long Term Loans and Advances				
Net cash from investing activities		*-8,04,88,520.04*		*-89,58,417.78*
Cash flows from financing activities				
Increase in Share Capital				
Increase in long-term borrowings				
Interest paid				
Dividends paid				
Net cash used in financing activities		-		-
Net increase in cash and cash equivalents		*-7,18,79,786.17*		*-1,52,30,708.60*
Cash and cash equivalents at beginning of period		*8,17,72,567.90*		*9,70,03,276.50*
Cash and cash equivalents at end of period		*98,92,781.73*		*8,17,72,567.90*

The accompanying Statement of Significant Accounting Policies form an integral part of the financial statements

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) FIXED ASSETS AS AT 31ST MARCH, 2023

Particulars	*Opening WDV as on 01.04.2022*	*Addition during the year*		*Rate*	*Depreciation for the year*		*Closing WDV as on 31.03.2023*
		upto 30.09.2022	*after 30.09.2022*		*upto 30.09.2022*	*after 30.09.2022*	
Other Equipments	*4,46,580.00*			*10%*	*44,658.00*	*-*	*4,01,922.00*
Office Machinery	*8,52,154.00*		*96,642.00*	*15%*	*1,27,823.00*	*7,248.00*	*8,13,725.00*
Furniture Account	*46,70,215.00*	*24,999.00*	*3,13,200.00*	*10%*	*4,69,521.00*	*15,660.00*	*45,23,233.00*
Office Car	*7,93,857.00*			*15%*	*1,19,079.00*	*-*	*6,74,778.00*
Electric Equipment	*1,87,582.00*			*10%*	*18,758.00*	*-*	*1,68,824.00*
Computer	*6,79,374.00*	*1,15,000.00*		*40%*	*3,17,750.00*	*-*	*4,76,624.00*
Total	*76,29,762.00*	*1,39,999.00*	*4,09,842.00*		*10,97,589.00*	*22,908.00*	*70,59,106.00*

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND

14, Golf Club Road, Kolkata - 700033

Balance Sheet as on 31st March, 2023

Liabilities	Amount in Rs.		Assets	Amount in Rs.
Capital A/c:-		*9,51,11,002.25*	***Fixed Assets:-***	
As per last A/c	*8,43,38,966.80*		*As per schedule*	*70,59,106.00*
Capital Expenses made	*(5,49,841.00)*			
Net Surplus for the year	*1,13,21,876.45*		***Current Assets:-***	
			Deposits (Asset)	
Movable Properties Fund:-		*70,59,106.00*	*TDS (A.Y.: 2022-23)*	*15,306.00*
As per Last A/c.	*76,29,762.00*		*TDS (A.Y.: 2023-24)*	
Transfer From Capital Fund	*5,49,841.00*		*Interest Receivable*	*170.00*
Depreciation Expenses Contra	*(11,20,497.00)*		*Fixed Deposits*	*9,28,90,777.00*
			Sundry Debtors	*74,84,694.00*
			Bank Accounts	*1,23,280.25*
			Cash in hand	*23,101.00*
Current Liabilities:-		*54,26,326.00*		
Accounting Charges	*1,30,000.00*			
Audit Fees	*20,000.00*			
Expenses payable (Govt A/c.)	*52,16,886.00*			
GST Payable	*11,678.00*			
TDS - Payable	*47,762.00*			
Total		**10,75,96,434.25**	**Total**	**10,75,96,434.25**

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2023

Particulars		Amount in Rs.	Particulars		Amount in Rs.
To	Accounting Charges	1,05,000.00	By	Fees & Charges	6,00,00,000.00
"	Accounting Software	21,240.00		Interest on Deposit	18,29,288.00
"	Audit Fees	10,000.00		Depreciation reversal	11,20,497.00
"	Bank Charges	1,540.55		Prior Period Income	7,50,000.00
"	Car Expenses	3,87,066.00			
"	Documentation Expenses	2,65,058.00			
"	Consultancy Charges	13,15,300.00			
"	Depreciation	11,20,497.00			
"	Electricity Charges	2,98,060.00			
"	Expenses Govt. A/c.	3,03,37,592.00			
"	Gardening Expenses	4,88,520.00			
"	General Expenses	1,49,237.00			
	Legal Fees	3,000.00			
"	Meeting Expenses	15,08,961.00			
"	Parliament Committee Visit Expenses	81,026.00			
"	Printing & Stationery	60,493.00			
"	Repair & Maintance	17,61,526.00			
"	Security & Manpower	1,35,33,549.00			
	Telephone Charges	10,611.00			
"	Travel & Comveyance	6,500.00			
"	Wages	67,380.00			
"	Website & IT Expenses	8,45,752.00			
"	Surplus for the year	1,13,21,876.45			
		6,36,99,785.00			6,36,99,785.00

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND

14, Golf Club Road, Kolkata - 700033

Receipts & Payments A/c for the year ended 31st March 2023

Receipts	Amount in Rs.	Payments	Amount in Rs.
To Opening Balance		By Capital Expenses Made	5,49,841.00
Bank	7,30,55,593.80	Tax Deducted at Source	3,02,756.00
Cash	-	" GST Payable	3,50,224.00
		Accounting Charges	50,000.00
		Sundry Creditors	20,00,000.00
" Receipts: Sundry Debtors	6,59,99,952.80	" Sundry Debtors	
Advance: ERPC Fund	5,000.00	Advance: ERPC Fund	5000.00
Advance to Officials	6,270.00	" Advance to Officials	20,000.00
Fixed Deposits	4,39,58,341.00	Fixed Deposits	13,68,49,288.00
To Revenue Income		By Revenue Payments	
Fees & Charges		Accounting Charges	-
Interest on Deposit	18,29,288.00	Accounting Software	21,240.00
Prior Period Income	7,50,000.00	Audit Fees	
		Bank Charges	1,493.35
		Car Expenses	3,87,066.00
		Consultancy Charges	13,15,300.00
		Documentation	2,65,058.00
		Electricity Charges	2,98,060.00
		Expenses Govt. A/c.	2,51,20,706.00
		Gardening Expenses	4,88,520.00
		General Expenses	1,35,507.00
TDS payable	2,82,453.00	Legal Fees	3,000.00
GST Payable	2,98,340.00	Meeting Expenses	15,08,961.00
		Parliament Committee Visit Expenses	81,026.00
		Printing & Stationery	60,493.00
		Repair & Maintanance	17,61,526.00
		Security & Manpower	1,35,33,549.00
		Telephone Charges	10,611.00
		Travel & Conveyance	6,500.00
		Wages	67,380.00
		Website & IT Expenses	8,45,752.00
		By Closing Balance	
		Bank	1,23,280.25
		Cash	23,101.00
	18,61,85,238.60		18,61,85,238.60

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND

14, Golf Club Road, Kolkata - 700033

FIXED ASSETS AS AT 31ST MARCH, 2023

Particulars	*Opening WDV as on 01.04.2022*	*Addition during the year*		*Rate*	*Depreciation for the year*		*Closing WDV as on 31.03.2023*
		upto 30.09.2022	*after 30.09.2022*		*upto 30.09.2022*	*after 30.09.2022*	
Other Equipments	*4,46,580.00*			*10%*	*44,658.00*	-	*4,01,922.00*
Office Machinery	*8,52,154.00*		*96,642.00*	*15%*	*1,27,823.00*	*7,248.00*	*8,13,725.00*
Furniture Account	*46,70,215.00*	*24,999.00*	*3,13,200.00*	*10%*	*4,69,521.00*	*15,660.00*	*45,23,233.00*
Office Car	*7,93,857.00*			*15%*	*1,19,079.00*	-	*6,74,778.00*
Electric Equipment	*1,87,582.00*			*10%*	*18,758.00*	-	*1,68,824.00*
Computer	*6,79,374.00*	*1,15,000.00*		*40%*	*3,17,750.00*	-	*4,76,624.00*
Total	*76,29,762.00*	*1,39,999.00*	*4,09,842.00*		*10,97,589.00*	*22,908.00*	*70,59,106.00*

EASTERN REGIONAL POWER COMMITTEE - ERPC FUND

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2023

Liabilities	Amount (Rs)		Assets	Amount (Rs)
Capital Account		*34,17,390.12*	*Current Assets:-*	
As per last A/c	*88,90,250.00*		*Deposits (Asset)*	*-*
Net Surplus for the year	*(54,72,859.88)*		*Sundry Debtors*	*7,39,252.00*
			Fixed Deposit	*1,47,820.82*
			Tax Deducted at Source	
			A.Y.: 2022-23	*2,041.00*
Current Liabilities:-		*1,15,119.00*	*A.Y.: 2023-24*	*9,281.30*
TDS - Payable	*38,583.00*		*Cash at Bank - ERPC*	*25,62,518.00*
GST - Payable	*61,536.00*		*Cash at Bank- Canteen*	*21,764.00*
Canteen Deposit	*15,000.00*		*Cash in Hand - ERPC*	*1,166.00*
			Cash in Hand - Canteen	*48,666.00*
Total		*35,32,509.12*	*Total*	*35,32,509.12*

EASTERN REGIONAL POWER COMMITTEE - ERPC FUND

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2023

Particulars	Amount (Rs)	Particulars	Amount (Rs)
To Holi Celebration	*46,296.00*	*By Membership Fees*	*47,00,000.00*
" Independence Day Celebration	*17,794.00*	*" Canteen Sale*	*9,53,694.00*
" Meeting Expenses	*72,97,460.00*	*Interest on FD*	*92,813.00*
" Misc. Expenses	*4,629.00*	*Prior Period Income*	*1,00,000.00*
" Postage	*1,000.00*		
" Printing & Stationery	*21,490.00*	*Defecit for the year*	*54,72,859.88*
" Refreshment Expenses	*54,248.00*		
" Telephone Expenses	*2,358.00*		
" Training Expenses	*34,520.00*		
" Travel & Conveyance	*21,840.00*		
" Workshop Expenses	*29,24,205.00*		
" Canteen Expenses	*8,69,915.00*		
" Bank Charges	*23,611.88*		
" Surplus for the year	*-*		
	1,13,19,366.88		*1,13,19,366.88*

EASTERN REGIONAL POWER COMMITTEE - ERPC FUND

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2023

Receipts	Amount (Rs)	Payments	Amount (Rs)
Opening Balance:-		*Celebration Expenses*	*46,296.00*
Cash at Bank - ERPC	*77,87,711.00*	*Independence Day Celebrat*	*17,794.00*
Cash at Bank- Canteen	*26,139.00*	*Meeting Expenses*	*1,96,07,715.00*
Cash in Hand - ERPC	*35,405.00*	*Misc. Expenses*	*4,629.00*
Cash in Hand - Canteen	*1,805.00*	*Postage*	*1,000.00*
		Printing & Stationery	*21,490.00*
Advance: Establishment Fund	*15,00,000.00*	*Refreshment Expenses*	*54,248.00*
Advance to Officials	*75,000.00*	*Telephone Expenses*	*2,358.00*
Maturity of Fixed Deposits	*74,35,710.88*	*Training Expenses*	*34,520.00*
Receipt : Sundry Debtors	*56,47,202.00*	*Travel & Conveyance*	*21,840.00*
		Workshop Expenses	*29,24,205.00*
Meeting Expenses	*1,23,10,255.00*	*Canteen Expenses*	*8,69,325.00*
		Bank Charges	*24,201.88*
Canteen Deposit			
GST Payable	*3,31,098.00*	*Advance: Establishment Fu*	*15,00,000.00*
TDS - Payable	*3,14,679.00*	*Advance to Officials*	*20,000.00*
		Fixed Deposit	*75,83,531.70*
		GST Payable	*2,69,562.00*
		TDS - Payable	*2,76,906.00*
Membership Fees	*47,00,000.00*	*Tax Deducted at Source*	*9,281.30*
Canteen Sale	*9,53,694.00*	*Sundry Debtors*	*53,88,495.00*
Interest on FD	*92,813.00*		
Prior Period Income	*1,00,000.00*	*Closing Balance:-*	
		Cash at Bank - ERPC	*25,62,518.00*
		Cash at Bank- Canteen	*21,764.00*
		Cash in Hand - ERPC	*1,166.00*
		Cash in Hand - Canteen	*48,666.00*
	4,13,11,511.88		***4,13,11,511.88***

EASTERN REGIONAL POWER COMMITTEE - PRDB PSDF

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2023

Liabilities	Amount (Rs)		Assets	Amount (Rs)
Capital Account		*5,85,927.00*	*Investments:-*	
As per last A/c	*75,83,873.38*		*Fixed Deposit*	*4,71,640.00*
Add: Surplus for the year	*(69,97,946.38)*			
			Cash at Bank	*1,14,287.00*
Total		*5,85,927.00*	*Total*	*5,85,927.00*

EASTERN REGIONAL POWER COMMITTEE - PRDB PSDF

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2023

Particulars	Amount (Rs)	Particulars	Amount (Rs)
To Expenses for the year	*71,64,958.00*	*By Interest on FD*	*1,67,011.62*
Surplus for the year	*-*	*Defecit for the year*	*69,97,946.38*
	71,64,958.00		*71,64,958.00*

EASTERN REGIONAL POWER COMMITTEE - PRDB PSDF

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2023

Receipts	Amount (Rs)	Payments	Amount (Rs)
Opening Balance:-			
Cash at Bank	*1,19,221.00*	*Expenses for Project*	*71,64,958.00*
Interest on FD	*1,67,011.62*		
Accrued Interest on FD	*42,842.38*		
Fixed Deposit maturity	*69,50,170.00*		
		Closing Balance:-	
		Cash at Bank	*1,14,287.00*
	72,79,245.00		***72,79,245.00***

EASTERN REGIONAL POWER COMMITTEE - PSDF Study Programme Foreign

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2023

Liabilities	Amount (Rs)		Assets	Amount (Rs)
Capital Account		*1,01,58,463.00*	*Investments:-*	
As per last A/c	*1,55,28,370.00*		*Fixed Deposit*	*1,00,74,463.10*
Add: Surplus for the year	*(53,69,907.00)*		*Interest accrued on FD*	*6,706.80*
			TDS AY: 2022-23	*38,304.50*
			TDS AY: 2023-24	*38,988.60*
			Cash at Bank	*-*
Total		*1,01,58,463.00*	*Total*	*1,01,58,463.00*

EASTERN REGIONAL POWER COMMITTEE - PSDF Study Programme Foreign

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2023

Particulars	Amount (Rs)	Particulars	Amount (Rs)
To Expenses for Project	*57,83,386.00*	*By Interest on FD*	*4,13,479.00*
Surplus for the year	*-*	*Defecit for the year*	*53,69,907.00*
	57,83,386.00		*57,83,386.00*

EASTERN REGIONAL POWER COMMITTEE - PSDF Study Programme Foreign

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2023

Receipts	Amount (Rs)	Payments	Amount (Rs)
Opening Balance:-		*Expenses for Project*	*57,83,386.00*
Cash at Bank	*2,14,682.70*		
		Interest accrued on FD	*6,706.80*
Interest on FD	*4,13,479.00*	*Fixed Deposit*	*3,67,783.60*
		TDS AY: 2023-24	*38,988.60*
Fixed Deposit	*55,68,703.30*		
		Closing Balance:-	
		Cash at Bank	
	61,96,865.00		***61,96,865.00***

EASTERN REGIONAL POWER COMMITTEE - PSDF Training Programme

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2023

Liabilities	Amount (Rs)		Assets	Amount (Rs)
Capital Account		*11,33,682.00*	*Investments:-*	
As per last A/c	*25,73,397.00*		*Fixed Deposit*	*11,23,653.20*
Less: Deficit for the year	*14,39,715.00*		*Interest accrued on FD*	*765.90*
			TDS AY: 2022-23	*4,104.00*
			TDS AY: 2023-24	*5,105.80*
			Cash at Bank	*53.10*
Total		*11,33,682.00*	*Total*	*11,33,682.00*

EASTERN REGIONAL POWER COMMITTEE - PSDF Training Programme

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2023

Particulars	Amount (Rs)	Particulars	Amount (Rs)
To Expenses for Project	*14,90,773.00*	*By Interest on FD*	*51,058.00*
Surplus for the year		*Deficit for the year*	*14,39,715.00*
	14,90,773.00		*14,90,773.00*

EASTERN REGIONAL POWER COMMITTEE - PSDF Training Programme

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2023

Receipts	Amount (Rs)	Payments	Amount (Rs)
Opening Balance:-		*Expenses for Project*	*14,90,773.00*
Cash at Bank	*5,32,010.40*		
		Interest accrued on FD	*765.90*
Interest on FD	*51,058.00*	*Fixed Deposit*	*45,186.30*
		TDS AY: 2023-24	*5,105.80*
Fixed Deposit	*9,58,815.70*		
		Closing Balance:-	
		Cash at Bank	*53.10*
	15,41,884.10		***15,41,884.10***

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) Balance Sheet as on 31st March, 2024

Prev. Yr	Liabilities	Amount in Rs.		Prev. Yr	Assets	Amount in Rs.
	Capital Funds				***Fixed Assets:-***	
9,51,11,002.25	*Establishment Fund :*		*7,49,60,994.25*	*70,59,106.00*	*As per schedule*	*70,01,123.00*
	As per last A/c	*9,51,11,002.25*				
	Less :Capital Expenses made	*(9,71,337.00)*			***Investments:-***	
	Less: Prior Period Adjustments	*(1,70,23,372.00)*		*10,47,08,354.12*	*Fixed Deposit*	*6,40,64,630.52*
	Add : Net Surplus for the year	*(21,55,299.00)*		*7,642.70*	*Interest accrued on FD*	*170.00*
70,59,106.00	*Movable Properties Fund:-*		*70,01,123.00*		***Current Assets:-***	
	As per Last A/c.	*70,59,106.00*		*82,23,946.00*	*Sundry Debtors*	*1,63,57,581.00*
	Add :Transfer From Capital Fund	*9,71,337.00*				
	Less :Depreciation (Contra)	*(10,29,320.00)*		*1,13,131.20*	*Income Tax & TDS*	
					A/Y - 2022-23	*59,755.50*
34,17,390.12	*ERPC Fund*		*20,14,237.12*		*A/Y - 2023-24*	*53,375.70*
	As per last A/c	*34,17,390.12*			*A.Y. 2024-25*	*15,18,682.60*
	Less: Deficit for the year	*14,03,153.00*				
				-	*Advance to Official*	*1,00,000.00*
	Current Liabilities:-					
1,18,78,072.00	*Unspent Grant-in-Aid*			*28,21,902.35*	*Cash at Bank*	*13,01,874.25*
	PRDB-PSDF		*14,276.00*			
	As per last A/c	*5,85,927.00*		*72,933.00*	*Cash in Hand*	*96,487.00*
	Less: Deficit for the year	*5,71,651.00*				
	PSDF Study Programme Foreign		*9,74,703.00*			
	As per last A/c	*1,01,58,463.00*				
	Less: Deficit for the year	*91,83,760.00*				
	PSDF Training Programme		*3,65,925.20*			
	As per last A/c	*11,33,682.00*				
	Less: Deficit for the year	*7,67,756.80*				
55,41,445.00	*Other Liabilities*		*52,22,421.00*			
	Accounting Charges	*1,80,000.00*				
	Audit Fees	*20,000.00*				
	Sundry Creditors	*17,197.00*				
	GST Payable	*30,687.00*				
	Expenses payable (Govt A/c)	*48,81,789.00*				
	TDS - Payable	*92,748.00*				
12,30,07,015.37	**Total**		**9,05,53,679.57**	**12,30,07,015.37**	**Total**	**9,05,53,679.57**

Annexure :Statement of Significant Accounting Policies

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) Income & Expenditure A/c. for the year ended 31st March 2024

Previous Year	Expenditure	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Amount in Rs.	Previous Year	Income	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Amount in Rs.
1,05,000.00	To Accounting Charges	90,000.00	-	-	-	-	90,000.00	6,55,50,000.00	By Fees & Charges	5,70,00,000.00	46,00,000.00	-	-	-	6,16,00,000.00
21,240.00	" Accounting Software	-	-	-	-	-	-								-
-	" Advertisement	-	-	-	-	-	-	9,53,694.00	" Canteen sale	-	9,78,145.00	-	-	-	9,78,145.00
10,000.00	" Audit Fees	10,000.00	-	-	-	-	10,000.00	25,53,649.62	" Interest on FD	65,68,704.00	10,183.00	18,939.00	1,55,370.00	22,288.20	67,75,484.20
25,152.43	" Bank Charges	81.00	443.00	708.00	-	-	1,232.00	-	" Movable Prop Fund	-	-	-	-	-	-
-	" Books & Periodicals	-	-	-	-	-	-	-	" Grant-in-Aid	-	-	-	-	-	-
8,69,915.00	" Canteen Expenses	-	9,99,455.00	-	-	-	9,99,455.00	11,20,497.00	" Depreciation reversal	10,29,320.00	-	-	-	-	10,29,320.00
3,87,066.00	" Car Expenses	1,13,677.00	-	-	-	-	1,13,677.00	-	" Collection from Guest House	1,33,950.00	-	-	-	-	1,33,950.00
64,090.00	" Celebration Expenses	51,582.00	-	-	-	-	51,582.00	-	" Liabilities Written Back	15,306.00	2,041.00	-	-	-	17,347.00
13,15,300.00	" Consultancy Charges	-	-	-	-	-	-								
2,65,058.00	" Documentation Expenses	52,74,699.00	-	-	-	-	52,74,699.00								
11,20,497.00	" Depreciation	10,29,320.00	-	-	-	-	10,29,320.00								
2,98,060.00	" Electricity Charges	18,17,930.00	-	-	-	-	18,17,930.00								
1,44,39,117.00	" Project Expenses	-	-	5,89,882.00	93,39,130.00	7,90,045.00	1,07,19,057.00								
3,03,37,592.00	" Expenses Govt. A/c.	2,90,47,590.00	-	-	-	-	2,90,47,590.00								
	" Expenses for Guest House	25,412.00	-	-	-	-	25,412.00								
4,88,520.00	" Gardening Expenses	5,57,550.00	-	-	-	-	5,57,550.00								
1,49,237.00	" General Expenses	65,205.00	-	-	-	-	65,205.00								
3,000.00	" Legal Fees	63,000.00	-	-	-	-	63,000.00								
88,06,421.00	" Meeting Expenses	81,94,225.00	59,80,732.00	-	-	-	1,41,74,957.00								
4,629.00	" Misc Expenses	-	7,746.00	-	-	-	7,746.00								
81,026.00	" Parliament Committee Visit Ex	-	-	-	-	-	-								
1,000.00	" Postage	-	-				-								
81,983.00	" Printing & Stationery	9,467.00	-	-	-	-	9,467.00								
-	" Professional Fees	50,740.00	-	-	-	-	50,740.00								
-	" Rates & Taxes	1,80,000.00	-	-	-	-	1,80,000.00								
17,61,526.00	" Repair & Maintance	29,76,035.00	-	-	-	-	29,76,035.00								
54,248.00	" Refreshment Expenses	-	5,146.00	-	-	-	5,146.00								
1,35,33,549.00	" Security & Manpower	1,51,41,515.00	-	-	-	-	1,51,41,515.00								
-	" Staff Welfare	3,31,480.00	-	-	-	-	3,31,480.00								
12,969.00	" Telephone Expenses	2,90,178.00	-	-	-	-	2,90,178.00								
34,520.00	" Training Expenses	-	-	-	-	-	-								
28,340.00	" Travel & Conveyance	7,86,416.00	-	-	-	-	7,86,416.00								
67,380.00	" Wages	62,542.00	-	-	-	-	62,542.00								
8,45,752.00	" Website & IT Expenses	7,33,935.00	-	-	-	-	7,33,935.00								
29,24,205.00	" Workshop Expenses	-	-	-	-	-	-								
1,13,21,876.45	" Surplus for the year	-	-	-	-	-	-	1,92,80,428.26	" Deficit for the year	21,55,299.00	14,03,153.00	5,71,651.00	91,83,760.00	7,67,756.80	1,40,81,619.80
8,94,58,268.88		6,69,02,579.00	69,93,522.00	5,90,590.00	93,39,130.00	7,90,045.00	8,46,15,866.00	8,94,58,268.88		6,69,02,579.00	69,93,522.00	5,90,590.00	93,39,130.00	7,90,045.00	8,46,15,866.00

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) Receipts & Payments A/c for the year ended 31st March 2024

Receipts	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Total	Payments	Establishment Fund	ERPC Fund	PRDB PSDF	PSDF Study Programme Foreign	PSDF Training Programme	Total
						-							-
To Opening Balance						-	By Revenue Payments						-
Bank	1,23,280.25	25,84,282.00	1,14,287.00	-	53.10	8,17,35,357.90	Accounting Charges	90,000.00	-	-	-	-	90,000.00
Cash	23,101.00	49,832.00				37,210.00	Accounting Software	-	-	-	-	-	-
						-	Advertisement	-	-	-	-	-	-
To Revenue Income							Audit Fees	10,000.00	-	-	-	-	10,000.00
Fees & Charges	5,70,00,000.00	46,00,000.00	-	-	-	6,16,00,000.00	Bank Charges	81.00	443.00	708.00	-	-	1,232.00
Canteen sale	-	9,78,145.00	-	-	-	9,78,145.00	Books & Periodicals	-	-	-	-	-	-
Interest on FD	65,68,704.00	10,183.00	18,939.00	1,55,370.00	22,288.20	67,75,484.20	Canteen Expenses	-	9,99,455.00	-	-	-	9,99,455.00
Accured Interest on FD	-	-	-	6,706.80	765.90	7,472.70	Car Expenses	1,13,677.00	-	-	-	-	1,13,677.00
Membership Fees	-	-	-	-	-	-	Legal Fees	63,000.00	-	-	-	-	63,000.00
Prior Period Income	-	-	-	-	-	-	Celebration Expenses	51,582.00	-	-	-	-	51,582.00
Collection from Guest House	1,33,950.00	-	-	-	-	1,33,950.00	Consultancy Charges	-	-	-	-	-	-
Liabilities written back	15,306.00	2,041.00	-	-	-	17,347.00	Cultural Program	-	-	-	-	-	-
						-	Documentation	52,74,699.00	-	-	-	-	52,74,699.00
						-	Electricity Charges	18,17,930.00	-	-	-	-	18,17,930.00
						-	Expenses Govt. A/c.	2,90,47,590.00	-	-	-		2,90,47,590.00
						-	Gardening Expenses	5,57,550.00	-	-	-		5,57,550.00
						-	General Expenses	65,205.00	-	-	-		65,205.00
						-	Internet Charges	-	-	-	-	-	-
							Legal Fees	-	-	-	-	-	-
							Meeting Expenses	81,94,225.00	59,80,732.00	-	-	-	1,41,74,957.00
							Messing Expenses	-	-	-	-	-	-
							Misc Expenses	-	7,746.00	-	-	-	7,746.00
							Wages	62,542.00	-	-	-	-	62,542.00
							Refreshment Expenses	-	5,146.00	-	-	-	5,146.00
							Rates & Taxes	1,80,000.00	-	-	-	-	1,80,000.00
							Printing & Stationery	9,467.00	-	-	-	-	9,467.00
							Professional Fees	50,740.00	-	-	-	-	50,740.00
							Repair & Maintance	29,76,035.00	-	-	-	-	29,76,035.00
							Security & Manpower	1,51,41,515.00	-	-	-	-	1,51,41,515.00
							Staff Welfare	3,31,480.00	-	-	-	-	3,31,480.00
							Telephone Expenses	2,90,178.00	-	-	-	-	2,90,178.00
							Travel & Conveyance	7,86,416.00	-	-	-	-	7,86,416.00
							Website & IT Expenses	7,33,935.00	-	-	-	-	7,33,935.00
							Expenses for Project	-	-	5,89,882.00	93,39,130.00	7,90,045.00	1,07,19,057.00
							Expenses fro Guest House	25,412.00	-	-	-	-	25,412.00
													-

To	Capital Receipts :						-	By	Capital Expenses							-
	Accouting Charges Payable	90,000.00					90,000.00		Payable of Govt	52,16,886.00	-	-	-	-	52,16,886.00
	Audit Fee Payable	10,000.00					10,000.00		Parliament Committee Visit Exp.	-	-	-	-	-	-
	GST Payable	4,13,683.00	74,360.00				4,88,043.00		Advance for Official	1,00,000.00	-	-	-	-	1,00,000.00
	TDS Payable	8,39,163.00	48,039.00				8,87,202.00		Advance Tax,A/y- 2024-25	15,00,000.00	-	-	-	-	15,00,000.00
	Fixed Deposit Maturity	7,95,38,297.00					7,95,38,297.00		Fixed Deposit Made	4,93,18,704.00	-	-	-	-	4,93,18,704.00
	Payable to Govt	48,81,789.00					48,81,789.00		Sundry Debtors	1,50,00,000.00	13,00,000.00				1,63,00,000.00
	Sundry Debtors	74,84,694.00	7,39,252.00				82,23,946.00		Current Account with ERPC Fund	7,50,000.00	-	-	-	-	7,50,000.00
	Sundry Creditors	17,197.00					17,197.00		Fixed Assets Addition	9,71,337.00	-				9,71,337.00
	Advance to Officials		35,000.00				35,000.00		Accounting Charges Payable	40,000.00	-	-	-	-	40,000.00
	Advance from ERPC Fund		7,50,000.00				7,50,000.00		Audit fees Payable	10,000.00	-	-	-	-	10,000.00
"	Fixed Deposit Maturity			4,71,640.00	91,92,796.20	7,68,872.90	1,04,33,309.10		GST Payable	3,94,674.00	1,35,896.00	-	-	-	5,30,570.00
									TDS Payable	7,95,611.00	85,188.00	-	-	-	8,80,799.00
									Advance from Customer	-	15,000.00	-	-	-	15,000.00
									Advance to ERPC Café	-	35,000.00	-	-	-	35,000.00
									Tax Deducted at Source	-	1,004.50	-	15,743.00	1,935.10	18,682.60
									Fixed Deposit made	-	9,178.50	-	-	-	9,178.50
									Sundry Debtors - ERPC Café	-	57,581.00	-	-	-	57,581.00
								By	Prior Period Adjustments						-
									Repair & Maintance Prior Period	40,06,082.00	-	-	-	-	40,06,082.00
									KMC Tax	1,30,17,290.00	-	-	-	-	1,30,17,290.00
															-
								By	Closing Balance						-
									Bank	78,682.25	12,08,916.00	14,276.00	-	-	13,01,874.25
									Cash	48,101.00	29,848.00	-	-	-	77,949.00
									Cash - Guest House	18,538.00	-	-	-	-	18,538.00
		15,71,39,164.25	98,71,134.00	6,04,866.00	93,54,873.00	7,91,980.10	25,66,39,749.90			15,71,39,164.25	98,71,134.00	6,04,866.00	93,54,873.00	7,91,980.10	17,77,62,017.35
			-	-	-	-									

Date: -

EASTERN REGIONAL POWER COMMITTEE

14, Golf Club Road, Kolkata - 700033

(Consolidated) FIXED ASSETS AS AT 31ST MARCH, 2024

Particulars	*Opening WDV as on 01.04.2023*	*Addition during the year*		*Rate*	*Depreciation for the year*		*Closing WDV as on 31.03.2024*
		upto 30.09.2023	*after 30.09.2023*		*upto 30.09.2023*	*after 30.09.2023*	
Other Equipments	*4,01,922.00*			*10%*	*40,192.00*	*-*	*3,61,730.00*
Office Machinery	*8,13,725.00*			*15%*	*1,22,059.00*	*-*	*6,91,666.00*
Furniture Account	*45,23,233.00*		*2,69,782.00*	*10%*	*4,52,323.00*	*13,489.00*	*43,27,203.00*
Guest House			*82,324.00*	*10%*	*-*	*4,116.00*	*78,208.00*
Intercom			*2,36,361.00*	*10%*	*-*	*11,818.00*	*2,24,543.00*
Office Car	*6,74,778.00*			*15%*	*1,01,217.00*	*-*	*5,73,561.00*
Electric Equipment	*1,68,824.00*			*10%*	*16,882.00*	*-*	*1,51,942.00*
Computer	*4,76,624.00*		*3,82,870.00*	*40%*	*1,90,650.00*	*76,574.00*	*5,92,270.00*
Total	*70,59,106.00*	*-*	*9,71,337.00*		*9,23,323.00*	*1,05,997.00*	*70,01,123.00*

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND
14, Golf Club Road, Kolkata - 700033

Balance Sheet as on 31st March, 2024

Previous Year	Liabilities	Amount in Rs.		Previous Year	Assets	Amount in Rs.
	General Fund		*7,49,60,994.25*		***Fixed Assets:-***	
9,51,11,002.25	*As per last A/c*	*9,51,11,002.25*		*70,59,106.00*	*As per schedule*	*70,01,123.00*
	Net Surplus for the year	*(21,55,299.00)*				
	Capital Expenses made	*(9,71,337.00)*				
	Prior -period Adjustment	*(1,70,23,372.00)*			***Investments***	
				9,28,90,777.00	*Fixed Deposits*	*6,26,71,184.00*
					Accured Interest	*170.00*
	Movable Properties Fund:-		*70,01,123.00*			
70,59,106.00	*As per Last A/c.*	*70,59,106.00*			***Current Assets:-***	
	Transfer From Capital Fund	*9,71,337.00*			*Deposits (Asset)*	
	Depreciation Expenses Contra	*(10,29,320.00)*		*15,306.00*	*TDS (A.Y.: 2022-23)*	*15,306.00*
					TDS (A.Y.: 2023-24)	
					TDS (A.Y.: 2024-25)	*15,00,000.00*
54,26,326.00	***Current Liabilities:-***		*52,20,987.00*		*Advance to Official*	1,00,000.00
	Accounting Charges	*1,80,000.00*		*170.00*	*Interest Receivable*	-
	Audit Fees	*20,000.00*		-	*Current Account with ERPC Fund*	*7,50,000.00*
	Sundry Creditors	*17,197.00*		*74,84,694.00*	*Sundry Debtors*	*1,50,00,000.00*
	Expenses payable (Govt A/c.)	*48,81,789.00*		*1,23,280.25*	*Bank Accounts*	*78,682.25*
	GST Payable	*30,687.00*		*23,101.00*	*Cash in hand*	*66,639.00*
	TDS - Payable	*91,314.00*				
10,75,96,434.25	**Total**		**8,71,83,104.25**	10,75,96,434.25	**Total**	**8,71,83,104.25**

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2024

Previous Year		*Particulars*	*Amount in Rs.*	*Previous Year*		*Particulars*	*Amount in Rs.*
1,05,000.00	*To*	*Accounting Charges*	*90,000.00*	*6,00,00,000.00*	*By*	*Fees & Charges*	*5,70,00,000.00*
21,240.00	*"*	*Accounting Software*	*-*	*18,29,288.00*	*"*	*Interest on Deposit*	*65,68,704.00*
10,000.00	*"*	*Audit Fees*	*10,000.00*	*11,20,497.00*	*"*	*Depreciation reversal*	*10,29,320.00*
1,540.55	*"*	*Bank Charges*	*81.00*	*7,50,000.00*	*"*	*Prior Period Income*	*-*
3,87,066.00	*"*	*Car Expenses*	*1,13,677.00*	*-*	*"*	*Collection from Guest Hous*	*1,33,950.00*
-	*"*	*Celebration Expenses*	*51,582.00*	*-*	*"*	*Liabilities Written Beck*	*15,306.00*
2,65,058.00	*"*	*Documentation Expenses*	*52,74,699.00*				
13,15,300.00	*"*	*Consultancy Charges*					
11,20,497.00	*"*	*Depreciation*	*10,29,320.00*				
2,98,060.00	*"*	*Electricity Charges*	*18,17,930.00*				
3,03,37,592.00	*"*	*Expenses Govt. A/c.*	*2,90,47,590.00*				
-	*"*	*Expenses for Guest House*	*25,412.00*				
4,88,520.00	*"*	*Gardening Expenses*	*5,57,550.00*				
1,49,237.00	*"*	*General Expenses*	*65,205.00*				
3,000.00		*Legal Fees*	*63,000.00*				
15,08,961.00	*"*	*Meeting Expenses*	*81,94,225.00*				
81,026.00	*"*	*Parliament Committee Visit Expenses*	*-*				
60,493.00	*"*	*Printing & Stationery*	*9,467.00*				
-	*"*	*Professional Fees*	*50,740.00*				
-	*"*	*Rates & Taxes*	*1,80,000.00*				
17,61,526.00	*"*	*Repair & Maintance*	*29,76,035.00*				
1,35,33,549.00	*"*	*Security & Manpower*	*1,51,41,515.00*				
-	*"*	*Staff Welfare*	*3,31,480.00*				
10,611.00	*"*	*Telephone Charges*	*2,90,178.00*				
6,500.00	*"*	*Travel & Comveyance*	*7,86,416.00*				
67,380.00	*"*	*Wages*	*62,542.00*				
8,45,752.00	*"*	*Website & IT Expenses*	*7,33,935.00*				
1,13,21,876.45	*"*	*Surplus for the year*	*(21,55,299.00)*				
6,36,99,785.00			*6,47,47,280.00*	*6,36,99,785.00*			*6,47,47,280.00*

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND

14, Golf Club Road, Kolkata - 700033

Receipts & Payments A/c for the year ended 31st March 2024

Previous Year	Receipts	Amount in Rs.	Previous Year	Payments	Amount in Rs.
				By Revenue Payments	
	To Opening Balance		1,05,000.00	Accounting Charges	90,000.00
7,30,55,593.80	Bank	1,23,280.25	21,240.00	Accounting Software	-
-	Cash	23,101.00	10,000.00	Audit Fees	10,000.00
-	Cash -Guest House	-	1,540.55	Bank Charges	81.00
			3,87,066.00	Car Expenses	1,13,677.00
			3,000.00	Legal Fees	63,000.00
			13,15,300.00	Consultancy Charges	
			-	Celebration Expenses	51,582.00
			2,65,058.00	Documentation	52,74,699.00
			2,98,060.00	Electricity Charges	18,17,930.00
			3,03,37,592.00	Expenses Govt. A/c.	2,90,47,590.00
	To Revenue Income		4,88,520.00	Gardening Expenses	5,57,550.00
6,00,00,000.00	Fees & Charges	5,70,00,000.00	1,49,237.00	General Expenses	65,205.00
18,29,288.00	Interest on Deposit	65,68,704.00	15,08,961.00	Meeting Expenses	81,94,225.00
-	Liabilities written back	15,306.00	67,380.00	Wages - Establishment Fund	62,542.00
-	Collection From Guest House	1,33,950.00	81,026.00	Parliament Committee Visit Expenses	
7,50,000.00	Prior-period Income	-	-	Rates & Taxes	1,80,000.00
			60,493.00	Printing & Stationery	9,467.00
			-	Professional Fees	50,740.00
			17,61,526.00	Repair & Maintanance	29,76,035.00
			1,35,33,549.00	Security & Manpower	1,51,41,515.00
			-	Staff Welfare	3,31,480.00
			10,611.00	Telephone Charges	2,90,178.00
			-	Intercom Establishment	
			6,500.00	Travel & Conveyance	7,86,416.00
			8,45,752.00	Website & IT Expenses	7,33,935.00
			-	Expenses for Guest House	25,412.00
	" Capital receipts :			By Capital Expenses Made	
1,05,000.00	Accounting Charges Payable	90,000.00		Advance for Official	1,00,000.00
	Advance to Officials			Payable to Govt	52,16,886.00
10,000.00	Audit Fees Payable	10,000.00		Advance Tax	15,00,000.00
2,98,340.00	GST Payable	4,13,683.00	13,68,74,288.00	Fixed Deposits Made	4,93,18,704.00
2,82,453.00	TDS payable	8,39,163.00	74,84,694.00	Sundry Debtors	1,50,00,000.00
4,39,83,341.00	Fixed Deposits Matured	7,95,38,297.00		Current Account with ERPC Fund	7,50,000.00
52,16,886.00	Payable to Govt	48,81,789.00	5,49,841.00	Fixed Assets Addition	9,71,337.00
1,34,84,694.00	Sundry Debtors	74,84,694.00	50,000.00	Accounting Charges Payable	40,000.00
	Sundry Creditors	17,197.00		Audit Fees Payable	10,000.00
			3,50,224.00	GST Payable	3,94,674.00
			3,02,756.00	TDS Payable	7,95,611.00
			20,00,000.00	Sundry Creditors	
				By Prior Period Adjustments	
				Repair & Maintenance Prior Period	40,06,082.00
				KMC Tax	1,30,17,290.00
				By Closing Balance	
			1,23,280.25	Bank	78,682.25
			23,101.00	Cash	48,101.00
			-	Cash -Guest House	18,538.00
19,90,15,595.80		15,71,39,164.25	19,90,15,595.80		15,71,39,164.25

EASTERN REGIONAL POWER COMMITTEE - ESTABLISHMENT FUND

14, Golf Club Road, Kolkata - 700033

FIXED ASSETS AS AT 31ST MARCH, 2024

Particulars	*Opening WDV as on 01.04.2023*	*Addition during the year*		*Rate*	*Depreciation for the year*		*Closing WDV as on 31.03.2024*
		upto 30.09.2023	*after 30.09.2023*		*upto 30.09.2023*	*after 30.09.2023*	
Other Equipments	*4,01,922.00*			*10%*	*40,192.00*	*-*	*3,61,730.00*
Office Machinery	*8,13,725.00*			*15%*	*1,22,059.00*	*-*	*6,91,666.00*
Furniture Account	*45,23,233.00*		*2,69,782.00*	*10%*	*4,52,323.00*	*13,489.00*	*43,27,203.00*
Guest House Upholstries			*82,324.00*	*10%*	*-*	*4,116.00*	*78,208.00*
Intercom			*2,36,361.00*	*10%*	*-*	*11,818.00*	*2,24,543.00*
Office Car	*6,74,778.00*			*15%*	*1,01,217.00*	*-*	*5,73,561.00*
Electric Equipment	*1,68,824.00*			*10%*	*16,882.00*	*-*	*1,51,942.00*
Computer	*4,76,624.00*		*3,82,870.00*	*40%*	*1,90,650.00*	*76,574.00*	*5,92,270.00*
Total	*70,59,106.00*	*-*	*9,71,337.00*		*9,23,323.00*	*1,05,997.00*	*70,01,123.00*

EASTERN REGIONAL POWER COMMITTEE - ERPC FUND

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2024

Previous Year	Liabilities	Amount (Rs)		Previous Year	Assets	Amount (Rs)
	Capital Account		20,14,237.12		Current Assets:-	
34,17,390.12	As per last A/c	34,17,390.12			Deposits (Asset)	
	Net Surplus for the year	(14,03,153.00)		7,39,252.00	Sundry Debtors	13,57,581.00
				1,47,820.82	Fixed Deposit	1,56,999.32
	Current Liabilities:-		7,51,434.00		Tax Deducted at Source	
38,583.00	TDS - Payable	1,434.00		2,041.00	A.Y.: 2022-23	2,041.00
61,536.00	GST - Payable	-		9,281.30	A.Y.: 2023-24	9,281.30
-	Advance from Establishment Fund	7,50,000.00			A.Y.: 2024-25	1,004.50
15,000.00	Canteen Deposit	-		25,62,518.00	Cash at Bank - ERPC	11,78,101.00
				21,764.00	Cash at Bank- Canteen	30,815.00
				1,166.00	Cash in Hand - ERPC	8,274.00
				48,666.00	Cash in Hand - Canteen	21,574.00
35,32,509.12	Total		27,65,671.12	35,32,509.12	Total	27,65,671.12

EASTERN REGIONAL POWER COMMITTEE - ERPC FUND

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2024

Previous Year	Particulars	Amount (Rs)	Previous Year	Particulars	Amount (Rs)
64,090.00	*To Celebration Expenses*	*-*	*47,00,000.00*	*By Membership Fees*	*46,00,000.00*
72,97,460.00	*" Meeting Expenses*	*59,80,732.00*	*9,53,694.00*	*" Canteen Sale*	*9,78,145.00*
4,629.00	*" Misc. Expenses*	*7,746.00*	*92,813.00*	*" Interest on FD*	*10,183.00*
1,000.00	*" Postage*	*-*	*1,00,000.00*	*" Prior Period Income*	*-*
21,490.00	*" Printing & Stationery*	*-*	*-*	*" Liabilities written Back*	*2,041.00*
54,248.00	*" Refreshment Expenses*	*5,146.00*			
2,358.00	*" Telephone Expenses*	*-*			
34,520.00	*" Training Expenses*	*-*	*54,72,859.88*	*" Defecit for the year*	*14,03,153.00*
21,840.00	*" Travel & Conveyance*	*-*			
29,24,205.00	*" Workshop Expenses*	*-*			
8,69,915.00	*" Canteen Expenses*	*9,99,455.00*			
23,611.88	*" Bank Charges*	*443.00*			
-	*" Surplus for the year*	*-*			
1,13,19,366.88		*69,93,522.00*	*1,13,19,366.88*		*69,93,522.00*

EASTERN REGIONAL POWER COMMITTEE - ERPC FUND

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2024

Previous Year	Receipts	Amount (Rs)	Previous Year	Payments	Amount (Rs)
	Opening Balance:-		*64,090.00*	*Celebration Expenses*	
77,87,711.00	*Cash at Bank - ERPC*	*25,62,518.00*	*72,97,460.00*	*Meeting Expenses*	*59,80,732.00*
26,139.00	*Cash at Bank- Canteen*	*21,764.00*	*4,629.00*	*Misc. Expenses*	*7,746.00*
35,405.00	*Cash in Hand - ERPC*	*1,166.00*	*1,000.00*	*Postage*	
1,805.00	*Cash in Hand - Canteen*	*48,666.00*	*21,490.00*	*Printing & Stationery*	
			54,248.00	*Refreshment Expenses*	*5,146.00*
47,00,000.00	*Membership Fees*	*46,00,000.00*	*2,358.00*	*Telephone Expenses*	
9,53,694.00	*Sale at Canteen ERPC Café*	*9,78,145.00*	*34,520.00*	*Training Expenses*	
92,813.00	*Interest on Fixed Deposit*	*10,183.00*	*21,840.00*	*Travel & Conveyance*	
-	*Liabilities written back*	*2,041.00*	*29,24,205.00*	*Workshop Expenses*	
1,00,000.00	*Prior Period Income*	-	*8,69,915.00*	*Canteen Expenses*	*9,99,455.00*
			23,611.88	*Bank Charges*	*443.00*
3,31,098.00	*GST Payable*	*74,360.00*	*20,000.00*	*Advance to Officials*	
3,14,679.00	*TDS - Payable*	*48,039.00*		*Advance from Customer*	*15,000.00*
74,35,710.88	*Fixed Deposit*			*Advance to ERPC Café*	*35,000.00*
9,97,959.00	*Receipt : Sundry Debtors*	*7,39,252.00*	*75,83,531.70*	*Fixed Deposit*	*9,178.50*
			2,69,562.00	*GST Payable*	*1,35,896.00*
			2,76,906.00	*TDS - Payable*	*85,188.00*
	Advance: Establishment Fund	*7,50,000.00*	*9,281.30*	*Tax Deducted at Source*	*1,004.50*
75,000.00	*Advance to Officials*	-		*Sundry Debtors - ERPC Café*	*57,581.00*
	Advance from ERPC Fund	*35,000.00*	*7,39,252.00*	*Sundry Debtors*	*13,00,000.00*
				Closing Balance:-	
			25,62,518.00	*Cash at Bank - ERPC*	*11,78,101.00*
			21,764.00	*Cash at Bank- Canteen*	*30,815.00*
			1,166.00	*Cash in Hand - ERPC*	*8,274.00*
			48,666.00	*Cash in Hand - Canteen*	*21,574.00*
2,28,52,013.88		***98,71,134.00***	***2,28,52,013.88***		***98,71,134.00***

EASTERN REGIONAL POWER COMMITTEE - PRDB PSDF

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2024

Previous Year	**Liabilities**	**Amount (Rs)**		Previous Year	**Assets**	**Amount (Rs)**
	Capital Account		*14,276.00*	-	*Investments:-*	
5,85,927.00	*As per last A/c*	*5,85,927.00*		*4,71,640.00*	*Fixed Deposit*	
	Add: Surplus for the year	*(5,71,651.00)*		-		
				-		
				1,14,287.00	*Cash at Bank*	*14,276.00*
				-		
				-		
5,85,927.00	*Total*		*14,276.00*	*5,85,927.00*	*Total*	*14,276.00*

EASTERN REGIONAL POWER COMMITTEE - PRDB PSDF

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2024

Previous Year	Particulars	Amount (Rs)	Previous Year	Particulars	Amount (Rs)
71,64,958.00	*To Expenses for the year*	*5,89,882.00*	*1,67,011.62*	*By Interest on FD*	*18,939.00*
	To Bank Charges	*708.00*			
	Surplus for the year		*69,97,946.38*	*Defecit for the year*	*5,71,651.00*
71,64,958.00		*5,90,590.00*	*71,64,958.00*		*5,90,590.00*

EASTERN REGIONAL POWER COMMITTEE - PRDB PSDF

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2024

Receipts	Amount (Rs)	Payments	Amount (Rs)
Opening Balance:-			
Cash at Bank	*1,14,287.00*	*Expenses for Project*	*5,89,882.00*
		Bank Charges	*708.00*
Interest on FD	*18,939.00*		
Fixed Deposit maturity	*4,71,640.00*		
		Closing Balance:-	
		Cash at Bank	*14,276.00*
	6,04,866.00		***6,04,866.00***

EASTERN REGIONAL POWER COMMITTEE - PSDF Study Programme Foreign

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2024

Previous Year	**Liabilities**	**Amount (Rs)**		Previous Year	**Assets**	**Amount (Rs)**
	Capital Account		*9,74,703.00*		*Investments:-*	
1,01,58,463.00	*As per last A/c*	*1,01,58,463.00*		*1,00,74,463.10*	*Fixed Deposit*	*8,81,666.90*
	Add: Surplus for the year	*(91,83,760.00)*		*6,706.80*	*Interest accrued on FD*	*-*
				38,304.50	*TDS AY: 2022-23*	*38,304.50*
				38,988.60	*TDS AY: 2023-24*	*38,988.60*
				-	*TDS AY: 2024-25*	*15,743.00*
				-	*Cash at Bank*	*-*
1,01,58,463.00	*Total*		*9,74,703.00*	*1,01,58,463.00*	*Total*	*9,74,703.00*

EASTERN REGIONAL POWER COMMITTEE - PSDF Study Programme Foreign

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2024

Previous Year	Particulars	Amount (Rs)	Previous Year	Particulars	Amount (Rs)
57,83,386.00	*To Expenses for Project*	*93,39,130.00*	*4,13,479.00*	*By Interest on FD*	*1,55,370.00*
	" Surplus for the year		*53,69,907.00*	*" Defecit for the year*	*91,83,760.00*
57,83,386.00		*93,39,130.00*	*57,83,386.00*		*93,39,130.00*

EASTERN REGIONAL POWER COMMITTEE - PSDF Study Programme Foreign

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2024

Previous Year	Receipts	Amount (Rs)	Previous Year	Payments	Amount (Rs)
	Opening Balance:-		*57,83,386.00*	*Expenses for Project*	*93,39,130.00*
2,14,682.70	*Cash at Bank*	*-*			
			6,706.80	*Interest accrued on FD*	
4,13,479.00	*Interest on FD*	*1,55,370.00*		*Fixed Deposit*	*-*
			38,988.60	*TDS*	*15,743.00*
51,96,852.60	*Fixed Deposit*	*91,92,796.20*			
4,067.10	*Interest accrued on FD*	*6,706.80*		*Closing Balance:-*	
			-	*Cash at Bank*	*-*
58,29,081.40		***93,54,873.00***	***58,29,081.40***		***93,54,873.00***

EASTERN REGIONAL POWER COMMITTEE - PSDF Training Programme

14, Golf Club Road, Kolkata - 700033

Balance Sheet as at 31st March, 2024

Previous Year	Liabilities	Amount (Rs)		Previous Year	Assets	Amount (Rs)
	Capital Account		3,65,925.20		Investments:-	
11,33,682.00	As per last A/c	11,33,682.00		11,23,653.20	Fixed Deposit	3,54,780.30
	Less: Deficit for the year	7,67,756.80		765.90	Interest accrued on FD	-
				-		
				4,104.00	TDS AY: 2022-23	4,104.00
				5,105.80	TDS AY: 2023-24	5,105.80
					TDS AY: 2024-25	1,935.10
				53.10	Cash at Bank	-
				-		
11,33,682.00	Total		3,65,925.20	11,33,682.00	Total	3,65,925.20

EASTERN REGIONAL POWER COMMITTEE - PSDF Training Programme

14, Golf Club Road, Kolkata - 700033

Income & Expenditure A/c. for the year ended 31st March 2024

Previous Year	Particulars	Amount (Rs)	Previous Year	Particulars	Amount (Rs)
14,90,773.00	*To Expenses for Project*	*7,90,045.00*	*51,058.00*	*By Interest on FD*	*22,288.20*
-	*" Surplus for the year*	*-*	*14,39,715.00*	*" Deficit for the year*	*7,67,756.80*
14,90,773.00		*7,90,045.00*	*14,90,773.00*		*7,90,045.00*

EASTERN REGIONAL POWER COMMITTEE - PSDF Training Programme

14, Golf Club Road, Kolkata - 700033

Receipt & Payment A/c. for the year ended 31st March 2024

Previous Year	Receipts	Amount (Rs)	Previous Year	Payments	Amount (Rs)
	Opening Balance:-			*Expenses for Project*	
5,32,010.40	*Cash at Bank*	*53.10*	*14,90,773.00*	*CESC*	*7,90,045.00*
51,058.00	*Interest on FD*	*22,288.20*			
			765.90	*Interest accrued on FD*	
542.70	*Accrued Interest*	*765.90*		*Fixed Deposit*	
			5,105.80	*Tax Deducted at Source*	*1,935.10*
9,13,086.70	*Fixed Deposit*	*7,68,872.90*			
				Closing Balance:-	
			53.10	*Cash at Bank*	*-*
14,96,697.80		*7,91,980.10*	*14,96,697.80*		*7,91,980.10*

Annex-I

GOVERNMENT OF INDIA
MINISTRY OF POWER
EASTERN REGIONAL POWER COMMITTEE

52ND ERPC MEETING

CONTENTS

- Highlights of Performance of ER Generators.
  - Average PLF of Thermal Generators (Excluding Nuclear Power Plant)
  - Flexible Operation of Thermal Generating Units in ER.
  - FGD Installation status.
  - Coal stock position.
  - Future Planned Projects
- Status of Important Transmission Elements
- Successful Implementation of AMR in ER Grid
- UNMS Implementation
- Status of On-River & Off-River Pumped storage Plants.
- Disaster Management

HIGHLIGHTS OF PERFORMANCE OF THERMAL GENERATORS.

- **Average PLF(%) of Thermal Generators(Excluding Nuclear)**

REGION	% PLF (2023-24)	% PLF (2022-23)
ER	**76.98**	**75.74**
NR	67.44	66.99
SR	63.77	56.79
WR	69.19	60.82
NER	76.78	75.74
ALL INDIA	**69.09**	**63.95**

SOURCE-Monthly Report of CEA,OPM Division

FLEXIBLE OPERATION OF THERMAL GENERATING UNITS IN ER.

- ✓ As per gazette notification dated 30.01.2023 issued by CEA regarding flexible operation of coal fired thermal generating units, ramp rate of 2% between 55-70% along with a ramp rate of 3% above 70% was mandated within one year of notification of the regulations by Jan 2024.
- ✓ The SOP for operating at 55% load with recommendation for necessary training of the plant operators, was also circulated.
- ✓ **Regarding 55% Minimum Technical Load (MTL):** All thermal Generating Units of ER are technically capable to operate at 55% MTL.

➢ **Regarding 40% Minimum Technical Load (MTL) & status of units under pilot phase (May,2023-March,2024):**

Phase	Sector	Organization	Name of Project	Unit No.	Capacity (MW)	Region
pilot	Central	DVC	MEJIA TPS	8	500	ER
Pilot	State	WBPDCL	SAGARDIGHI TPS	3	500	ER

✓Mejia TPS unit#8(Under pilot phase) is technically capable to operate at 50% MTL.

✓ Sagardighi TPS Unit#3(Under pilot phase) operation at 40% MTL is successfully tested for a short duration but it's performance & subsequent response for a longer period is yet to be ascertained.

FGD INSTALLATION STATUS IN THERMAL GENERATING UNITS OF ER

- **DVC**: The present status of FGD implementation i.r.o DVC units (**500/600 MW**) is appended below

Station	Unit#	FGD Commissioning date
DSTPS	Unit#1	Implemented w.e.f. 01-04-2024
	Unit#2	Under implementation.
KTPS	Unit#1	Implemented w.e.f. 02-07-2024
	Unit#2	Under implementation
MTPS	Unit#7	Implemented w.e.f. 26-01-2024
	Unit#8	Implemented w.e.f. 29-03-2024
RTPS	Unit#1	Implemented w.e.f. 21-04-2024
	Unit#2	Under implementation
BTPS-A	Unit#1	Implemented w.e.f. 22-06-2024
	Total No of Units=9 FGD implemented Units=6 FGD Under Implementation Units=3	

- **WBPDCL**:

Station	Unit#	FGD Commissioning date
Sagardighi TPS	Unit#1,2,3 & 4	Under Implementation

- **NTPC**:

✓FGD has been commissioned in Darlipali Unit #2 & is functional.

✓In all other Units of NTPC in ER, It is under Implementation as per MoEF Timeframe.

- **OPGC :**

FGD is under Implementation in both Units of IB TPS.(2*660MW)

CAPTIVE COAL BLOCK

Presently, 64 nos. coal blocks are allocated to Power Sector.

- Coal Blocks under **Production**: **33** nos.
- Coal Blocks under **Development**: **16** nos.
- Coal Blocks surrendered / expected to be **surrendered**: **15** nos.

- Total Coal Production(MT) from Captive Coal mines in the FY **2023-24:121.3 MT**

- **COAL BLOCK SATUS**

Sl No	COAL BLOCK	STATE	ORGANIZATION	End Use Plant	Status
1	Dulanga (NTPC)	JHARKHAND	NTPC	DARLIPALI PH-1(2*800MW)	Producing
2	Chatti Bariatu				
3	Chatti Bariatu South			Barh-II TPP Unit #1&2	Producing
4	Pakri-Barwadih			Basket Mine	Producing

CAPTIVE COAL BLOCK

Sl No	Coal Block	STATE	ORGANIZATION	End Use Plant	Status
5	Sarisatolli (CESC)	WB	CESC	Budge-Budge Unit #1 & #2(2*250MW)	Producing
6	BARJORA	WB	WBPDCL	Basket Mine	Not Producing (Reserve Exhausted)
7	BARJORA NORTH				Producing
8	PACHWARA NORTH				
9	Gangaramchak				
10	Gamgaramchak-Bhadula				
11	TARA (EAST)				
12	TARA (WEST)				

CAPTIVE COAL BLOCK

Sl No	Coal Block	STATE	ORGANIZATION	End Use Plant	Status
13	Trans Damodar Coal Mine	WB	DPL	DPL Power Plant (300+250) MW	Producing
14	Tubed (DVC)	JHARKHAND	DVC	Chandrapura U # 8, 250 MW: Mejia U#7&8, 2x500MW	
15	MANOHARPUR	ODISHA	OPGC	Ib Valley TPP Unit 3 & 4(2*660MW)	
16	Talabira II & III	ODISHA	NLC	Talabira TPS 4x800MW	

CAPTIVE COAL BLOCK

UNDER DEVELOPMENT

Sl No	Coal Block	STATE	End Use Plant	Status
1	Rajbar E &D.	Jharkhand.	Tenughat Thermal Power Station 2 x 660 MW : Proposed.	Under Development
2	Deocha Pachami	West Bengal	Basket Mine	
3	Banhardih	Jharkhand	Patratu TPS Expn. 2400 MW Phase-I (3 x 800 MW). : Under Construction	

STATUS OF UPCOMING THERMAL GENERATION PROJECTS IN ER.

- Following Thermal power plants expected to be commissioned in ER by the coming years. (Identified by CEA)

SL NO	Name of Project	Developer	Tentative COD as per CEA Status Report	Capacity MW
1	Patratu Unit#1	NTPC	Q4,FY 2024-25	1*800
2	NKSTPP Unit#3	NTPC		1*660
3	Barh stage-I U#3	NTPC		1*600
4	TTPS Unit#1	NTPC	OCT,2027	1*660
5	Sagardighi TPS Unit#6	WBPDCL	Q4,FY 2024-25	1*660
6	Buxar TPP-II	SJVN		1*660
7	NLC Talabira STPS	NLC	NA. LOA was placed on 12.01.2024	3*800

STATUS OF IMPORTANT TRANSMISSION ELEMENTS

- **ICT:**

➢ **Installation of 315MVA ICT at Jeerat :WBSETCL**

4th ICT at 400 kV Jeerat S/S successfully installed during March 2024 by 315 MVA spare ICT from Malda (PG) .

➢ **Installation of 315 MVA transformer bank at 400 kV New Chanditala S/S :WBSETCL**

4th ICT at New Chanditala 400 kV sub-station was installed as a bank of 3 single-phase transformers & was put on operation w.e.f April 2024.

- **Installation of 7th (Interim) 500 MVA ICT at 400 kV Subhasgram (PG):PG ER II**
  - *The 500 MVA ICT was transported from Maithon during January 2024 & reached Budge-Budge on 16.02.2024 via waterways from Kolaghat*
  - *After a lots of bottlenecks, in terms of Local Administrative issues during it's transportation(Video attched), The 500 MVA 400/220 KV ICT-VII (interim) was first time charged on 21.06.2024 on no load and was finally put on operation w.e.f 22.06.2024 .*
- **HVDC Converter Transformer of Talcher-Kolar HVDC: PG Odisha**
  - *The R-phase converter transformer is under transit since April 2024, from Kolar.*
  - *Considering all constraints that hindering transportation, It is apprehended that the converter Transformer will reach at the site by end of September 2024 & likely to be put on operation in October 2024.*

➢ Installation of 315MVA ICT at Rengali: PG Odisha

At per latest communication from PG Odisha, ICT Commissioning process is going on & Likely to be charged by 15th September 2024.

RECONDUCTORING OF AC TRANSMISSION LINE:

- **RKL-Sundarharh Reconductoring (PG Odisha):**

Sl No	Circuit	HTLS Reconductoring Status
1	400KV RKL-SUNDARGARH ckt #1	Completed
2	400KV RKL-SUNDARGARH ckt #3	9 Kms Pending (120km out of 129km)
3	400KV RKL-SUNDARGARH ckt #4	60km pending (66.8 km out of 126.8km)

- **Completions of HTLS Reconductoring i.r.o 220 KV D/C transmission lines between New Chanditala 400KV S/S & Howrah 220KV S/S: WBSETCL**

SUCCESSFUL POC(PROOF OF CONCEPT) OF 5 MIN METER IN AMR EASTERN REGION: POWERGRID ER-II

- *5 min Load survey Meter (Secure make) Successful implemented at Rajarhat-PG by DCU firmware upgradation and AMR system upgradation.*
- *The existing AMR system can easily and seamlessly be upgraded to handle simultaneously, both 05 min Meter along with the existing 15 min Meters of heterogenous make.*

IMPLEMENTATION OF UNMS IN EASTERN REGION

- UNMS is an integrated centralised supervision system for communication network where all the network elements of Central Sector & all the states are integrated.
- POWERGRID has successfully implemented Unified Network Management System in ER on Dec-2023.

MAIN UNMS- PGCIL Kolkata

Backup UNMS- PGCIL Patna

Client – All States (full access for respective part)

Client - ERLDC,ERPC & CTU

STATUS OF ON-RIVER & OFF-RIVER PUMPED STORAGE PLANTS.

➢STATUS OF ON-RIVER PUMPED STORAGE DEVELOPMENT IN INDIA

SL .No.	SCHEMES	STATE	INSTALLED CAPACITY		Remarks
			No. of units x Unit size (MW)	MW	
1	Turga	WB	4*250	1000	DPR CONCURRED BY CEA

➢STATUS OF OFF-RIVER PUMPED STORAGE DEVELOPMENT IN INDIA

SL .No.	SCHEMES	STATE	INSTALLED CAPACITY		Remarks
			No. of units x Unit size (MW)	MW	
1	Upper Indravati	Odisha	4x150	600	•Upper Reservoir is existing on Upper Indravati HEP reservoir (Existing Hydro Project) and Lower Reservoir is to be constructed. •Target date for preparation of DPR – 07/24 •Agency-OHPCL •Date of MOA-15.01.2014.
2	Purulia	West Bengal	4x225	900	Working in Pumping Mode

DISASTER MANAGEMENT

- *A Meeting on **REGIONAL DISASTER MANAGEMENT (EASTERN REGION)** was held virtually on 09.07.2024 under the aegis of ERPC Secretariat & The deliberation of the meeting were as follows:*

➢ *Conduct at least one mock drill exercise for every crisis/disaster situation to which the installation/plant is vulnerable must be undertaken in each quarter and quarterly report by the utilities to be shared with CEA for review and onward submission to Ministry of Power (Govt of India) .*

➢ *Periodically share the experience on mock drill exercises in OCC forum, emphasizing scope for improvement.*

➢ *All generating stations (Thermal, Hydro and RE), transmission licensees(ISTS and state) and DISCOMs were directed to identify potential risks to their respective assets(plant/equipment/lines,etc) and intimate the same along with their preparedness to mitigate the identified risks.*

➢ *Creation of the disaster management fund by utilities as per provisions of Disaster Management Act 2005.*

➢ *All Transmission licensees were requested to update the status of ERS infrastructure, strategic locations identified for ERS and incidents of ERS deployment in the recent past.*

- *Furnish details of Mock black start i.r.o black start capable generating units and mock drills of Islanding schemes in ER in monthly OCC meetings by ERLDC*
- *Periodically update grid restoration procedure in partial/total blackout in consultation with concerned SLDCs taking changes in network configuration into consideration by ERLDC.*
- *Update the operational practices of the established Emergency Operation Centers (EOCs)/Control Rooms and back up EOC/ Control rooms status.*
- *Constitution of Plant level Emergency Management Group (EMG).*
- *Ensure compliance to CEA Guidelines on Cyber Security in the Power Sector.*
- *Update the status of the Cyber Risk Assessment and Mitigation Plan developed by them and also provide the incidents of cyber threats in the recent times.*
- *To have proper CCMP (Cyber Crisis Management Plan) in place.*


Thank You