भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय
NERPC Complex, Dong Parmaw, Lapalang, Shillong - 793006, Meghalaya

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Website: www.nerpc.nic.in

No. NERPC/SE (O)/OCC/2021/***899-935*** Dated: November 03, 2021

To,

1. Managing Director, AEGCL, Bijuli Bhawan, Guwahati – 781 001
2. Managing Director, APDCL, Bijuli Bhawan, Guwahati – 781 001
3. Managing Director, APGCL, Bijuli Bhawan, Guwahati – 781 001
4. Director (Generation), Me. PGCL, Lumjingshai, Short Round Road, Shillong – 793 001
5. Director (Distribution), Me. ECL, Lumjingshai, Short Round Road, Shillong – 793 001
6. Director (Transmission), Me. PTCL, Lumjingshai, Short Round Road, Shillong – 793 001
7. Managing Director, MSPDCL, Secure Office Bldg. Complex, South Block, Imphal – 795 001
8. Managing Director, MSPCL, Electricity Complex, Keishampat, Imphal – 795 001
9. Director (Tech.), TSECL, Banamalipur, Agartala -799 001.
10. Director (Generation), TPGCL, Banamalipur, Agartala -799 001.
11. Chief Engineer (WE Zone),Department of Power ,Govt. of Arunachal Pradesh, Itanagar- 791111
12. Chief Engineer (EE Zone),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
13. Chief Engineer (TP&MZ),Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791111
14. Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawl – 796 001
15. Engineer-in-Chief (P), Department of Power, Govt. of Nagaland, Kohima – 797 001
16. CGM, (LDC), SLDC Complex, AEGCL, Kahilipara, Guwahati-781 019
17. Group General Manager, NTPC, Bongaigoan Thermal Power Project, P.O. Salakati, Kokrajhar- 783369
18. ED, NERTS, PGCIL, Dongtieh-Lower Nongrah, Lapalang, Shillong -793 006
19. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
20. ED (Commercial), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
21. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
22. Vice President (Plant), OTPC, Badarghat Complex, Agartala, Tripura - 799014
23. ED, NERLDC, Dongtieh, Lower Nongrah, Lapalang, Shillong -793 006
24. Chief Engineer, GM Division, Central Electricity Authority, New Delhi – 110066
25. Chief Engineer (NPC), GM Division, Central Electricity Authority, New Delhi – 110066

Sub: Minutes of 183rd OCC Meeting.

Sir/Madam,

Please find enclosed herewith the minutes of 183rd OCC Meeting held at Pala Resort, Sohra on the 21st October, 2021 for your kind information and necessary action. The minute is also available on the website of NERPC, **www.nerpc.nic.in**.

Any comments/observations may kindly be communicated to NERPC Secretariat at the earliest.

Encl: As above

Yours faithfully,

S. Mukherjee
Dy. Director (O)

Copy to:

1. CGM, AEGCL, Bijuli Bhawan, Guwahati – 781001
2. CGM, APGCL, Bijuli Bhawan, Guwahati – 781001
3. CGM, DISCOM, Bijuli Bhawan, Guwahati – 781001
4. Head of SLDC, MeECL, Lumjingshai, SR Road, Umjarain, Shillong – 793022
5. Head of SLDC, Dept. of Power, Govt. of Arunachal Pradesh, Itanagar – 791111
6. Head of SLDC, Dept. of Power, Govt. of Nagaland, Dimapur – 797103
7. Head of SLDC, MSPCL, Imphal – 795001
8. Head of SLDC, P&E Deptt. Govt. of Mizoram, Aizawl – 796 001
9. Head of SLDC, TSECL, Agartala – 799001
10. Chief Engineer(Elect), Loktak HEP,Vidyut Vihar, Kom Keirap, Manipur- 795124
11. DGM (O&M), OTPC, Badarghat Complex, Agartala, Tripura – 799014
12. Director, NETC, 1st Floor, Corporation Tower, AMBIS Mall Complex, NH-8, Gurgoan – 122001.

Dy. Director (O)

North Eastern Regional Power Committee

MINUTES OF THE 183rd OPERATION COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date : 21/10/2021 (Thursday)

Time : 10:30 hrs

Venue : Pala Resort, Sohra.

The List of Participants in the 183rd OCC Meeting is attached at **Annexure – I**

Shri B. Lyngkhoi, Member Secretary i/c, NERPC welcomed the participants to the 183rd OCC meeting. He thanked all the members for attending in person after a long gap and especially to Sh. P. Yanthang, Chairman, TCC for making it convenient to attend the meeting. He regretted the absence of MSPCL and P&ED Mizoram. He informed the forum that important issues like Dimapur shutdown, Aizawl shutdown and Sihhmui FTC will be discussed. Further he informed the forum in addition to the main agenda there will be many presentations on topics of interest viz.

(i) Draft DSM Regulations, 2021
(ii) Automatic Demand Management Scheme in Meghalaya
(iii)O&M practices of Transmission Line
(iv) Installation of AWS for Power Sector in North East

After due intimation to the forum about dissolution of NERPCTP, he requested the members to participate enthusiastically for fruitful discussion. Thereafter he requested Chairman, TCC to grace the occasion with a few words. Sh. P. Yanthang, Chairman TCC thanked Sh. B. Lyngkhoi, Member Secretary i/c, NERPC and requested Sh. A. Kharpan, Chief Engineer, MePTCL to felicitate him with a Traditional Vest from Nagaland. Thereafter, Chairman, TCC stated that Sh. Lyngkhoi shall take the NER Power Sector to newer heights and on behalf of the forum assured him full co-operation and best of luck for his future assignment.

Thereafter, Member Secretary i/c requested DD, NERPC to take up the agenda items for discussion.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 182nd MEETING OF OPERATION COORDINATION SUB-COMMITTEE OF NERPC.

The minutes of 182nd meeting of Operation Sub-committee held on 21st September, 2021 at Shillong were circulated vide letter No. NERPC/SE (O)/OCC/2019/2674-2711 dated 30th September, 2021.

The following comments/observations have been received from the constituents:

Item No. B.13:

Recorded: "SE(SO&PSC), DoP Ar. Pradesh stated that due to long radial link 132kV RHEP-Ziro-Daporizo-Along-Pasighat-Roing-Tezu-Namsai severe voltage problems are being encountered. For e.g. the 20MVAR Bus Reactor at Roing when it is switched ON leads to the voltage(115-118kV) being less than IEGC and when turned OFF leads to voltage(>140kV) higher than IEGC limit. He requested that the Reactor may be replaced with reactor of suitable rating. Further he enquired about the status of 132kV Roing – Chapakhowa and 33kV Rupai-Chapakhowa.

CGM(AM), NERTS informed that 132kV Roing-Chapakhowa will be completed by Dec'21. AGM, SLDC, AEGCL informed that 33kV Rupai-Chapakhowa has already been charged."

Modifications sought by DoP Arunachal Pradesh vide letter dated. 06.10.2021

33kV Rupai-Chapakhowa to be modified to 132kV Rupai-Chapakhowa. Further it was also decided that during the pendency of completion of 132kV Roing – Chapakhowa by Dec'21, NERLDC would carry out a study and suggest voltage control means to keep the voltage in the IEGC range.

Item No. C.2

Sl.No. 9 Status for 132kV Roing – Chapakhowa recorded as: "Retendering done. By Dec'21"

View/Observation of DoP Ar. Pradesh: "At Sl.No.9 it is stated that re-tendering of 132kV Roing-Chapakhowa would only be completed by Dec'21. It may be recalled that CGM(AM), NERTS had informed the forum that the same line will be completed and put into service by Dec'21. This item is in contradiction to what had been informed in item B.13.

Sl.No. 4 Status for 132kV Agia – Nangalbibra-II – Name of utility: AEGCL

View/Observation: "Request to change the name of utility to MePTCL"

The Sub-committee confirmed the minutes of 182nd OCCM of NERPC with the above modifications as no other comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

B.1. Ensuring Reliable Power Supply and redundancy of power connected to oxygen plants:

In 182nd OCCM Director(O&P), NERPC stated that present Oxygen plant power supply status for Assam is being reported live in the SCADA system and thus requested other SLDCs to follow suit.

Deliberation of the sub-Committee:

GM, NERLDC stated that presently the status report of power supply to oxygen plants are being submitted regularly. After detailed deliberation it was decided to drop the agenda item in the meantime and review later on.

The Sub-Committee noted as above.
Action: All SLDCs.

B.2. Implementation of projects funded from PSDF:

The status as informed in 183rd OCC:

State	R&U scheme	ADMS	Capacitor Installation	SAMAST**	Line Differential Protection
Ar. Pradesh	Package-I (Diagnostic tools) Complete in all respects. P-II (for PLCC & communication) Supply completed. P-III (Substation equipment) Submitted to government for tender finalization. LoA by Oct'21.	Work completed in all respects. Final 10% disbursement by Oct'21.	-	LoA placed on 23rd Sep'21.	-
Nagaland	Completed in all respects. 10% requisition to be sent alongwith UC.	Work completed in all respects. Final 10% release in process.	-	LoA placed on 23rd Sep'21.	Lines identified. Under DPR preparation stage.
Mizoram	Completed. 10% remaining claim to be submitted ASAP.	Work completed in all respects. Final 10% to be disbursed.	To reply to TESG queries.	LoA placed on 23rd Sep'21.	DPR submitted.
Manipur	Package-II: completed Package-I: total quantity of material yet to be	Work completed in all respects. Final 10% to be disbursed.	WIP.	LoA placed on 23rd Sep'21.	DPR received.

	received at site				
	33kV System Integration with SLDC	In tendering stage			
	Reliable Communications for grid connectivity	In tendering stage			
Tripura	Work completed. 10% remaining claim to be sent ASAP.	60% funds received. Disbursement Oct'21.	Study results to be submitted alongwith DPR	LoA placed on 23rd Sep'21.	Under DPR preparation stage.
Assam	WIP. 60% amount to be disbursed at the earliest.	Work complete in all respects. 10% to be disbursed after receipt of funds from PSDF.	-	Requisition to be submitted for first tranche	Lines identified. Under DPR preparation stage.
Meghalaya	MePTCL – completed in all respects. MePGCL – UC to be submitted at the earliest**.	Project complete in all respects.	-	Requisition to be submitted for first tranche	WIP. Delayed due to COVID situation

Deliberation of the sub-Committee:

**SE, MePGCL informed the forum that some residual works remains to be completed and shutdown for the same will be availed in Nov'21, subsequently UC shall be submitted by MePGCL.

Member Secretary i/c, NERPC informed the forum that LoA has been issued for SAMAST i.r.o. of the 5 states on 23rd September, 2021 and Kick-Start Meeting shall be held on 27th Oct'21. He requested all the five state utilities to extend full co-operation to the respective firms for speedy and effective Project Implementation.

The Sub-Committee noted as above.
Action: all state utilities, NERPC.

B.3. Operational Performance and Grid discipline during September,2021:

NERLDC presented the Operational Performance and Grid Discipline in September'2021.

Deliberation of the sub-Committee:

NERLDC presented the Grid Performance for the month of September'21 (attached at **Annexure-B.3**).

The Sub-Committee noted as above.

B.4 Generation Planning (ongoing and planned outages)

a. Present per day MU and projected number of days of operation.

Plants	Reservoirs level in meter	MU content	Present DC (in MU)	No of days as per current generation
Khandong + Kopili stg II			**1.176**	22
Kopili			**0**	Will be "0" until further intimation.
Doyang			**0.568**	36
Loktak			**2**	11

The outage of other generating stations may be approved considering the present water levels in reservoirs and long term outage of Kopili HEP.

Deliberation of the sub-Committee:

After detailed deliberations the forum approved the outage of generators in October'2021.

The Sub-Committee noted as above.
Action: all generating utilities.

B.5 Outage Planning Transmission elements

It was agreed in the 99th OCC meeting that shutdown will be availed only after approval is given by the OCC forum. It was also agreed that deferment/revision of outages elements other than already approved in OCC will be henceforth put/displayed in the website of NERPC (under Operational Activities/OCC Approved shutdown) as per CERC regulations/ CEA guidelines etc for ensuring smooth & secure grid operation.

Furnishing request of shut down of the element, which was approved by NERPC, by Indenting Agency (ISTS licensees/STUs/Generating Companies) to NERLDC: Planned shutdown approved by NERPC shall be considered for implementation by NERLDC on D-3 basis. If an outage is to be availed on say 10th of the month, the shutdown availing agency would reconfirm to NERLDC on 7th of the month by 10:00 Hr. This practice is

necessary to ensure optimal capacity utilization and the time required for associated system study/coordination by/amongst RLDC/NLDC.

It was decided in the previous OCCM that shutdown would be granted from the 1st day of the following calendar month to the 30th/31st day of the same month.

Deliberation of the sub-Committee:

After detailed deliberations the forum approved the shutdown of transmission elements for Oct'21(attached at **Annexure-B.5**).

The Sub-Committee noted as above.
Action: all transmission utilities.

B.6 Estimated Transmission Availability Certificate (TAC) for the month of August - September,2021:

NETC and POWERGRID have submitted the outage data for the month of August, September 2021. So, the attributability of outage of the said elements will be issued by NERPC Secretariat after getting verification from NERLDC.

Deliberation of the sub-Committee:

Representatives from M/s Indigrid have requested for issuing TAC annually or in cumulative basis for TBCB lines (under Sec 63, Electricity Act 2003) as their incentives are linked to annual availability as per TSAs.

Acknowledging the concern, Member Secretary i/c, NERPC has allowed their submission and stated that NERPC Secretariat would issue the Transmission Availability Certificates on cumulative basis for TBCB lines. The TACs for FY 2020-21 with necessary changes will be issued shortly.

The Sub-Committee noted as above.
Action: NERLDC. NERPC.

B.7 Mock Black Start Exercise:

The previous mock black start & restoration exercise has been conducted at various generating stations in NER on the dates mentioned in the following table:

Plant Name	**Performed On**	**Due Date**	**Schedule of Testing as per 176th OCCM**
AGBPP	.....	.....	June 2021
AGTTCCPP	09.04.2019	09.10.2019	July 2021
RHEP	.....	.....	March 2021

PareHEP	25.01.2020	25.07.2020	To be reviewed
Kopili HEP	10.05.2019	NA	NA
Khandong HEP	09.05.2019	09.11.2019	To be reviewed
DHEP	12.06.2019	12.12.2019	To be reviewed
Kameng HEP	…….	……	After 10.04.2021
Loktak HEP	10.12.2019	10.06.2020	To be reviewed

As per discussion in 177th OCC meeting on 22nd April 2021, schedule of Mock exercise at AGBPP and RHEP was to be finalized by NEEPCO after discussion with OEM. As per regulation 5.8 (b) of IEGC, mock black start shall be carried out by Users/CTU/STUs at-least once in 6 months. Therefore, mock black start exercises at all the generating stations is due as per dates mentioned in the above table. Procedure of Mock Black start at AGBPP was discussed and agreed in 166th OCC Meeting.

In 182nd OCC meeting it was decided that NEEPCO would revert back with the revised dates.

Deliberation of the sub-Committee:

GM, NEEPCO informed the following:

- For AGBPP Emergency DG not capable of sustaining Black Start Operation as its capacity is only 950KVA, while loads of all auxiliary systems are far higher. During R&M this deficiency will be addressed for which NTPC has been roped in as consultant. NERLDC requested NEEPCO to provide auxiliary consumption data so that the issue may be analyzed further as no increment has been there in aux. consumption. Forum requested NERLDC to remove AGBPP from list of generating stations having black start capabilities in NER. The Black Start and restoration procedure of NER may be updated accordingly. The same shall be included again in the list once DG is replaced by AGBPP.
- Regarding Kameng HEP, he informed that two machines are under shutdown and black start may be done after restoration.
- For all other generating stations, the respective HoP may be contacted for fixing the date.

Sr. Manager, NHPC, Loktak HEP informed that the date for Black Start shall be intimated prior to the next OCC date.

The Sub-Committee noted as above.
Action: NEEPCO, NHPC, NERLDC.

B.8 Planned shutdown of Khandong and Kopili Stg-II units:

It is proposed for all the three Units of both the Power Plant shall remain under shutdown w.e.f. 01.12.2021 to 31.03.2022 for the following activities:

1. Inspection and repairing of Khadong Head Race Tunnel, Trash Rack Gate, Intake Gate, Surge Shaft Gates, Steel Liner of HRT etc.
2. Acid Proof Coating of Stage-II Penstock
3. Installation and commissioning of Penstock Protection BFV System of Khandong
4. Annual Planned Maintenance of Khandong Unit# I & II.

In 182nd OCC meeting Director(O&P), NERPC requested NEEPCO to postpone the shutdown from 04.01.2022 to 30.04.2022 so that there is no interruption of power supply during the festive period.

DGM, NEEPCO stated that intake gate and stop lock gate has to be repaired during the shutdown period. Further he stated that NEEPCO is eager to complete the works ASAP in order to avoid a Kopili like tragedy at any cost.

EE, SLDC, MeECL stated that since Misa-Kopili-Khandong link is unavailable the Khandong generation is very much essential for Meghalaya during the lean season and the suggestion of Director(O&P), NERPC may be accommodated.

After detailed deliberation it was decided that NERLDC would conduct a detailed system study and present in the next OCC meeting for discussion.

Deliberation of the sub-Committee:

DM, NERLDC informed the forum the following results of System Study:

- Meghalaya load during Peak Hours is 384MW with generation at 118MW
- In N-0 condition with 42MW generation from Leshka 370MW demand can be met.
- In N-1 condition (one circuit of 132kV Umiam Stg-III to Umiam Stg-I) 250MW demand can be met.

EE, SLDC, Meghalaya informed that Study Results indicate a very alarming situation and would involve very heavy load shedding during the Festive Season. The shutdown of Khandong and Kopili Stg-II would further aggravate the situation.

CE, MePTCL stated that without the Misa-Kopili-Khandong link Meghalaya Power System would be extremely vulnerable. He enquired of NEEPCO the status of the Kopili 220kV Switchyard.

GM, NEEPCO informed that under present tender, Bay construction at Kopili for restoration of the above stated link has been kept on priority. Further, with Single Bidder Participation they have quoted very high price and NEEPCO shall be meeting

with vendors for competitive price determination. The tentative Completion date is Sep'22.

CGM(AM), NERTS informed that the diversion works have been completed and the line(s) shall be restored matching with NEEPCO switchyard restoration. Further NERTS requested NEEPCO to expedite the construction of Control Room for controlling the bays, which were damaged during devastation, and the upcoming bays being constructed by POWERGRID.

The forum requested NERPC to include the following in item No. C.2 for monitoring:

a. 220kV Misa-Kopili D/C, 220/132kV ICTs at Kopili and 132kV Kopili-Khandong D/C
b. Re-conductoring of 132kV Umiam Stg-III to Umiam Stg-I

CE, MePTCL noted that with the commissioning of 220kV Mawngap-Killing there would be no constraints in drawing upto the full demand of Meghalaya. He asserted for early commissioning of the same.

After detailed deliberation the forum tentatively approved the shutdown of Khandong Units from 04.01.2022 to 03.05.2022

The Sub-Committee noted as above.
Action: NEEPCO, NERTS, NERPSIP-POWERGRID, NERPC

B.9 <u>Turning ON of SPS for Monarchak GBPP:</u>

As per discussion in special meeting held on 20/02/2020, SPS devised at Monarchak and tested successfully on 01/05/2021 at 02:42 Hrs when line - 3 (132 KV Monarchak-Rokhia) tripped due to some line fault. SPS was operated, STG was out from grid, GTG not tripped and feeder-4 (132KV Monarchak - Udaipur) also not tripped due to overloading. Logic was devised as discussed and advised in special meeting on 20/02/2020. Total generation setting can be changed as per requirement. SPS is presently in disable condition and waiting the confirmation from SLDC Tripura to implement the SPS. Email containing all the details and logic diagram was sent to SLDC Tripura on 29/07/2021 with request to evaluate, confirm and clear the DC/schedule revision issue.

In 182nd OCC meeting DGM, NEEPCO informed the forum that the wiring and control logic for the scheme has been implemented, however the SPS has not been put into service due to no assent from TSECL. Further he requested TSECL to grant the following in case of SPS operation:-(i) real time schedule, (ii) Open Cycle Certification.

DGM, SLDC, TSECL informed that SLDC is not empowered to take decision in this regard as it has financial implications also. The same has been put up for management

approval. He assured the forum that Board Meeting will be convened soon and the decision would be conveyed to NEEPCO/NERPC.

CGM (I/C) NERLDC requested Tripura to obtain the management approval as early as possible so that the SPS may be put ON as the same is required urgently to be put in operation so that GDs at Monarchak may be avoided during tripping of 132 kV Monarchak – Rokhia or 132 kV Monarchak – Udaipur line. He also stated that the SPS may not be required after commissioning of 132 kV Monarchak – SM Nagar TL.

Deliberation of the sub-Committee:

DGM, TSECL informed that logics of the scheme have been agreed and the commercial implications i.e. Open Cycle Certification is pending with the Board of TSECL.

GM(SO-II), NERLDC intimated that from Feb'21 onwards there have been tripping of Monarchak plant due to tripping of 132kV Monarchak-Rokhia or 132kV Monarchak-Udaipur.

GM, NEEPCO informed that load throw off of machine is not desirable and the repeated tripping is severely damaging the machines of Monarchak. The SPS would relieve the stress to a large extent. Further he urged the forum to impress upon TSECL for early commissioning of 132kV Monarchak-SMNagar.

Member Secretary i/c, NERPC stipulated deadline of 31.10.2021 for obtaining Board approval for TSECL.

The Sub-Committee noted as above.
Action: TSECL

B.10 Low voltage at Namsai:

In 182nd OCC meeting SE(SO&PSC), DoP Ar. Pradesh stated that due to long radial link 132kV RHEP-Ziro-Daporizo-Along-Pasighat-Roing-Tezu-Namsai severe voltage problems are being encountered. For eg. the 20MVAR Bus Reactor at Roing when it is switched ON leads to the voltage(115-118kV) being less than IEGC and when turned OFF leads to voltage(>140kV) higher than IEGC limit. He requested that the Reactor may be replaced with reactor of suitable rating. Further he enquired about the status of 132kV Roing – Chapakhowa and 33kV Rupai-Chapakhowa.

CGM(AM), NERTS informed that 132kV Roing-Chapakhowa will be completed by Dec'21. AGM, SLDC, AEGCL informed that 33kV Rupai-Chapakhowa has already been charged.

After detailed deliberation it was decided that during the pendency of completion of 132kV Roing – Chapakhowa by Dec'21, NERLDC would carry out a study and suggest voltage control means to keep the voltage in the IEGC range.

Deliberation of the sub-Committee:

DM, NERLDC informed that as per System Study of NERLDC it has been observed that the voltage issue at Namsai is seen to be resolved once 132kV Roing-Chapakhuwa D/C and 220kV Namsai-AGBPP D/C are commissioned.

CGM(AM), NERTS re-iterated that 132kV Roing-Chapakhuwa D/C would be commissioned by Dec'21.

The Sub-Committee noted as above.
Action: DoP Ar. Pradesh, POWERGRID.

B.11 Status of ADMS:

Status for Automatic Demand Management Scheme in 7 states of NER:

Name of the utility	SAT Completion	DoCO
DoP Ar. Pradesh	To be informed	To be informed
AEGCL/APDCL	07-12-2020	
MSPCL	30-11-2020	
MePTCL/MePDCL	31-08-2020	04-09-2020
P&ED Mizoram	26-02-2021	To be informed
DoP Nagaland	17-11-2020	
TSECL	24-12-2020	

Deliberation of the sub-Committee:

AE, SLDC Meghalaya presented the ADMS of Meghalaya through a presentation (attached at **Annexure-B.11**). The brief details of the scheme presented are as follows:

- ✓ Through ADMS feeders, five nos. Sub-stations of Meghalaya are being tripped viz. 33/11kV Meter Factory, 33/11kV S.E. Falls, 33/11kV Nongthymmai, 33/11kV Kench's Trace, 33/11kV Mawprem
- ✓ All the Stations connected over FO.
- ✓ The feeders are priority ranked and are tripped on round-robin basis.
- ✓ Logics implemented as per IEGC and DSM regulations
- ✓ Extension of existing ADMS system with integration of additional 50-60 Stations across Meghalaya state is need of the hour.
- ✓ Strategic configuration of feeders of various S/Sn for creation of group of feeders for load shedding to control power overdrawal in rotational basis.

The forum appreciated the presentation by SLDC Meghalaya and the implemented functional scheme for Meghalaya. The forum requested SLDC Assam to present their ADMS scheme in the next OCC meeting.

DD, NERPC requested all the SLDCs to intimate the SAT Completion and DoCO if not already done.

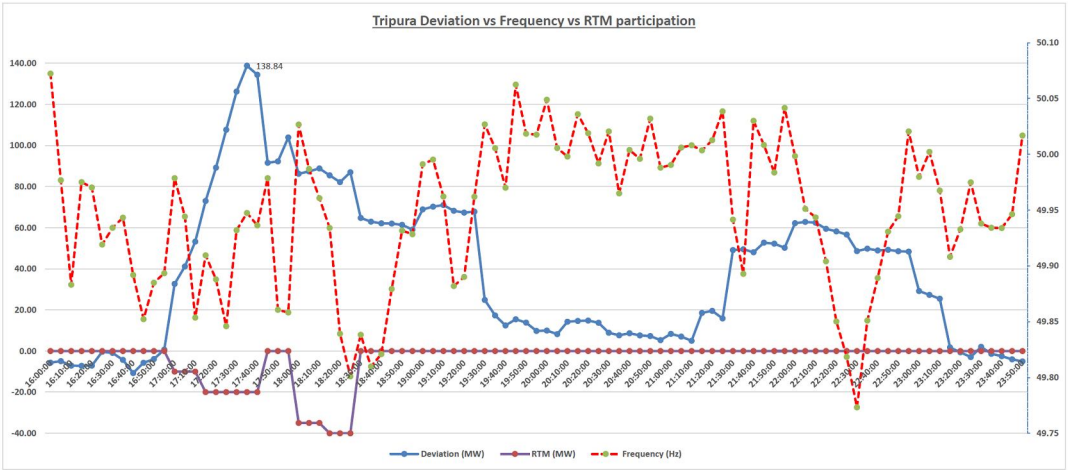
The Sub-Committee noted as above.
Action: all SLDCs.

B.12 <u>Persistent overdrawal by Tripura during peak hour and at low frequency on 04.10.21:</u>

It has been observed that Tripura has been over drawing from the grid during peak hours. On 4th Oct. 2021, the Tripura was persistently over drawing from 17:00 Hrs to 23:15 Hrs with maximum over drawl mounting to approx.138 MW. OD of Tripura mounted upto 134 MW. No significant corrective action was taken by SLDC Tripura even after numerous violation messages, emails, and telephonic instructions to Tripura for control of their over drawl. The Grid frequency was below the IEGC band for substantial period during the peak hours with minimum frequency going upto 49.77 Hz at 18:25 Hrs/04.10.2021.

Also, it is to be mentioned that there was sale of power by Tripura in RTM between 17:00 Hrs to 18:30 Hrs. Selling power in RTM during outage of Monarchak generating station (which was under planned outage till 16:00 hrs/04.10.2021) and then overdrawing from Grid significantly during peak hour is a matter of serious concern.

SLDC Tripura is requested to limit their deviation and ensure compliance of RLDC instructions in real time. Strict adherence to schedule must be ensured when grid frequency is at alarmingly low level. Also, overdrawing from grid after selling power in RTM must be strictly avoided.



<u>Deliberation of the sub-Committee:</u>

NERLDC highlighting the persistent overdrawal by Tripura informed that power was sold in the RTM during period of overdrawal. DGM, SLDC, TSECL clarified that such incident happened due to negligence of CR personnel and matter has been addressed with proper sensitization. Further during the period there was no Barmura generation.

GM(SO-II), NERLDC opined that in line with the practice followed by SLDC Assam of deputing one officer from DISCOM in Shift, the other SLDCs may follow a similar practice to maintain consonance of Operation without hampering Commercial interests.

The forum took strong note of the issue and requested Tripura to adhere to the instructions of NERLDC during real time operation.

The Sub-Committee noted as above.
Action: TSECL.

B.13 Synchronisation issue at AGBPP on 05.10.2021:

On 05.10.2021 there was Planned shutdown of 220kV AGBPP – Maraini(PG) due to which Upper Assam gate flow was maintained around 0MW. The shutdown was returned at 16:46hrs but due to synchronizing issue at AGBPP, the line was charged at 19:00hrs after multiple attempts. During Multiple attempts the line was extended from Mariani(PG) end but failed to synchronize at AGBPP end. During the last attempt the line was extended from AGBPP end and synchronized successfully at Mariani(PG). During this a huge load reduction of around 100MW was done by Assam to maintain Upper Assam Gate Flow.

Deliberation of the sub-Committee:

GM, NEEPCO informed that similar synchronization attempt was successful on 06.10.2021, however, for 05th it seems that line fault was there. GM(SO-II), NERLDC stated that due to this Synchronization problem around 100MW peak load shedding is there in Upper Assam.

Sr.GM(Group-in-charge), Misa, NERTS stated that no SOTF picked up and it seems that there is no interlock between Synchronisation Trolley and CB for the line. Thus, closing of the line is manual and Synchronisation fails sporadically. The forum requested NEEPCO to implement interlock between trolley and line CB for automatic closing at the earliest.

The Sub-Committee noted as above.
Action: NEEPCO.

B.14 Availing emergency shutdown of an element multiple times for the same reason:

Emergency outages are allowed subject to system conditions and its severity by RLDC on real time basis. In recent times it has been observed that many requisitions for emergency shutdown are being applied by utilities for same element multiple times citing similar nature of emergency. Few instances for reference are listed below:

- NERTS availed shutdown of 132kV Badarpur- Kolasib multiple times on consecutive days as follows:
- Emergency basis on 25.09.2021 for vegetation clearance (loc 301-302)
- Planned shutdown on 26.09.2021 for overhauling of CB at Kolasib end
- Emergency basis on 27.09.2021 for vegetation clearance (loc 342 - 343 & 302 - 303)
- Emergency shutdown was applied on 28.09.2021 for vegetation clearance (loc 305-306) but was not permitted.
- TSECL availed shutdown of 132kV PKBari(ISTS)-Ambassa multiple times as follows:
- Planned shutdown on 01.10.2021 for vegetation clearance
- Emergency basis on 06.10.2021 for vegetation clearance
- Emergency basis on 09.10.2021 for vegetation clearance
- Emergency basis on 11.10.2021 for vegetation clearance

Multiple emergency shutdown of the same element for similar reason dilutes the essence of emergency nature. Proper checking/ patrolling of the line could have reduced the frequent outage of the lines. Utilities must avoid such practices in future and plan the shutdowns in advance.

Deliberation of the sub-Committee:

After detailed deliberation the forum requested all transmission utilities to desist from taking emergency shutdown of elements for works of planned nature. Further, rather than creating binding rules for taking Emergency shutdown the OCC forum was of the view that RLDC discretion is paramount and additional proofs viz. time stamped photos may be perused by NERLDC.

The Sub-Committee noted as above.
Action: all transmission utilities.

B.15 Low generation availability due to ongoing coal shortage and low frequency during the peak hours:

Due to the ongoing Coal Shortage condition, generation availability has reduced to a very low level throughout the country. The maximum price at DAM and RTM is

touching Rs 20/kwh almost every day. The Minimum frequency has reached upto 49.50 Hz twice within a fortnight (at 18:42 hrs/24.09.21 and at 18:14 hrs/07.10.21). This alarming scenario of the grid shall have to be handled with cooperation from all stakeholders. For maintaining the grid frequency within the IEGC band following proactive steps are required to be taken:

a. Maximization of internal state generation.
b. States to carry out demand estimation and avoid resorting to deviation from the grid
c. States to Revive the units under outage to maintain reserves for meeting demand
d. Higher DC by coal-fired stations in evening peak hours.
e. Scheduling of Hydro generating stations under state control area such that deviations as well as frequency excursions are minimized.
f. Constituents are advised to control the drawls and take proactive measures to maintain and plan the schedules carefully and accurately. Also, states may purchase power from the exchanges to meet their demand & reserve requirements.
g. In case of inadequate generation to meet the state demand, state shall take measures to manage their demand suitably and keep their drawl from grid within the schedule throughout the day particularly during the evening peak hours.
h. ISGS under outage (Kameng Unit IV & Kopili Stg 2) must be revived immediately.
i. Healthiness of defense mechanisms such that UFRs, ADMS, SPS, Islanding etc. must be ensured

Deliberation of the sub-Committee:

DD, NERPC alluded to the deliberations of the Special Meeting on 10th October, 2021 wherein many decisions were taken to mitigate the peak shortage of NER beneficiaries.

AGM, SLDC, Assam thanked NEEPCO for extending Kameng HEP power to meet deficit of 112MW.

Upon enquiry, GM, NEEPCO clarified that Kameng HEP two units under shutdown shall take time for restoration and no firm date can be provided at this juncture. For Kopili Stg-2 he informed that Dry Out shall be completed in two days and after RIO clearance same can be charged.

GM, NEEPCO further stated that testing SEM at Kopili Stg-2 with secondary injection kit is futile as the same can be tested during test synchronization. Also, no secondary injection kit is available at site.

After detailed deliberation it was decided that the same shall not be required and the SEM can be tested during test synchronization. Further, all SLDCs and ISGSs agreed to adhere to the measures mentioned by NERLDC for maintaining grid frequency inside IEGC Band. All SLDC ensured to coordinate with their respective state-owned generating stations to maximize the generation and revive the units under outage.

The Sub-Committee noted as above.
Action: NEEPCO, All SLDCs in NER.

B.16 Implementation of Single Phase Auto-Reclosure for 132kV Rangia- Motonga and 132kV Gelephu-Salakati :

It was discussed in 164th OCCM held on 21.01.2020 that the 3 phase GO CB at Salakati and Rangia is to be converted to single Pole CB by NERTS. The same has been implemented at Gelephu and Motanga end by Bhutan. In 6th OCC meeting between India & Bhutan held on 16th March 2021, it was informed by NERTS that the work shall be completed within 3 months.

Deliberation of the sub-Committee:

Chief Manager(AM), NERTS intimated that the Indian portion of 132kV Rangia-Motonga though maintained by POWERGRID the ownership lies with PTC India. Hence after due clearance from PTC India, the SPAR would be implemented tentatively by 3 months. For 132kV Gelephu-Salakati, he informed that CB cannot be fitted in the existing foundation and the works require 4 months for completion.

GM(SO-II), NERLDC stated that BPC is ready to implement TLSA for 132kV Gelephu-Salakati in the Bhutan Section and Indian section should also be fitted with TLSA to reduce the lightning induced tripping esp. back flashover. The forum requested NERTS to explore and revert back at the earliest.

The Sub-Committee noted as above.
Action: NERTS

B.17 Installation of AWS by IMD for better weather forecasting in power sector:

RMC, Guwahati vide mail to NERLDC dated 08.09.2021 informed that inspection for site selection of AWS installation has been completed and No-Objection Certificate (NOC) is awaited for the selected sites to initiate the installation process.

The selected site list for AWS installation in NER is attached as **Annexure-B.17**. Hence, all the NER constituents are requested to provide immediate NOC for the concerned sites to RMC, Guwahati for smooth installation of AWS.

Deliberation of the sub-Committee:

Scientist, IMD briefly stated the scope of AWS for NER-Power Sector and the identified stations for installation through a presentation (attached at **Annexure-B.17**).

EE, SLDC, DoP Nagaland requested for stations of Nagaland to be included. AGM, SLDC, Assam informed the forum that the modus operandi for handing over land parcels to IMD is being discussed internally and same shall be intimated to the forum in due course of time.

Further, SLDC Assam mentioned that few clarifications have been requested by AEGCL higher Management e.g. Terms of leasing the land required for AWS installation, Time period of such lease, etc. Forum requested SLDC Assam to mail the queries to IMD along with Copy to NERLDC and NERPC and requested IMD to give the clarifications soon as they receive the same.

DoP, AP mentioned that they shall be providing more number of sites for AWS installation (presently 2 locations have been selected). Meghalaya mentioned that they need AWS installation at Leshka. Manipur, Nagaland and Mizoram were requested to provide locations as no locations from these states have been included in approved list of IMD. Member Secretary, NERPC requested all the utilities to peruse through the list of stations and suggest for inclusion of more stations.

Member Secretary i/c, NERPC requested all the utilities to peruse through the list of stations and suggest for inclusion of more stations.

The Sub-Committee noted as above.
Action: all utilities, NERLDC, NERPC.

B.18 Implementation of revised setting of Automatic Under Frequency Load Shedding in NER:

In the 19th NERPC Meeting held on 28th& 29th Nov'18, it was approved to revise the stages of the operation of UFR from existing frequency band of 49.2 – 48.6 Hz (100MW) to 49.4 – 48.8Hz (170MW) in four stages viz., 49.4 Hz, 49.2 Hz, 49.0 Hz, 48.8 Hz and the constituents agreed for the implementation of revised band of frequency and quantum of load shedding during the 148th OCC Meeting.

As per the minutes of 174th OCCM, all the states were asked to identify the feeders for additional installation of UFRs and review the existing locations of UFR installations with respect to frequency and connectivity. It was also requested from the states to share the detailed plan for UFR installation. However, only Assam and Nagaland had shared their updated UFR plan as per 176th OCCM.

Hence, all the states are requested to expedite the implementation of revised UFR settings and share their respective updated UFR plan.

Deliberation of the sub-Committee:

In view of the lax grid discipline of late, Member Secretary i/c highlighted the requirement of UFR. He requested all the SLDCs except Assam and Nagaland to submit the status of UFR Installation as per approved revised list at the earliest.

NERLDC stated that in the 10th NPC meeting held on 09-04- 2021, WRPC and ERPC have mentioned that modified UFR setting has been implemented at all locations in WR & ER respectively. Also, SRPC informed that the same has been completed at Telengana. AE, SLDC, DoP Ar.Pradesh committed that they shall send the same by 15-11-2021 and SLDC Meghalaya by 22-10-2021.

The Sub-Committee noted as above.
Action: SLDC Arunachal Pradesh, SLDC Manipur, SLDC Meghalaya, SLDC Mizoram, SLDC Tripura.

B.19 Frequent tripping/outage of 132kV Monarchak-Rokhia and 132kV Monarchak-Udaipur lines:

132 kV Monarchak-Rokhia and 132 kV Monarchak-Udaipur lines are a vital link for evacuation of power from TGBPP, Monarchak.132 kV Monarchak-Rokhia and 132 kV Monarchak-Udaipur lines have tripped twenty (20) times from February'21 to September'21.

As per DR analysis most of the tripping's are likely due to solid and vegetation nature of fault.

Frequent tripping of the above lines is a matter of serious concern and effects the reliability of the evacuation path of TGBPP. Also, it signals that there is the requirement of proper & regular maintenance of these transmission elements by TSECL.

NERLDC also highlighted the same to TSECL vide letter dated 22nd Sep'21 requesting to carry out the patrolling related activities as per Cl. No 23(2) (3) & (4) of CEA grid standard Regulation, 2010 on regular basis and to identify and implement measures at the earliest to enhance reliability & resiliency of NER grid.

TSECL is requested to look into the matter on priority basis for ensuring secured & integrated grid operation.

Deliberation of the sub-Committee:

Pls refer to discussion in item No. B.9.

The Sub-Committee noted as above.
Action: TSECL.

B.20 Load restriction in Meghalaya power system due to proposed shutdown of Khandong HEP and Kopili Stg-II from Dec'21 to Mar'22:

As per the minutes of 182nd OCCM, it is proposed that all the three units of both the Power Plants shall remain under shutdown w.e.f. 01.12.2021 to 31.03.2022 for the following activities:

a. Inspection and repairing of Khandong Head Race Tunnel, Trash Rack Gate, Intake Gate, Surge Shaft Gates, Steel Liner of HRT etc.
b. Acid Proof Coating of Stage-II Penstock
c. Installation and commissioning of Penstock Protection BFV System of Khandong
d. Annual Planned Maintenance of Khandong Unit# I & II.

As per system study conducted by NERLDC, it is observed that due to forced outage of 220 kV Kopili-Misa link, load reduction in Meghalaya system may be required. The study results suggest that, with 42 MW power support from Leshka HEP, a maximum of 250 MW load can be served to Meghalaya under N-1 contingency i.e. outage of one circuit 132 kV Umiam Stg-3-Umiam Stg1. High loading has been observed in other circuit of 132 kV Umiam Stg-3-Umiam Stg-1 (81 MW). The maximum served load may reduce correspondingly if the generation from Leshka HEP is reduced.

Deliberation of the sub-Committee:

Pls refer to discussion in item No. B.8.

The Sub-Committee noted as above.
Action: NERTS, NEEPCO.

B.21 Introduction of SPS in Leshka S/Sn of Meghalaya:

Proposal to set up a SPS to limit the generation of Leshka on the account of tripping of one circuit of 132 kV Leshka – Khleihriat D/C. NERPC stated that under NERPSIP 132kV Leshka-Khliehriat-II will be LILOed at 132/33kV Mynkre S/Sn. However, even after LILO of Leshka-Khliehriat-II at Mynkre, full generation of Leshka cannot be safely evacuated via the other circuit in case of N-1 contingency.

Deliberation of the sub-Committee:

SE, MePGCL informed that MePGCL is in discussion with OEM M/s ANDRIZ for determining the ramp down rate which is essential in designing the logic. Regarding SPS-6 EE, SLDC, Meghalaya enquired about the location of load shedding i.e whether

Umiam or Mawphlang. The forum requested NERLDC to carry out a detailed Study and present in the next Sub-Group meeting.

The Sub-Committee noted as above.
Action: MePGCL, NERLDC.

B.22 Low voltage at CALCOM Cement, Umrangsho:

M/s Calcom cement India Ltd., Umrangsho is receiving 132kV power supply from adjacent 132kV GSS AEGCL which is fed from Haflong(PGCIL) on one end and Khandong(NEEPCO) on the other end. There are issues of frequent voltage dips in 132kV line recently, thereby leading to tripping of our whole plant & huge operational losses.

Deliberation of the sub-Committee:

AGM, SLDC, AEGCL submitted to the forum the difficulties faced by the M/s CALCOM Cement due to voltage dips. He requested the guidance of the forum to address the issue.

GM(SO-II), NERLDC presented the voltage profile which indicates a normal one. He suggested that trip time of motor at CALCOM Cement may be extended to more than 160ms.

MD, NETC recalled that similar problem was encountered in WR. He apprised the forum that part of CEMENT plant load is variable. The problem in WR was solved by installation of Variable Load Controller.

The forum suggested that AEGCL may advise M/s CALCOM Cement for installation of Variable Load Controller.

The Sub-Committee noted as above.
Action: AEGCL.

B.23 Third Party Protection Audit:

AEGCL requests for Third Party Protection Audit of its stations, so that AEGCL may plan for Renovation and Upgradation of the same. The list is attached at **Annexure-B.23**

Deliberation of the sub-Committee:

Member Secretary i/c, NERPC elaborated the Audit Plan for Assam Sub-stations. He stated that teams shall be formed with officials from NERLDC, NERPC and NERTS/NEEPCO. In nearby stations of NEEPCO, NEEPCO shall be part of Audit Team and provide logistics. For remaining stations NERTS shall be part of Audit Team and provide the logistics. Also, members of Audit Team shall be drawn from the

neighbouring states. He assured that the Audit shall commence from November'21 and slated for completion by Jan'22.

The Sub-Committee noted as above.
Action: NERPC

B.24 Establishment of backup SLDC:

With reference to the agenda B1 of 20th NeTEST meeting, SLDC, AEGCL is planning to establish backup SLDC along with up gradation of SCADA/EMS at the existing control center. In the connection with SCADA/EMS up gradation at the existing control center a draft DPR has been circulated by NERLDC. In that draft DPR, equipment needed for SCADA/EMS has been considered for two control centers. But the cost involved against equipment needed for communication network up gradation and civil infrastructure for establishing the backup control center has not been considered in that draft DPR for PSDF funding.

Deliberation of the sub-Committee:

AGM, SLDC, AEGCL requested the intervention of forum so that the Establishment of Backup SLDC be funded from suitable scheme. Further he requested guidance for inclusion of Civil Cost in DPR.

The forum welcomed the initiative and requested NERPC to discuss the matter with MoP/CEA/CTU/NLDC regarding provision of inclusion of communication network up-gradation and civil infrastructure for establishing the backup control center in draft DPR for PSDF funding. The same shall be discussed in the next OCCM.

The Sub-Committee noted as above.
Action: NERPC

B.25 Temporary jumpering of 132kV Aizawl-Melriat TL (6.7km) with 132kV Aizawl-Luangmual TL(0.8km) at Dead end Tower of Aizawl SS to avail Day-time shutdown of 132kV Main Bus of Aizawl SS for 08hrs each on 10/10, 11/10 & 12/10/21 for erection of GIB/Bus Duct below 132kV Main bus area:

POWERGRID Aizawl Sub-Station (Ramrikawn) is an AIS substation having 132kV Single Main and Transfer Bus Schemes with 07(seven) nos. Bay.

Under the NERSS-VIII project, all the existing 132 kV AIS Bays shall be changed to GIS Bays (Double Main Bus Scheme) & existing equipment's (i.e. CT/CVT/LA/WT etc.) shall be dismantled along with structures. The GIS hall is ready & all GIS eqpt. Modules have been erected inside the GIS hall.

To facilitate the erection of GIB/Bus Duct inside switchyard area including area beneath the 132kV Main Bus at Aizawl SS shutdown of the following element is required:

- 132 kV Main Bus along with all associated TLs (i.e. Aizawl-Kumarghat, Aizawl-Kolasib, Aizawl-Melriat, Aizawl-Lungmual, Aizawl-Tipaimukh & Bus-Reactor) on 23/10, 24/10 & 25/10/21

Considering the above facts, it is proposed for availing the Main Bus shutdown to concerned authority for the following works:

Sl No	**Date**	**Time (hrs)**		**Shutdown Equipment**	**Works**
		From	**To**		
1.	23.10.2021	08:00	16:00	132kV Main Bus	Erection of T-section & L-section of GIB/ Bus-duct of Lungmual bay, Melriat bay, Kumarghat bay & Kolasib bay beneath 132kV Main Bus
2.	24.10.2021	08:00	16:00	132kV Main Bus	Erection of GIB/Bus Duct of **Melriat Bay** & **Kolasib Bay** including equipment structure beneath the Main bus area (10 mtr.) & from Main Bus section to existing CVT foundation (40 mtr.)
3.	25.10.2021	08:00	16:00	132kV Main Bus	Erection of GIB/Bus Duct of **Lungmual bay** & **Kumarghat bay** including equipment structure beneath the Main bus area (10 mtr.) & from Main Bus section to existing CVT foundation (30 mtr.)

Presentation on the shutdown and temporary arrangement attached at Annexure-B.25.

To facilitate un-interrupted power flow to 132/33kV Lungmual SS of P&E, Mizoram during the proposed daytime shutdown of 132kV Main Bus at POWERGRID Aizawl (Ramrikawn), following temporary arrangement shall be done:

a. Temporary connection of 132kV Aizawl-Melriat TL (6.7 km) with 132kV Aizawl-Lungmual TL (0.8 km) in dead-end tower at POWERGRID Aizawl SS on the very 1st day of Bus-shutdown (i.e. on 23/10/21). 132/33 kV Lungmual Sub-station will be affected for 4 hrs. on 23/10/21 w.e.f 08:00 hrs.

b. After 12:00 hrs. on 23/10/2021, 132kV Aizawl-Melriat TL shall charged as 132kV Melriat-Lungmual TL as temporary arrangement

c. After 12:00 hrs. on 23/10/2021, Lungmual SS will draw power from

POWERGRID Melriat SS (at Sakawrtuichhun) via 132kV Melriat-Lungmual TL. Relay setting shall be changed at Melriat SS (PG) & Lungmual SS of Mizoram.

d. This Temporary arrangement shall be for 03(three) days (i.e. for 23/10, 24/10 & 25/10/2021). On 25/10/21 @16:00 hrs., the temporary jumper connection shall be removed with 4 hrs S/d 132kV Melriat-Lungmual TL from w.e.f 12:00 hrs of 25/10/2020.

Deliberation of the sub-Committee:

After detailed deliberation it was decided that the shutdown will be discussed in a Special Meeting on 26th October, 2021 in presence of officials of P&ED Mizoram. Further, Member Secretary i/c, NERPC decided that in addition to the above the following issues specific to Mizoram shall be discussed in the Special Meeting on 26th Oct'21:

(i)Diversion of 132kV bawktlang-Sihhmui

(ii)FTC of 132kV Sihhmui and associated assets.

The Sub-Committee noted as above.
Action: NERPC, NERTS, P&ED Mizoram

C. ITEMS FOR STATUS

C.1. Status update of important grid elements under prolonged outage impacting system operation:

Sl. No	Element	Owner	Status as informed in the 182nd OCCM	Status as informed in the 183rd OCCM
1	132kV Mariani – Mokokchung (*out since April'2008*)	AEGCL	Inspection completed for Loc. No. 163/164/165 on 07-08-2021	Inspection for 132kV Mariani-Longtho to be completed and Estimate by Oct'21
2	FSC of 400kV Balipara – Bongaigaon-4(*out since 02nd Sep'20*)	NERTS	LoA placed. Completion by Apr'22	LoA placed. Completion by Apr'22
3	132kV Roing-Pasighat (*charged through ERS tower*	NERTS	2/32 piles completed. By Mar'22	2/32 piles completed. By Mar'22
4	220kV Mariani-Mokokchung - I	NERTS	By 24.09.2021	Charged
5	Kameng Unit-III (*out since 29.07.2021*)	NEEPCO	By 30-09-2021	OEM to visit site
6	Kameng Unit-IV (*out since 18.08.2021*)	NEEPCO	By Nov'21	OEM to visit site
7	Kopili Stg-II-25MW (*out since 01.09.2020*)	NEEPCO	By 1st week of Nov'21	By 1st week of Nov'21

The Sub-Committee noted as above.

Action: all utilities as above.

C.2. <u>Status of commissioning for upcoming projects:</u>

Sl. No	Name of the element	Utility	Status as informed in 182nd OCC meeting	Status as informed in 183rd OCC meeting
1	132kV Monarchak-Surjamaninagar	TSECL	By Oct'21	3/15 tower foundation completed.
2	PLCC for 132kV Loktak-Ningthoukong and 132kV Loktak-Rengpang(existing lines)	MSPCL	To be intimated.	To be intimated.
3	Construction of 2nd bay at Balipara for 220kV Balipara-Sonabil-2	AEGCL	By Feb'22	By Feb'22
4	132kV Agia-Nangalbibra-II	MePTCL	PTCC clearance awaited.	PTCC clearance awaited.
5	Upgradation of 132kV Lumshnong – Panchgram line	MePTCL	NIT to be floated. OPGW to be included in the same.	NIT by Oct'21. OPGW not included.
6	Diversion of 132kV Bawktlang-Sihhmui	NERTS	Oct'21	By Jan'22
7	PLCC for 132kV Karong-Kohima	MSPCL	Karong side supply completed. Specifications to be provided by MSPCL to DoP Nagaland for Kohima.	By Jan'22
8	132kV Loktak-Ningthoukong-II	MSPCL	Delayed due to RoW issues. By July'21	Delayed due to RoW issues. By July'22
9	132kV Roing-Chapakhowa	NERTS	Retendering done. By Dec'21	Retendering done. By Dec'21
10	132kV Rupai-Chapakhowa & Chapakhowa S/Sn	POWERGRID	By Dec'21	Charged on 04.08.2021
11	Re-conductoring 220kV BTPS-Salakati D/C	NERTS	By Mar'22	By Mar'22
12	420kV 80MVAR Bus Reactor	NEEPCO	OBD 21/08/2021 LoA by Sep'21	Bid Evaluation on-going. LoA by 15th Nov'21.
13	220kV Killing - Mawngap	NERPSIP	RoW Ribhoi/ East Khasi Hills districts. By Dec'21	RoW Ribhoi/ East Khasi Hills districts. By Dec'21

14	220kV Samaguri – Mariani-I	AEGCL	Forest department clearance awaited.	Forest department clearance awaited.
15	220kV Mariani(AS) – New Mariani	AEGCL	By Oct'21	Stay arrangement made. By Nov'21.
16	400kV Imphal-Thoubal & 400kV Thoubal S/Sn	MSPCL	By Sep'21.	Charged on 18.10.2021**
17	Reconductoring of 132kV Umiam Stg-III to Umiam Stg-I by HTLS	MePTCL	-	NIT by Oct'21

** The forum unanimously congratulated MSPCL for successfully charging 400kV Thoubal and 400kV Imphal-Thoubal D/C line.

The Sub-Committee noted as above.
Action: all utilities as above.

Metering agenda

C.3. SEMs to be procured for Sterlite and KMTL ongoing projects:

NERTS confirmed over mail regarding receipt of 50 Nos. SEM and 10 Nos. DCD at Misa Substation on 23.03.2021. NERLDC prepared a list of 30 nos. SEM and 07 nos. DCD on priority basis and sent to NERTS via mail on 29.04.21. Therefore, currently a total of 20 nos. SEM and 6 nos. DCD is in stock as spare (considering 3 nos. DCD as spare from earlier 20 nos. DCD procurement and 3 nos. from the present DCD procurement of 10 nos.).

List of completion of installation of SEMs and distribution of DCD may be provided for record. Further work progress may be discussed.

Deliberation of the sub-Committee:

Chief Manager, NERTS informed that 30 SEMs and 10 DCDs have been distributed.

The Sub-Committee noted as above.
Action: NERTS

C.4. Procurement of SEM&DCD/laptop for future requirements:

NERTS may intimate the status of procurement of:

(I) 125 nos. SEMs and 15 nos. CMRIs

(II) Additional 40 nos. of DCD

In 181st OCCM, NERTS informed that 15 Number of DCDs will be procured by NERTS by first week of Sept, 2021.

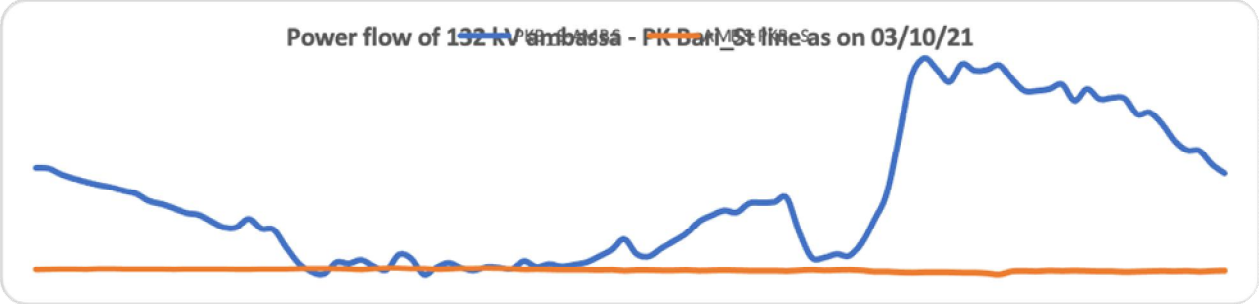
As per discussion in 182nd OCCM, NERTS may update the status of GTG-I, 400/132kV 125MVA ICT-I& ICT-IISEMs at Palatana GBPP**.**

Deliberation of the sub-Committee:

Chief Manager, NERTS informed that 4 nos. SEM have been diverted to Palatana GBPP.

The Sub-Committee noted as above.
Action: NERTS

C.5. Erroneous reading of 132kV Ambassa end of PKBari-Sterlite line:



Based on round of discussions in previous OCCMs, Ambassa (TSECL) end of 132 kV Ambassa- PK Bari Sterlite line meter (Type-B) procured by Sterlite and certified by CTU installed on 28.06.21. But the data received after installation of the meter found close to 0 (zero) reading.

Matter has been communicated over mail and phone several times, but no corrective action has been taken so far. Installation of that meter, though not procured by CTU was decided by the Forum based on the importance of requirement of that meter for energy accounting.

In 182nd OCCM, the Forum requested TSECL to check for connection issue of the SEM and rectify the same (if any issue is found). Also, the Forum requested NERTS to visit the sub-station to check issue of the Type-B SEM at Ambassa.

Status may be reviewed (As per NERLDC observation, SEM still reads close to zero reading).

Deliberation of the sub-Committee:

Chief Manager, NERTS informed that NERTS had visited Ambassa and wiring have been checked and corrected. NERLDC was requested to check whether mismatch still persists in the readings.

The Sub-Committee noted as above.
Action: NERTS, NERLDC.

C.6. Time mismatch between SEMs and ABT SEMs:

OTPC Main and check SEMs used for commercial purpose are L&T make, stand alone and sealed, the meters are battery supported (No GPS time), Our ABT SEMs are Schneider make and GPS synchronized.

OTPC plant is managing and monitoring SG on real time through ABT system. On analysis of previous few week DSM data it was observed that there is difference in Average Generation of ABT data vs SCM data which is causing Deviation though the AG is as per SG in ABT data. Mainly under injection penalty and over injection penalty i.e. as per ABT data no over injection/Under injection violation recorded however on DSM data over injection/Under injection violation recorded for few blocks.

NERLDC may suggest to explore possibility to synchronize OTPC Main and check SEMs and ABT SEMs.

In 182nd OCC meeting Members surmised that the penalty may be due to the different frequency being used for calculation of DSM because Korba frequency is used for the purpose of DSM calculation. After detailed deliberation it was decided that NERTS would synchronize with GPS the Main & Check SEMs at Palatana GBPP.

Deliberation of the sub-Committee:

After detailed deliberation it was decided that NERTS would assist OTPC in synchronizing the Main & Check SEMs with the ABT SEMs. CM, NERTS stated that they shall visit Palatana for checking the time drift by 15-11-2021.

The Sub-Committee noted as above.
Action: NERTS, OTPC

ADDITIONAL AGENDA

D.1. Bypassing of LILO of Ranganadi-Naharlagun/Nirjuli at Pare HEP:

Excerpts of MOM of 6th Standing Committee Meeting held on 03.10.2016 and the sketch of the LILO of 132KV Ranganadi –Lehki-Nirjuli line, as attached at **Annexure-D.1**.

The MOM of the 6th Standing Committee at 6.2 (ii) states about Bypassing of LILO of Ranganadi - Naharlagun / Nirjuli at Pare HEP to form a direct Ranganadi - Naharlagun / Nirjuli 132 kV S/C line - ISTS by NEEPCO.

Issues to be resolved:

1. During formation of LILO at Pare HEP, 132KV Ranganadi –Lehki-Nirjuli line was disconnected at Tower no. 43 and connected to double circuit tower no. AB07 to form a LILO. The two lines are Pare – RHEP circuit-I and Pare – Lehki – Nirjuli.
2. Now as per decision of the 6th Standing Committee, NEEPCO has to bypass this LILO and make the line in its original configuration i.e. RHEP – Lehki- Nirjuli.
3. After survey it has come to the knowledge of NEEPCO that tower no. 43 which was abandoned during formation of LILO, cannot be re-used as local populace have constructed houses nearby the tower and for erection of new tower in the nearby area issue of land acquisitions will come up.
4. As the line belongs to POWRGRID, NEEPCO cannot decide its own for any change of configuration of its present form. But based on decision of the 6th Standing Committee, this has become a requirement.
5. NEEPCO has already implemented Line Differential Relay Protection (Short Line) in 132KV RHEP- Pare Ckt-II (DOP Line) using OPGW fibre of 132KV RHEP-Pare Ckt-I (POWERGRID Section of Line). Once this line will be straightened, there will be no OPGW available for the LDP for RHEP- Pare Ckt -II (DOP Line) and internet connectivity between Pare PS and Ranganadi PS will be disconnected.

During a recent meeting with M/s Sterlite, they have informed that they will terminate their two lines in AB07 tower and target date is June'2022.

In view of the above, the matter be discussed in the OCC forum and requested to suggest the best way to fulfill the requirement of the decision of the Standing Committee.

Deliberation of the sub-Committee:

GM, NEEPCO informed that issues at Sl. No. 1,2 & 3 will be resolved by bilateral discussions with NERTS. However, for Sl.No. 4 &5 he intimated the forum that for 132kV RHEP-Pare-II (State Line) LDP & Internet has been implemented using OPGW Link of 132kV RHEP-Pare-I(PG Line). After configuration change the fiber would not be available any more. He requested the intervention of the forum.

Member Secretary i/c, NERPC clarified that the OPGW for 132kV RHEP-Pare-II line has been included under NERFO and early commissioning shall be discussed in NETeST forum.

Regarding shutdown requirement for changing of configuration and connecting 132kV Pare-N. Lakhimpur D/C, Member Secretary i/c requested NEEPCO, DoP Ar. Pradesh, M/s STERLITE to have preliminary discussions before approaching the OCC forum for approval.

The Sub-Committee noted as above.
Action: NEEPCO, DoP Ar. Pradesh, M/s STERLITE

D.2. <u>Installation of TLSA in 400kV D/C Palatana Transmission System:</u>

Major portion of the 400 kV Silchar-Byrnihat-Azara line is traversing through the State of Meghalaya which falls under high isokerauniclevel and also the soil is found to be of very high resistive nature. Due to such high isokeraunic level, repeatedly lightning strikes with heavy intensity occurs during thunderstorm due to which both these circuits have experienced excessive tripping(s)since commissioning. To reduce such type of tripping(s), NETC has taken up no. of innovative measures to reduce the Tower Footing Resistances (TFR)such as Tower Shield Earthing, Bentonite treatment and Marconite treatment etc. and by which could be able to reduce the tower footing resistances (TFR) significantly i.e. below 10 ohms. However, it is observed that during monsoon, these lines are still getting tripped due to lighting strikes in the stretches where the tower footing resistances are quite low. On the basis of further study and field experience it is felt that, such tripping(s) are taking place because of lightning with very high intensity. Considering the situation, to avert such happenings in future NETC shall explore the introduction of Transmission Line Surge Arrestors (TLSA) in some critical stretches of the subject Transmission Line on experiment basis. On fixing theses TLSAs the performance shall be monitored very stringently for further future use of the TLSAs. Accordingly, 2(two) critical stretches involving **22 no.** towers in Silchar – Byrnihat – Azara line have been identified for fixing the TLSAs.

Further, during the last few years number of lightning strikes in a particular stretch in Byrnihat–Bongaigaon line section causing number of line outages have also been observed. Considering the same 1(one) more critical stretch involving **08 no**. towers in Byrnihat – Bongaigaon line has also been identified for fixing the TLSAs. PGCIL had already installed 400 kV TLSAs in few of their lines. Accordingly, the matter was discussed with their Asset Management Department, CC, Gurgaon and obtained confirmation regarding much improvement in the performance of those lines. As per the latest LoA placed by PGCIL in March'2020 for "Supply & Supervision of Installation & Commissioning of TLSAs in their 400kV Rourkela-Sundargarh-Raigarh Transmission Line" the financial involvement for fixing TLSAs in 30 nos. (22 + 8) towers (04 no. TLSAs per tower) comes to around Rs. 200 Lakhs. For fixing the TLSAs, shutdown shall be required to be availed by NETC which may be accounted for system improvement and availability of NETC shall not suffer. The committee is requested to recommend capitalisation of the above expense.

Simultaneously, NETC will also continue the Bentonite/Marconite treatment for earthing improvement in the identified towers. On observing the satisfactory performance of such improvement measures, NETC shall come up with a detail proposal for the balance critical stretches with request for reimbursement of such expenditure through Tariff.

This issue was also highlighted / discussed in various forum of NERPC including the 2nd Meeting of NERPC(TP), 21st TCCM & 21st NERPC Meetings. In the 168th OCCM, the NERLDC had recommended for installation of TLSA in these two circuits of NETC.

Deliberation of the sub-Committee:

MD, NETC proposed installation of 30 nos. of Transmission Line Surge Arrestors (TLSA) in Palatana-Silchar-Byrnihat-Bongaigaon corridor in strategic locations to mitigate tripping of lines on lightning fault even when Tower Footing Resistance (TFR) is less than threshold value of 10 Ohms. NETC further requested the committee to assist NETC in allowing outages and capitalization of the expenses to the tune of about Rs 2 Crores. The committee deliberated the issue and accorded in principle approval, as such installation would improve the stability of the Grid. The Committee further recommended the proposal to be put up in the ensuing CCM/TCC / Board Meeting for final approval.

The Sub-Committee noted as above.
Action: NETC

D.3. R&U of Protection System (Phase-II) of MePGCL:

NERPC has clarified in the OCC meeting held at Tawang on the 22nd March, 2021 that the 21st TCC/NERPC has approved the second phase R&U of MePGCL Stations and the third party protection audit report conducted in all the Power Stations of MePGCL has been submitted. The forum would like to know the status of the DPR for the same.

Deliberation of the sub-Committee:

SE, MePGCL informed that after MeECL Board Approval, MePGCL shall place the proposal for PSDF funding.

The Sub-Committee noted as above.
Action: MePGCL

D.4. R&U of Protection System (Phase-I) of MePGCL:

The final 10% (2nd Tranche) grant was released on April, 2021 for the R&U project. The Utilization Certificate for the released grant has not been submitted even after 5 months. MePGCL may clarify the delay in submission of the same as this is serious and may raise audit objection.

Further, it may be informed that DPR for the R&U of Phase – II will be considered only after the Utilisation Certificate of 10% (2nd Tranche) is submitted by MePGCL.

Deliberation of the sub-Committee:
Pls refer to discussions in item No. **B.2**.

The Sub-Committee noted as above.
Action: MePGCL

D.5. Extension of power supply at 33kV level to Roing from Chapakhowa:

AE, SLDC, DoP Ar. Pradesh informed that after commissioning of 132kV Rupai-Chapakhowa and associated assets, the voltage profile of Roing at 33kV level is expected to improve considerably. Thus DoP Ar.Pradesh has been receiving multiple requests for connection to Chapakhowa at 33kV level at Roing. He requested the intervention of the forum so that power can be supplied for the interim till commissioning of 132kV Roing-Chapakhowa.

Deliberation of the sub-Committee:

After detailed deliberation the forum approved the following:

- As per existing arrangement Roing would be included under one more point for DSM calculation taking total points between DoP Ar. Pradesh and Assam to 23.
- SEM to be installed at Roing and JMR to be provided periodically.
- Energy to be adjusted under DSM calculation.
- Transmission cost from Ar. Pradesh to Assam to be agreed bilaterally.
- Abandoned line from Chapakhowa to Roing to be revived by DoP Ar. Pradesh
- Above arrangement to bilaterally agreed by C.E(Eastern Electrical Zone),DoP Ar. Pradesh and CGM(TRC), APDCL

The Sub-Committee noted as above.
Action: AEGCL, APDCL, DoP Ar. Pradesh, NERLDC, NERPC

The presentation of MD, NETC on O&M practices of Transmission line is attached at ***Annexure-II***

The meeting ended with thanks to the Chair.

****

Annexure-I

List of Participants in the 183rd OCC Meeting held on 21.10.2021

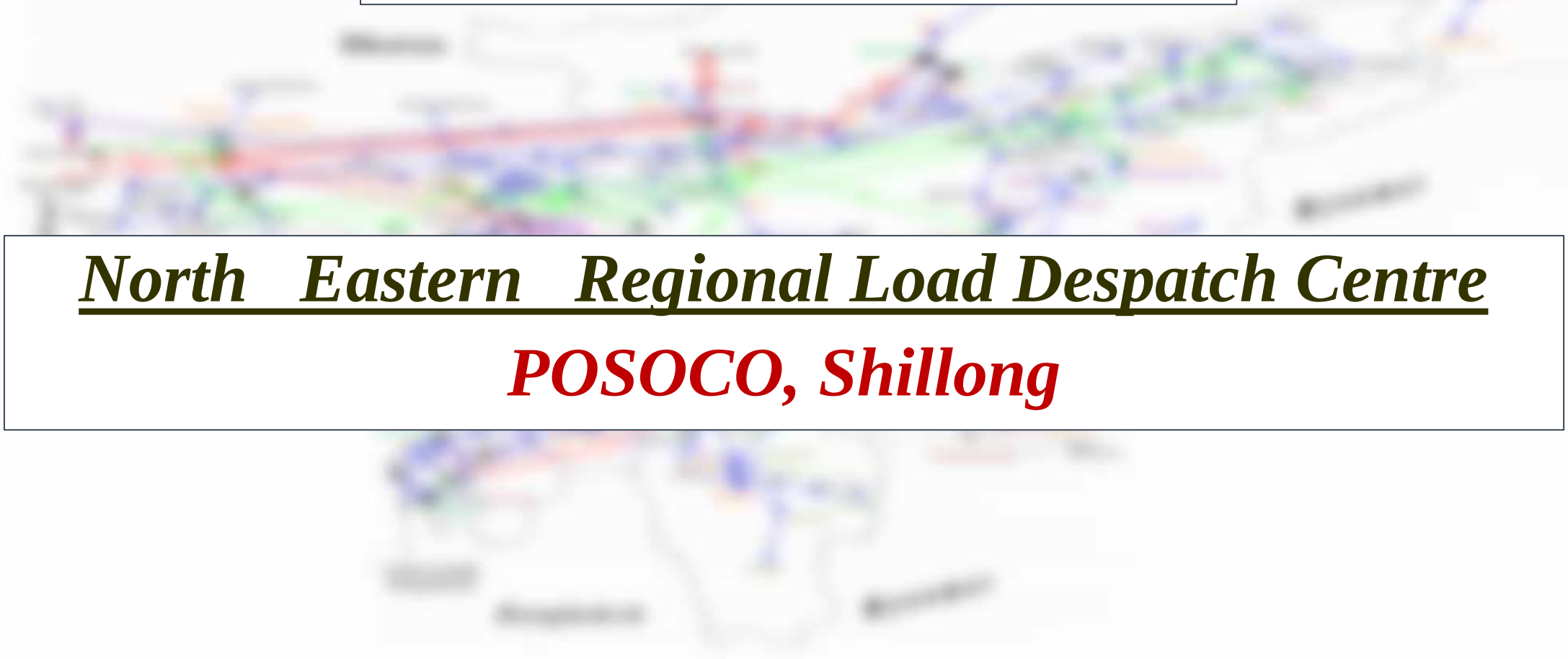
SN	Name & Designation	Organization	Contact No.
1	Sh. Purik Buchi, A.E (E)	Ar. Pradesh	09366118384
2	Sh. P. Bora, CGM, SLDC, AEGCL	Assam	08638174429
3	Sh. Rupanka Kishore Goswami, AGM (SLDC)	Assam	09613146565
4	Ms. Barsha Kashyap, Dy. Mgr.	Assam	09706692773
5	Sh. Mriganka Bhuyan, AGM (SLDC), AEGCL	Assam	09101302916
	NO REPRESENTATIVE	**Manipur**	-
6	Sh. P.Yanthan, CE (T&G) & Chairman TCC	Nagaland	09862586770
7	Shri. Nitovi A Wotsa, SE, Dimapur Electrical Circle and SLDC Head	Nagaland	08974035404
8	Shri. S.I Asangba Tikhir, Executive Engineer (Transmission & SLDC)	Nagaland	079085508502
9	Sh. Roko Iralu, SDO (IT)	Nagaland	09436832020
10	Sh. Tsiamchi Ndang, EE	Nagaland	09856860400
11	Sh. Imsen Kaba, EE	Nagaland	09436003805
12	Sh. Akumtemjen Jamir, EE	Nagaland	07085961125
13	Sh. O.S. Ovung, EE	Nagaland	07005635565
14	Sh. A. Kharpran, CE (T), MePTCL	Meghalaya	09436117802
15	Sh. B. Wankhar, SE (SLDC)	Meghalaya	07005673697
16	Sh. H. Shangpliang, SE, MePGCL	Meghalaya	09863315562
17	Sh. T. Gidon, EE, SLDC, MePTCL	Meghalaya	06009094044
18	Sh. B. Das, EE (Gen-II), MePGCL	Meghalaya	09402195525
19	Sh. D. Lyngdoh, EE, SLDC	Meghalaya	09863063375
20	Sh. C.W. Chen, AEE (C&CSD), MePTCL	Meghalaya	09863093311
21	Smti. Riti Biam, AE (SLDC)	Meghalaya	08794327510
	NO REPRESENTATIVE	**Mizoram**	-
22	Sh. Anil Debbarma, DGM (SLDC)	Tripura	09612589250
23	Sh. U. Kataki, CGM	PGCIL	09435505418
24	Sh. Devaprasad Paul, CM	PGCIL	09435382360
25	Sh. P. Kanungo, Sr. GM (AM)	PGCIL	09436302823
26	Sh. Raktim Konwar, DM	PGCIL	09436335227

27	Sh. A.K. Basumatary, GM	PGCIL	09435591725
28	Sh. Samar Chandra De, GM	NERLDC	094363635369
29	Sh. Biswajit Sahu, GM	NERLDC	09425409539
30	Sh. Sourav Mandal, Mgr. (SO-I),	NERLDC	09402102354
31	Sh. Palash Jyoti Borah, Dy. Manager	NERLDC	08761093397
32	Sh. Joypal Roy, GM (E/M)	NEEPCO	09435577726
33	Sh. Satyajit Ganguly, MD	NETC	09810310449
34	Sh. D.K. Sarma, DM	NETC	09471001032
35	Sh. Soubhik Choudhury, Sr. Executive	OTPC	08837008091
36	Sh. Sajeev Mohandas, DGM	NTPC	09496006403
37	Sh. K. Ramesh Kumar, DGM	NTPC	09440901780
38	Sh. Akan Basumatary, SM	NHPC	07086071190
39	Sh. Venkatraman R. Inumula	INDIGRID	07752020404
40	Sh. Vivek Karthikeyan, Sr.Mgr.	INDIGRID	08966903034
41	Sh. Lokendra S. Ranawat, DGM(OP)	INDIGRID	09311279183
42	Sh. Rakesh Kumar, Scientist-C	IMD, Shillong	08729816312
43	Sh. Ashish Kumar	KMTL, Ghy	09435417267
44	Sh. Dhurjyoti Chaliha	KMTL, Ghy	08011187572
45	Sh. Anil R.Sah, DGM	NETCL, Ghy	09999055047
46	Sh. N. Ramesh Kr. Singh, Mgr.	NETCL, Jowai	09101658046
47	Sh. B. Lyngkhoi, Member Secretary I/c	NERPC	09436163419
48	Sh. S. Mukherjee, Dy. Director	NERPC	08794277306
49	Sh. Abhijeet Agrawal, Dy. Director	NERPC	09871266951
50	Sh. Shaishav Ranjan, AEE	NERPC	08787892650
51	Sh. Shivam Chaturvedi, AE	NERPC	08077661727

उ.पू.क्षे ग्रिड प्रदर्शन

NER GRID PERFORMANCE

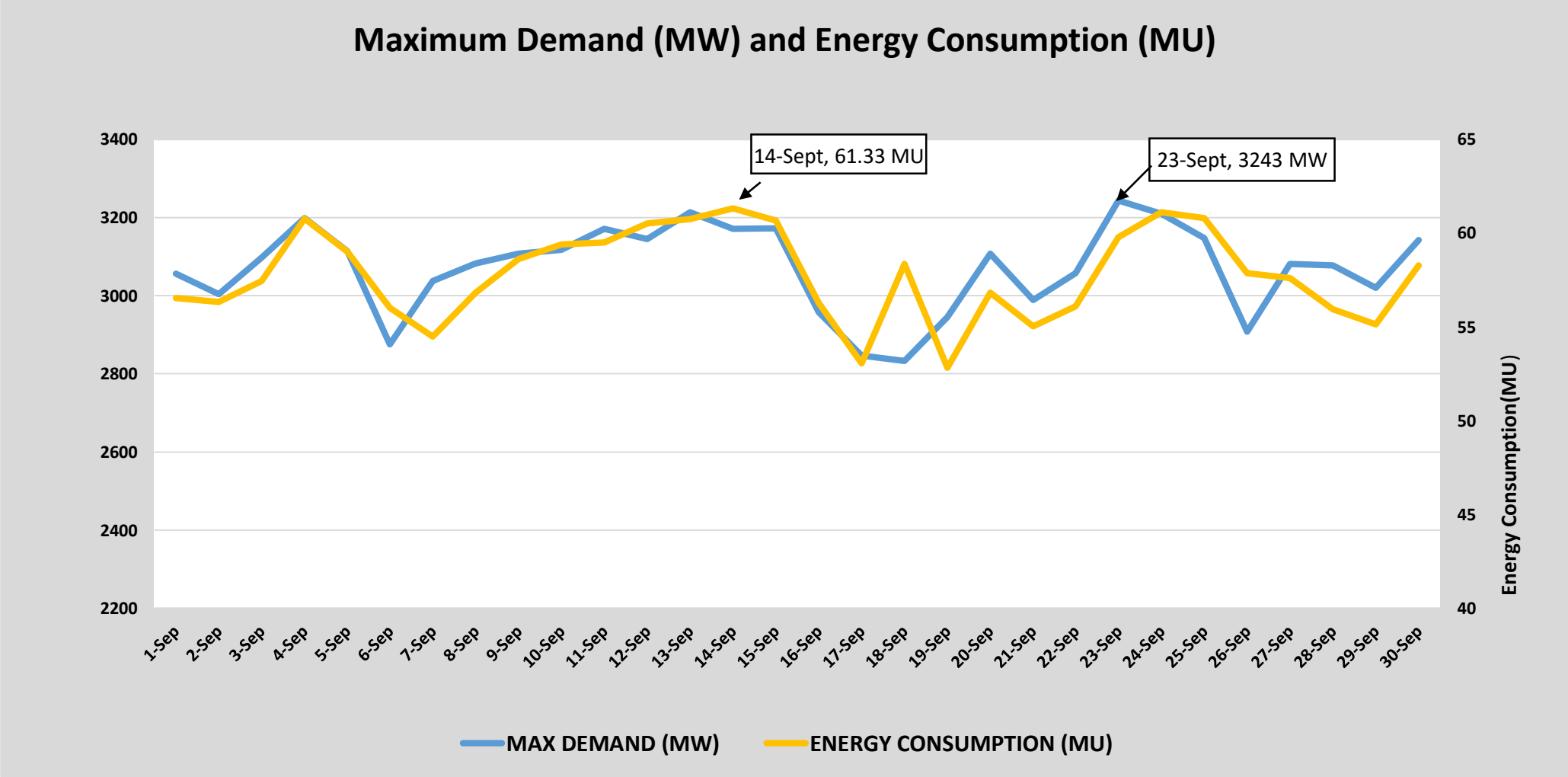
For the month September 2021



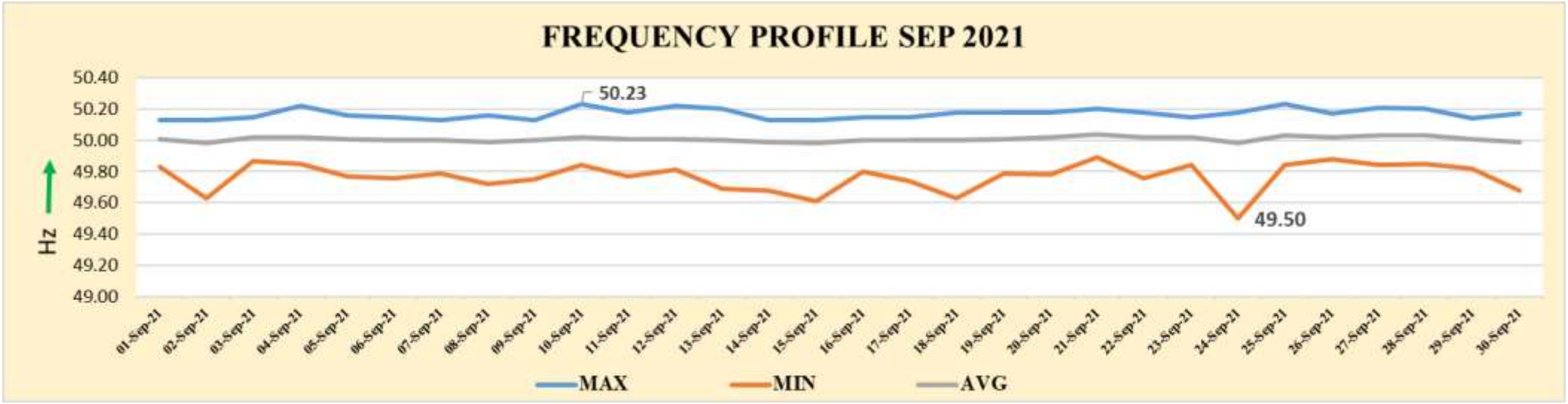
North Eastern Regional Load Despatch Centre

POSOCO, Shillong

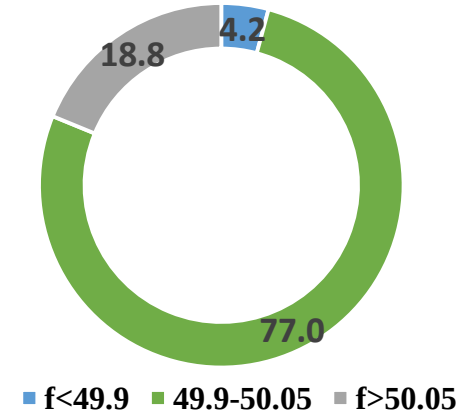
Maximum MW and MU in NER: September 2021



Frequency Profile

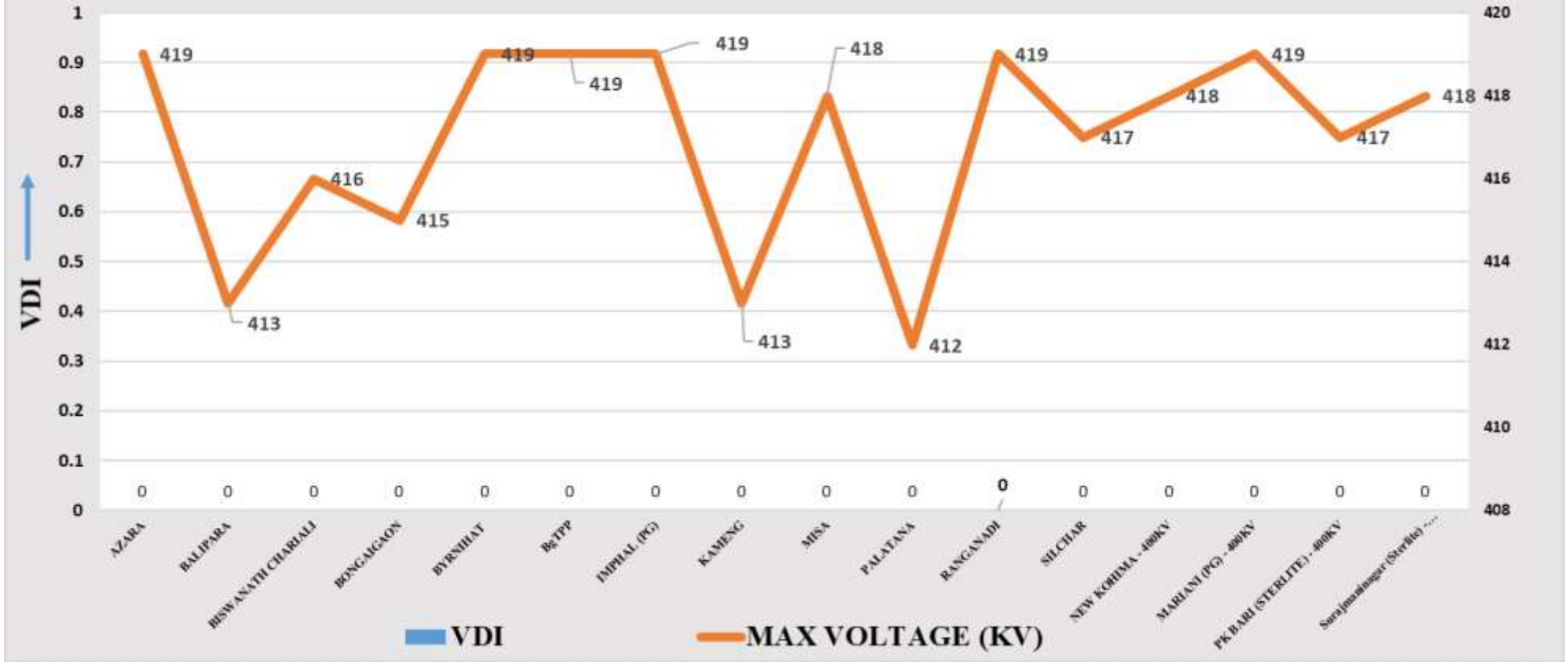


FREQ PROFILE FOR SEP'21

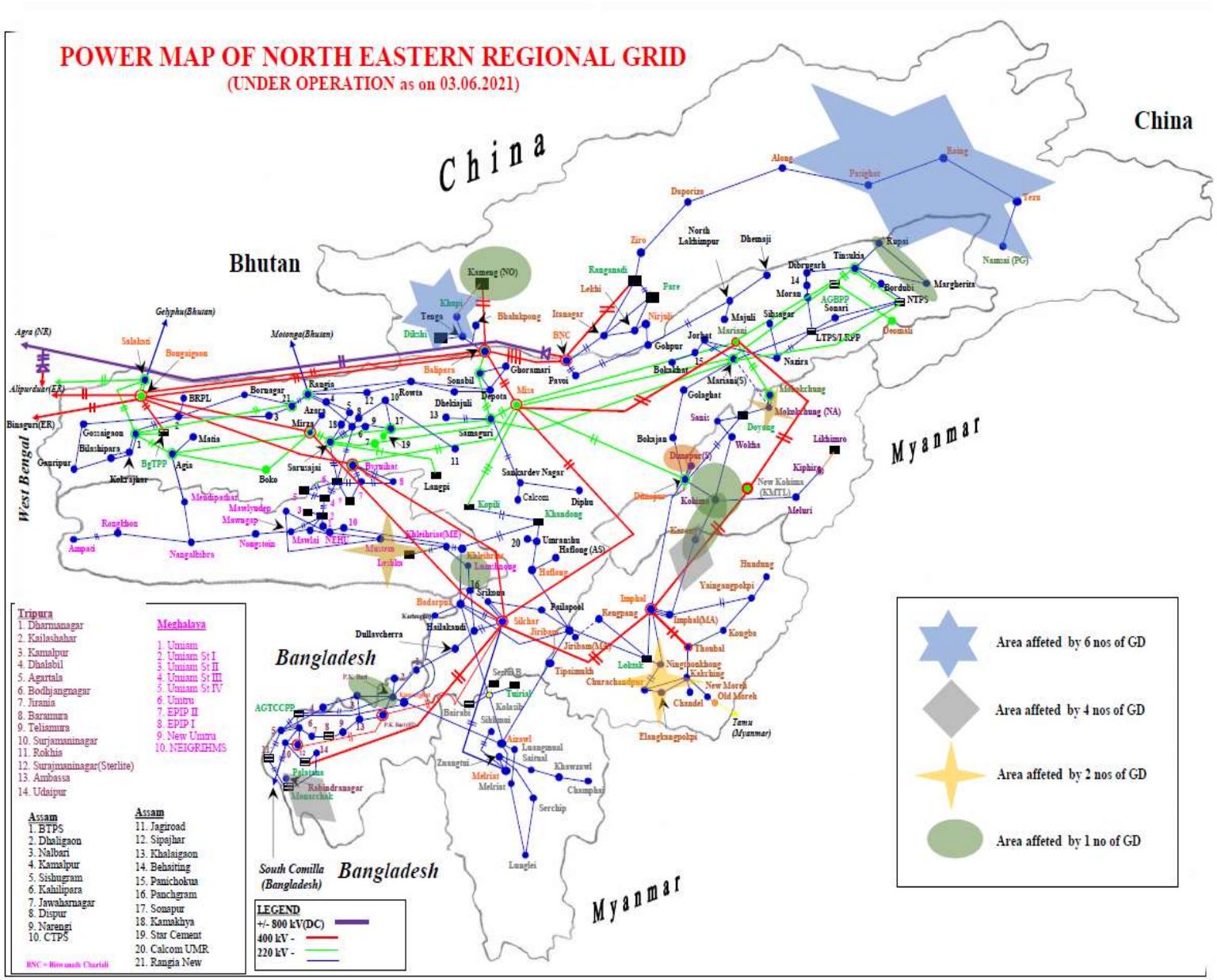


VDI (400 KV) FOR SEPTEMBER 2021

No. of 400 kV lines kept open for over voltage : 0



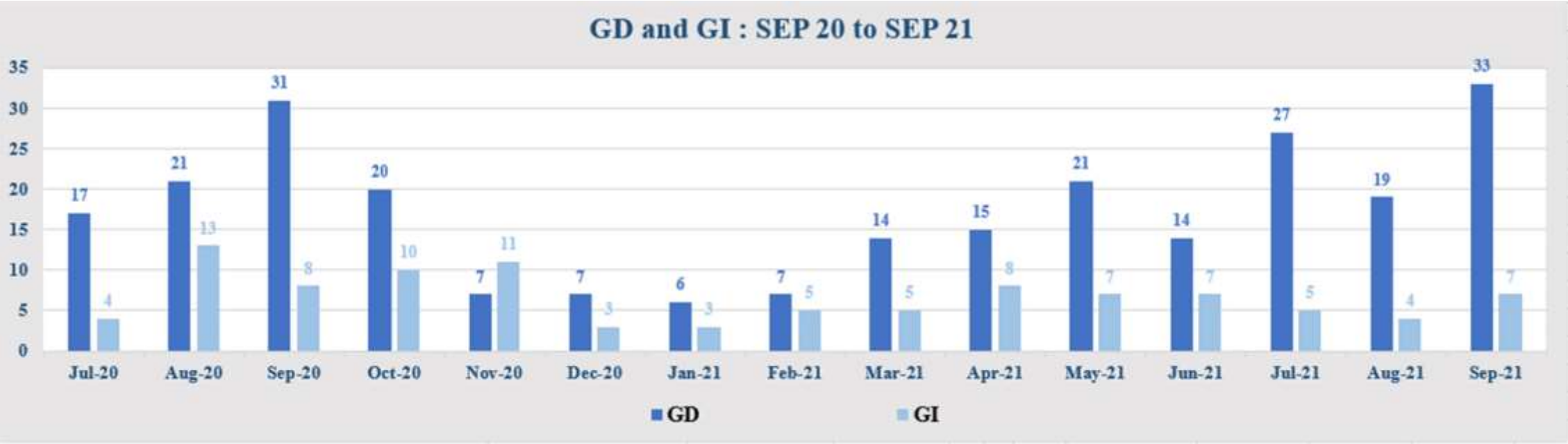
Grid Disturbance during September 2021



No. of GD	33
No. of GI	7

SL No.	Element	Number of times
1	132 kV Dharmanagar-PK Bari Line	Caused 1 no of GD
2	400 kV Balipara - Kameng II Line, Kameng Unit I and Unit II	Caused 1 no of GD
3	220/132 kV Tinsukia ICT 1 & 2, 132 kV Tinsukia-Bordubi and 132 kV Tinsukia-Dibrugarh lines	Caused 1 no of GD
4	132 kV Dimapur(PG) - Dimapur(Nagaland)-I & 132 kV Dimapur(PG) - Dimapur(Nagaland)-II lines	Caused 1 no of GD
5	132 kV Lumshnong - Panchgram line 132 kV Khliehriat(MePTCL) - Lumshnong line	Caused 1 no of GD
6	132 kV Karong-Kohima, 132 kV Kohima-Wokha and 132 kV Kohima-Dimapur(PG) lines	Caused 1 no of GD
7	132 kV Imphal (Yurembam)-Karong & 132 kV Karong-Kohima, 132 kV Kohima-Wokha & 132 kV Dimapur(PG)-Kohima lines	Caused 1 no of GD
8	132 kV Loktak-Nigthoukhong Line & 132 kV Imphal(PG)-Ningthoukhong Line	Caused 2 no of GD
9	132 kV Doyang-Mokokchung (DoP, Nagaland) line, 132 kV Mokokchung(PG)-Mokokchung(DoP, Nagaland) D/C lines	Caused 2 no of GD
10	132 kV Yurembam - Karong line and 132 kV Karong-Kohima line	Caused 4 no of GD
11	132 kV Monarchak - Rokhia Line, 132 kV Monarchak - Udaipur Line.	Caused 4 no of GD
12	Myndtu Leshka - UNIT 1 & 2 132 kV Leshka-Khliehriat(MePTCL) D/C lines	Caused 2 no of GD
14	132 kV Balipara - Tenga line	Caused 6 no of GD
15	132 kV Pashighat-Along line	Caused 6 no of GD

Grid Disturbance/Incidences for last 12 Months



Projected Hydro Generation Availability

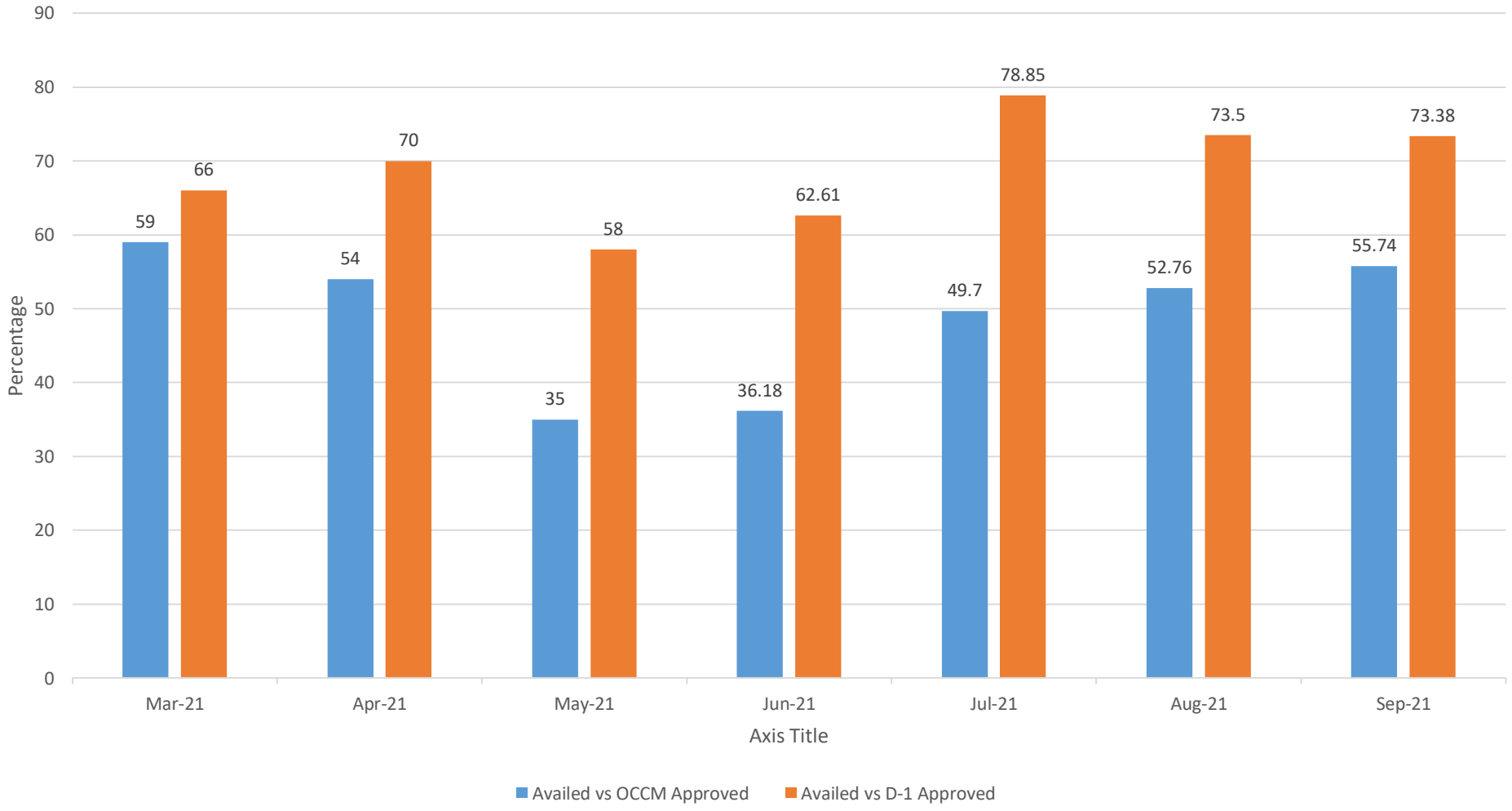
Plants	Reservoir Level in meters (as on 19/09/2021)	MU Content	Present DC (MU)	No of days as per current Generation
Khandong + Kopili STG II	723.85	38.48	1.176	33
Kopili	-	-	-	
Doyang	319	21.5	0.231	93
Loktak	766.72	17.2	0.325	53

OCC approved shutdown availing status for the month of September 2021

SUMMARY OF NER OUTAGE						
MONTH	PLANNED IN OCC	APPROVED IN D-1	AVAILED IN REAL TIME	AVAILED VS PLANNED	AVAILED VS APPROVED	DEFFERED BY RLDC DUE TO SYSTEM CONSTRAINT
September-21	183	139	102	55.74 %	73.38 %	3

	OCC Approved	D-1 Approved	Availed	Not Availed	RLDC Deferred
NER	183	139	102	36	3
NERTS	86	64	50	14	1
ASSAM	64	46	33	12	2
MEGHALAYA	9	9	6	3	0
NAGALAND	3	2	2	0	0
TRIPURA	17	14	8	6	0
Arunachal Pradesh	6	6	2	4	0
OTPC	2	2	1	1	0
INDIGRID	2	2	2	0	0

Approved Shutdown availing trend in percentage



RMSE of Load forecast for Sept'21

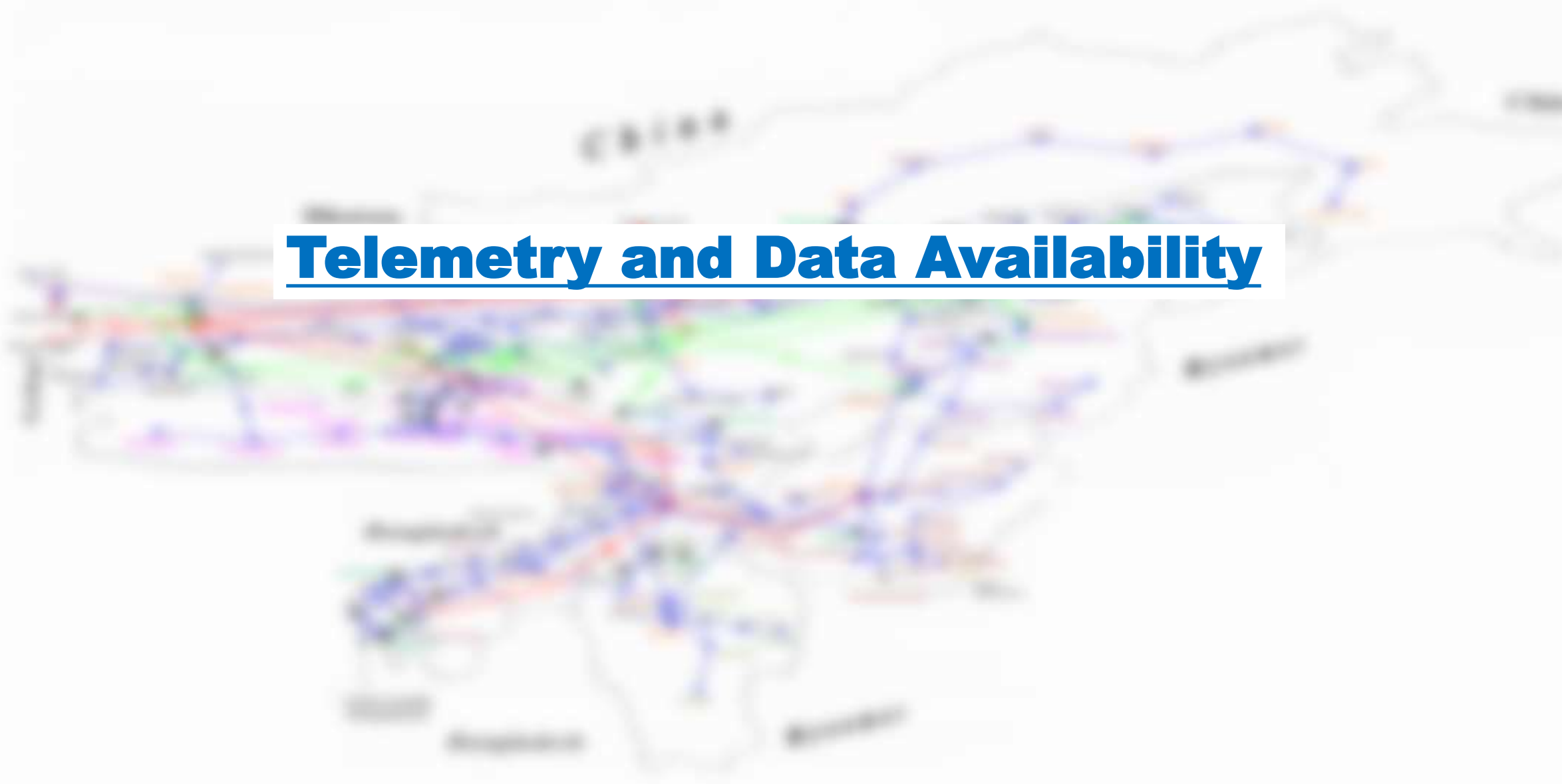
RMSE of the forecasted Demand by SLDCs Vs Actual Demand met as per SEM by SLDCs (as per IEGC c1.5.3):

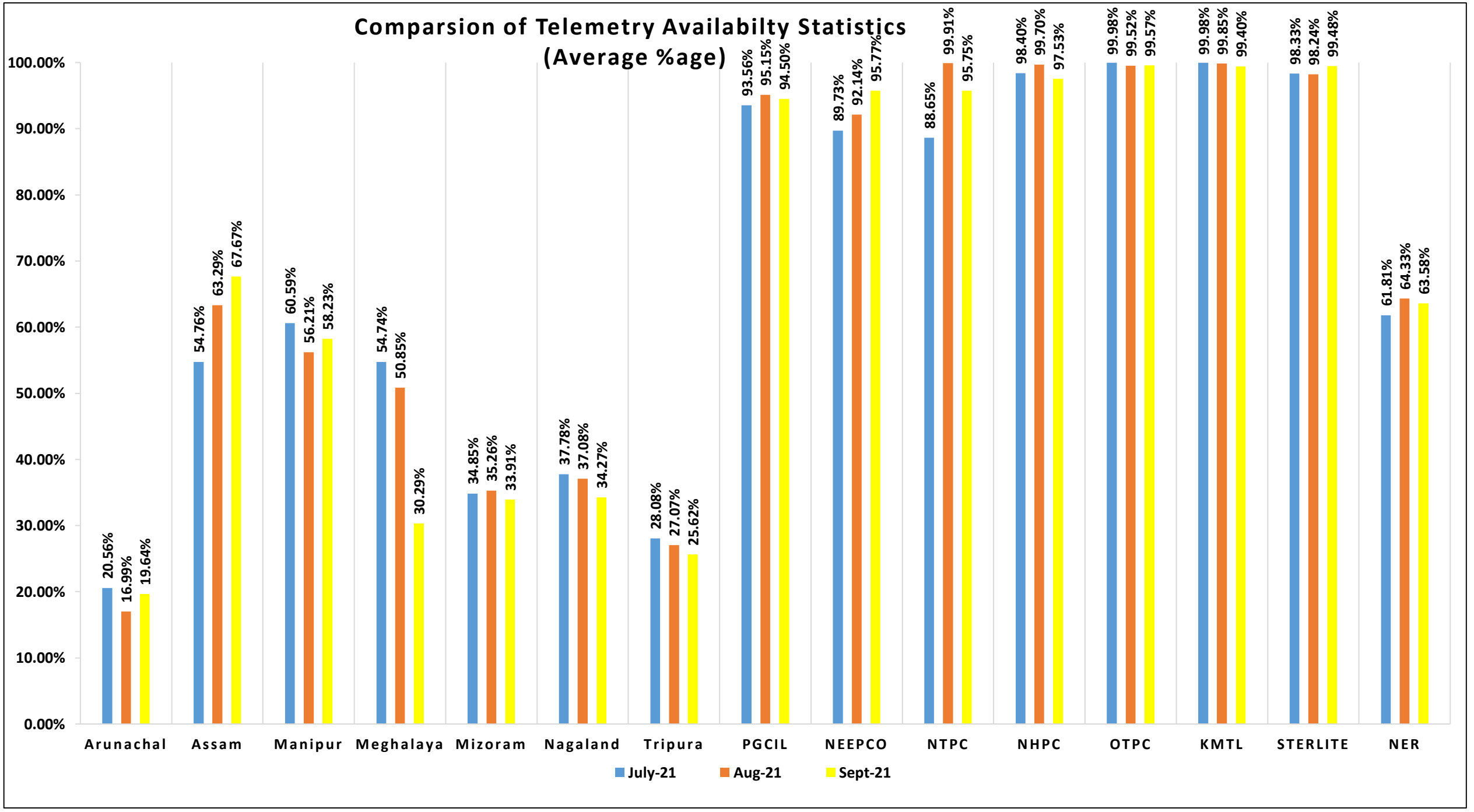
$$RMSE = \sqrt{\frac{\sum_{i=1}^{N} (Predicted_i - Actual_i)^2}{N}}$$

Where,
Predicted$_i$ = Forecasted Value
Actual$_i$ = Actual value
N = Total number of observations.

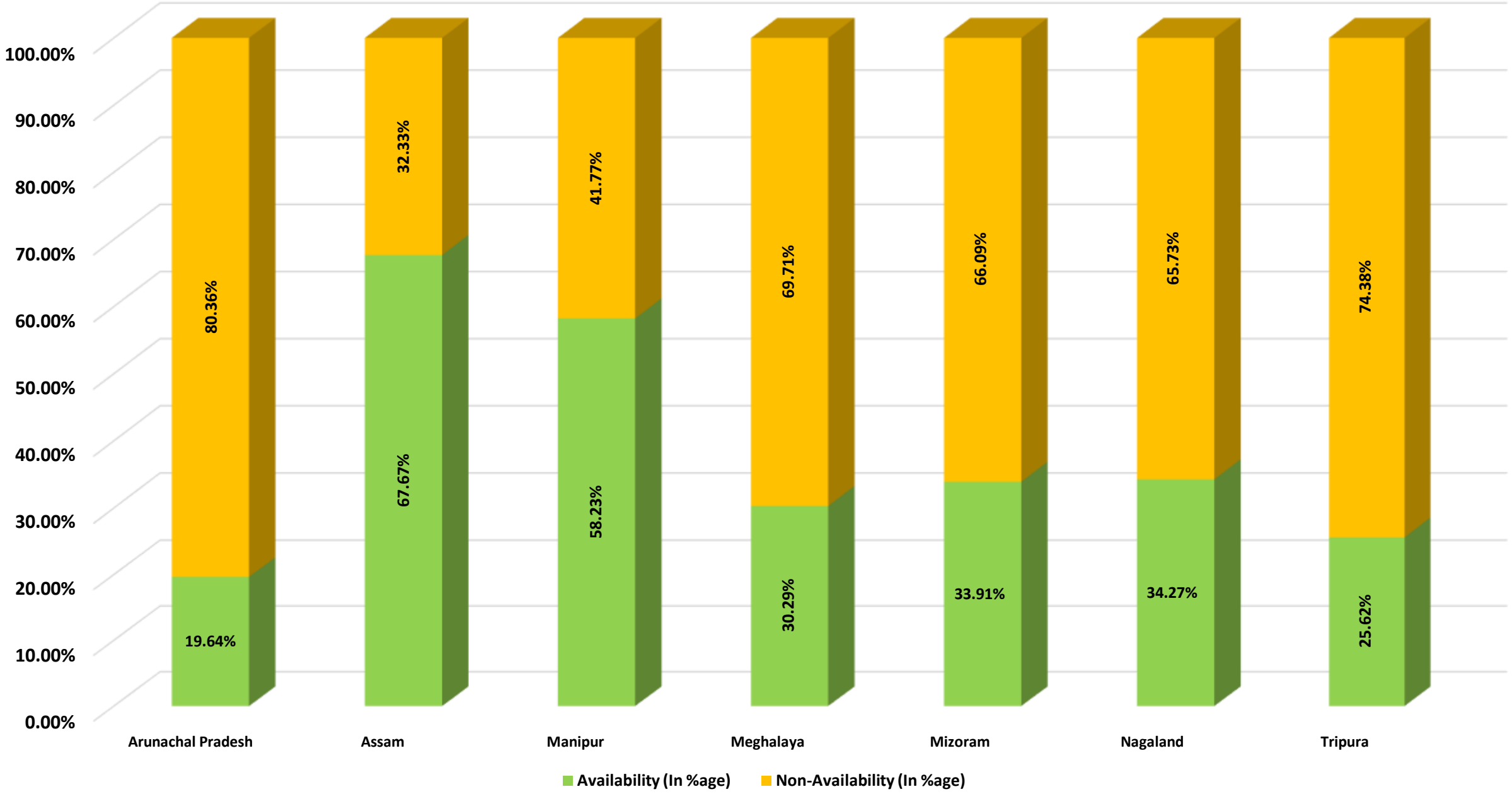
	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura
Median	12	11	9	18	25	12	12

Telemetry and Data Availability

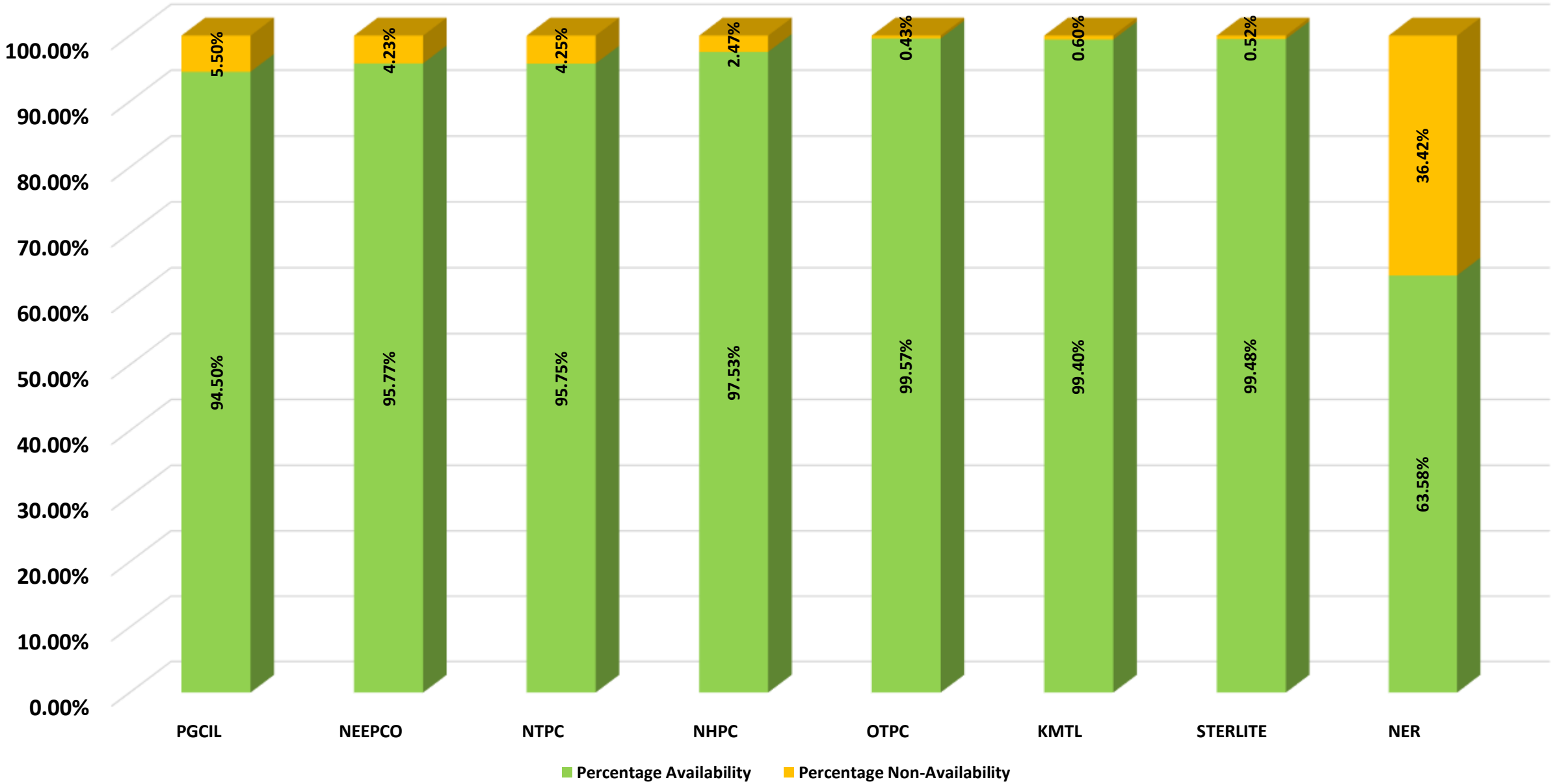



Comparsion of Telemetry Availabilty Statistics
(Average %age)
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
20.56%
16.99%
19.64%
54.76%
63.29%
67.67%
60.59%
56.21%
58.23%
54.74%
50.85%
30.29%
34.85%
35.26%
33.91%
37.78%
37.08%
34.27%
28.08%
27.07%
25.62%
93.56%
95.15%
94.50%
89.73%
92.14%
95.77%
88.65%
99.91%
95.75%
98.40%
99.70%
97.53%
99.98%
99.52%
99.57%
99.98%
99.85%
99.40%
98.33%
98.24%
99.48%
61.81%
64.33%
63.58%
Arunachal
Assam
Manipur
Meghalaya
Mizoram
Nagaland
Tripura
PGCIL
NEEPCO
NTPC
NHPC
OTPC
KMTL
STERLITE
NER
July-21
Aug-21
Sept-21

Telemetry Statistics for NER States (Average availability of data for the Month of September'21)

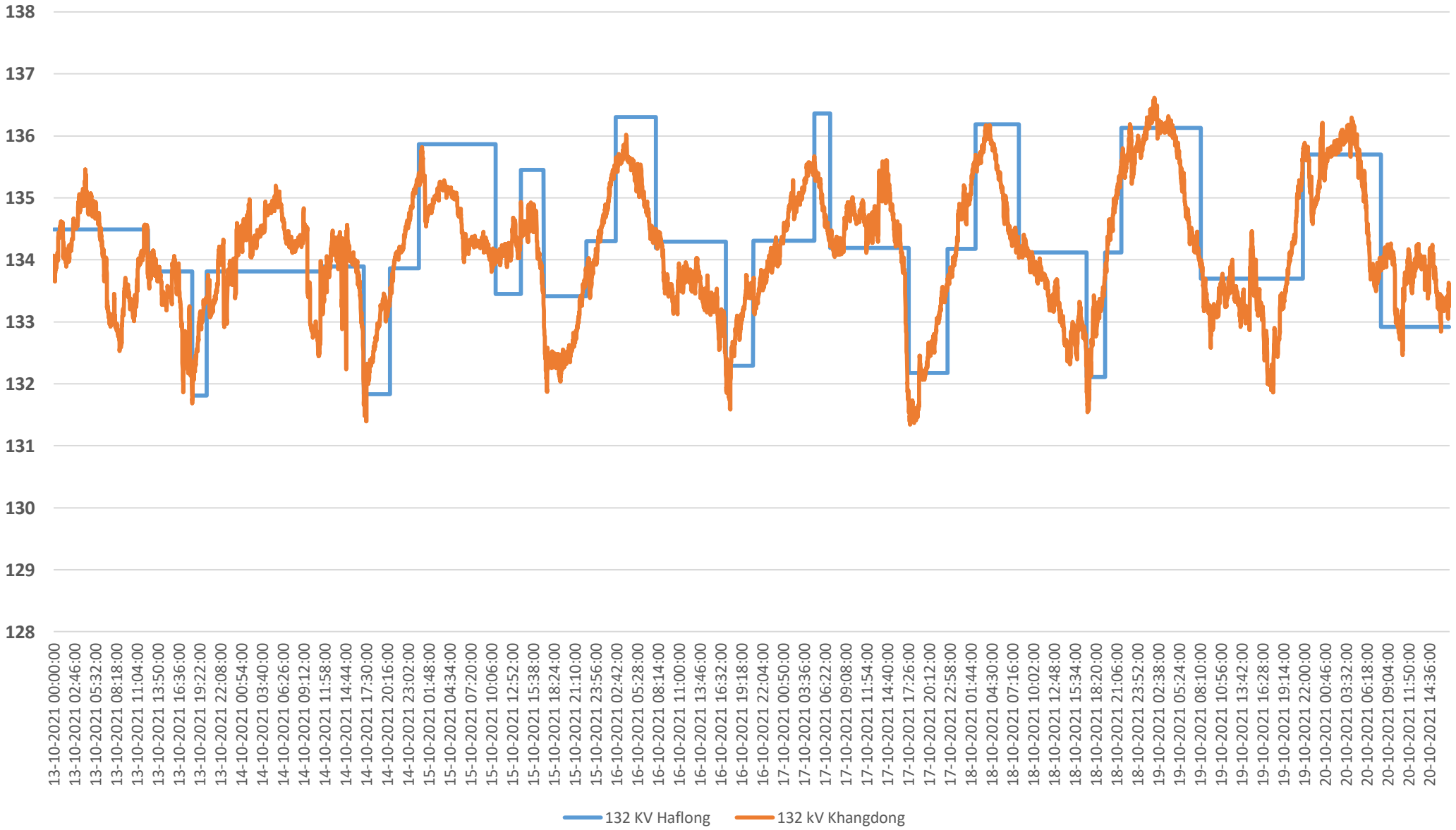


Telemetry Statistics for Central Sector of NER (Average availability of data for the Month of September'21)



Thank You

Khangdong and Haflong Voltage Profile : Last 7 days



Shutdown Requisition for the month of Nov 21

SN	Name of Element	Nov-21																													Dec-21			Time	Reason
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3		
	SHUTDOWNS PROPOSED BY PGCIL																																			
	132kV Transmission lines																																			
1	132kV R.C.Nagar - Agartala-I TL								Consent from Tripura Received							Intimation to NEEPCO																			CSD 0700Hrs to 1500Hrs	for installation of line differential relay.
2	132kV R.C.Nagar -Agartala-II TL								Consent from Tripura Received							Intimation to NEEPCO																			CSD 0700Hrs to 1500Hrs	for installation of line differential relay.
3	132kV Palatana - SurjamaninagarTSECL TL															Not Approved in 183rd OCCM due to non-receipt of consent from Tripura																			CSD 0700Hrs to 1500Hrs	for overhauling of Circuit Breaker
4	132kV Aizawl - Kumarghat TL and Aizwal - Kolasib TL								Not Approved in 183rd OCCM																											Erection, testing and commisssioning of LA, WT and CVT and there respective PLCC under GIS upgradation
5	132kV Aizawl-Lungmual TL								Not Approved in 183rd OCCM																											0700Hrs to 1100Hrs	The following construction activities will be carried out 1. Temp. jumpering of 132kV Aizawl-Melriat TL with 132kV Aizawl-Lungmual TL in dead end tower at Aizawl SS on 08/11/21 from 08:00 hrs. to 12:00 hrs. 2. After completion of this jumpering, the feeder will be renamed as 132kV Melriat-Lungmual TL (7.5 km) & Lungmual SS (P&E Mizoram) will draw power from POWERGRID Melriat (Sakawrtuichhun) w.e.f 12:00 hrs. on 08/11/21 after taking charging code from NERLDC. 3. There will be no connectivity between POWERGRID Aizawl & Lungmual SS from 08/11 to 12/11/21. 4. Relay setting will be changed at Melriat (PG) SS & Lungmual SS (Mizoram) before charging of the line. 5. This temporary arrangement shall be till 12/11/21 @17:00 hrs. 6. On 12/11/21, shutdown of 132kV Melriat-Lungmual TL shall be availed for 04(four) hrs. w.e.f 13:00 hrs. to remove the temporary jumpering at dead end tower & relay setting updation at both ends. 7. After completion of shutdown, both the feeders shall be charged & connectivity shall be as 132kV Aizawl-Melriat TL & 132kV Aizawl-Lungmual TL
6	132kV Aizawl-Lungmual TL and 132kV Aizwal - Melriat TL								Not Approved in 183rd OCCM																											CSD 0700Hrs to 1500Hrs	
7	132kV Melriat-Lungmual TL (Temporary LILO)								Not Approved in 183rd OCCM																											1100 Hrs to 1500Hrs	
8	132 kV Badarpur-Kolasib TL								Not Approved in 183rd OCCM due to non-receipt of consent from Mizoram																											0700Hrs to 1500Hrs	For Clearing of Critical infringements at Loc-221-224,177-178,126-127,107-108,191-192,193-194
9	132 kV Badarpur-Badarpur (ASEB) (Panchgram)								Consent from Assam Received																											0700Hrs to 1500Hrs	AMP of Bay equipments
10	132 kV Badarpur-Silchar-1																																			0700Hrs to 1500Hrs	AMP of Bay equipments
11	132 kV Badarpur-Karimganj								Consent from Assam Received																											0700Hrs to 1500Hrs	AMP of Bay equipments
12	132 kV Haflong-Jiribam TL																																			0700Hrs to 1500Hrs	Installation of arcing horn and grading ring in the line to improve the performace of the line in lightning atmosphere
13	132 kV Umrangsoo-Haflong TL								Consent from Assam Received																											0700Hrs to 1500Hrs	Installation of arcing horn and grading ring in the line to improve the performace of the line in lightning atmosphere
14	132 kV Khandong-Umrangsoo TL								Consent from Assam Received																											0700Hrs to 1500Hrs	Installation of arcing horn and grading ring in the line to improve the performace of the line in lightning atmosphere
15	132kV Kumarghat - Karimganj TL															Consent from Assam Received																			CSD 0700Hrs to 1500Hrs	Erection, testing and commisssioning of Line Differential relay in karimganj Bay. Also Installation of LA, cabling of Bus Reactor in connection to GIS Augmentation works
16	132kV Kumarghat - P.K.Bari TL								Consent from Tripura Received																											CSD 0700Hrs to 1500Hrs	Erection, testing and commisssioning of Line Differential relay in PK Bari Bay. Also Installation of LA, cabling of Bus Reactor in connection to GIS Augmentation works
17	132KV Nirjuli - Lekhi TL	Consent from AP Received							Consent from Assam Received (power support based on real-time grid condition)																											0700Hrs to 1500Hrs	AMP of Bay Equipments
18	132kV Silchar - Hailakandi # 1 TL																																			0900 Hrs to 1200 Hrs	AMP of Bay Equipments
19	132 kV Ziro - Daporizo								Not Approved in 183rd OCCM due to non-receipt of consent from AP																											0800Hrs to 1500Hrs	AMP of Bay Equipments
20	132 kV Kolasib -Turial																																			0700Hrs to 1500Hrs	Autoreclosure switch to be kept in Non-Auto Mode for OPGW works
21	132 kV Silchar - Hailakandi I and II																																			0700Hrs to 1500Hrs	Autoreclosure switch to be kept in Non-Auto Mode for OPGW works
22	132 kV Pare - Chimpu																																			0700Hrs to 1500Hrs	Autoreclosure switch to be kept in Non-Auto Mode for OPGW works
23	132 KV DIMAPUR - DOYANG # 2 TL (Tentative)																						Not Approved in 183rd OCCM													CSD 0700Hrs to 1500Hrs	for line equipment dismantling, erection and charging through new GIS bus
24	132 KV DIMAPUR - DOYANG # 1 TL (Tentative)																						Not Approved in 183rd OCCM													CSD 0700Hrs to 1500Hrs	for line equipment dismantling, erection and charging through new GIS bus
25	132 KV DIMAPUR - IMPHAL TL (Tentative)																						Not Approved in 183rd OCCM													CSD 0700Hrs to 1500Hrs	for line equipment dismantling, erection and charging through new GIS bus
26	132 KV DIMAPUR- BOKAJAN TL (Tentative)																						Not Approved in 183rd OCCM													CSD 0700Hrs to 1500Hrs	for line equipment dismantling, erection and charging through new GIS bus
27	132 KV DIMAPUR- DIMAPUR #1 TL (Tentative)																						Not Approved in 183rd OCCM													CSD 0700Hrs to 1500Hrs	for disconnecting jumper connection with Bokajan and charging through new GIS bus
		Nov-21																													Dec-21				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3		
	220kV Transmission lines																																			
28	220KV BALIPARA-SONABIL-1															Consent from Assam Received																			0700Hrs to 1500Hrs	Retrofitting and commisioning of numerical Auto Reclosure relay.
29	220kV N Mariani - Kathalguri TL								Intimation to NEEPCO																											0700Hrs to 1500Hrs	AMP of Bay Equipments and Line.
	400kV Transmission lines																																			
30	400KV BALIPARA-MISA #1 TL																																			0700Hrs to 1500Hrs	RETROFITTING OF MAIN AND TIE AR RELAY
31	400KV BALIPARA-MISA #2 TL																																			0700Hrs to 1500Hrs	RETROFITTING OF MAIN AND TIE AR RELAY
32	400 kV Bongaigaon-Byrnihat																																			0800 Hrs to 1700 Hrs	Autoreclosure switch to be kept in Non-Auto Mode for OPGW works
33	400 kV Silchar-Pallatana-1																																			0800 Hrs to 1700 Hrs	Autoreclosure switch to be kept in Non-Auto Mode for OPGW works

		Nov-21																													Dec-21				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3		
	132kV Aizwal SS																																			
34	20MVAR Bus Reactor																																		0700Hrs to 1500Hrs	AMP of Bus Reactor
	132kV Kumarghat SS																																			
35	132kV 20MVAR Bus Reactor																																		CSD 0700Hrs to 1500Hrs	Erection, testing and commisssioning GIS bays under Substation upgradation project.
	132kV Nirjuli SS																																			
36	132kV Bus Coupler																																		0700Hrs to 1500Hrs	AMP of Bay Equipments
	400kV Silchar SS																																			
37	400kV Azara Main Bay																																		0800 Hrs to 1500 Hrs	AMP of Bay Equipments
38	400kV Byrnihat Tie Bay																																		0800 Hrs to 1500 Hrs	AMP of Bay Equipments
39	400kV ICT-3 Main Bay																																		0800 Hrs to 1500 Hrs	AMP of Bay Equipments
40	400/132kV, 315MVA ICT-3																																		0800 Hrs to 1500 Hrs	AMP of ICT
41	400kV 63MVAR Byrnihat LR																																		0800 Hrs to 1500 Hrs	AMP of Reactor

		Nov-21																													Dec-21				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3		
	400kV Bongaigaon SS																																			
42	400 kV Alipurduar-2 & Balipara-4 Tie Bay																																		0700 Hrs to 1500 Hrs	AMP of Bay Equipments
43	400 kV ICT-1 Main Bay																																		0700 Hrs to 1500 Hrs	AMP of Bay Equipments
44	400 kV Bus Reactor-2 Main Bay																																		0700 Hrs to 1500 Hrs	AMP of Bay Equipments
45	400 kV Bus Reactor-2 Main Bay																																		CSD 0800Hrs to 1500Hrs	For upgradation of 03 Nos of 400 kV CT in Bus Reactor#2 Main Bay as approved in ADD CAP 2019-2024
46	400 kV Balipara#2 & Bus Reactor#2 Tie Bay																																		CSD 0800Hrs to 1500Hrs	For upgradation of 03 Nos of 400 kV CT in Tie Bay as approved in ADD CAP 2019-2024
47	400 kV Binaguri-2 Main Bay																																		0700 Hrs to 1500 Hrs	AMP of Bay Equipments
48	400/220/33kV 315MVA ICT#2																																		0700 Hrs to 1500 Hrs	For Installation of Insulation Sleeves on 33 kV Bus section of ICT-2 for safe work clearance in 33kV swichyard,
	400kV Balipara SS																																			
49	400KV BONGAIGAON-2 MAIN BAY																																		0700 Hrs to 1500 Hrs	AMP of Bay Equipments
50	400KV BONGAIGAON-3 MAIN BAY																																		0700 Hrs to 1500 Hrs	AMP of Bay Equipments
51	400KV 63MVAR BONGAIGAON-1 L/R. (Line will be out during switching)																																		0700 Hrs to 1500 Hrs	TO ATTEND AIRCELL Lekage OF THE NGR
52	400KV BONGAIGAON-2 AND BNC-4 TIE BAY																																		CSD 0700Hrs to 1500Hrs	Upgradation of BHEL CT OF R AND B-ph
53	400KV BUS REACTOR-1 MAIN BAY																																		CSD 0700Hrs to 1500Hrs	Upgradation of BHEL CT OF R AND B-ph
54	400KV BONGAIGAON-1 MAIN BAY																																		CSD 0700Hrs to 1500Hrs	Upgradation of BHEL CT OF R AND B-ph
	400kV Mariani SS																																			
55	400kV Bus Reactor -1 Main Bay																																		1000Hrs to 1100Hrs	Oil Sample collection from CT after commissioning, for asset health monitoring during warrenty period.
56	400kV Bus Reactor -1 Tie Bay																																		1115Hrs to 1215Hrs	Oil Sample collection from CT after commissioning, for asset health monitoring during warrenty period.
57	400kV Bus Reactor -2 Main Bay																																		1230Hrs to 1330Hrs	Oil Sample collection from CT after commissioning, for asset health monitoring during warrenty period.
58	400kV Kohima -1 Main Bay																																		1345Hrs to 1445Hrs	Oil Sample collection from CT after commissioning, for asset health monitoring during warrenty period.
59	400kV Kohima -2 Tie Bay																																		1000Hrs to 1100Hrs	Oil Sample collection from CT after commissioning, for asset health monitoring during warrenty period.
60	400kV Misa -1 Main Bay																																		1115Hrs to 1215Hrs	Oil Sample collection from CT after commissioning, for asset health monitoring during warrenty period.
61	400kV Misa -2 Main Bay																																		1230Hrs to 1330Hrs	Oil Sample collection from CT after commissioning, for asset health monitoring during warrenty period.

SN	Name of Element	Nov-21																													Dec-21			Time	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3		
	±800kV HVDC BNC																																			
62	Filter # 2 Sub bank # 3 bay								**Consent from NLDC Required**																											0800Hrs to 1500Hrs	AMP of Bay Equipments
63	400KV 80 MVAR Bus Reactor # 1																																		0800Hrs to 1500Hrs	AMP of Reactor
64	Filter # 3 Main bay															**Consent from NLDC Required**																			0800Hrs to 1500Hrs	AMP of Bay Equipments
65	BR # 2 Main bay																																		0800Hrs to 1500Hrs	AMP of Bay Equipments
66	Tie Bay of Ranganadi # 2 & BR # 2																																		0800Hrs to 1500Hrs	AMP of Bay Equipments
67	400KV 80MVAR Bus Reactor # 2																																		0800Hrs to 1500Hrs	AMP of Reactor
68	400kV 63MVAR Lower Subansari # 1 L/R																																		0800Hrs to 1500Hrs	AMP of Reactor
69	Ranganadi # 2 Main bay																																		0800Hrs to 1500Hrs	AMP of Bay Equipments

SN	Name of Element	Nov-21 (1–30) / Dec-21 (1–3)	Time	Remarks
70	Filter # 3 Sub bank # 5 bay	Consent from NLDC Required	0800Hrs to 1500Hrs	AMP of Bay Equipments
71	Lower Subansiri # 1 Main bay		0800Hrs to 1500Hrs	AMP of Bay Equipments
72	Ranganadi # 1 Main bay		0800Hrs to 1500Hrs	AMP of Bay Equipments
73	Bus Reactor # 1 Main bay		0800Hrs to 1500Hrs	AMP of Bay Equipments
74	Filter # 2 Sub bank # 1 bay	Consent from NLDC Required	0800Hrs to 1500Hrs	AMP of Bay Equipments
	400kV Misa SS			
75	4X25 MVAR Tertiary Reactors and 33kV Incomer		CSD 0700Hrs to 1500Hrs	For Installation of Insulation Sleeves on 33 kV Bus section of ICT-2 for safe work clearance in 33kV swichyard,
76	400 kv 50 MVAr Bus Reactor		CSD 0700Hrs to 1500Hrs	Overhauling of 3 nos. CB after completion of 10yrs of service for health assesment and enhancement & upgradation of 3 nos. CT
77	400kV Balipara 1 Main 2 Bay		CSD 0700Hrs to 1500Hrs	Overhauling of 3 nos. CB after completion of 10yrs of service for health assesment and enhancement & upgradation of 3 nos. CT
78	400kV Balipara 1 Main 1 Bay		CSD 0700Hrs to 1500Hrs	Overhauling of 3 nos. CB after completion of 10yrs of service for health assesment and enhancement
79	400 kV ICT-1 & Balipara-2 Tie Bay		CSD 0700Hrs to 1500Hrs	Overhauling of 3 nos. CB after completion of 10yrs of service for health assesment and enhancement & upgradation of 6 nos. CT
	220kV Dimapur SS			
80	Existing 132kV GIS Bus along with 132kV Dimapur- Kohima TL, 132kV Dimapur-Dimapur-2 TL and LV side of ICT-2 (Tentative S/D)	Not Approved in 183rd OCCM	0700 Hrs to 1500 Hrs	FOR CONNECTION WITH NEW GIS AND BUS BAR STABILITY TEST

SN	Name of Element	Nov-21 (1–30) / Dec-21 (1–3)	Time	Remarks
	Interregional/International			
81	400kV Bongaigaon - Binaguri #2 along with Line Reactor	Consent from NLDC Required	0700 Hrs to 1500 Hrs	To carry out FDS measurement in Line Reactor for health assesment of the reactor.
82	400 kV Bongaigaon - Alipurduar #1 TL	Consent from NLDC Required	0700 Hrs to 1500 Hrs	Commissioning of numerical A/R relay in Tie Bay
83	800KV HVDC AGRA BNC LINE 1 (requested by ERTS)	Consent from NLDC Required	1000 Hrs to 1700 Hrs	To attend broken jumper from jumper pad T-2235.To be clubbed with sl 84. ATC/TTC curtailment of 300 MW in ER-NR.
84	HVDC800KV-ALIPURDUAR (PG)-AGRA-1 (requested by ERTS)	Consent from NLDC Required	0700 Hrs to 1600 Hrs	Tree cutting between loc. 1288-1295.ATC/TTC curtailment of 300 MW in ER-NR.
85	HVDC800KV-ALIPURDUAR (PG)-AGRA-2 (requested by ERTS)	Consent from NLDC Required	0700 Hrs to 1600 Hrs	Tree cutting between loc. 1288-1295.ATC/TTC curtailment of 300 MW in ER-NR.
86	800KV AGRA BNC - I (S/D proposed by NR3)	Consent from NLDC Required	0900Hrs to 1800Hrs	Transmission Line diversion work due to construction of Bundelkhand Expressway by UPEIDA . S/D proposed by NR3. During shut down, all 04 poles will be out
87	800KV AGRA BNC - II (S/D proposed by NR3)	Consent from NLDC Required	0900Hrs to 1800Hrs	Transmission Line diversion work due to construction of Bundelkhand Expressway by UPEIDA . S/D proposed by NR3. During shut down, all 04 poles will be out

SN	Name of Element	Nov-21 (1–30) / Dec-21 (1–3)	Time	Remarks
	ASSAM			
1	220kV Samaguri-Jawaharnagar		7:00-15:00	CORRIDOR CLEANING
2	220kV Samaguri- Sonapur		7:00-15:00	CORRIDOR CLEANING
3	132KV MARIANI-GOLAGHAT		7:00-15:00	CORRIDOR CLEANING
4	132KV GOLAGHAT-BOKAJAN		7:00-15:00	CORRIDOR CLEANING
5	220KV AGIA-BTPS-1		7:00-15:00	CORRIDOR CLEANING
6	220KV AGIA-BOKO		7:00-15:00	CORRIDOR CLEANING
7	220KV AGIA-BTPS-2		7:00-15:00	CORRIDOR CLEANING
8	220KV MIRZA-BOKO		7:00-15:00	CORRIDOR CLEANING
9	220KV AGIA-MIRZA		7:00-15:00	CORRIDOR CLEANING
10	315 MVA TX -1 AT MIRZA		7:00-15:00	ANNUAL MAINTENANCE
11	315 MVA TX -2 AT MIRZA		7:00-15:00	ANNUAL MAINTENANCE
12	220KV SONAPUR-SARUSAJAI		7:00-15:00	CORRIDOR CLEANING
13	220kV Main Bus 1 AT SAMAGURI		8:00-15:00	For Bus maintenance work
14	220kV Main Bus 2 AT SAMAGURI		8:00-15:00	For Bus maintenance work
15	220 kV Samaguri-Sonabil-I		8:00-15:00	For Bay maintenance work /CORRIDOR CLEANING
16	220 kV Samaguri-Sonabil-II		9:00-15:00	For Bay maintenance work /CORRIDOR CLEANING
17	220 kV Samaguri-Mariani-II	Not Approved in 183rd OCCM	9:00-15:00	For Bay maintenance work
18	132KV MAIN BUS AT SRIKONA		5:00-10:00	For DC system rewiring & preventive maintenance works
19	220KV SAMAGURI-MARIANI-II	Intimation to NEEPCO	7:00-15:00	CORRIDOR CLEANING
20	132KV SRIKONA-PAILAPOOL		7:00-15:00	PREVENTIVE MAINTENANCE & INSPECTION WORK
21	132KV PANCHGRAM-LUMSHNONG	Consent from Meghalaya Received	7:00-15:00	PREVENTIVE MAINTENANCE & INSPECTION WORK
22	132KV PANCHGRAM-HAILAKANDI		7:00-15:00	PREVENTIVE MAINTENANCE & INSPECTION WORK
23	132KV HAILAKANDI-DULLAVCHERRA		7:00-15:00	PREVENTIVE MAINTENANCE & INSPECTION WORK
24	132KV DULLAVCHERRA-DHARMANAGAR	Consent from Tripura Received	8:00-15:00	PREVENTIVE MAINTENANCE & INSPECTION WORK
25	220KV SARUSAJAI-MIRZA-2		8:00-15:00	CORRIDOR CLEANING
26	220KV NTPS-MARIANI		7:00-15:00	CORRIDOR CLEANING
27	220KV TINSUKIA-KATHALGURI-1		9:00-15:00	CORRIDOR CLEANING
28	220KV TINSUKIA-KATHALGURI-2		9:00-15:00	CORRIDOR CLEANING
29	220KV AGIA-BTPS-II		7:00-15:00	CORRIDOR CLEANING

SN	Name of Element	Nov-21																													Dec-21			Time	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3		
	MEGHALAYA																																			
1	132KV Lumshnong- Panchgram line								Consent from Assam Received																										9:00-15:00	For changing of broken disc insulators at T/loc 281 (B-Phase)
2	132KV Lumshnong- Panchgram line								Consent from Assam Received																										9:00-15:00	For changing of broken disc insulators at T/loc 293 (Y-Phase)
3	132KV Bus Shutdown, Lumshnong SS								Consent from Assam Received																										9:00-15:00	For checking and tightening of the terminals and Isolator & Jumper clamps of all the feeders and other maintenance work .
4	132KV Bus Shutdown, Khliehriat SS																																		9:00-15:00	For checking, and tightening of jumper clamps of all 132KV feeders and transformers and other maintenance work.
	NAGALAND																																			
1	132/66/33/11kV, 2 x 100MVA Nagarjan Sub -Station, Dimapur (132kV Dimapur PG-Dimapur(NA) Ckt 1 & 2)																																		05:00 hrs to 08:00hrs	Annual maintenance for tightening of hardware fittings, CT/PT/Transformer joints, cleaning of bushings, insulators and others.
	NEEPCO (RHEP)																																			
1	360 MVA, 132/400 KV, ICT-2																																		w.e.f. 07:00 Hrs of 03/11/2021 to 15:00 Hrs of 17/11/2021	replacement of repaired Single Phase ICT in the Y-phase of ICT-2 Bank
	NTPC																																			
1	3x250 MW plant's Unit-2															Continuous Shutdown from 15.11.2021 to 19.12.2021 (35 Days)																			w.e.f 15.11.2021 of 00:00:00 hrs to 19.12.2021 of 24:00:00 hrs	Overhauling
2	Bay 410 (Unit-2 O/H)								Study couldn't be performed due to late submission																										07:00-15:00	
3	Bay 405 (Transfer Bay)								Study couldn't be performed due to late submission																										07:00-15:00	1. Bus 1 Pantograph Isolator 89A PM/ OH of Bay 410 2. Bus 1 Pantograph Isolator 89A PM/ OH of Bay 405
4	400 KV Bus 1 at BgTPP								Study couldn't be performed due to late submission																										07:00-15:00	
5	Bay 410 (Unit-2 O/H)								Study couldn't be performed due to late submission																										07:00-15:00	
6	Bay 405 (Transfer Bay)								Study couldn't be performed due to late submission																										07:00-15:00	1. Bus 2 Pantograph Isolator 89A PM/ OH of Bay 410 2. Bus 2 Pantograph Isolator 89A PM/ OH of Bay 405
7	400 KV Bus 2 at BgTPP								Study couldn't be performed due to late submission																										07:00-15:00	

SN	Name of Element	Nov-21																													Dec-21			Time	Remarks
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3		
	INDIGRID																																			
1	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
2	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
3	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
4	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
5	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
6	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
7	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
8	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
9	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
10	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
11	400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	DEJ Helical Installation and SD defects rectification
12	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	DEJ Helical Installation and SD defects rectification
13	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	DEJ Helical Installation and SD defects rectification
14	400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	DEJ Helical Installation and SD defects rectification
15	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
16	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
17	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-1								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
18	A/R OF 400KV-ALIPURDUAR (PG)-BONGAIGAON-2								Consent from NLDC Required																										08:00 hrs to 18:00 hrs	Rectification of Earth wire issues
19	400 kV Silchar Misa Ckt 1																												Continuous S/D 28.11.21 to 03.12.21						w.e.f 28.11.2021 of 07:00:00 hrs to 03.12.2021 of 15:00 hrs	Sag rectiifcation and jumper rectification work at mutiple location.
20	400 kV Silchar Misa Ckt 2																												Continuous S/D 28.11.21 to 03.12.21						w.e.f 28.11.2021 of 07:00:00 hrs to 03.12.2021 of 15:00 hrs	Sag rectiifcation and jumper rectification work at mutiple location.

Implementation of Automatic Demand Management System (ADMS) in Meghalaya

ADMS IMPLEMENTATION: OBJECTIVES 1/2

- Monitoring of overall power supply scenario of the State including scheduling and dispatch in cognizance with Indian Electricity Grid Code, 2010 & its subsequent amendments and related CERC Regulations with respect to real time availability power to avoid Grid failures.
- Compliance with Indian Electricity Grid Code Regulations
- Optimum Scheduling & Dispatch of power within State
- Appropriate Loading of Distribution Network :Reducing the number of blackouts by controlling the identified 33/11 KV feeders of Sub-Stations within State
- To manage Grid contingencies - Abnormal operating conditions brought out by abrupt load changes leading to abnormal voltage and/or frequency excursions and/or overloading of Grid network.
- Operational reliability of Transmission & Distribution network within State
- Feeder Control and Protection for Grid Stability

ADMS IMPLEMENTATION: OBJECTIVES 2/2

- Excessive over-drawal may jeopardize the real time balance of load and generation of power leading to Grid failure which may affect the balance of power in other regions too.
- As per the existing Deviation Settlement Mechanism (DSM) and the Indian Electricity Grid Code (IEGC) Regulations issued by the CERC, the regional entities are to abide the scheduled power drawl and assist in maintaining the grid security as per the provisions of the regulations 5.4.2 (a) & (b).
- The Distribution Companies are required to restrict drawl of power from the grid to comply with the specified frequency requirements and set parameters of IEGC so as to overcome any threat to system security in an interconnected system on account of overdrawal from the grid.
- The Central Electricity Regulatory Commission (CERC) of India mandates manual as well as automatic demand disconnection from the distribution network under overdrawal conditions and on crossing the defined frequency limits.

ADMS : SCHEME IMPLEMENTATION PHILOSOPHY

- ADMS System to ensure real time management of load & scheduled drawl by Power Distribution Licensee / DISCOMs - SLDCs have been mandated by CERC to implement the comprehensive Automatic Demand Management System in Meghalaya State.
- The scheme envisages server at SLDC which accepts the operational parameters from the existing SLDC SCADA or manual inputs from the operator at SLDC and holds the intelligence to order no arbitrary load shedding at 11 KV level throughout the state on rotational basis to ensure the drawl of the SEB/ Distribution licensee remains within the scheduled operational band.
- The ADMS server shall communicate with the SLDC SCADA server on secure ICCP standards.
- ADMS server will communicate with field terminal units at the 33/11 kV substation through GPRS Modems / SDH communication panels and issue the trip command automatically for disconnection of load when the operating conditions go beyond the permitted variations from the schedule.
- The scheme would localize load sheds to geographically smaller areas and share load shed burdens quantities to geographically disparate regions simultaneously.

ADMS : SCHEME IMPLEMENTATION PHILOSOPHY 2/2

- In order to maintain the frequency within the stipulated band and maintaining the network security, the interruptible loads shall be arranged in four groups of loads, for scheduled power cuts/load shedding, loads for unscheduled load shedding, loads to be shed through under frequency relays df/dt relays as well as loads may be shed under any system protection scheme identified at the RPC/State level. There should be no overlapping between different Groups of loads.
- Automatic disconnection of load occurs when the operating conditions go beyond the permitted variations from the schedule or on any contingency noticed by SLDC, NERLDC, NLDC i.e. Drawal crossing the permitted limit, Overdraw when frequency is less than the set value as per IEGC, Operation of regional/local SPS schemes for which command will be originated from dedicated ADMS SCADA at SLDC and any condition requiring manual intervention of load as decided by SLDC etc.

Indian Electricity Grid Code (IEGC) 5.2

- (m) All users, SEB, SLDCs, RLDCs and NLDC to take possible measures to ensure grid frequency always remains within 49.90Hz to 50.05Hz (2nd amendment)

Indian Electricity Grid Code (IEGC) 5.4.2

- (a) SLDC / distribution licensee to initiate action to restrict the drawal of its control area, from the grid, within the net drawal schedule. Also, (b) to ensure that requisite load shedding is carried out in its control area so that there is no overdraw
- Regulation 5.4.2(d) provides that SLDC through respective State Electricity Boards/Distribution Licensees to formulate and implement state-of-the-art demand management schemes for automatic demand management like rotational load shedding, demand response (which may include lower tariff for interruptible loads) etc. to reduce overdraw and to limit the net drawal schedule with in limit in order to comply with frequency requirements as specified in Regulation 5.4.2(a) and (b) of the Grid Code.

- Demand Management 8.3
- State Grid Code (SGC) 8.3.2
  - Requirement for implementation of Automatic Demand Management Schemes in compliance of Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010
  - In accordance with the provisions of Regulation 5.4.2(c) of the Grid Code, each user, State Transmission Utility and State Load Despatch Centre shall formulate contingency procedures and make arrangements to enable demand disconnections as per the directions of Regional Load Despatch Centre or State Load Despatch Centre under normal and contingency situations.
  - Distribution Licensee shall help SLDC in identifying such load blocks. Load shed by the operation of automatic load shedding shall not be restored without specific directions from SLDC

REGULATORY PROVISIONS 3/3

- A report detailing the scheme and periodic reports on progress of implementation of the schemes has to be sent to the Central Commission by the concerned SLDC.
- In order to maintain the frequency within the stipulated band and maintaining the network security, the interruptible loads shall be arranged in four groups of loads,
  - for scheduled power cuts/load shedding,
  - loads for unscheduled load shedding,
  - loads to be shed through under frequency relays/df/dt relays and
  - loads to be shed under any System Protection Scheme identified at the RPC level.
- No overlapping between different Groups of loads

REGULATORY ORDERS FOR ADMS IMPLEMENTATION

- **Suo Motu petition No. 208/2011 dated 01.12.2011 by CERC**
  - For Implementation of Automatic Demand Management Schemes (ADMS).
  - SLDCs directed to file affidavit and provide the inputs as below by 20.12.2011.
  - The current status of the automatic load management scheme, indicating date of implementation of the scheme, its maintenance and operational preparedness to meet the normal and contingent situations;
  - Where the scheme has not been implemented so far, the reasons thereof; and
  - The status of contingency procedures and arrangements for demand disconnection during normal or contingency conditions
- All of the States have failed to comply CERC direction but have also failed to discharge their responsibility under the Act and the Grid Code
- Commission vide order dated 25.4.2014 issued show cause notice under Section 142 of the Act to the Respondents on the charge for non-compliance with the provisions of the Act and the Grid Code with regard to the implementation of the Automatic Load Management Scheme.

MePTCL reply to Show case Notice issued by CERC

- “Meghalaya Energy Corporation Limited (MePTCL), vide its affidavit dated 13.5.2014, has submitted that ADMS is not yet implemented in NER due to non-availability of in-house expertise. However, schemes such as UFR based load shedding, Islanding scheme in the first phase and GSES, WAMS and URTDSM in the second phase have been considered for NER. MePTCL has requested for time to implement ADMS and to consider source of funding to implement the scheme without burden on the consumer”

CERC Regulations Compliance :Tender Invitation for ADMS Scheme Implementation in NER

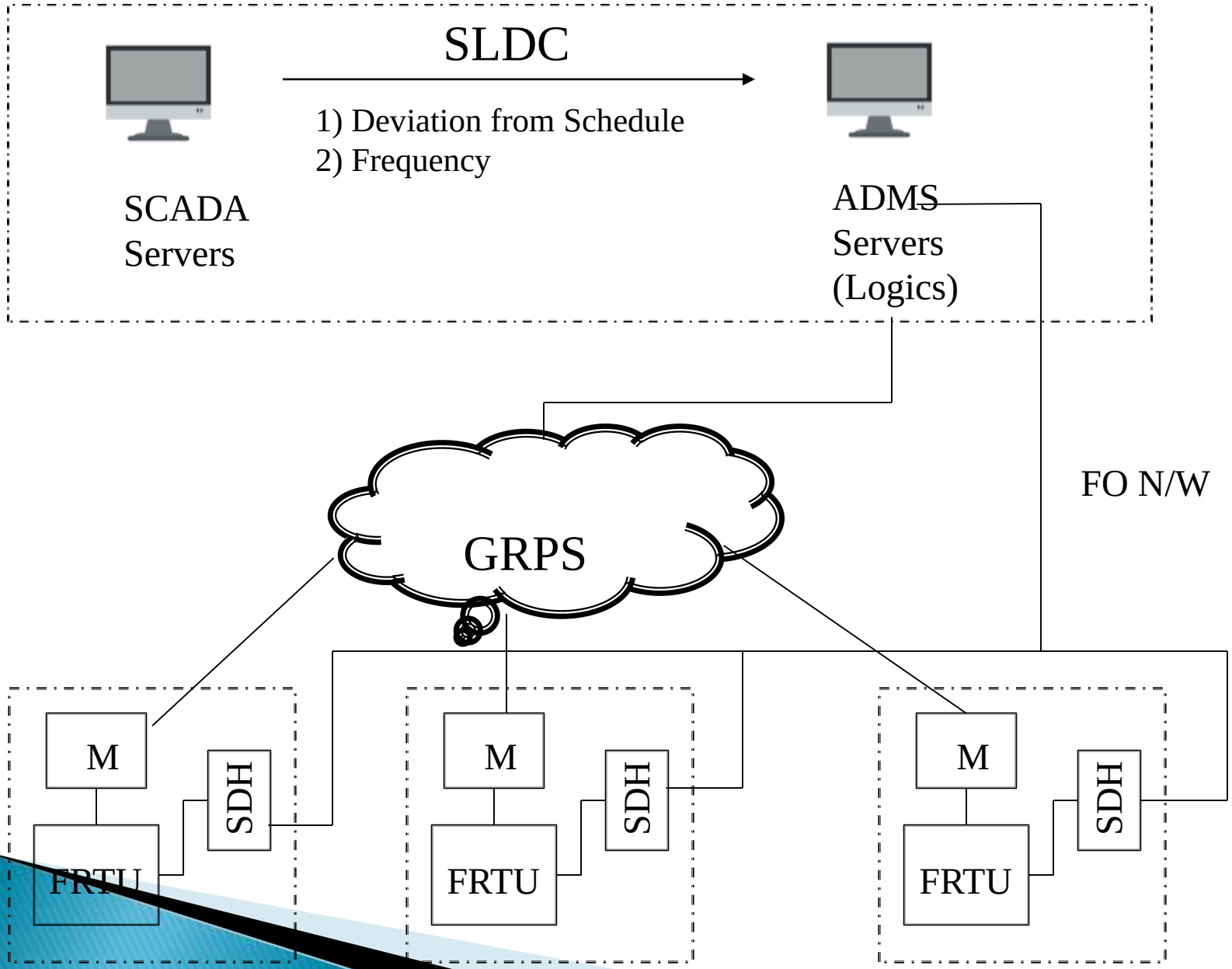
Notice Inviting Tender (NIT) for "Implementation of Automatic Demand Management Scheme for North Eastern Region : April,2019

Sealed quotations/ offers were invited by NERPC on behalf of NER State Power Utilities from eligible and reputed agencies for providing services for implementation of "**Implementation of Automatic Demand Management System for North Eastern Region**" under Single Stage-two packet/envelope system**.**

ADMS IMPLEMENTATION : SCHEME HIGHLIGHT & STATUS

- **PROJECT: Implementation of Automatic Demand Management Scheme for North Eastern Region : Meghalaya State**
- **Project Implementation Strategy for NER : ADMS Scheme Implementation as Pilot Project and Large Scale Implementation based on successful implementation of Pilot project and its benefits assessment**
- **BENEFICIARY**: MePTCL & MePDCL
- **NATURE OF PROJECT IMPLEMENTATION** – Intra-State
- **BUDGET FOR PROJECT IMPLEMENTATION: Rs. 2.07 Crore**
  - **PSDF Fund :** Rs 2.07 Crore
  - **STATE Internal Fund :** Nil
  - **LOA Value including GST** : Rs. 1.28 Crore
- **PROJECT IMPLEMENTATION DURATION**: 9 Months with 3 Years Warranty
- **PROJECT IMPLEMENTATION STATUS: System "Go Live" in September,2020**

ADMS : TYPICAL SCHEMATIC DIAGRAM



PRIORITY RANKING OF 11 KV FEEDERS FOR ADMS IMPLEMENTATION

Sl.no.	Name of Substation	Priority Ranking of 11 KV feeders (Highest to Least)
1.	33/11 KV Meter Factory	1. Ganesh Das 2. Oakland 3. Mawroh 4. PHE 5. Jaiaw
2.	33/11 KV S.E. Falls	1. Pohkseh 2. Umpling 3. New Colony 4. Nongmynsong 5. Demseiniong 6. MES
3.	33/11 KV Nongthymmai	1. Feeder-I 2. Feeder-II 3. Nongrim Hills 4. Bandstand 5. Springside
4.	33/11 KV Kench's Trace	1. Kench's Trace 2. Madan Laban 3. Lawsohtun 4. MES
5.	33/11 KV Mawprem	1. Iewduh 2. Mawprem 3. Beadon-II

PRIORITY RANKING OF 11 KV FEEDERS IN ADMS LOGIC

Rank 1

MEGHALAYA/33-11KV METER FACTORY/11KV PHE FRTU --> 0

MEGHALAYA/33-11KV METER FACTORY/11KV JAIAW --> 0

MEGHALAYA/33-11KV METER FACTORY/11KV MAWROH --> 0

MEGHALAYA/33-11KV SE FALLS/11KV UMPLING --> 0

MEGHALAYA/33-11KV SE FALLS/11KV MES --> 0

MEGHALAYA/33-11KV MAWPREM/11KV IEWDUH --> 0

MEGHALAYA/33-11KV METER FACTORY/11KV OAKLAND --> 0

MEGHALAYA/33-11KV KENCH TRACE/11KV LAWSOHTUN --> 0

MEGHALAYA/33-11KV KENCH TRACE/11KV MADAN LABAN --> 0

MEGHALAYA/33-11KV KENCH TRACE/11KV MES --> 0

MEGHALAYA/33-11KV NONGTHYMMAI/11KV BAND STAND --> 0

MEGHALAYA/33-11KV NONGTHYMMAI/11KV DHANKHETI --> 0

MEGHALAYA/33-11KV NONGTHYMMAI/11KV POHKTIEH --> 0

MEGHALAYA/33-11KV MAWPREM/11KV MAWPREM --> 0

PARAMETERS OF ADMS LOGIC

Logic Name *
SLDC

☑ Enable/Disable Logic

Activation
Always

Check Block
15(Min.)

Start Delay(Min.) *
5

End Block
10

Logic Repeat Delay(Min.) *
1

Inter Rank Type
Daily

Reset Timer(Min.) *
1440

Update Logic

TRIPPING REPORT - FEBRUARY 2021

Tripping Report

Start Time	End Time	Duration	Object	Quality	Reason	Load Shed
24/02/2021 09:50:17.054(R)	24/02/2021 09:58:03.329	00:07:46.275	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	1.38
24/02/2021 09:50:15.577(R)	24/02/2021 09:58:26.466	00:08:10.889	33-11KV SE FALLS/11KV MES/CB STATUS	Good	Event	-0.01
24/02/2021 09:50:13.351(R)	24/02/2021 09:58:57.925	00:08:44.574	33-11KV SE FALLS/11KV NEW COLONY/CB STATUS	Good	Event	458676.78
23/02/2021 10:13:12.084(R)	23/02/2021 10:17:24.788	00:04:12.704	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	1.62
23/02/2021 10:13:06.192(R)	23/02/2021 10:17:02.472	00:03:56.280	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	1.16
20/02/2021 15:35:11.676(R)	20/02/2021 15:35:56.236	00:00:44.560	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00
20/02/2021 15:34:01.881(R)	20/02/2021 15:35:03.596	00:01:01.715	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Load Shedding	1.04
20/02/2021 15:33:01.874(R)	20/02/2021 15:35:11.575	00:02:09.701	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Load Shedding	1.09
20/02/2021 15:32:01.763(R)	20/02/2021 15:34:54.765	00:02:53.002	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Load Shedding	0.40
20/02/2021 15:21:00.762(R)	20/02/2021 15:25:41.630	00:04:40.868	33-11KV MAWPREM/11KV MAWPREM/CB STATUS	Good	Load Shedding	0.24
20/02/2021 15:17:00.680(R)	20/02/2021 15:26:33.314	00:09:32.634	33-11KV MAWPREM/11KV BEADON/CB STATUS	Good	Load Shedding	0.00
19/02/2021 13:28:49.443(R)	19/02/2021 14:05:28.697	00:36:39.254	33-11KV MAWPREM/11KV IEWDUH/CB STATUS	Good	Event	1.42
19/02/2021 10:47:26.176(R)	19/02/2021 10:59:15.180	00:11:49.004	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	1.38
18/02/2021 12:49:59.236(R)	18/02/2021 12:56:48.170	00:06:48.934	33-11KV NONGTHYMMAI/11KV BAND STAND/CB STATUS	Good	Event	1.73
18/02/2021 08:34:11.183(R)	18/02/2021 09:01:24.673	00:27:13.490	33-11KV NONGTHYMMAI/11KV NONGRIM/CB STATUS	Good	Event	0.89
18/02/2021 00:54:27.196(R)	18/02/2021 01:01:58.504	00:07:31.308	33-11KV NONGTHYMMAI/11KV NONGRIM/CB STATUS	Good	Event	0.37
17/02/2021 02:57:06.963(R)	17/02/2021 02:59:13.895	00:02:06.932	33-11KV MAWPREM/11KV IEWDUH/CB STATUS	Good	Event	0.29
16/02/2021 19:01:02.380(R)	16/02/2021 20:00:34.248	00:59:31.868	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Event	0.00
16/02/2021 19:00:51.165(R)	16/02/2021 20:00:17.681	00:59:26.516	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.00
16/02/2021 19:00:47.327(R)	16/02/2021 20:00:29.299	00:59:41.972	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
16/02/2021 19:00:45.610(R)	16/02/2021 20:00:00.508	00:59:14.898	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00
16/02/2021 19:00:42.681(R)	16/02/2021 20:00:08.881	00:59:26.200	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.00

TRIPPING REPORT – MARCH 2021

Tripping Report

30/03/2021 01:55:31.748(R)	30/03/2021 01:57:23.920	00:01:52.172	33-11KV MAWPREM/11KV IEWDUH/CB STATUS	Good	Event	1.10
30/03/2021 01:52:18.037(R)	30/03/2021 01:55:00.979	00:02:42.942	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.36
30/03/2021 01:52:04.115(R)	30/03/2021 02:25:07.636	00:33:03.521	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	0.00
29/03/2021 12:14:29.542(R)	29/03/2021 12:15:31.501	00:01:01.959	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	0.00
29/03/2021 12:14:02.654(R)	29/03/2021 12:15:18.360	00:01:15.706	33-11KV SE FALLS/11KV NEW COLONY/CB STATUS	Good	Event	0.00
29/03/2021 12:13:59.623(R)	29/03/2021 12:15:23.022	00:01:23.399	33-11KV SE FALLS/11KV MES/CB STATUS	Good	Event	0.00
29/03/2021 05:41:00.073(R)	29/03/2021 05:42:38.683	00:01:38.610	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.68
28/03/2021 13:54:55.258(R)	28/03/2021 13:58:58.249	00:04:02.991	33-11KV SE FALLS/11KV MES/CB STATUS	Good	Event	0.00
27/03/2021 17:00:31.673(R)	27/03/2021 17:00:57.855	00:00:26.182	33-11KV MAWPREM/11KV MAWPREM/CB STATUS	Good	Event	0.24
27/03/2021 13:07:38.363(R)	27/03/2021 13:08:38.667	00:01:00.304	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Load Shedding	1.26
27/03/2021 13:06:38.357(R)	27/03/2021 13:08:54.832	00:02:16.475	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Load Shedding	0.78
27/03/2021 13:05:38.352(R)	27/03/2021 13:08:14.623	00:02:36.271	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Load Shedding	0.28
27/03/2021 13:04:39.110(R)	27/03/2021 13:05:51.237	00:01:12.127	33-11KV MAWPREM/11KV MAWPREM/CB STATUS	Good	Load Shedding	0.26
27/03/2021 13:03:39.085(R)	27/03/2021 13:05:30.291	00:01:51.206	33-11KV MAWPREM/11KV IEWDUH/CB STATUS	Good	Load Shedding	1.14
27/03/2021 11:49:46.662(R)	27/03/2021 12:15:49.732	00:26:03.070	33-11KV MAWPREM/11KV MAWPREM/CB STATUS	Good	Event	0.21
27/03/2021 08:15:04.747(R)	27/03/2021 08:19:45.297	00:04:40.550	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	0.00
26/03/2021 13:53:01.537(R)	26/03/2021 13:54:58.322	00:01:56.785	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.84
26/03/2021 13:19:43.881(R)	26/03/2021 13:20:33.096	00:00:49.215	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00
26/03/2021 13:19:40.053(R)	26/03/2021 13:20:20.669	00:00:40.616	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
26/03/2021 13:16:58.510(R)	26/03/2021 13:18:02.261	00:01:03.751	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Event	0.00
26/03/2021 13:16:55.780(R)	26/03/2021 13:17:47.109	00:00:51.329	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.00
26/03/2021 13:16:53.255(R)	26/03/2021 13:18:16.505	00:01:23.250	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
26/03/2021 13:16:51.639(R)	26/03/2021 13:18:25.496	00:01:33.857	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00

TRIPPING REPORT – MAY 2021

Tripping Report

Start Time	End Time	Duration	Object	Quality	Reason	Load Shed
30/05/2021 17:25:19.133(R)	30/05/2021 17:30:57.616	00:05:38.483	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.14
25/05/2021 07:38:01.704(R)	25/05/2021 07:43:39.550	00:05:37.846	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Load Shedding	0.00
25/05/2021 07:22:01.091(R)	25/05/2021 07:24:43.382	00:02:42.291	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
22/05/2021 16:39:51.727(R)	22/05/2021 16:43:22.862	00:03:31.135	33-11KV SE FALLS/11KV NEW COLONY/CB STATUS	Good	Event	49.98
22/05/2021 16:39:32.427(R)	22/05/2021 16:43:25.094	00:03:52.667	33-11KV SE FALLS/11KV MES/CB STATUS	Good	Event	0.02
22/05/2021 16:39:29.295(R)	22/05/2021 16:43:29.631	00:04:00.336	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	1.42
22/05/2021 16:12:21.784(R)	22/05/2021 16:12:51.541	00:00:29.757	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00
22/05/2021 16:07:14.467(R)	22/05/2021 16:11:22.684	00:04:08.217	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.00
22/05/2021 16:07:12.750(R)	22/05/2021 16:11:37.735	00:04:24.985	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Event	0.00
22/05/2021 16:07:09.518(R)	22/05/2021 16:12:02.769	00:04:53.251	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
22/05/2021 16:07:07.801(R)	22/05/2021 16:12:21.683	00:05:13.882	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00
22/05/2021 16:07:06.483(R)	22/05/2021 16:11:04.803	00:03:58.320	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.00
22/05/2021 04:41:59.719(R)	22/05/2021 04:45:15.422	00:03:15.703	33-11KV MAWPREM/11KV BEADON/CB STATUS	Good	Event	0.00
21/05/2021 22:33:43.965(R)	21/05/2021 22:54:39.755	00:20:55.790	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	1.42
21/05/2021 22:14:09.621(R)	21/05/2021 22:25:35.944	00:11:26.323	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	1.42
21/05/2021 14:22:28.571(R)	21/05/2021 14:22:54.245	00:00:25.674	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.15
21/05/2021 12:31:28.435(R)	21/05/2021 12:32:28.939	00:01:00.504	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.19
20/05/2021 15:13:13.745(R)	20/05/2021 15:14:26.881	00:01:13.136	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.65
20/05/2021 08:29:28.761(R)	20/05/2021 08:39:35.846	00:10:07.085	33-11KV MAWPREM/11KV BEADON/CB STATUS	Good	Event	0.00
19/05/2021 18:14:44.677(R)	19/05/2021 18:23:16.208	00:08:31.531	33-11KV SE FALLS/11KV MONGMYNSONG FDR/CB STATUS	Good	Event	1.42
17/05/2021 15:05:35.500(R)	17/05/2021 15:32:16.991	00:26:41.491	33-11KV MAWPREM/11KV IEWDUH/CB STATUS	Good	Event	0.61
17/05/2021 13:30:20.185(R)	17/05/2021 13:32:41.291	00:02:21.106	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Event	0.24

TRIPPING REPORT – OCTOBER 2021

Tripping Report

Start Time	End Time	Duration	Object	Quality	Reason	Load Shed
15/10/2021 15:29:02.585(R)	15/10/2021 15:36:00.197	00:06:57.614	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	1.06
14/10/2021 12:57:59.933(R)	14/10/2021 12:59:46.885	00:01:46.952	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.00
14/10/2021 12:57:56.295(R)	14/10/2021 12:59:37.772	00:01:41.477	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.00
14/10/2021 12:57:13.664(R)	14/10/2021 12:57:47.606	00:00:33.942	33-11KV METER FACTORY/11KV INCOMER-1/CB STATUS	Good	Event	0.00
14/10/2021 12:57:13.664(R)	14/10/2021 13:00:57.926	00:03:44.262	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.88
13/10/2021 16:34:23.220(R)	13/10/2021 16:38:10.435	00:03:47.215	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	1.13
13/10/2021 14:51:09.280(R)	13/10/2021 14:53:32.742	00:02:23.462	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	1.17
13/10/2021 14:01:37.871(R)	13/10/2021 14:01:53.529	00:00:15.658	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00
13/10/2021 13:57:47.731(R)	13/10/2021 14:01:37.770	00:03:50.039	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.62
13/10/2021 13:11:43.553(R)	13/10/2021 13:15:30.669	00:03:47.116	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.61
12/10/2021 16:05:52.871(R)	12/10/2021 16:08:07.349	00:02:14.478	33-11KV METER FACTORY/11KV JAIAW/CB STATUS	Good	Load Shedding	0.00
12/10/2021 09:07:36.930(R)	12/10/2021 09:45:52.861	00:38:15.931	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.00
12/10/2021 09:07:29.961(R)	12/10/2021 09:46:07.710	00:38:37.749	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
12/10/2021 09:07:24.909(R)	12/10/2021 09:46:29.735	00:39:04.826	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.00
11/10/2021 21:36:33.054(R)	11/10/2021 21:58:14.292	00:21:41.238	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	1.19
11/10/2021 17:31:42.542(R)	11/10/2021 17:34:02.960	00:02:20.418	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.00
11/10/2021 17:31:36.279(R)	11/10/2021 17:33:39.331	00:02:03.052	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.00
11/10/2021 17:31:33.047(R)	11/10/2021 17:34:19.732	00:02:46.685	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
11/10/2021 10:02:25.515(R)	11/10/2021 10:16:48.168	00:14:22.653	33-11KV METER FACTORY/11KV GANGESHDAS/CB STATUS	Good	Event	0.00
11/10/2021 10:02:18.938(R)	11/10/2021 10:16:12.004	00:13:53.066	33-11KV METER FACTORY/11KV PHE FRTU/CB STATUS	Good	Event	0.00
11/10/2021 10:02:17.928(R)	11/10/2021 10:16:29.177	00:14:11.249	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00
11/10/2021 10:02:15.312(R)	11/10/2021 10:15:40.379	00:13:25.067	33-11KV METER FACTORY/11KV OAKLAND/CB STATUS	Good	Event	0.00
10/10/2021 22:09:14.737(R)	10/10/2021 22:09:51.404	00:00:36.667	33-11KV METER FACTORY/11KV MAWROH/CB STATUS	Good	Event	0.00

BAR CHART FOR IMPLEMENTATION OF AUTOMATIC DEMAND MANAGEMENT SYSTEM (ADMS) as on 20.05.2021 (System commissioned on 04.09.2020)

Sl.no.	Activity	Jun'19	Jul'19	Aug'19	Sep'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20	Responsibility	Status
1	Site Survey											Done ##	Completed
2	Approval of Site Survey Reports											MePDCL/SLDC**	Completed
3	Engineering documents' approval											MePDCL/SLDC**	Completed
4	Payment against Survey Report Submission											SLDC**	Completed
5	Database building** & ADMS/SCADA Data Interface											SLDC ##	Completed
6	Material verification at sites											MePDCL/SLDC ##	Completed
7	Payment against Materials' delivery											SLDC**	
8	Final testing of ADMS/SCADA Data Interface											SLDC ##	Completed
9	Integration & Commissioning of FRTUs at Substations											MePDCL / SLDC ##	Completed
10	Site Acceptance Tests (SAT) of ADMS software functions and FRTU data communication											MePDCL / SLDC ##	Completed
11	Training											MePDCL/SLDC ##	Completed
12	Final Payment Release on Taking Over											SLDC**	Completed

ADMS IMPLEMENTATION : ASSESSED/IMPLIED BENEFITS

- **STATUTORY & TECHNICAL**
  - Compliance with Indian Electricity Grid Code Regulations.
  - Optimum scheduling & dispatch of electricity within the state.
  - Reduction in nos. of blackouts by controlling the identified 33/11 KV feeders of Sub-Stations within State.
  - Operational reliability of Transmission & Distribution network within State.
  - Increased System Load/Feeder Control and Protection for System & Grid Security/ Stability.
  - Real time data management of Sub-Stations under monitoring & Control provision.
  - Identification of revenue loss making areas through feeders dedicated monitoring & faster decision making to control the losses with scheduled power management.
  - Improved operational efficiency & better asset utilization.
- **FINANCIAL**
  - Compliance to DSM Regulations leading to avoidance of severe penalties occurred due to unscheduled overdrawal.

ADMS: PILOT PROJECT IMPLEMENTATION OUTCOME

- **IMPLEMENTED SYSTEM**
  - Pilot Project Implementation : Targeted system functional performance achieved for targeted load management of the integrated Sub-Stations.
  - Possibility of Implemented ADMS System expansion & its desired benefits for load management on wider geographical level in the state.
- **IDENTIFIED ISSUES**
  - Limited level of load relief through ADMS triggered load shedding due to connectivity of only 5 Nos. 33/11KV Sub-Stations with ADMS System.
  - Interruption in GPRS network communication between Sub-Station & ADMS System.

ADMS IMPLEMENTATION : Strategy for Full Scale ADMS Implementation in Meghalaya State

- **Extension of existing ADMS System with integration of additional 50-60 33/11 Sub-Stations across Meghalaya State to maximize the coverage of Load Shedding of the selected feeders on round robin basis to achieve effective load management.**
- **Efficient Load Management of the State power distribution through implementation of ADMS with wider geographical reach of the critical load centres/feeders : To integrate at least 40% of the current nos. of 33/11 KV Sub-Stations in Meghalaya State with ADMS System.**
- **ADMS System implementation at SLDC with enhanced System functionality with additional IT System Hardware & associated Software along with robust Cyber Security Features.**
- **Use of ADMS System functions as DMS SCADA System with practical functionalities to achieve appropriate distribution load management of the state.**
- **Establishment of connectivity from Sub-Stations to ADMS Control Center at SLDC through Fibre Optic based communication medium along with GPRS Based communication System : Availability of Redundant communication System between 33/11 KV Sub-Stations & ADMS Control Center.**
- **Strategic configuration of Feeders of various S/S for creation of Group of feeders for load shedding to control power overdrawal in rotational basis.**

Infrastructural requirement / Pre-requisites to facilitate ADMS implementation

S.No.	Nature of Work
A	**Achieved**
A.1	Upgradation of 2 Mbps to 6 Mbps Leased line (done) 1. For fast GPRS connectivity between SLDC and ADMS S/S 2. Receiving regular software patch updates for the ADMS servers
B	**Yet to be done for effective ADMS Functions utilization**
B.1	Upgradation of the SCADA-DMS Fibre Optic network Actions envisaged : a) Replenishment of defective SDH equipment cards so that the ADSS FO network under SCADA-DMS project can be revived. b) Replacement of the defective / obsoleted SDH Equipments at Sub-Stations being evisaged to be integrated with ADMS System for effective FO Network connectivity from Sub-Station to ADMS System (The FO network is intended to be used as the main communication media for ADMS implementation besides acquisition of SCADA-DMS data from RTUs)
B.2	Availability of Active Data SIMs at Sub-Stations for the backup/redundant communication medium between Sub-Station & ADMS System for transfer of data over GPRS network from Sub-Stations (4G SIM Cards at Substation for GPRS dual SIM with different Operators from any of the available Telecom Service Providers in Meghalaya State)
B.3	Extension of ADMS SMS facility to designated field officers on ADMS tripping of 11 KV feeders
B.4	FRTU panels to be kept in Remote and not Local mode : Substation personnel at ADMS substations to accept & acknowledge Alarm Annunciator provided in FRTU panels and to call SLDC after ADMS triggered tripping for necessary instruction from SLDC for feeder charging

For your precious time

Installation of AWS for Power Sector in Northeast

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

Background

IMD and Power System Operation Corporation Ltd. (POSOCO) signed a Memorandum of Understanding for optimum use of weather information / forecast in the power sector on 18 May 2015 for utilization of weather & climate services for uninterrupted, efficient and economic operation of power sector in the country; and for providing institutional support at all scales to the sector.

Weather Portal for Power Sector

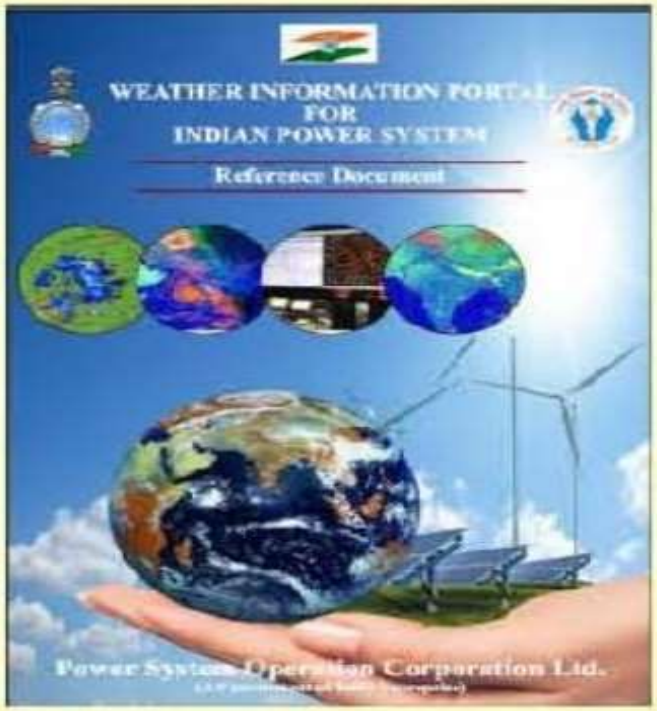
IMD and POSOCO have launched a web portal dedicated exclusively to energy sector. The portal was launched by Shri Piyush Goyal, Hon'ble Union Minister of State (IC) for Power, Coal, and New & Renewable Energy on 23rd June 2017.

The Portal (**http://amssdelhi.gov.in/NRLDC/index.html**) contains:

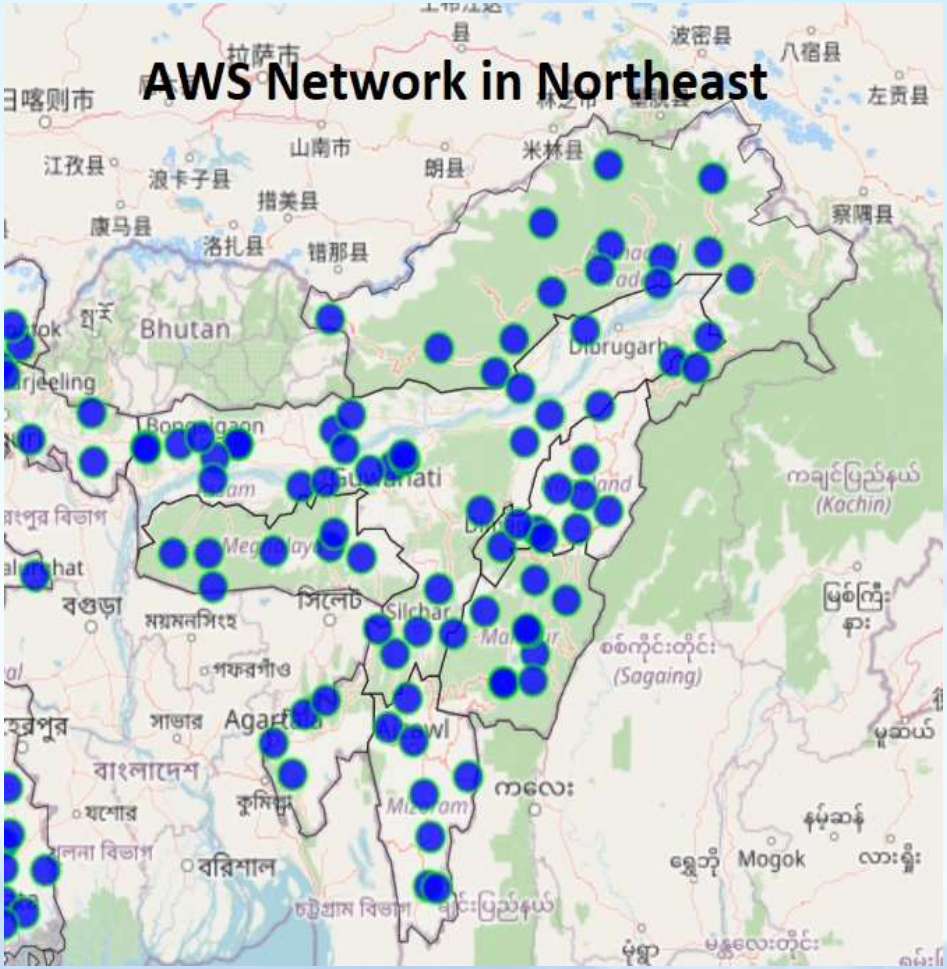
- Weather forecasts and warnings for all meteorological sub-divisions
- Nowcast warnings
- City weather forecasts &meteograms
- Satellite & RADAR information
- Colour coded warnings for severe weather events
- Forecasts for special weather phenomena such as fog, cold wave, heat wave and cyclone.

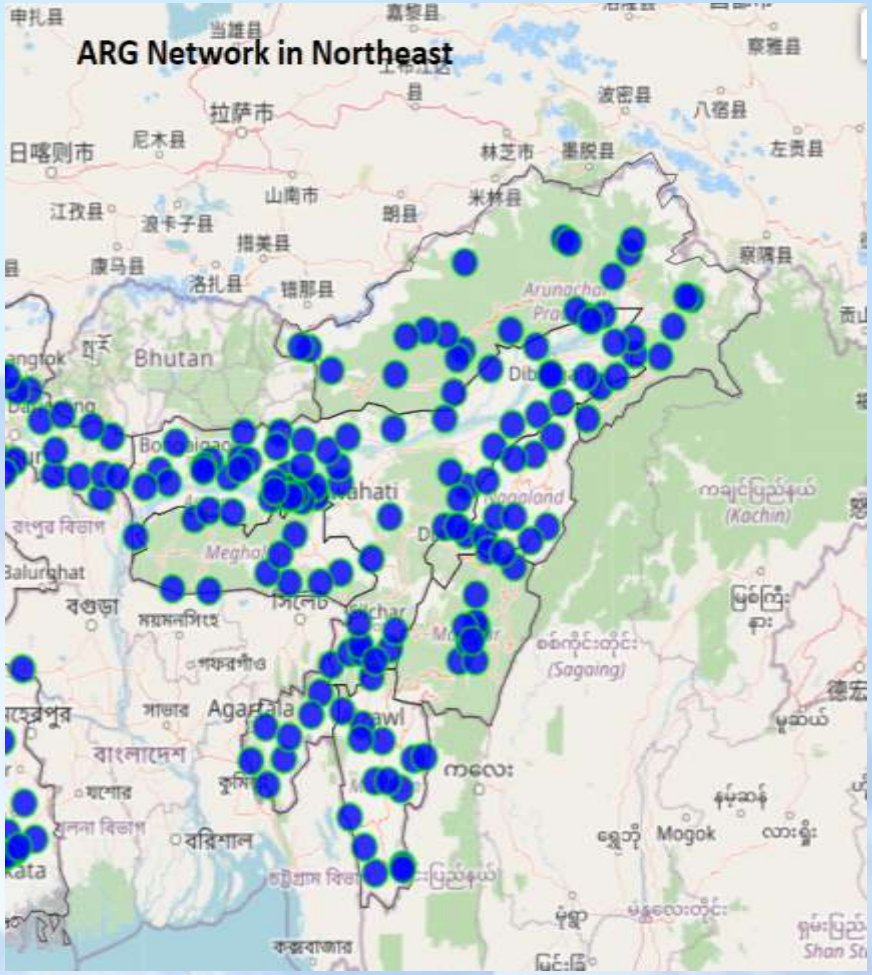
Reference Document on Weather Portal

POSOCO has released a Reference Document for use of the dedicated weather portal for the power sector. The document was launched by Hon'ble Minister of State (IC), Ministry of Power and New & Renewable Energy, Shri R.K Singh on 29 August, 2018.



Existing AWS/ARG in Northeast





Sites Inspected and Found Suitable - Tripura

Name of sub-station where AWS required to be installed	Site approved or not
S.M Nagar S/S	OK
Budhjungnagar S/S	OK
Rabindranagar S/S, Udaipur	OK
Garo Tilla S/S, Kamalpur	OK
Gournagar S/S, kailasahar	OK
Dhalabil S/S, Khowai	OK

Sites Inspected and Found Suitable - Meghalaya

Name of sub-station where AWS required to be installed	Site approved or not
Mustem West jaintia Hills District	Site suitable after slight ground labelling
Mynkre S/S and Khlieriat East Jaintia Hills District	--do--
Lad Nongkrem (Mawlyndep), East Khasi Hills District	Site suitable after slight ground labelling
Nongstoin West Khasi Hills District LAT : 25^0 $30^/$ $28.9^{//}$ N LONG : 91^0 $14^/$ $44.4^{//}$ E AREA : 15 X12 m	Site suitable after slight ground labelling Contact Person : Mr. Nongkhlaw, RE (M) : 07640090103

Sites Inspected and Found Suitable - Assam

Name of sub-station where AWS required to be installed	ADDRESS
NTPC, Bongaigaon, Salakati	OK
Gauripur	OK
BTPS	OK
Barnagar	OK
Mirza	OK
Rangia	OK
Agia	OK
Samaguri	OK
Gohpur	OK
Bokajan	
Mariani	Mr. Mrinmoy Borah, Asstt. Manager, AEGCL, Mariani
Nazira	Mr. Madhab Mandal Neog, Resident Engineer, 132 KV SS, AEGCL, Nazira
NTPS	Shri Pankha Boham, Resident Engineer 220KV Grid SS, NTPS, AEGCL, Namrup
Ledo	132 KV Margherita Sub Grid Station, Ledo, Near LEDO PHC NILOTPAL GOGOI, RESIDENT ENGINEER (M) : 70026 34841

Sites Inspected and Found Suitable – Arunachal Pradesh

Name of sub-station where AWS required to be installed	ADDRESS
Itanagar S/S(Chimpu)	OK
Deomali S/S	Sri M M Singh, Jr. Engineer 220/132/33 SS, Deomali (M) : 094360-96387/ 098625-16933

Status of AWS

- Tender Process for AWS installation is completed.
- Contract has been awarded to the firm.
- Firm is ready for installation , waiting for NOC .

- NOC is to received from concerned for installing AWS at finalized sites.

- Details of Contact person at respective Station for Installation of AWS, delivery of materials.

Thank You

Name of Substations	Salakati
	Kokrajhar
	Gauripur
	Barnagar
	APM
	Gossaigaon
	Bilasipara
	Dhaligaon
	Kamakhya
	Capital
	Sonapur
	CTPS
	Sishugram
	Baghjap
	Narengi
	Agia
	Boko
	Matia
	Sarusajai
	Jawaharnagar
	Rangia
	Nalbari
	Sipajhar
	Kamalpur
	Kukurmara
	Azara
	Hailakandi
	Dullavcherra
	Panchgram
	Srikona
	Haflong
	Pailapool
	Rowta
	Gohpur
	Sonabil
	Biswanth Chariali
	Ghoramari
	Dhekiajuli
	Depota
	Nalkata
	Majuli
	Dhemaji
	Khaloigaon
	Umrangshu
	Samaguri
	Sankardev nagar
	Mariani

	Jorhat
	Bokajan
	Diphu
	Jorhat west
	Golaghat
	Bokakhat
	Nazira
	Sibsagar
	Sonari
	LTPS
	Dibrugarh
	Behiating
	Moran
	NTPS
	Tinsukia
	Bordubi
	Rupai
	Margherita
MRT	Bongaigaon
	Guwahati
	Silchar
	Tezpur
	Jorhat
	Tinsukia
PLCC	Jorhat
	Guwahati

– Itanagar 132kV D/c line at Gohpur. The LILO along with bays at Gohpur would be implemented by AEGCL.

5.3 GM, POWERGRID said that the existing 132 kV sub-station at Gohpur has single main bus switching arrangement, which can impact reliability of the system. DGM, AEGCL said that to improve reliability, the switching scheme at Gohpur 132 kV S/s would be modified from single main bus to double main bus scheme.

5.4 Chief Engineer, CEA stated that Biswanath Chariali (PG) – Itanagar 132kV D/c line is an ISTS line being implemented as a part of NERSS-II through TBCB and LILO of an ISTS line should preferably be implemented as ISTS work. He requested AEGCL to confirm the availability of space for 2 no. 132 kV bays at Gohpur for the proposed LILO and implementing double main bus switching scheme at Gohpur.

5.5 DGM, AEGCL stated that the availability of space for 2 no. 132 kV bays at Gohpur and implementing double main bus switching scheme at Gohpur would be informed to CEA after the site visit.

5.6 GM, POWERGRID informed that RfP for the scheme NERSS-II Part-B and NERSS-V has been issued in Sep. 2016 and bidders are to be informed about the change in scope before the bid submission date.

5.7 After further discussion, it was decided that the LILO of one circuit of Biswanath Chariali (PG) – Itanagar 132kV D/c at Gohpur (AEGCL) would be implemented through TBCB as ISTS work as a part of NERSS-II Part-B and the scope of works of NERS-II Part-B would be modified accordingly. It was also decided that AEGCL would implement the double main bus switching scheme at Gohpur 132 kV S/S along with 2 no. 132 kV bays at Gohpur before Dec., 2019.

5.8 Subsequently, AEGCL vide its letter no. AEGCI/MD/13th Plan/Tech -593/2014-15/9 dated 30-11-2016 (copy enclosed at Annexure-II) has informed that due to space constraint at Gohpur for accommodating double main bus switching scheme, they have proposed to switch over from AIS to GIS at Gohpur 132 kV S/S along with implementation of 2 no. 132 kV GIS bays for the LILO of one circuit of Biswanath Chariali (PG) – Itanagar 132kV D/c at Gohpur (AEGCL).

6.0 Strengthening of evacuation system of Pare HEP of NEEPCO

6.1 Director, CEA stated that Pare HEP by NEEPCO is expected to be commissioned by Dec., 2016. Evacuation system from Pare HEP consist of

i) LILO of Ranganadi-Naharlagun / Nirjuli 132 kV S/C line at pare HEP

ii) LILO of one circuit of Ranganadi-Itanagar 132 kV D/C line at Pare HEP.

6.2 He added that out of four 132 kV lines evacuating from Pare HEP, two are connected to Ranganadi HEP and remaining two to the load centres viz. Naharlagun and Itanagar. System studies have been carried out for 2018-19 time-frame corresponding to high hydro and low hydro conditions. It is observed that Ranganadi HEP injects power at Pare HEP through Pare – Ranganadi 132kV 2xS/c lines, thereby leaving only 2 no. 132kV S/c lines i.e. Pare – Itanagar and Pare – Naharlagun / Nirjuli for evacuation of 110MW power

from Pare HEP and additional power injected at Pare HEP from Ranganadi HEP. This causes overloading of Pare – Naharlagun / Nirjuli 132kV S/c line (Pare – Naharlagun: 129MW, Naharlagun – Nirjuli: 91MW). In order to overcome this situation, following transmission system modification is proposed to be implemented as NERSS-IX:

(i) Bypassing of LILO of Ranganadi - Naharlagun / Nirjuli at Pare HEP so as to form direct Ranganadi - Naharlagun / Nirjuli 132 kV S/C line - ISTS by NEEPCO

(ii) Pare HEP (From LILO point) – North Lakhimpur (AEGCL) 132kV D/c line (with ACSR Zebra conductor) – along with 2 no. 132 kV bays at North Lakhimpur ISTS through TBCB

(iii) LILO of one circuit of Pare HEP – North Lakhimpur (AEGCL) 132kV D/c line (with ACSR Zebra) at Nirjuli substation – ISTS through TBCB

(iv) Re-conductoring of LILO portion at Pare end (of Ranganadi – Naharlagun / Nirjuli 132kV S/c line) with HTLS (HTLS equivalent to ACSR Zebra) along with modification of 132kV bay equipment at Pare HEP – by NEEPCO.

6.3 DGM, NEEPCO stated that 132 kV bay equipment at Pare HEP had already been erected.

6.4 Director, CEA stated that to recover additional investment in the transmission and bay equipment modification as suggested above, M/s NEEPCO may file revised tariff petition in CERC. He enquired about the availability of space at North Lakhimpur 132 kV S/S for termination of Pare-North Lakhimpur 132 kV D/C line and at Nirjuli for LILO of one circuit of Pare-North Lakhimpur 132 kV D/C line.

6.5 DGM, AEGCL informed that space for two number 132kV line bays at North Lakhimpur is available. GM, POWRGRID also confirmed the availability of space for 2 no. 132 kV line bays at Nirjuli S/S.

6.6 After further discussion, following additional / modification in the transmission system associated with Pare HEP was agreed as a part of NERSS-IX.

a. Bypassing of LILO of Ranganadi - Naharlagun / Nirjuli at Pare HEP so as to form direct Ranganadi - Naharlagun / Nirjuli 132 kV S/C line – ISTS by NEEPCO.

b. Pare HEP (from LILO point) – North Lakhimpur (AEGCL) 132kV D/c line (with ACSR Zebra conductor) along with 2 no. 132 kV line bays at North Lakhimpur – ISTS (implementation through TBCB/RTM to be decided by empowered committee).

c. LILO of one circuit of Pare HEP – North Lakhimpur (AEGCL) 132kV D/c line (with ACSR Zebra) at Nirjuli substation – ISTS (implementation through TBCB/RTM to be decided by empowered committee).

d. Re-conductoring of LILO portion at Pare end (of Ranganadi – Naharlagun / Nirjuli 132kV S/c line) with HTLS (HTLS equivalent to ACSR Zebra) along with modification of 132kV bay equipment at Pare HEP – ISTS by NEEPCO

e. 2 no. 132 kV bays at Nirjuli S/S for termination of LILO of one circuit of Pare HEP – North Lakhimpur (AEGCL) 132kV D/c line (with ACSR Zebra) – ISTS by POWERGRID.

7.0 Augmentation of 2x30MVA, 220/132kV substation at Mokokchung (PG)

7.1 Director, CEA stated that Mariani (PG)-Mokokchung (PG) 220 kV D/C line supplies power to 2x30 MVA 220/132 kV S/S at Mokokchung (PG) SS, which in turn feeds power to Mokokchung & other downstream areas of Nagaland. Thus, Mokokchung (PG) substation is a vital node for supplying power to Nagaland. He added that under N-1 contingency of ICT at Mokokchung the other ICT would be over loaded and loading has to be restricted to 30 MW. So it was proposed to enhance the transformation capacity at Mokokchung (PG) by installation of third 220/132 kV ICT of 30MVA (3x10MVA) single phase units.

7.2 Director, CEA stated that Mokokchung (PG) belongs to POWERGRID, so augmentation should be done by POWERGRID. The tariff policy in vogue does not exempt implementation of augmentation of sub-station from TBCB. Empowered Committee will take the decision whether the project will be done by POWERGRID or it goes through TBCB.

7.3 GM, POWERGRID informed that the Mokokchung is a GIS station.

7.4 After further discussions, augmentation of 220/132 kV Mokokchung (PG) S/S by 30 MVA (3x10 MVA single phase) was agreed to be implemented as ISTS work with GIS bays as a part of NERSS-VIII. Executing agency for the augmentation would be decided by the Empowered Committee on transmission.

8.0 Conversion of 2 nos. 63 MVAR Line Reactors at Bishwanath Chariali end of Biswanath Chariali – Lower Subansiri 400kV (1st) D/c line to Bus Reactors

8.1 Director, CEA stated that power evacuation system from Lower Subansiri HEP inter-alia, consist of Lower Subansiri - Biswanath Chariali 400 kV 2xD/C lines along with 4x80 MVAR line reactors at Biswanath Chariali. POWERGRID has informed that due to delay in the commissioning of Lower Subansiri HEP, construction of Lower Subansiri - Biswanath Chariali lines have been deferred and the 4 nos. 420kV, 63MVAR line reactors at Biswanath Chariali of the lines are not being used at this moment.

8.2 He added that due to high voltages observed at 400kV level at Biswanath Chariali, Balipara and Ranganadi substations, numbers of 400 kV lines from Bongaigaon, Balipara, Biswanath Chariali, Ranganadi are being kept open in off peak hours to maintain the nodal voltages within stipulated limits.

8.3 He also said that presently 420 kV 2x80MVAR Bus Reactors are in service at Biswanath Chariali. So, in order to contain high voltage in upper Assam and Arunachal Pradesh, POWERGRID has proposed that two out of four 63 MVAR Line Reactors at Biswanath Chariali may be utilized as Bus Reactors.

8.4 GM, POWERGRID suggested that in order to have better control of the over voltages all the four line reactors may be converted as bus reactors.

North East Transmission Company (NETC)

Presentation
On
O&M practices of Transmission Line

NERPC's 183rd OCC meeting at Cherrapunjee (Meghalaya)

On 21.10.2021

About NETC & Its Assets

- North East Transmission Company (NETC) is a JV company of POWERGRID, OTPC, AEGCL, Govt. of Tripura, Mizoram, Manipur, Meghalaya and Nagaland.
- Equity shares – POWERGRID 26%, OTPC 26%, AEGCL 13%, Govt. of Tripura 10%, Mizoram 10%, Manipur 6%, Meghalaya 5% and Nagaland 4%.
- NETC's 400Kv D/C Transmission System with line corridor length of 662.8 km constructed for evacuation of power from OTPC's 726.6 MW Gas Based Combined Cycle Power Plant Palatana (Tripura) and is passing through the States of Tripura, Meghalaya and Assam.

400 kV D/C Palatana to Silchar line - 247 km
400 kV Silchar – Azara line - 256 km (Ckt-I)
400 kV Silchar – Byrnihat line - 214 km (Ckt-II)
400 kV Azara- Bongaigaon line - 159 km (Ckt-I)
400 kV Byrnihat – Bongaigaon line - 201 km (Ckt-II)

- This Transmission System is catering 1/3rd power requirement of NER.

O&M of NETC's lines - History

- **A Company with committed excellence started O&M on its own**
- Byrnihat -Bongaigaon Section (201 km)- Since March' 2017
- Silchar- Byrnihat Section (214 km) - March' 2020
- Palatana- Silchar Section (247 km) - August' 2021

- **Transmission line availability (Target 100%)**

Sl. No.	Year	Availability
1.	2016-17	99.89%
2.	2017-18	99.90%
3.	2018-19	99.97%
4.	2019-20	99.98%
5.	2020-21	99.94%

Major factors affecting O&M

- Deficiencies of construction stage.
- Difficult geographical and environmental condition of the terrain.
- Presence of wild animal corridor.
- Theft, ROW & Legal issues.
- Stretches with High Isokeraunic level.
- Stretches with high soil resistivity.
- Subsequent development of infrastructures - industry, road, rail,. including urbanization.

Major O&M challenges faced by NETC

1. Exposure of tower foundation due to heavy rainfall, land slides, earthquake etc.
2. Submergence of tower stubs in water logged low lying area.
3. Change in major river (Brahmaputra) course.
4. Steep hillocks without approach road.
5. Fast growth of vegetation and bamboos.
6. Burning of trees bushes & forest by local forest settlers in the line corridor for Jhoom cultivation.
7. Industrial pollution causing outage of line due to deposition of dust particles on porcelain insulators including reduction of life of towers due to severe rusting caused by acid rain.
8. Severe lightning causing outages due to high soil resistivity.
9. In paddy land area digging/development of pond underneath the line corridor near tower for fish farming.

Deployment by NETC for best O&M practices:

- Dedicated experienced staff available 24x7 with suitable vehicle, T&P, PPE and minimum required line materials.
- Advance annual planning further broken down to monthly & weekly planning for patrolling.
- Use of modern communication equipment e.g. mobile phone, walky-talky etc. including sharing information through WhatsApp email etc.
- Use of GPS technology of Android based Mobile Application for updation of real time patrolling report of the towers.
- Use of modern transmission line maintenance instrument e.g. Thermo-vision Camera, PID, TFR equipment, Binocular etc. including ERS.

Measures adopted for mitigation of O&M challenges

1. **Vulnerability of line & exposure of foundation due to heavy rains, land slides & earthquake.**

i) Temporary protection with sand bags & bamboo barricade.

ii) Permanent protection by RRM wall.

iii) Vegetation / plantation grow to strengthen loose soil.

2. **Submergence of towers (300 nos.) in low lying water logged area**

Stub encasement along with anti rust painting to protect from rusting.

3. **Industrial pollution:**

i) **Causing Rusting of towers:** Painting of towers with Zinc rich anti corrosive paint.

ii) **Deposition of Dust Particles on Porcelain Insulators**: Replacement of porcelain insulators with polymer insulators.

Measures adopted for mitigation of O&M challenges - contd…

4. **Major river (Brahmaputra) changing its course**

   Relocated tower with pile foundation.

5. **Severe lightning causing outages due to high soil resistivity in Meghalaya.**

Adopted chemical earthing using Sodium bentonite and Marconite to reduce the Tower Footing Resistance (TFR). **To eliminate lightning outages, NETC need NERPC's support to install 400 kV TLA in critical section**.

Measures adopted for mitigation of O&M challenges - contd.

6. **Fast growth of vegetation and bamboos:**
   Clearance of vegetation on regular basis and as per site requirement in addition to the O&M protocol.

7. **Burning of trees bushes & forest by local forest settlers in the line corridor for Jhoom cultivation:**
   Educating forest dwellers in collaboration with local administration to develop environmental awareness .

8. To attend maximum rectification of defects during opportunity shut down.

O&M practices being followed in NETC

Patrolling (Non shutdown)

i) Ground Patrolling

ii) Tower Top Patrolling

Three cycles of Ground Patrolling (Non shutdown)

i) Pre Monsoon and before High wind season Cycle - January to March

ii) During Monsoon - April to September

iii) Post Monsoon - October to December

Additionally, after each tripping (transient / non transient nature) – Post fault Patrolling done as per the Relay Indication and as per Disturbance Recorder (DR) analysis showing fault distance.

ROUTINE ACTIVITIES COVERED UNDER TL MAINTENANCE

- **Ground Patrolling – Ground inspection of TL for** Checking of tower foundation including criticality which are prone to landslide, soil erosion, excavation of soil, change of river course, earthing condition, vegetation infringement, any new construction under the line corridor and other visual inspection of installed tower materials/parts etc and a defect list prepared for rectification of the same on regular basis.

- **Tower top patrolling is carried out** to find out the untraceable faults/defects during ground patrolling in the insulators, earth wire & conductor accessories such as Jumper cone nuts & bolts, hardware fittings, copper bond, earth wire jumpers etc including presence of deposition of dust particles on insulators and flashover marks. Accordingly a defect list prepared for rectification of the same during Planned/Opportunity shutdown depending on severity of the defect.

The Output:

A) *Lightening related tripping during the year 2018, 2019 & 2020:*

After all these activities, the nos. of tripping (s) due to lightning in the year 2018, 2019 & 2020 reduced marginally. Data of the tripping during post & pre of these activities are as below:

LNCC TRIPPING			
MONTH	2018	2019	2020
	No. of tripping	No. of tripping	No. of tripping
January	0	0	0
February	5	0	0
March	2	1	3
April	4	3	4
May	1	4	4
June	3	3	1
July	1	2	0
August	3	2	0
Sept	2	4	1
October	4	1	0
November	0	0	0
December	0	0	0
TOTAL	**25**	**20**	**13**

O&M practices being followed in NETC- contd.

Terrain identification criteria

- **Normal terrain**
- **Vulnerable terrain** –Theft prone, proximity to mines / blasting area, river / highways & railway line crossings, land slide area.
- **Most Vulnerable terrain** – Repeated thefts, River changing course, disturbed & critical land slide area.
- ***Inspection is done on regular basis in vulnerable and most vulnerable areas.***

Defect identification & Categorisation

Category A - Defects to be attended without shut down

Category B - Defects need shut down

Condition monitoring of transmission line.

- Good monitoring techniques turns investment cost in to cost benefit

a) <u>Tower footing resistance measurement (TFR):</u>

- Measured in dry weather condition.
- TFR value is maintained less than 10 ohms to avoid flashover from lightning and high voltage surge

b) <u>Thermovison scanning of the line:</u>

- Identification of hot spot in the conductor joints, loose connections and other hardware connections.

<u>c) Punctured Insulator Detection:</u>

- To detect healthiness of the porcelain insulators.

<u>d) Checking of clearance of conductor:</u>

- To maintain safe distance from roads, rail tracks, nearby trees etc. using electronic instrument under live condition.

Measurement of TFR

Thermovison Scanning

Improvement and protection activities

Other Activities:

Other activities like Temporary protection wall for tower footing protection, rectification of exposed CP earthing due to soil erosion, application of Anti-Corrosive paint to avoid rusting of Counter poise earthing, tightening of copper bonds, earth-wire jumpers etc. are carried out from time to time.

Temporary protection wall to avoid further soil erosion around the tower leg.

Application of (Anti-Corrosive) to avoid further rusting of CP earthing.

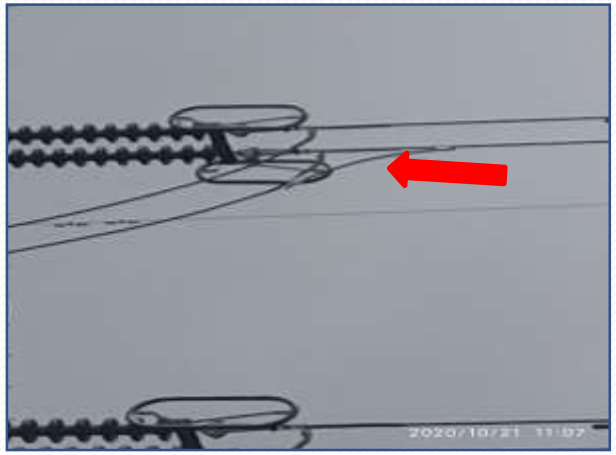
Stub encasement work for protection of tower legs and bracing members for water logged towers (During monsoon).

Improvement and protection activities

Before rectification (burned of jumper cone)

Before rectification (Rusted jumper N&B)

Vegetation infringement under the line corridor



After rectification by installing Wedge connector

After *rectification*

After clearing the vegetation infringement

Safety

- **Safety of workers & environment** are uttermost priority.
- NETC has initiated various programmes and measures to maintain safe and accident free working environment by conducting various safety awareness programmes:

a) TBT:

Tool box talk is an informal meeting focuses on safety topics related to specific work. It is conducted on a daily basis before starting any site activity.

b) Quarterly Safety meeting:

Quarterly safety meet is conducted with Mock Drill & awareness topics related to accident/ incidents/ near misses including status of PPE's & T&P's etc.

Daily TBT and safety oath conducting at worksite.

Quarterly safety meeting

Special measures

- Sharing of weather condition on daily basis including any sudden change of weather helping day to day maintenance work.
- Clear instructions / responsibilities to individuals before taking up any maintenance work.
- Presence of responsible executive during shutdown work.
- Planning / pooling of man & material before any shutdown work.
- Readiness for maximum utilization of opportunity shut down at a short notice.
- Analysis of each and every fault and sharing results using WhatsApp.
- Upgradation of skill through technical training.

Innovative measures

- **App based O&M of transmission line:**
  - NETC has started the App based O&M in the Palatana-Silchar section of the 400 KV Palatana Transmission system.
  - At present it is found to be quite fruit full.
  - For implementation of the same in other sections viz. Silchar-Byrnihat & Byrnihat-Bongaigaon is under process.
- **Use of UAV for tower top Patrolling:**

  A detail study for carrying out the tower top patrolling by using the UAV (drone) is also in process.

Working with NER partners

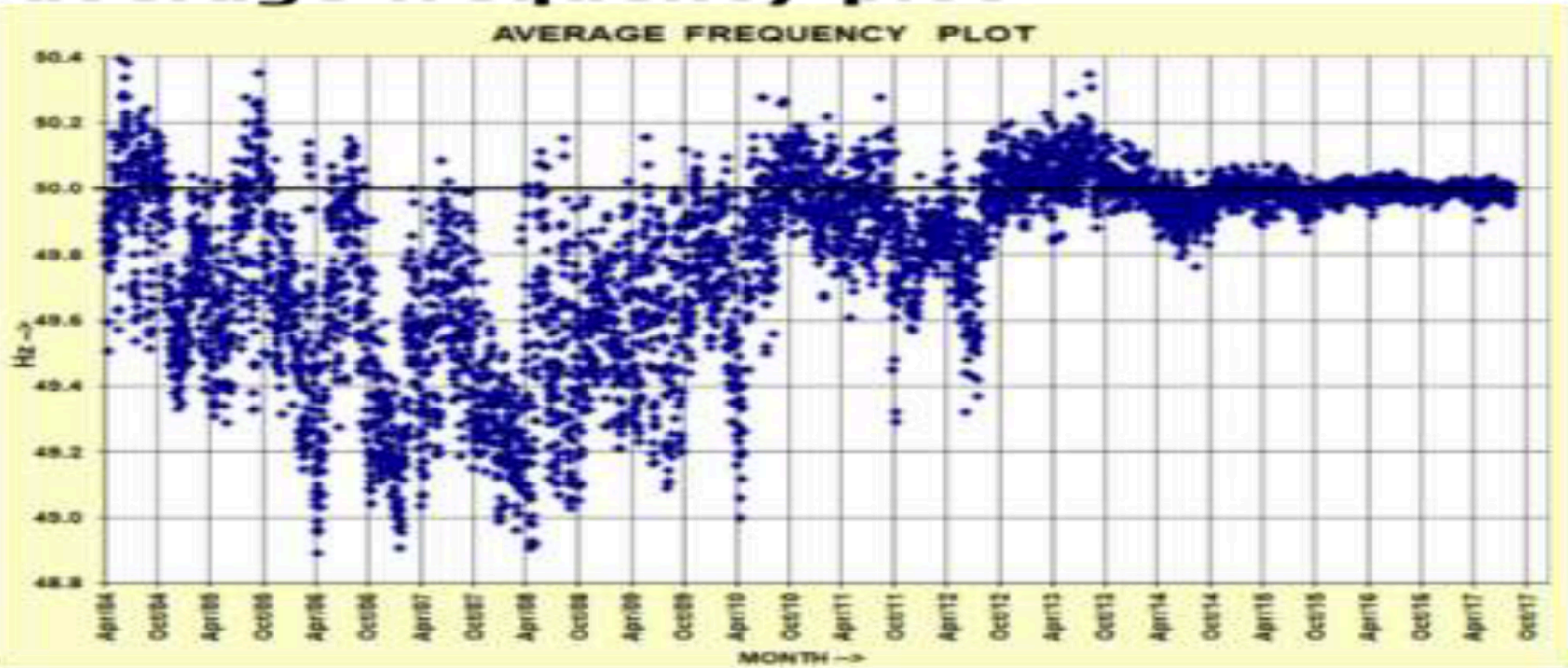
NETC is interested for inking MOUs with Generation, Transmission & Distribution companies in NER states to provide

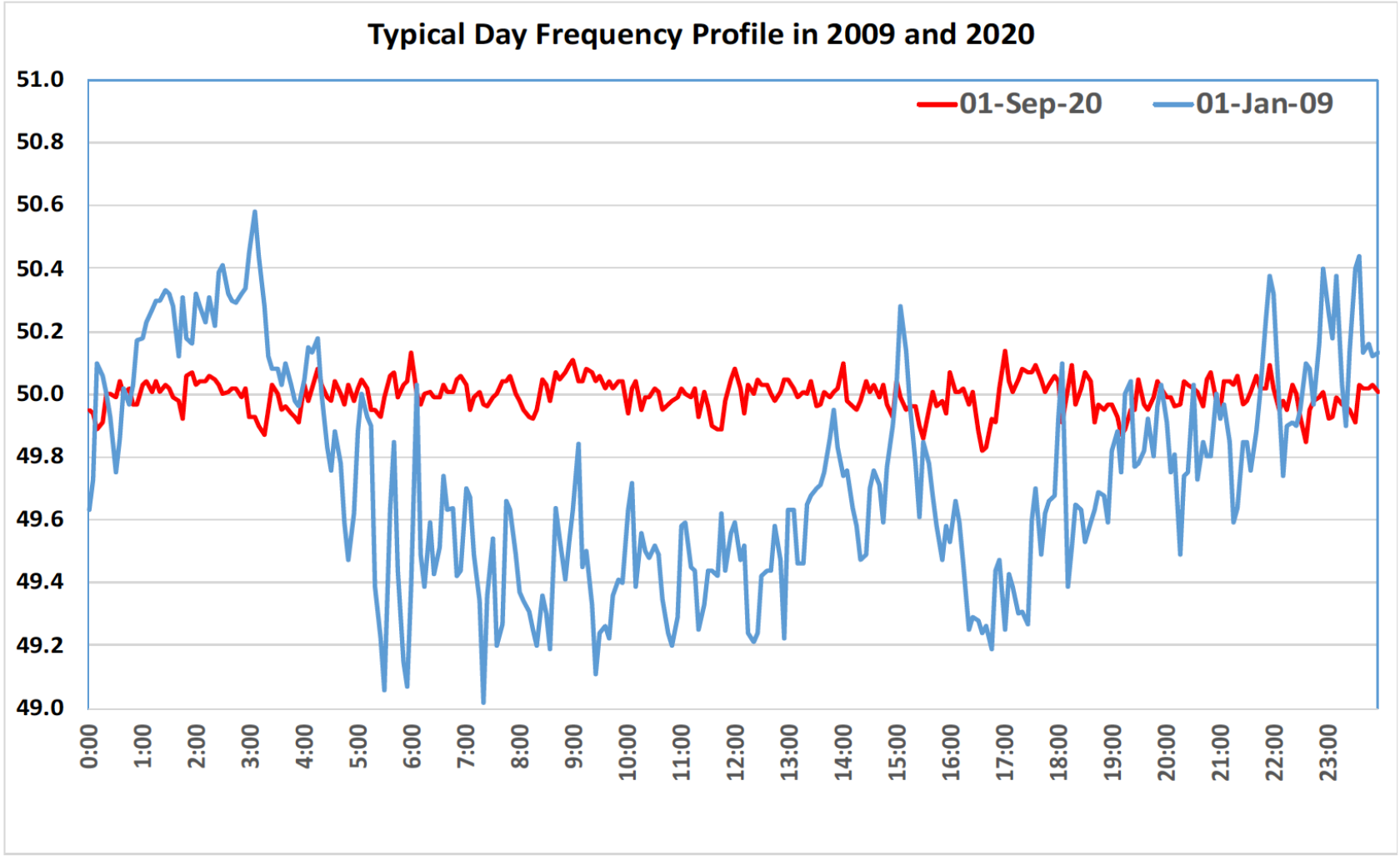
- PMC in the field of Construction and O&M of transmission lines & substations.
- The service for Thermovision Scanning and also for Punctured Insulator Detection (PID).
- Signature analysis of power & distribution transformers.
- Supervisory /advisory support for smart metering and development of Decision Support System.
- Venturing in Renewable energy sector- Solar, wind, and solar-wind Hybrid starting with micro / mini projects.

THANK YOU

DRAFT DSM-2021
183RD OCC
NERPC

Improved Frequency Profile – average frequency plot




Typical Day Frequency Profile in 2009 and 2020
01-Sep-20
01-Jan-09
51.0
50.8
50.6
50.4
50.2
50.0
49.8
49.6
49.4
49.2
49.0
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00

D E V I A T I O N

Deviation= [(Actual injection/drawal in MWh) – (Scheduled generation/ drawal in MWh)]

- For Seller

$$Deviation\ \% = \frac{100\ \text{x}\ [(\text{Actual injection in MWh}) - (\text{Scheduled generation in MWh})]}{[(Scheduled\ generation\ in\ MWh)]}$$

- For WS Seller

$$Deviation\ \% = \frac{100\ \text{x}\ [(\text{Actual injection in MWh}) - (\text{Scheduled generation in MWh})]}{[(Availabile\ Capacity)]}$$

- For Buyer

$$Deviation\ \% = \frac{100\ \text{x}\ [(\text{Actual drawal in MWh}) - (\text{Scheduled drawal in MWh})]}{[(Scheduled\ drawal\ in\ MWh)]}$$

Note: WS seller: Wind-Solar seller

NORMAL RATE OF CHARGES FOR DEVIATION

- Normal rate of Charges for Deviation for a time block shall be equal to the Weighted Average Ancillary Service Charge (in paise/kWh) computed based on the total quantum of Ancillary Services deployed and the total charges payable to the Ancillary Service Providers for all the Regions for that time block

- For a period of one year from the date of effect of these regulations:

Rate of Charges for Deviation will be Maximum of

- (weighted average ACP of the DAM)
- (weighted average ACP of the RTM)
- (weighted Average Ancillary Service Charge)

- The normal rate of charges for deviation shall be rounded off to the nearest two decimal places

CALCULATIONS OF CHARGES FOR DEVIATIONS

SELLER

Type of Seller	Over - Injection	Under - Injection
General Seller	Zero till 2% of Deviation	@Normal Rate till 2%
	Beyond 2% @ 0.1*Normal Rate	@1.1*Normal Rate beyond 2%
RoR Generating Station	Zero	@Normal Rate till 12%
		@1.1*Normal Rate beyond 12%
Station based on Municipal Solid Waste	Zero	Zero till 20%
		@Normal Rate beyond 20%
WS Seller	Zero	Zero till 10%
		@0.1*Normal Rate beyond 10%

CALCULATIONS OF CHARGES FOR DEVIATIONS

BUYER

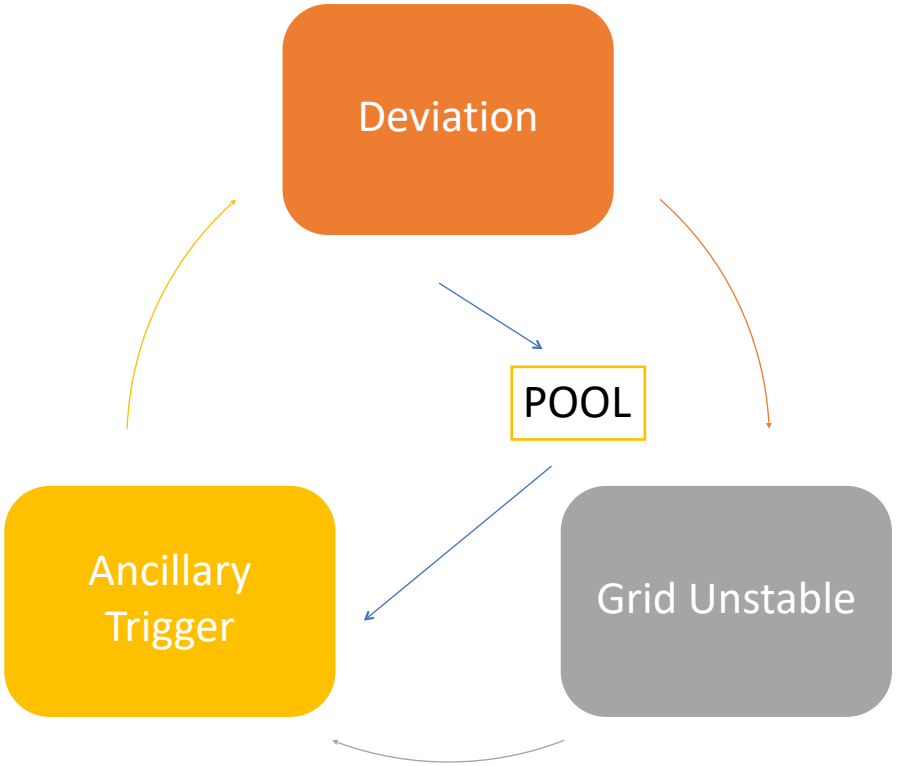
Type of Buyer	Under drawal	Over drawal
Buyer (Sched. > 400MW)	Zero	@Normal Rate till 12% or 150MW whichever is lower
		@1.1*Normal Rate beyond 12%
Buyer (Sched. Up to 400MW)	Zero	@Normal Rate till 12%
		@1.1*Normal Rate beyond 12%
RE Rich State	Zero	@Normal Rate till 12% or 250MW whichever is lower
		@1.1*Normal Rate beyond 12%

CALCULATIONS OF CHARGES FOR DEVIATIONS

OTHER CASES

Case	Charges
For infirm power	Zero
For start-up power drawal before COD or aux. power drawal during shutdown of a generator	@normal rate
For inter-regional & cross-border transactions (over-drawal/ under-	@normal rate

ACCOUNTING OF CHARGES FOR DEVIATION AND ANCILLARY SERVICE POOL ACCOUNT



ACCOUNTING/ SETTLEMENT OF CHARGES FOR DEVIATION AND ANCILLARY SERVICE POOL ACCOUNT

- Separate books to be maintained for principal component & interest component
- Disbursement from Pool only in case of SRAS up & TRAS up
- In case of deficiency in Deviation and Ancillary Service Pool Accounts of all other regions, payment of balance amount to be done via RLDC Fees & Charges
- Highest priority to Payment of Charges for Deviation
- Within 7 days from issue of statement of Charges for Deviation
- Late payment surcharge: @0.04% for each day of delay

IMPACT?

NORTH EASTERN REGIONAL POWER COMMITTEE

ABT based Deviation Charge Account
For the period 31.05.2021 TO 06.06.2021
AS PER 5TH AMENDMENT OF DSM, 2019 W.E.F. 03/06/2019

UTILITIES AND DEVIATION CHARGES PAYABLE BY THEM	SCHEDULE (MWH)	ACTUAL (MWH)	DEVIATION (MWH)	DEVIATION CHARGE		ADDITIONAL DEVIATION CHARGE DUE TO BLOCKWISE VIOLATION OF	ZERO CROSSING VIOLATION COUNT	ADDITIONAL DEVIATION CHARGE DUE TO VIOLATION OF SIGN CHANGE	FINAL DEVIATION CHARGE	
				RECEIVABLE	PAYABLE				RECEIVABLE	PAYABLE
BENEFICIARIES OF NORTH EASTERN REGION										
ARUNACHAL PRADESH	14,938.39	12,685.73	-2,252.67	66,97,289		88,199	27	8,40,175	57,68,915	
ASSAM	1,52,224.43	1,53,947.17	1,722.74		74,05,253	7,97,918	18	6,95,099		88,98,270
MANIPUR	18,079.66	17,678.63	-401.03	16,45,595		27,046		0	16,18,549	
MEGHALAYA	14,454.96	13,052.14	-1,402.82	45,56,905		1,12,259	2	48,668	43,95,977	
MIZORAM	11,653.95	11,459.33	-194.62	3,02,937		66,205		0	2,36,731	
NAGALAND	17,301.65	16,494.65	-807.00	27,53,757		12,094		0	27,41,663	
TRIPURA	23,707.92	21,727.73	-1,980.19	55,19,720		1,10,889	3	71,706	53,37,125	
BNC	163.65	155.44	-8.21	30,122		1,735		0	28,387	
CERC REGULATED GENERATORS (CGS/ISGS)										
AGBPP	32,254.12	33,071.07	816.95	15,38,949		40,782		0	14,98,167	
AGTCCPP	18,200.73	18,553.68	352.95	8,16,485		7,320	1	5,102	8,04,063	
BGTPP	68,811.23	66,644.03	-2,167.20		50,74,014	3,33,646	5	2,39,728		56,47,388
PALATANA	53,153.87	52,264.66	-889.21		16,81,827	9,49,473	4	1,85,116		28,16,415
DOYANG	336.00	335.11	-0.89	4,716		1,942		0	2,774	
KHANDONG	7,274.25	7,375.71	101.46	3,18,562		600		0	3,17,962	
KOPILI	0.00	0.00	0.00		0	0		0		0
KOPILI-2	0.00	-2.99	-2.99		6,887	142		0		7,029
LOKTAK	5,608.74	5,741.56	132.83	3,56,094		2,606		0	3,53,488	
PARE	15,712.88	15,846.16	133.28	5,01,259		2,897		0	4,98,362	
RANGANADI	38,655.90	39,290.46	634.56	13,44,066		21,878		0	13,22,188	
KAMENG	49,266.53	50,213.96	947.44	19,10,903		1,08,637		0	18,02,265	
INTER- REGIONAL										
ER	-28,683.76	59,536.04	88,219.81	26,80,67,009					26,80,67,009	
NR	0.00	-91,986.04	-91,986.04		28,11,22,520					28,11,22,520
INFIRM GENERATORS										
KAMENG_INF	0.00	0.00	0.00		0					0
TOTAL	513115.0901	504084.2374	-9030.852662	296364365.7	295290501.4	2686266.7	60	2085594.321	294793625.9	298491622.6

In Daily data report : +ve figures indicate charges receivable and -ve figures indicate charges payable. All deviation charges in Rs.