

North Eastern Regional Power Committee

MINUTES OF THE 134th OPERATION COORDINATION

SUB-COMMITTEE MEETING OF NERPC

Date : 28/07/2017 (Friday)
Time : 10:00 hrs
Venue : "Hotel Nandan", Guwahati.

The List of Participants in the 134th OCC Meeting is attached at **Annexure – I**

Shri P.K. Mishra, Member Secretary, NERPC welcomed all the participants to the 134th OCC meeting. He noted the presence of participants from all the utilities including NETC and Sterlite Power. He expressed satisfaction about the maximum participants from all the utilities and requested to continue the same in future so that matters can be resolved during the meeting. He informed the forum about the decision taken by CEA regarding construction of one bay at Pallatana on Pallatana – S.M. Nagar and Tripura has to vacate the bay presently utilized for drawing power from Udaipur so that reliable power supply to Bangladesh is ensured. He also mentioned about the delay and slow implementation of R&M Scheme through PSDF especially Ar. Pradesh & Manipur and requested them that the same should be carried out on priority. Further, he also informed the forum about the successful completion of training for 1st batch of participants of Study Tour and stated that the 2nd & 3rd batches will commence soon.

Shri T.S. Singh, GM, NERLDC in his address mentioned about the importance of Load Forecasting and hence they have once again requested Indian Meteorological Department (IMD) to give a presentation and highlight about the current status so that NER constituents can be benefited. Further, he also mentioned about the need of implementing the ABT meters at the earliest and stated that Hon'ble CERC is willing to extend all possible help for getting the funding from PSDF and hence requested NER States to avail the schemes at the earliest for benefit of the region. He also expressed happiness about the large number of participants and hope that the same trend continues in future.

Thereafter, Member Secretary requested Shri B. Lyngkhoi, Director/SE(C&O) to take up the agenda items for discussion. Shri Lyngkhoi welcomed Scientists from IMD, Shri Sunit Das and Shri Atul Kumar Singh, then Shri T.A.N. Reddy, VP, Sterlite Power, Shri S. Deshpande, Head(O&M), Sterlite Power and all the new officers participating from AEGCL, DoP Nagaland, MSPCL, NHPC & NETC and requested them

to attend the meetings regularly for the benefit of the organization and the region. He also informed that IMD, OTPC, NERPC will give the presentations on different topics for the benefit of the forum and also to discuss and resolve the issues. He informed the forum that CEA has formed a working Group for preparation on Guidelines for Availability of Communication System and the undersigned himself has been nominated for the working group from NER. Further, he mentioned that finalization of OPGW pertaining to States and CTU has to be resolved at the earliest before the next TCC/NERPC meeting in which he mentioned that the date for NeTEST will be fixed soon. He also informed the house that the scheme for Protection Database Management System (PDMS) is being prepared and as suggested by NPC, CEA a sub-group comprising member from NERPC, NERLDC, NERTS and utilities station in Shillong may also be included so that the DPR can be finalized and send to NPC/NLDC. He highlighted about the critical issue of Ranganadi HEP and requested to resolve the same.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 133rd MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 133rd meeting of Operation Sub-committee held on 8th June, 2017 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2016/4556-4591 dated 16th June, 2017.

The Sub-committee confirmed the minutes of 133rd OCCM of NERPC with no modifications as no comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

B.1. ACTION TAKEN:

1. IMPLEMENTATION OF PROJECTS FUNDED FROM PSDF:

The status as informed in 134th OCC:

State	Protection System	ADMS	CAPACITOR INSTALLATION
Arunachal Pradesh	Approval for opening a/c under PFMS obtained.	Status to be updated	-

Nagaland	Work under execution. Completion by 30.09.17.	Under process of approval.	Under process of approval. To submit undertaking and other required documents.
Mizoram	By Aug'17 all LOAs would be issued.	Under process of approval.	Under process of approval. To submit clarification.
Manipur	By Aug'17 all tendering to be completed. By Sept-Oct'17 all LOAs would be issued.	Under process of approval. To submit clarification.	To submit pilot scheme DPR
Tripura	All LOAs issued. Target for work completion March'2018.	DPR submitted to CEA & NLDC.	Under Study stage**
Assam	By Aug'17 all LOAs would be issued.	DPR submitted. Under process of approval.	-
Meghalaya	MePTCL – 25% balance LOAs will be completed by Aug' 2017. MePGCL – by Aug, 2017 all LOAs	DPR submitted to CEA & NLDC.	DPR to be prepared.

Deliberation of the sub-Committee:

NERLDC informed that as per CERC order against NERLDC petition 133/MP/2014 on 27th November 2017; NERLDC is required to give feedback to CERC on the status of completion. So details of NIT and LOA may please be furnished by all concerned utilities for the same immediately after these activities.

S.E. (C&O), NERPC informed that those schemes whose DPR has been submitted, would be taken up in the Appraisal Committee meeting after Technical Evaluation.

DGM(SO-II),NERLDC requested Assam and Tripura to submit DPR for capacitor bank requirement at the earliest. AGM, SLDC, AEGCL informed that concerned DISCOM officials have already been apprised of the scheme and requirement has to be decided by APDCL only. DGM(SO-II), NERLDC requested the forum to invite DISCOMs for fruitful discussion related to the matters of them. Member Secretary, NERPC concluded that as per grid conditions under voltage is not a problem and requirement if any may be finalized by DISCOMs only.

The Sub-Committee noted as above.

Action: All state utilities/NERPC.

2. Outage of Important Grid Elements:

Name of the Element	Name of Utility	Status
63MVAR Reactor at Byrnihat to be replaced with 80MVAR Reactor	MePTCL	NERLDC informed that after studies it has been found that at least 65MVAR compensation is required at Byrnihat. Forum accordingly requested MePTCL to upgrade to 80MVAR reactor with PSDF funding.
400kV 80MVAR Bus Reactor at Palatana	OTPC	04 Nos bushing to be replaced. Work would be completed by OTPC itself. Tentative completion 31.10.2017.
63 MVAR Line Reactor of 400 kV Balipara - Bongaigaon III line at Bongaigaon	NERTS	Charged on 10.07.2017.
220 kV, 1x31.5 MVAR Bus Reactor at Mokokchung (PG).	NERTS	December'17. To be added in item C.1 .
132 KV Durlavcherra-Dharmanagar	AEGCL	Sr. Manager, TSECL informed that there is no power flow from Durlavcherra end and this renders the line redundant for Tripura. Forum decided that the actual problem is outage of 132 kV Durlavcherra - Dharmanagar. Item to be dropped.
132 kV Jiribam - Rengpang S/C	MSPCL	Line charged from Jiribam end. To be re-commissioned by Sept'17.
132 kV Mariani (AEGCL) - Mokokchung (DoP, Nagaland) S/C	DoP Nagaland & AEGCL	Line cannot be charged due to low insulation. Outlay of ₹ 26Cr yet to be sanctioned. AEGCL to give deadline in next OCC meeting.

132 kV P K Bari – Silchar II	NERTS	Status to be updated.
132 kV Dimapur Dimapur I	DoP Nagaland	Work in Bay at PGCIL end to be completed by Aug'17.
132 kV Hailakandi Dullavcherra	AEGCL & TSECL	Line is submerged. Restoration by Oct'17.

GM, NERLDC enquired from NTPC about the status of Unit # I & II. NTPC informed that Unit #I will be brought back to service by 20th August, 2017 and Unit #II by 31st October, 2017.

The forum requested that Unit #II of NTPC be put in the column above for review till the unit is back in service.

The Sub-Committee noted as above.

Action: AEGCL, MePTCL, OTPC, NERTS, NERLDC/NERPC.

3. Furnishing of various data for reliable grid operation:

Data regarding	Status as of 134 th OCC
UFR Operation Report	SLDCs of Arunachal Pradesh & Manipur yet to submit for June'17. SLDCs of Assam, Meghalaya, Mizoram, Nagaland & Tripura submitted for June'17
Reporting of Commissioned Elements for Tarang App	SLDCs of Arunachal Pradesh, Assam, Meghalaya & Mizoram yet to submit for June'17. SLDCs of Manipur, Nagaland & Tripura submitted for June'17
DAS output for FRC calculation	OTPC, NTPC, NEEPCO & NHPC** not yet submitted
Questionnaire of Working Group on Hydro(FOLD)	P&ED Mizoram
Report on VDI	SLDCs of Assam, Meghalaya & Tripura submitting regularly. Other SLDCs yet to submit.

DG healthiness report	Revised format circulated by NERLDC. NERTS, NTPC, OTPC, NHPC, DoP, Ar. Pradesh, AEGCL, MSPCL, MePTCL, P&ED, Mizoram, DoP, Nagaland, TSECL yet to submit on monthly basis.
Auxiliary Supply details	Revised format circulated by NERLDC. NERTS (partially), NHPC, NEEPCO, MePTCL and DoP, Nagaland submitted. NERTS (rest), NTPC, OTPC, DoP, Ar. Pradesh, AEGCL, MSPCL, P&ED, Mizoram & TSECL not yet submitted.
Technical & Commercial data for PoC (Q3 2017-18)	Due date for submission of Q3 data is 31.07.2017. TSECL yet to submit YTC data.
Daily Operational Data	All SLDCs.

Date & Time of event	Brief description	Name of ISGS	Whether data submitted
27-July-17 at 10:08 Hrs	On 27-July-17 at 10:08 Hrs Teesta III & Dikchu tripped. Generation loss was around 993 MW.	Palatana, BgTPP, AGTCCPP Extension, Ranganadi	No
<i>*AGTCCPP, AGBPP, Khandong, Kopili and Doyang may please intimate their DAS implementation schedule.</i>			

NERLDC has also requested that Water level, inflow details, discharge quantity & Number of Gate opening (in case of spillage) of Hydro Plants be recorded on a 12 hour basis (2 entries in a day) and to be submitted to NERPC & NERLDC on a monthly basis for proper operational planning

Deliberation of the sub-Committee:

NEEPCO representative informed the following:

- . Spillage is being reported thrice a day for Umrong, Khandong and Kopili HEP. For RHEP it is reported twice a day.
- . Inflow is reported twice a day except for Doyang, Umrong and Kopili because of many tributaries and no measurement facilities.

The Sub-committee noted as above.

Action: All utilities as above.

B.2. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING JUNE, 2017

As per the data made available by NERLDC, the grid performance parameters for June, 2017 are given below:

NER PERFORMANCE DURING JUNE, 2017

States	Energy Met (MU)		w.r.t. May,17 % inc (+) /dec (-)	Energy Reqr. (MU)		w.r.t. May,17 % inc (+) /dec (-)	% inc (+) /dec (-) of energy reqr vs met. In June,17
	June-17	May-17		June-17	May-17		
Ar. Pradesh	56.26	61.01	-7.79	57.36	62.19	-7.77	-1.92
Assam	789.75	723.12	9.21	823.36	765.00	7.63	-4.08
Manipur	59.67	72.13	-17.27	60.95	73.29	-16.84	-2.10
Meghalaya	154.15	136.77	12.71	154.15	136.77	12.71	0.00
Mizoram	37.09	42.30	-12.32	38.13	43.16	-11.65	-2.73
Nagaland	58.30	63.70	-8.48	59.39	64.75	-8.28	-1.84
Tripura	111.51	120.73	-7.64	114.51	124.52	-8.04	-2.62
Region	1266.74	1219.76	3.85	1307.85	1269.69	3.01	-3.14

States	Demand Met (MW)		w.r.t. May,17 % inc (+) /dec (-)	Demand in (MW)		w.r.t. May,17 % inc (+) /dec (-) States	% inc (+) /dec (-) of Demand vs met. In June,17 June-17
	June-17	May-17		June-17	May-17		
Ar. Pradesh	123	145	-15.17	124	145	-14.48	-0.81
Assam	1623	1580	2.72	1744	1649	5.76	-6.94
Manipur	155	161	-3.73	156	163	-4.29	-0.64
Meghalaya	272	304	-10.53	272	304	-10.53	0.00
Mizoram	77	85	-9.41	82	86	-4.65	-6.10
Nagaland	146	131	11.45	147	132	11.36	-0.68
Tripura	268	276	-2.90	268	280	-4.29	0.00
Region	2387	2391	-0.17	2499	2472	1.09	-4.48

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

Month---->	June-17	May-17
Total Generation in NER (Gross)	1453.218	1111.858
Total Central Sector Generation (Gross)	1032.192	873.920
Total State Sector Generation (Gross)	421.026	295.716
Inter-Regional Energy Exchange		
(a) NER-ER	6.362	42.45
(b) ER-NER	352.192	242.07
(c)NER-NR	375.306	102.02
(d)NR-NER	14.197	92.30
© Net Import	-15.279	189.90

AVERAGE FREQUENCY (Hz)

Month---->	June-17	May-17
	% of Time	% of Time
Below 49.9 Hz	5.94	5.05
Between 49.9 to 50.05 Hz	73.13	72.20
Above 50.05 Hz	17.59	22.75
Average	48.33	49.99
Maximum	50.24	50.27
Minimum	49.72	49.85

NERLDC gave presentation on the grid performance during June'17. NERLDC also highlighted that Daily, Weekly and Monthly Voltage Deviation Report, Frequency Deviation Report and System Reliability Report for June'17 are already mailed to all the constituents for necessary actions. Further it was informed that members may access these reports from NERLDC website under the tab CERC KPI Reports.

The Sub-committee noted as above.

ITEMS FOR DISCUSSION

D. NEW ITEMS

D.1 Generation Planning (ongoing and planned outages)

NEEPCO/NHPC may kindly intimate the availability for hydro stations:

Generating Station	Units running	MW	MU	Reservoir
Khandong	2		27.61	719.55
Kopili-II	1			
Kopili	4		208.64	609.60
Ranganadi	3		Subject to inflow	
Doyang	3		30.00	322.45
Loktak	3		250.00	769.57
AGBPP	-	-	-	-
AGTPP	-	-	-	-

Hydro planning

The outage of other generating stations may be approved considering the present level water level in reservoirs.

Deliberation of the sub-Committee:

The Committee discussed and approved the proposed shutdown by Generating Stations and the same has already been uploaded in the website of NERPC.

D.2 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.

In 124th OCCM, SE(C&O) strongly opined that constituents should inform to NERPC/NERLDC in case shutdown is not avail as approved in the OCC meeting and should mention clearly the reason for not availing the shutdown. The full list of shutdown would be placed in the next OCC by NERLDC so that proper record can be made in future for generating units as well as transmission lines. All constituents endorsed the view of SE(C&O).

In 130th OCCM, Member Secretary opined strongly about non commitments of earlier decision by the constituents and stated that all proposed plan shutdowns and agenda for the next OCC meeting should be sent to NERPC Secretariat latest by 5th day of next month. He directed SE(C&O) that the decision should be strictly adhere to and no shutdowns or agenda will be entertained after that stipulated date.

S.E.(C&O) requested all the utilities to submit shutdown proposals within 5th of the month, and NERLDC to circulate the final compiled shutdown list for comments in advance of the OCCM.

NERLDC during the meeting again highlighted that 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 indenting 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. In case the request for outage is not received within the timeline, it will be assumed that the indenting agency will not avail the shutdown.

AEE, NERPC gave a presentation (**attached at Annexure-D.2**) on some recent developments concerning shutdown planning briefly consisting the following:-

- CERC (Communication System for Inter-State Transmission of Electricity) effective from 01.07.2017 stipulates outage planning for communication system with uninterrupted communication.
- Thus all communication system(s) (for eg. RTU, OPGW link, end equipments etc.) outage affecting the transmission of data or schemes dependent on communication system(s) may be approved in OCC.
- Such shutdown(s) may be approved after exploring all alternative path(s) for uninterrupted communication. Further the conditions under which shutdown of communication system be approved, shall be decided by a Sub-Group under NETeST forum of NERPC.
- Under PDMS project conceived for the entire NER grid, product offerings include Contingency Analysis. This may be used to get Contingency rankings as per latest NERC standard. Thus elements under shutdown which may cause contingencies in the grid would be listed based on severity.

After detailed deliberation the forum approved the suggestions and requested NERPC to convene the sub-group meeting under NETeST forum at the earliest.

The sub-Committee discussed and approved the proposals received from the constituents regarding transmission elements and generating units for July, 2017 - August, 2017 and the same has already been uploaded in website of NERPC.

D.3 Estimated Transmission Availability Certificate (TAC) for the month of March 2017 & April, 2017:

NETC and POWERGRID have submitted the outage data for the month of March & April, 2017. So the attributability of outage of the said elements may please be finalized.

The forum once again advised NETC & POWERGRID to submit data in a time bound manner as decided previously.

The Sub-Committee noted as above.

D.4 Assessment of Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) by SLDC on respective Inter-State Transmission Corridor

Updated PSS/E Base Cases have been **mailed to all the SLDCs on 02.07.17**. All SLDCs are requested to assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) for the month of Aug'17 using these cases, and submit the study cases and results to NERLDC by **25.07.17**.

NERLDC has assessed the state control area wise, state subsystem wise and group of control-area wise TTCs for NER Grid, on behalf of SLDCs of NER. The study results conducted by NERLDC **mailed to all SLDCs on 14.07.17**. SLDCs are requested to check the TTC of their control areas as computed by NERLDC and **give comments, if any, by 25.07.17**. The TTC figures for Aug'17 are as follows:

Name of States	Off Peak TTC in MW		Peak TTC in MW	
	N-0	N-1	N-0	N-1
Arunachal Pradesh	192	187	188	186
Assam	1567	1462	1514	1420
Manipur	324	260	322	250
Meghalaya	277	227	296	246
Mizoram	126	116	126	119
Nagaland	168	68	161	67
Tripura	294	170	296	196

If no comments received from any SLDCs of NER, TTC, ATC & TRM figures of State control area and group of control areas as assessed by NERLDC will be considered as final and may be uploaded on website.

As per discussions in 122nd OCC meeting of NERPC, all SLDCs of NER may host the assessed TTC / ATC / TRM figures on their website for information dissemination.

Deliberation in the meeting

Forum appreciated the efforts made by NERLDC and requested SLDC, Assam to give presentation in next OCC meeting.

NERLDC requested SLDCs of NER to do system study on regular basis. In case of facing any problem while doing system study in PSSE, assistance will be provided to them by NERLDC.

The Sub-Committee noted as above.

Action: All SLDCs.

D.5 Transformer Tap optimization

System study was conducted by NERLDC considering load, generation and network pattern of May, 2017 during Peak & Off Peak periods. Suggested taps position of important transformers in NER for maintaining bus voltages within permissible limit as well as to minimize system losses are attached at Annexure D.21.

In 132nd OCC, NERLDC informed that system study was conducted based on May, 2017 Off Peak & Peak Base Cases and suggested Tap position were given in the report. NERLDC requested all the utilities to go through the report and take necessary actions.

DGM(AM),NERTS informed that changing tap positions in peak and off-peak period is a tedious job and should be avoided as far as possible.

NERLDC informed that system study conducted based on May, 2017 Off Peak & Peak Base Cases indicated high voltage (431 kV) at Byrnihat with present tap setting (D-9). After detailed deliberation it was decided to change the tap position to D-4 for 400/220kV 2x315MVA ICT at Byrnihat as a one-time measure.

Deliberation in the meeting

The forum once again advised MePTCL to change the tap-position as an interim arrangement. MeECL agreed. After detailed deliberation forum decided to drop the agenda item.

The Sub-Committee noted as above.

D.6. Status of Implementation of SAMAST:

DGM(MO), NERLDC made a presentation on SAMAST which means SCHEDULING (S), ACCOUNTING(A), METERING(M), AND (A), SETTLEMENT OF (S) TRANSACTIONS (T) IN ELECTRCITY.

He intimated that Forum of Regulators Technical Committee is regularly following-up the status of implementation of SAMAST in all States across the Country. The implementation would include Metering at intra-State level, AMR scheme to fetch data to SLDC, intra-State scheduling, Open Access web portal, Accounting, Settlement system etc. This would pave way for intra-State ABT implementation. He advised the States to proceed with the activities as listed in SAMAST report (highlighted in ppt) and apply for PSDF funding.

Assam, Tripura and Meghalaya expressed interest in the project. It was clarified that NERPC and NERLDC would provide support to the States on this.

Deliberation in the meeting

DGM(MO),NERLDC informed that few rounds of discussion has taken place with Assam SLDC. They have identified intra-State entities and total number of SEMs required would be frozen shortly. Assam was requested to nominate their representative for SAMAST implementation committee.

- Meghalaya SLDC and MePTCL representatives stated that they would initiate activity for identification of Metering points.
- TSECL representative requested NERPC/NERLDC members to meet TSERC / TSECL higher officials to enable take-off of the project.

The forum felt that since SAMAST would be PSDF funded project it may reviewed under item **B.1(1)**.

The Sub-Committee noted as above.

Action: AEGCL/MeECL/TSECL.

D.7. DIVERSION OF 400 KV D/C SILCHAR-BYRNIHAT-AZARA TRANSMISSION LINE BETWEEN LOCATION NO. 573 TO 580 (2.33 KM) TO FACILITATE CONSTRUCTION OF TETELIA - BYRNIHAT RAILWAY LINE OF NORTHEAST FRONTIER RAILWAY (NFR):

The 400 kV D/C Silchar – Byrnihat-Azara line is the part of 400 kV Palatana Transmission System owned by NETC presently being maintained by PGCIL. Silchar – Byrnihat Ckt & Silchar – Azara Ckt of the said line were commissioned on 01.03.2013 and on 27.07.2014 respectively.

However, now to facilitate construction of Tetelia – Byrnihat Railway line of NFR, a section of the line to the tune of 2.33km involving 6 (six) tower locations is to be diverted through a new alignment. During construction of the line in the year 2012, NFR had claimed that both the line and Railway corridor in this section are overlapping each other and hence the line is to be shifted prior to the construction of the Railway line. The permission for possession of land was granted to NFR as per notification u/s 4 (1) in July 2010 by Addl. Dy. Commissioner, Kamrup (Metro), Guwahati.

NETC in the capacity of transmission systems developer finalized the route alignment during 2005-06 after obtaining necessary approvals such as section 68 & section 164 under Electricity Act 2003. Though it was not mandatory, NETC obtained approval from Revenue Authorities of Sonapur during December 2010 much before taking up

the construction activity in the Tetelia-Byrnihat section by NFR and completed the work by April 2012.

Since then, series of meetings were held between NETC & NFR in presence of representative of Govt. of Assam. But till August'2016, no conclusion could be arrived with regard to which party (NETC/NFR) would bear the expenses of the said diversion. Finally, in the meeting convened by Special Secretary (Power) Gol on 26.09.2016, NETC had issued the letter of acceptance for diversion of the line as per their directive.

Accordingly, NETC has placed the LOA for diversion of the line with a target to complete by December 2017. On behalf of NETC, PGCIL is executing the job under Project Management Consultancy (PMC). The total cost of this diversion work will be around Rs. 14.0 Cr.

NETC propose for booking of this expenditure under PoC Mechanism as the line has to be diverted in the interest of the Nation, in general and for the State of Meghalaya in particular.

Deliberation in the meeting

The members agreed to the proposal of NETC and recommended for approval of TCC and NERPC.

The Sub-Committee noted as above.

Action: NERPC.

D.8. Low gas pressure in Stage-2 of 400/220kV Byrnihat S/Sn:

In Special Meeting held on 23.06.17 DGM(AM),NERTS informed that upon visit by NERTS officials to 400/220kV Byrnihat S/Sn it has been found that Stage 2 gas pressure is low and susceptible to direct trip without sounding alarm. The forum requested MeECL to investigate and revert back at the earliest.

Deliberation in the meeting

EE, MePTCL requested NERTS to provide the relay settings and once shutdown is accorded the matter may be investigated. DGM(AM),NERTS reiterated that low SF₆ directly gives DT to Silchar. Sr. Consultant, NETC raised doubts regarding handing over of 400/220kV Byrnihat S/Sn to MeECL. NERTS agreed to look into the matter. S.E.(C&O),NERPC concluded that a team consisting of officials from NERTS/MeECL would jointly visit Byrnihat on 03.08.17 and investigate the issue. Shutdown if any required would granted impromptu.

The Sub-Committee noted as above.

Action: NERTS/MeECL.

D.9. Connectivity to Namsai Node:

The 6th NETeST Forum opined that there is requirement of one ISTS transmission line 132kV Tinsukia to Namsai(PG) keeping in view optical grid connectivity and back up connectivity of power requirement of Arunachal Pradesh. Forum opined the technical study may be done by NERLDC and same may be put up as an agenda in OCC forum.

Deliberation in the meeting

DGM(AM),NERTS opined that ring connectivity is essential for connecting 132kV Namsai as radial link from Ziro upto Namsai is very long and may result in unstable and unreliable power supply. EE, SLDC, DoP Ar.Pradesh also concurred and further informed that 132 kV Rupai-Namsai has been included in the Comprehensive Scheme. The forum referred the matter to the next SCM of NER for detailed discussion and resolution.

The Sub-Committee noted as above.

Action: NERPC.

D.10. Commercial operation of 132kV Passighat – Roing – Tezu

Subsequent to 24 Hours successful trial operation, following elements are put in service for commercial operation:

1. 132kV Passighat – Roing Line w.e.f. 12.06.2017
2. 132kV Roing – Tezu Line w.e.f. 12.06.2017
3. 15MVA, 132/33kV ICT – 1 at Roing w.e.f. 12.06.2017
4. 15MVA, 132/33kV ICT – 2 at Roing w.e.f. 12.06.2017
5. 20MVAR, 145kV Bus Reactor at Roing w.e.f. 12.06.2017
6. 20MVAR, 145kV Bus Reactor at Tezu w.e.f. 14.06.2017

Further, successful test charging and trial operation of following elements also carried out but load flow could not be done due to non-readiness of 33kV downstream by DoP, AP

7. 15MVA, 132/33kV ICT – 1 at Tezu on 11.06.2017
8. 15MVA, 132/33kV ICT – 2 at Tezu on 11.06.2017

Deliberation in the meeting

POWERGRID informed the members about the sequence of operation 132/33kV Roing Sub Station which is as below:

- When 132kV Passighat – Roing Line is charged the voltage at Roing bus becomes more than 140kV and at Passighat it is just below 140kV.

- Then, 20MVAR Bus Reactor at Roing is taken into service and the bus voltage at Roing drops below 120kV.
- In order to avoid considerable rise of voltage 132kV Passighat-Roing Line is charged along with 20MVAR Bus Reactor at Roing.
- When 132kV Roing-Tezu Line is charged, the bus voltage at Roing reduces to around 123kV.
- Finally, when 20MVAR Bus Reactor at Tezu is put in service withdrawing 20MVAR Bus Reactor at Roing, the Bus Voltage at Roing becomes around 130kV.

Thus, for maintaining Bus Voltage at Roing near nominal 132kV the above elements are to be taken in service technically except 2 nos. of 15MVA, 132/33kV ICTs at Tezu as 33kV downstream is yet to be made ready by DoP, AP.

The Sub-Committee noted as above.

D.11. Construction of dedicated 33KV line along with bay at 220KV Mariani (AEGCL) Substation for providing auxiliary power supply to POWERGRID Mariani (New) Substation:

220KV Mariani (New) Substation owned by POWERGRID was commissioned in March'2013 & is a critical substation for evacuation of Kathalguri generation as well as feeding power to Nagaland. Further, the substation is shall be upgraded to 400KV voltage level under NERSS Project shortly. Availability of reliable auxiliary power supply for the station is of utmost importance not only for catering to requirement of the substation (including switchyard & colony) but also for maintaining a healthy protection system.

Accordingly, for facilitating provision of reliable auxiliary power, the work for construction of a 33KV dedicated feeder from Mariani(AEGCL) Substation to POWERGRID Mariani(New) Substation including one 33 KV Bay at Mariani (AEGCL) end was entrusted to AEGCL on deposit work basis. The requisite amount of Rs. 1 Crore for the said work too was deposited to AEGCL in January'2014.

As on date, construction of the 33KV feeder has been completed by AEGCL. However, the 33KV Bay at Mariani (AEGCL) end is yet to be completed despite passage of more than 3 years from the date of deposition of fund, owing to which it has not been possible to draw auxiliary power through the dedicated feeder till date. As a result of this inordinate delay in completion of works related to the dedicated 33KV feeder, POWERGRID Mariani Substation is facing serious crisis on account of unavailability

of reliable auxiliary power in the station. The existing 11KV feeder connected to the station (non-dedicated) too is unreliable since frequent interruption (15 to 20 times a day) is experienced. The matter has been taken up with AEGCL through various correspondences (copies enclosed).

AEGCL is therefore requested to expedite completion of the balance works related to the aforesaid 33KV dedicated feeder on priority so that reliable auxiliary power is made available to the Mariani (new) substation without any further delay.

AEGCL may kindly provide the completion schedule for the above 33KV dedicated feeder.

Deliberation in the meeting

AGM, SLDC, Assam informed that as per informal discussion with AEGCL counterparts the work has been held up due to contractor problem. Further, he informed that he will revert back shortly to resolve the issue.

The Sub-Committee noted as above.

Action: AEGCL.

D.12. Diversion of 132KV Nirjuli-Ranganadi (Nirjuli-Lekhi section) as per requirement of NF Railways.

Diversion of the 132KV Nirjuli-Ranganadi (Nirjuli-Lekhi section comprising of the section from tower loc.134 to loc.23) has been taken up by POWERGRID as per requirement of NF Railways. On completion of the instant re-alignment work, the existing towers in the old route including tower No. 11, from which LILO section connecting 132KV Lekhi Substation of DoP, AP emanates, shall have to be abandoned & dismantled.

Since, with completion of the diversion work, the existing LILO line connecting 132KV Lekhi Substation (DoP, AP) shall get affected, therefore the matter was discussed on earlier occasions in OCC Forum wherein it was deliberated that DoP, AP too shall complete re-alignment/ modification of their LILO line so as to maintain connectivity with Nirjuli & Ranganadi.

The work of diversion of 132KV Nirjuli-Ranganadi line (by POWERGRID) is presently in advanced stage of completion & is expected to be completed by September-2017. DoP, AP is requested to intimate the present status of work pertaining to shifting of the LILO portion for maintaining the connectivity.

Deliberation in the meeting

DGM(AM),NERTS once again reiterated the need for LILO part diversion to be completed urgently by DoP Ar. Pradesh. He stressed that connectivity of Lekhi is being endangered by delaying the work. EE,SLDC, DoP Ar. Pradesh informed that the work has been taken up on an immediate basis by Transmission Division, DoP Ar. Pradesh and would be completed by Dec'17. The forum decided to review the matter monthly under item C.1.

The Sub-Committee noted as above.

Action: DoP Ar. Pradesh.

D.13. Requirement of Protection Wall at POWERGRID Ziro Substation on account of Severe Landslide & resultant damage on 10.07.2017:

Severe landslide has taken place within the periphery of 132KV Ziro substation on 10.07.2017 in the aftermath of torrential rain in recent times. As a result, part of the boundary wall (27 m approx.) & 2 No. 33 KV Bays have been substantially damaged. Temporary protection for averting further sliding is meanwhile being provided.



Therefore, as a long term protection measure against landslide, POWERGRID shall provide suitable protection wall at identified stretches of the station.

The agenda is placed for information of the forum.

The Sub-Committee noted as above.

D.14. Restoration of 400KV D/C Silchar-PK Bari TL (charged at 132KV) subsequent to collapse of towers:

The 400KV D/C Silchar-PK Bari TL (charged at 132KV) underwent breakdown on 02.04.2017 on account of collapse of tower at loc. 124,125, 126, 137, 138 & 139 in Karimganj District, Assam in the aftermath of severe cyclone.

Subsequently, one of the circuits (Ckt#1) of the line was temporarily restored through ERS on 07.05.2017.

Meanwhile, permanent restoration of the line too has commenced on war footing. However, the work has been hampered due to continuous rain & resultant flood at entire work site in recent times.

It may also be mentioned that presently the entire work site/adjoining area is in completely inundated condition, posing threat to stability of the temporarily erected ERS towers. In the event of failure of ERS tower during such flooded condition, extensive damage to life & property in the entire area due to electrocution is apprehended. Hence, considering such safety hazard, the line (temporarily charged through ERS) has been disconnected on 10.07.2017. The line shall once again be put in service on recession in water level in the adjoining area.



Further, the job of permanent restoration of the line section, which too has been badly affected due to on-going flood, shall be commenced & completed within an estimated timeframe of two months after recession in flood at work site.

The Sub-Committee noted as above.

D.15. Replacement of battery bank at AGBPP:

Existing 48V DC battery bank for PLCC at AGBPP are installed and maintained by PGCIL which are in service more than twenty years, hence needs immediate replacement by POWERGRID.

Deliberation in the meeting

After detailed deliberation the forum directed NEEPCO to replace the battery bank on its own. The Sub-Committee decided to drop the agenda item.

The Sub-Committee noted as above.

Action: NERTS.

D.16. Updated Operating Procedures of NER July 2017 (Draft):

Operating Procedures of NER July 2017 has been updated and e-mailed to regional entities of NER and also available in NERLDC website.

Power utilities of NER are requested to send comment and suggestion for this document by 30th June'17. This document will be finalized by 20th July'17.

The document is password protected. Password may be collected from SOII department of NERLDC.

No comment has been received by NERLDC from Power Utilities of NER till date.

Deliberation in the meeting

NERLDC informed that Operating Procedures of NER July 2017 was finalized by 20th July'17 and informed to all constituents of NER. This document is available in NERLDC website.

NERLDC requested all the SLDCs to update their Operating Procedures at the earliest. NERLDC also requested constituents of NER to submit Operating Procedures of HVDC, Substations and Generating Stations.

The Sub-Committee noted as above.

D.17. Updated Power Map of NER July 2017 (Draft):

Power Map of NER July 2017 has been updated and e-mailed to regional entities of NER and available in NERLDC website. It will cover all the elements under operation, execution & planning stage.

Power utilities of NER are requested to submit comment and suggestion and check the line length, capacity etc., for this document by 30th June'17.

Views/comments were received from some power utilities of NER.

The final version of compiled document on Power Map of NER July 2017, is made available in pdf format in NERLDC website (www.nerldc.org) with password protection. Password may be obtained from SO-II Department, NERLDC.

Deliberation in the meeting

NERLDC informed that Power Map of NER July 2017 was finalized by 15th July'17 and informed to all constituents of NER. This document is available in NERLDC website.

NERLDC informed the forum that Power Map is being prepared for elements under construction and the same will be forwarded for validation.

NERLDC also informed the forum that Single Line Diagrams (SLDs) of communication system under operation & execution, showing the location of SEMs will be prepared. NERLDC requested constituents of NER to furnish the data/information as per format for preparation of these SLDs.

The Sub-Committee noted as above.

D.18. Web portal on Weather Information for Power Sector:

MoU was signed between POSOCO & IMD on 18.05.15 to have an effective weather information interface exclusively for Power System Operation. In pursuance to this MoU, dedicated web portals for all the 5 regions have been developed jointly by IMD & POSOCO. These web portals contain lot of information related to weather forecast, real time & past data related to various locations in all the regions.

Weather Website of North Eastern Region has been made operational from 29th April 2017. The link of the website is <http://amssdelhi.gov.in/NERLDC/MAIN.html>. The same is also available in WEATHER tab in NERLDC website.

The Website covers weather related information of all the Seven States of North Eastern Region. Summarized contents of the Website are follows:

1. Regional Summary: Regional Forecast, Weather Bulletin, Daily and Weekly Weather.
2. Now-cast for Guwahati, Dibrugarh, Jorhat, Dhubri, Silchar & North Lakhimpur
3. Warning: District Level, State Level & Cyclone
4. Mateogram @ 3 hourly, 10 days forecast for 33 locations in the Region: Assam-19, Arunachal Pradesh -4, Meghalaya-3, Nagaland-3, Tripura-2, Manipur and Mizoram 1 each.
5. Radar Products for two Locations updated @10 Minutes: Agartala & Mohanbari
6. Satellite Image updated @ 30 minutes from INSAT 3 D.

With better understanding of this data, various utilities in the concerned region can equip themselves with better preparedness and improved operational planning, thereby enhancing the reliability of power system operation. For interpretation of weather data available on the web portal to derive the information and knowledge for decision making in the day to day operation of Power system, series of interactive sections with IMD would be required.

As OCC meetings are held on monthly basis and representatives from all SLDCs, constituents and utilities attend the same, these interactive sections with IMD representative in conjunction with OCC meeting would be highly beneficial.

Deliberation in the meeting

A detailed presentation was given by Scientists from IMD explaining all the features of the application and how it may be used for predicting load fluctuations depending on the weather. S.E.(C&O),NERPC appreciated the efforts of IMD and requested all the SLDCs to make optimum use of the application.

NERLDC requested all the utilities to go through the website and give their comments to NERLDC so that the same can be forwarded to IMD for improvement.

The Sub-Committee noted as above.

D.19. Post-Monsoon & Pre-Monsoon Disaster Management Plans of power utilities:

Crisis in power sector is an event of acute danger which can cause sudden disruption of power supply. Objectives of the Disaster Management Plan is to improve the preparedness to meet any contingency, reduce the response time in organizing the assistance, identify major resources: man power, materials & equipment needed to make the plan operational and optimize the use of the combined resources. The Disaster Management Act enacted in Dec05 has assigned the role/responsibilities to various Ministries/Departments for co-ordinated approach with other organizations.

CEA vide letter no. CEA/PLG/PSLF/15/Crisis/356-367 dated 12.06.2017 requested POSOCO to submit pre-post monsoon disaster management plans of PSUs, status of mock drill & flushing out of reservoir and details of review of Disaster Management Plan on an urgent basis as this is a parliamentary matter. NERLDC vide email circulated the formats for furnishing these details to all PSUs. Format for furnishing data is attached as Annexure II. Information from NHPC & State Power Utilities are not received till date.

It is requested to NHPC and State Utilities to furnish the pre-post monsoon disaster management plans, status of mock drill & flushing out of reservoir and details of review of Disaster Management Plan at the earliest to NLDC/NERLDC.

The Sub-Committee noted as above.

D.20. Load Forecasting Methodology

It has been observed that the deviation is high for day-ahead load forecast done by state power utilities from actual demand met. This error is reflected in the deviation of drawl of state utilise from the regional grid. To find out the reason for this gap, it is necessary to know the approach/process behind the load forecast.

Deliberation in the meeting

DGM(MO),NERLDC informed that during workshop conducted by NERPC on 19.01.17 detailed presentations on methodologies adopted by different SLDCs were presented. The same is once again being attached at **Annexure -D.20**. The Sub-Committee decided to drop the agenda item.

The Sub-Committee noted as above.

D.21. False DC by AGBPP:

It is seen repeatedly that whenever RRAS up regulation is implemented for AGBPP, they starts reducing their DC thereby creating problem implementing RRAS.(Ref 1. NERLDC msg 30th June @ 1637hr 2. NERLDC msg 6th July'17 @ 1406hr. and so on)and it is regularly happening. As per IEGC regulation 6.4, mis-declaration of plant DC is wrong practise and can be penalised.

Forum may discuss the issue and give direction to AGBPP to avoid such mis-declaration of DC.

(IEGC CI 6.4.18: It shall be incumbent upon the ISGS to declare the plant capabilities faithfully, i.e. according to *their best assessment. In case, it is suspected that they have deliberately over/under declared the plant capability contemplating to deviate from the schedules given on the basis of their capability declarations (and thus make money either as undue capacity charge or as the charge for deviations from schedule), the RLDC may ask the ISGS to explain the situation with necessary backup data.*)

Deliberation in the meeting

Sr. Engineer, NERLDC stated that giving False DC amounts to gaming and attracts serious penal provisions. He pointed out that among many instances, on 30.06.17 and 06.07.17 AGBPP had revised DC after RRAS UP instructions were issued. Sr. Manager, NEEPCO informed that the matter has been addressed. The forum strongly reprimanded NEEPCO and advised it to desist from such actions in future.

The Sub-Committee noted as above.

D.22. Charging of new elements without proper communication and telemetry by Nagaland:

132 kV Doyang-Wokha line LILoed at Sanis sub-station (date unknown). On 07.07.17 Nagaland requested to charge 132 KV Doyang-Wokha line and accordingly permission given to charge the line from Doyang. After charging the line there was frequent oscillation and jerk in Doyang machine and the machine was about to trip.(Attached Mail from Doyang dated 07.07.2017).Also there was no telemetry in Sanis and Wokha S/S.No voice communication is also not available with Sanis and wokha.

(IEGC 4.6.2: Data and Communication Facilities: Reliable and efficient speech and data communication systems shall be provided to facilitate necessary communication and data exchange, and supervision/control of the grid by the RLDC, under normal and abnormal conditions. All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches/ transformer taps etc. in line with interface requirements and other guideline made available by RLDC.)

So forum may discuss and issue suitable guidelines to Nagaland and others also to follow the same.

132 KV Kohima-Karong-Imphal line: Presently 132 kV Kohima-Karong line is service and Karong –Imphal is also healthy. So 132 kV Kohima-Karong-Imphal complete line may be kept in service to make alternate parallel corridor for 132 kV for 132 kV Dimapur-Imphal. This arrangement will give stability in the Manipur /Nagaland system. With implementation of SLDC and new SCADA/EMS system in Manipur and Nagaland we hope reliable telemetry and voice communication will be available from Kohima, Karong and Imphal.

Deliberation in the meeting

EE (Trans.), DoP Nagaland informed the members that such incidences would not recur in future. Forum felt that 132kV Karong-Kohima line should be kept in service at all times.

The Sub-Committee noted as above.

It is observed that 132 kV Daporizo-Along-Pasighat-Tezu-Namsai line is tripping everyday (Tripped on 06.07.17 @ 1033 hrs, on 07.07.17 @ 0915 hrs, on 09.07.17 @ 1555 hrs, on 11.07.17 @ 1250 hrs, on 13.07.17 @ 0516 hrs).It is creating problem in Ranganadi/Ziro. Also as per CERC guide lines all these events are GD-1 category

(Full S/S outage). So Arunachal Pradesh needs to check the line thoroughly before requesting for permission for charging.

Also telemetry/voice communication is not available from these stations. As per IEGC it is very important to have telemetry and voice communication.

Forum may discuss and issue guidelines to AP/POWERGRID.

Deliberation in the meeting

DGM(AM),NERTS once again reiterated that the long radial 132 kV Daporizo-Along-Pasighat-Tezu-Namsai line should be connected in ring to avoid GD-I incidences. EE, SLDC, DoP Ar. Pradesh thanked the members for their concern and also stated that this radial line is a lifeline for a large number of consumers in Ar. Pradesh. For telemetry and voice communication upto NERLDC in the interim arrangement the forum referred the matter to next NETeST meeting (Radial connectivity please refer to discussion in item **D.9**)

The Sub-Committee noted as above.

Action: NERPC.

D.23. Online submission of daily data:

NERLDC has developed as in house web based reporting software. Formats for filling the online data have been sent to Assam, Meghalaya & Tripura, all ISGS generators and CPCC NERTS.

Assam, Meghalaya and Tripura started giving some data but all Inter-state link wise we need data(only MWH on daily basis)which we are not getting. So all are requested to give these data online to NERLDC everyday.

The Sub-Committee noted as above.

D.24. Dedicated voice communication:

Dedicated voice communication and availability is one of the key requirements for efficient grid management. But it is observed that whenever we try to talk to SLDCs always it shows busy. We have intimated POWERGRID to resolve this problem but still it is not solved but still it is pending.

Most of the PG stations are connected through only one dedicated voice communication. Minimum two no of dedicated link needs to be done at the earliest.

Forum may discuss and time bound target may be fixed to fulfil the above requirement. Also 400 KV stations, HVDC station, SLDCs need 4 no of dedicated voice communication.

Following S/S either does not have link or links are not working.

1. PALATANA (Biggest Gen in NER)-No dedicated voice link.
2. 400 kV SILCHAR PG Station.-No dedicated voice link.
3. SM Nagar (International link)-No dedicated voice communication with RLDC.
4. MONARCHAK Gen: No dedicated voice link with RLDC.
5. SALAKATI (Inter Regional PG station)No dedicated voice link.
6. 400 kV BYRNIHAT: No dedicated voice link with RLDC/SLDC.
7. 400 kV Azara: No dedicated voice link with RLDC.

Following S/S links are not working.

1. Itanagar-23640151
2. Jiribam-23640130
3. Kathalguri-23640154
4. Ranganadi-23640119
5. Kolasib-23640111

Deliberation in the meeting

After detailed deliberation forum referred the matter to next NETeST meeting of NERPC.

The Sub-Committee noted as above.

Action: NERPC.

D.25. Important RTUs are not working:

1. 400 kV BALIPARA out since 26.06.17: Central NER Grid visibility lost.
2. 132 kV ITANAGAR: Effect: Realtime drawal of AP is not coming. Visibility of AP grid lost. Communication link problem.
3. 132 kV HAFLONG.
4. KHANDONG
5. KOPILI
6. RANGANADI: Completely un-stable. Communication problem. Team needs to be formed involving PG and RHEP and solve the problem within fixed time.
7. KOLASIB
8. ROING: Newly installed but not coming.
9. TEZU: Newly installed but not coming.

Deliberation in the meeting

After detailed deliberation forum referred the matter to next NETeST meeting of NERPC.

The Sub-Committee noted as above.

Action: NERPC.

D.26. Simplification of Operational Matters pertaining to 132kV Pasighat - Roing:

The recently commissioned 132 Kv line from Pasighat to Roing at present serves no purpose to any other constituents. At the both ends at Pasighat and Roing the beneficiaries are only Arunachal Pradesh. It injects its own power at Pasighat and draws at Roing. Any kind of activities in operational matters pertaining to this segments benefits or affect the state of Arunachal Pradesh only. Therefore the Grid Control activities pertaining to that element may be simplified so that during the emergency nature of Shutdown and Withdrawal becomes easier and response to such situation can be attended in a faster and efficient manner. In the present scenario for every operational purpose, Pasighat-Roing Transmission System being a part of NERTS reports to NERLDC and in return NERLDC seek consents from the SLDC Arunachal Pradesh and again SLDC Arunachal Pradesh Seek further consent from transmission utilities (DoP) in a very long and tortuous manner which so much of inconveniences.

Therefore it is suggested that a simplified mechanism is adopted to meet the ends in a faster and convenient way. Such a mechanism could be that for all approved / emergency shutdowns and normalization of NERTS, for that portion of the systems, reports to SLDC Arunachal Pradesh directly instead of reporting to NERLDC. All such actions, on the part of SLDC Arunachal Pradesh, shall inform NERLDC of every action taken for records.

Deliberation in the meeting

EE, SLDC, DoP Ar. Pradesh stated that for the long radial line 132kV Ziro-Daporizo-Along-Pasighat-Roing-Tezu-Namsai shutdown coordination is a big issue. Not only SLDC has to manage getting charging code from NERLDC but also Transmission Division has to be communicated the same, which rarely coincides. This might result in delay of maintenance work or they being hampered altogether. In this event, EE, SLDC, DoP Ar. Pradesh suggested that after approval in OCC/NERPC the coordination in shutdown may be carried out by SLDC. The forum felt that this

suggestion was not feasible keeping in mind emergencies and further ramifications. GM, NERLDC suggested that improving voice communication among all the stations and SLDC/RLDC may solve the problem to a great extent. The forum welcomed the suggestion of GM, NERLDC and referred the matter of communication to next NETeST meeting of NERPC.

The Sub-Committee noted as above.

Action: NERPC.

D.27. Opening of 132 kV Palatana-Udaipur- unilaterally by Tripura:

Frequently it is observed that Tripura keeps open the 132kV Palatana-Udaipur line without any information to NERLDC and Palatana. The line is connected to biggest gas based NER generator of Palatana and opening of this line unilaterally creating threat to the system security of NER Grid. Even we understand that it is important grid element and any S/D or opening requires permission from NERLDC.

Forum may discussed and issue suitable guidelines.

Deliberation in the meeting

Forum reproached TSECL for not adhering to grid code and not maintaining grid discipline. Sr. Manager, OTPC also informed that SLDC, Tripura is not aware of the grid parameters in real time overloading the ICT inspite of warnings given by OTPC Control Room beforehand. Sr. Manager, TSECL informed that the shortcomings would be addressed and such incidences would not recur in future.

The Sub-Committee noted as above.

Action: TSECL.

D.28. Frequent disturbance in Tripura system due to reduced grid security:

Number of disturbance in Tripura system increased due to following reason.

1. 132 kV Silchar-PK Bari both the lines out since long.(Line-1 out from 10th July'17,Line-2 from 02nd April'17)
2. Links are being kept open by Tripura without intimation.(On 19.07.17, 132 kV SM Nagar-Agartala I & II,132 kV Agartala- Bodhjungnagar,132 KV Agartala-RCN-II lines were open and 132 kV Ambassa-Gamaitilla line was S/D and no information to NERLDC. At 1331 hrs 132 kV RCN-Kumarghat and RCN-Agartala-II tripped and Tripura grid collapsed, RCN (ISGS), Monarchak, Rokhia tripped.)
3. 132 kV Kamalpur-Ambassa line always remains open at Ambassa.

It is gathered that Palatana generation will be out from 19th August for 20 days and during that time if all these loops remains open stability of Tripura system will come down drastically.

Deliberation in the meeting

Sr. Manager, TSECL informed that the shortcomings would be addressed and such incidences would not recur in future.

The Sub-Committee noted as above.

Action: TSECL.

D.29. Update on NERSS-II(B) & V awarded under TBCB:

The following transmission system associated with North Eastern Region Strengthening Scheme were discussed in 4th, 5th and 6th SCMPSP of NER and was agreed to be implemented through TBCB route in 35rd Empowered Committee held on 14th September 2015,

A. NERSS II Part B

- i. Biswanath Chariyali (POWERGRID) – Itanagar 132kV D/c line.
- ii. 2 nos. 132kV line bays at Itanagar for termination of Biswanath Chariyali (POWERGRID) – Itanagar 132kV D/c line.
- iii. LILO of one circuit of Biswanath Chariyali (POWERGRID) – Itanagar 132kV D/c line at Gohpur (AEGCL)
- iv. Silchar (POWERGRID) – Misa (POWERGRID) 400kV D/c Line.

B. NERSS -V

- i. Establishment of 400/132kV, 2 X 315MVA S/s at Surajmaninagar
- ii. Establishment of 400/132kV, 2 X 315MVA S/s at P.K. Bari
- iii. Surajmaninagar – P.K. Bari 400kV D/C line
- iv. 2 no. 400kV line bays at Palatana GBPP switchyard for termination of Palatana-Surajmaninagar 400kV D/c line
- v. AGTPP (NEEPCO) – P.K.Bari (TSECL) 132kV D/c line with high capacity HTLS conductor
- vi. 2 no. 132 kV line bays at P.K.Bari (TSECL) S/s for termination of AGTPP (NEEPCO) – P.K.Bari (TSECL) 132kV D/c line.

Deliberation in the meeting

VP, Sterlite Power informed that the above projects have been awarded to the firm recently, and latest status would be updated periodically to the forum. He informed that their target to complete the projects would be July, 2019 against the scheduled completion date of July, 2020.

The Sub-Committee appreciated the efforts of Sterlite and agreed in principle as it is benefited for NER States. The same would be put up to next TCC/NERPC meetings for endorsement.

D.30. Use of Multi-circuit towers and Monopoles:

1. **Use of Multi Circuit Towers** - There are two lines one is 400kV D/C Surajmaninagar - P.K. Bari Transmission line which is 92 kms and other is 132kV D/C AGTPP (NEEPCO) – P.K. Bari (TSECL) Transmission line which is 82 kms. These two lines are parallel to each other in forest, so we want to implement Multi circuit Towers in forest area by merging these two lines for approx. 60 kms (M/C Start point to M/C End Point). The 132kV D/C will be kept in lower side and 400kV D/C in the upper side of the tower. The usage of multi circuit towers will reduce the Forest area and there would be a substantial reduction in the number of trees to be felled in Forest Portion. The details are as:-

Description	SMN- P.K.Bari 400kV	NEEPCO- P.K. Bari 132	Total Forest Area details while Laying Single Lines	NEEPCO- SMN-Pkbari 400kV/132kV Multi Circuit Line	Saving in Forest area / Tree Cutting while using Multi Circuit Transmission Line in Forest Portion.
	Line Length:	Line Length:	Line Length:	Line Length:	Line Length:
	Tripura	Tripura	Tripura	Tripura	Tripura
Length of Transmission Line in K.M	92	82	174	115	59
Forest Length in K.M	32.5	41	73.5	34.5	39.0
Line Corridor in Meter	46	27		46	
Forest Area (In hac)	150	111	261	159	102
Total Trees Enumerated	89,700	66,420	1,56,120	95,220	60,900

on Sample Basis @ 600 Tree/Hectare					
No. of Forest Proposals Submissions	1	1	2	2	

In doing so around 60,900 trees would be saved from felling and there would be a reduction in Forest area required for diversion by 102 Ha.

2. Use of Monopoles - 132kV D/C Biswanath Chariyalli (PowerGrid) - Itanagar Transmission line is of 69kms, out of which we proposed to install Monopoles in the forest Area of Arunachal Pradesh for approximately 14 kms.

The Sub-Committee appreciated the efforts of Sterlite and agreed in principle as it is benefited for NER States. The same would be put up to next TCC/NERPC meetings for endorsement.

ADDITIONAL AGENDA ITEM:

D.31. Share Allocation from CSGs' to POWERGRID:

S.E. (C&O), NERPC informed that as per communication received from CEA; it has been intimated that PGCIL made a request for allocation of 41MW from one or more CGS to meet auxiliary consumption of its AC Sub-stations in the country. They have proposed region-wise allocation for their sub-stations. CEA have requested the views of RPCs.

Deliberation in the meeting

Members opined that the matter is concerned with Distribution wing and requested NERPC to discuss in next TCC/RPC meeting.

The forum also requested NERPC that many issues are pertaining to Generation and Distribution and hence from now onwards members from Distribution and Generation wings of the NER States should attend the meeting for resolving the issues. Members requested NERPC to highlight the same in TCC/NERPC Meetings.

The Sub-Committee noted as above.

D.32. Sale of URS in DAM as per IEGC (Fifth Amendment) Regulations:

Sr. Manager, OTPC gave a presentation (attached at **Annexure-D.32**) on sale of URS as per latest IEGC Regulations in the Day Ahead Market. He expressed ease of sale in DAM compared to TAM. He also praised Nagaland for giving consent swiftly which has realised into gains amounting to ₹ 613450/- (June-July'17) for DoP Nagaland. The forum requested all beneficiaries to follow suit as the arrangement is mutually beneficial.

The Sub-Committee noted as above.

D.33. Update regarding PDMS:

S.E.(C&O),NERPC informed the forum that upon consultation with NPC and PSDF Secretariat it is imperative that proposal for commissioning of Protection Database Management System (alongwith all other Analysis modules) be approved in TCC/RPC. Further, he informed that a team from NERPC, NERLDC, NERTS may be constituted to prepare a DPR and finalize the same, get its approval from TCC/NERPC before sending to NPC/NLDC.

The forum unanimously concurred upon the urgent requirement of the system and referred the matter to TCC/RPC.

The Sub-Committee noted as above.

D.34 C-DAC

SE(C&O) informed that 40% of the fund has been released to C-DAC for installation of the software/hardware for 6 (six) NER States except Meghalaya and C-DAC has intimated that the materials would be dispatched soon to 6 SLDCs, one each for NERPC & NERLDC.

The forum also requested NERPC that C-DAC should highlight the scheme in next OCC/MM before implementation of the scheme.

The Sub-Committee noted as above.

Date & Venue of next OCC meeting

It is proposed to hold the 135th OCC meeting of NERPC on second week of August, 2017. However, the exact date and venue will be intimated in due course.

The meeting ended with thanks to the Chair.

Annexure-I**List of Participants in the 134th OCC Meetings held on 28.07.2017**

SN	Name & Designation	Organization	Contact No.
1.	Sh. N. Perme, EE(E), SLDC	Ar. Pradesh	-
2.	Sh. Manoranjan kalita, DGM (SLDC)	Assam	07002949272
3.	Sh. Dipesh Ch. Das, DGM (LDC)	Assam	09954110254
4.	Sh. A.N. Dev Choudhury, AGM, APDCL	Assam	09854120791
5.	Sh. Uday S. Nath, AGM	Assam	-
6.	Sh. B. C. Borah, AGM (SLDC)	Assam	09435119248
7.	Sh. Paragjyoti Kalita, DM, APDCL	Assam	09435301799
8.	Sh. S. Kennedy, AM, MSPCL	Manipur	07085464547
9.	Th. Sushanta Singh, DM, MSPCL	Manipur	09402404857
10.	Sh. H.F. Shangpliang, SE(Gen)	Meghalaya	09863315562
11.	Sh. B. Wankhar, EE (MO), SLDC	Meghalaya	09436105914
12.	Sh. B. Narry, EE (Generation-I)	Meghalaya	09436111550
13.	Sh. B. Nihla, EE, SD MePTCL	Meghalaya	09436314163
14.	Sh. T. Gidon, EE (SLDC)	Meghalaya	09774479956
15.	Sh. C.W. Chen, AE (SLDC)	Meghalaya	09803093311
16.	Sh. Lalbiaksanga, SE (SLDC)	Mizoram	09436140932
17.	Sh. K. Duhsanga, EE, SLDC	Mizoram	08118910161
18.	Sh. Wabangmeren Jamir, EE (Trans.)	Nagaland	09856052256
19.	Sh. Debabrata Pal, Sr. Manager (Comml.)	Tripura	09436500244
20.	Sh. Joypal Roy, Sr. Manager (E/M)	NEEPCO	09435577726
21.	Sh. Sundar Moni Mohan, Dy. Mgr (E/M)	NEEPCO	08729907466
22.	Sh. T.S. Singh, GM, NERLDC	NERLDC	-
23.	Sh. R. Sutradhar , DGM (MO)	NERLDC	09436302714
24.	Sh. Ankit Jain, Sr. Engineer (SO-I)	NERLDC	09436335381
25.	Sh. A. Mallick, DGM, SO-II	NERLDC	09436302720
26.	Sh. Palash Jyoti Borah, Engineer, SO-II	NERLDC	08761093397
27.	Sh. Sourav Mandal, Engineer, SO-I	NERLDC	09402102354
28.	Smt. Momai Dey, Sr. Engineer, SO-II	NERLDC	09436302716
29.	Sh. P. Kanungo, DGM (AM)	PGCIL	09436302823

30.	Sh. Mohammad Arif, Manager (E)	NHPC	09932025993
31.	Sh. Narendra Gupta, Sr. Manager	OTPC	09774233426
32.	Sh. Ratan Singh Basnet, Asst. Manager	NETC	08811072489
33.	Sh. Dilip Kr. Sarma, Sr. Consultant	NETC	09471001032
34.	Sh. E. Ngullie, DGM (O)	NTPC	09435139531
35.	Sh. Ashit Roy Chowdhury, Manager (O)	NTPC	09435027019
36.	Sh. Sachin Deshpande, Head (O&M)	Sterlite Power	08966903047
37.	Sh. T.A.N. Reddy, V.P	Sterlite Power	09310490976
38.	Sh. T.K. Sinha, AM	Sterlite Power	08889922005
39.	Sh. Narrottam Chakraborty, CM	Sterlite Power	07896022335
40.	Sh. Atul Kumar Singh, SC-B	IMD	09005334600
41.	Sh. Sunit Das, SC-D	IMD	07896043788
42.	Sh. P.K. Mishra, MS	NERPC	-
43.	Sh. B. Lyngkhai, Director/S.E (C&O)	NERPC	09436163419
44.	Sh. S. Mukherjee, AEE	NERPC	08794277306



**SHUTDOWN PLANNING FOR NER
GRID
-NERPC**

PRESENT PRACTICE



CERC(COMMUNICATION SYSTEM FOR INTER-STATE TRANSMISSION OF ELECTRICITY) REGULATIONS, 2017

- W.e.f 01.07.2017
- Reg.7.3(iv) *“The RPC Secretariat shall be responsible for outage planning for communication system in its region. RPC Secretariat shall process outage planning such that uninterrupted communication system is ensured.”*



UNINTERRUPTED COMMUNICATION REQUISITES

- Round the clock Availability of real time data of all nodes upto 132/66/33 kV at RLDC.
- Identifying alternate paths(at least two?) for all RTUs except those in radial path.
- Outage of Communication link due to OPGW stringing/ end equipment(s) maintenance or replacement may be approved in OCC only.



PDMS(PROTECTION DATABASE MANAGEMENT SYSTEM)

○ Along with the database following other offerings have been proposed by M/s PRDC:

1. Short circuit,
2. transient stability
3. contingency analysis
4. Grid Disturbance simulation

Of these Contingency Analysis and GD Simulation may be used for Shutdown Planning.

Power Flow Analysis	
26.	Solution methods - Gauss-Seidel, Newton-Raphson, Fast-DeCoupled, current Injection
27.	Zone / Area wise modeling & control, islanding.
28.	Simulating the study mode in dynamic changes in the network
29.	Modeling loads as constant power, constant current, constant impedance or any combination of these.
30.	Determine MVAR Compensation.
31.	Contingency analysis ranking.
32.	Slack Bus Concept uses Gauss - Seidel, Newton - Raphson, Fast-DeCoupled techniques.
33.	Frequency dependent Load flow uses Fast-DeCoupled technique. The options available are

Steady State & Stability:

- a. The System shall remain stable. Cascading and uncontrolled islanding shall not occur.
- b. Consequential Load Loss as well as generation loss is acceptable as a consequence of any event excluding P0.
- c. Simulate the removal of all elements that Protection Systems and other controls are expected to automatically disconnect for each event.
- d. Simulate Normal Clearing unless otherwise specified.
- e. Planned System adjustments such as Transmission configuration changes and re-dispatch of generation are allowed if such adjustments are executable within the time duration applicable to the Facility Ratings.

Steady State Only:

- f. Applicable Facility Ratings shall not be exceeded.
- g. System steady state voltages and post-Contingency voltage deviations shall be within acceptable limits as established by the Planning Coordinator and the Transmission Planner.
- h. Planning event P0 is applicable to steady state only.
- i. The response of voltage sensitive Load that is disconnected from the System by end-user equipment associated with an event shall not be used to meet steady state performance requirements.

Stability Only:

- j. Transient voltage response shall be within acceptable limits established by the Planning Coordinator and the Transmission Planner.

Category	Initial Condition	Event ¹	Fault Type ²	BES Level ³	Interruption of Firm Transmission Service Allowed ⁴	Non-Consequential Load Loss Allowed
P0 No Contingency	Normal System	None	N/A	EHV, HV	No	No
P1 Single Contingency	Normal System	Loss of one of the following: 1. Generator 2. Transmission Circuit 3. Transformer ⁵ 4. Shunt Device ⁶	3φ	EHV, HV	No ⁴	No ⁷
		5. Single Pole of a DC line	SLG			
P2 Single Contingency	Normal System	1. Opening of a line section w/o a fault ⁷	N/A	EHV, HV	No ⁴	No ⁷
		2. Bus Section Fault	SLG	EHV HV	No ⁴ Yes	No Yes
		3. Internal Breaker Fault ⁸ (non-Bus-tie Breaker)	SLG	EHV HV	No ⁴ Yes	No Yes
		4. Internal Breaker Fault (Bus-tie Breaker) ⁸	SLG	EHV, HV	Yes	Yes
P3 Multiple Contingency	Loss of generator unit followed by System adjustments ⁹	Loss of one of the following: 1. Generator 2. Transmission Circuit 3. Transformer ⁵ 4. Shunt Device ⁶	3φ	EHV, HV	No ⁴	No ⁷
		5. Single pole of a DC line	SLG			
P4 Multiple Contingency (Fault plus stuck breaker ¹⁰)	Normal System	Loss of multiple elements caused by a stuck breaker ¹⁰ (non-Bus-tie Breaker) attempting to clear a Fault on one of the following: 1. Generator 2. Transmission Circuit 3. Transformer ⁵ 4. Shunt Device ⁶ 5. Bus Section	SLG	EHV HV	No ⁴ Yes	No Yes
		6. Loss of multiple elements caused by a stuck breaker ¹⁰ (Bus-tie Breaker) attempting to clear a Fault on the associated bus	SLG	EHV, HV	Yes	Yes
		P5 Multiple Contingency (Fault plus relay failure to operate)	Normal System	Delayed Fault Clearing due to the failure of a non-redundant relay ¹¹ protecting the Faulted element to operate as designed, for one of the following: 1. Generator 2. Transmission Circuit 3. Transformer ⁵ 4. Shunt Device ⁶ 5. Bus Section	SLG	EHV HV
P6 Multiple Contingency (Two overlapping angles)	Loss of one of the following followed by System adjustments ⁹ 1. Transmission Circuit 2. Transformer ⁵ 3. Shunt Device ⁶ 4. Single pole of a DC line			3φ	EHV, HV	Yes
	4. Single pole of a DC line	SLG	EHV, HV	Yes		
P7 Multiple Contingency (Common Structure)	Normal System	The loss of: 1. Any two adjacent (vertically or horizontally) circuits on common structure ¹¹ 2. Loss of a bipolar DC line	SLG	EHV, HV	Yes	Yes

LOAD FORECAST METHODOLOGY

MANIPUR

1. SHORT TERM FORECAST
2. PREVIOUS DAY ACTUAL DRAWAL PATTERN

SLDC MANIPUR studies the loading pattern of the previous day and correspondingly makes changes in the next day forecast with consideration of various other factors such as load constraints of line, festival day load increment, etc.

FEW EXAMPLES ARE ILLUSTRATED AS FOLLOW:-

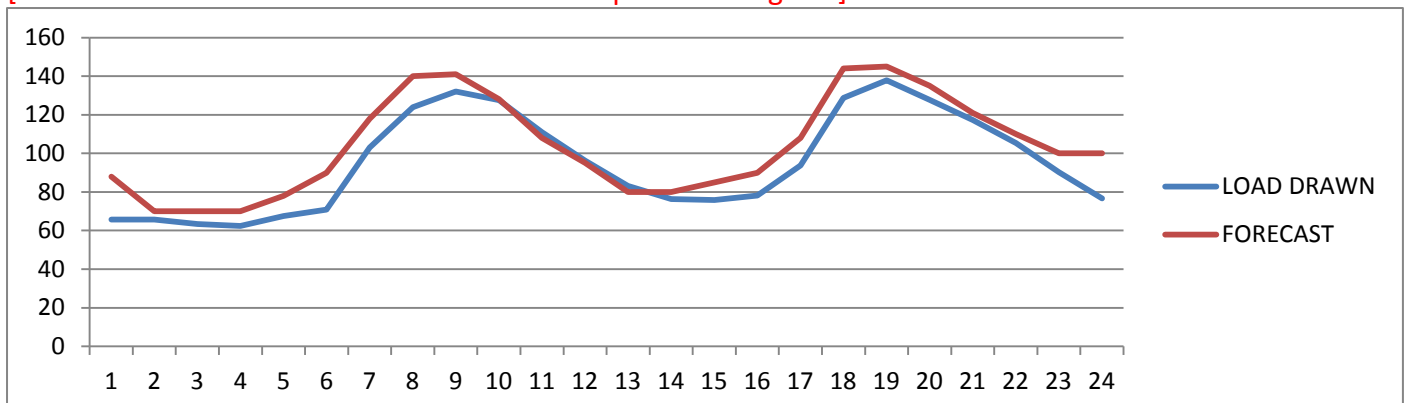
A) FOR DATE 1-1-17

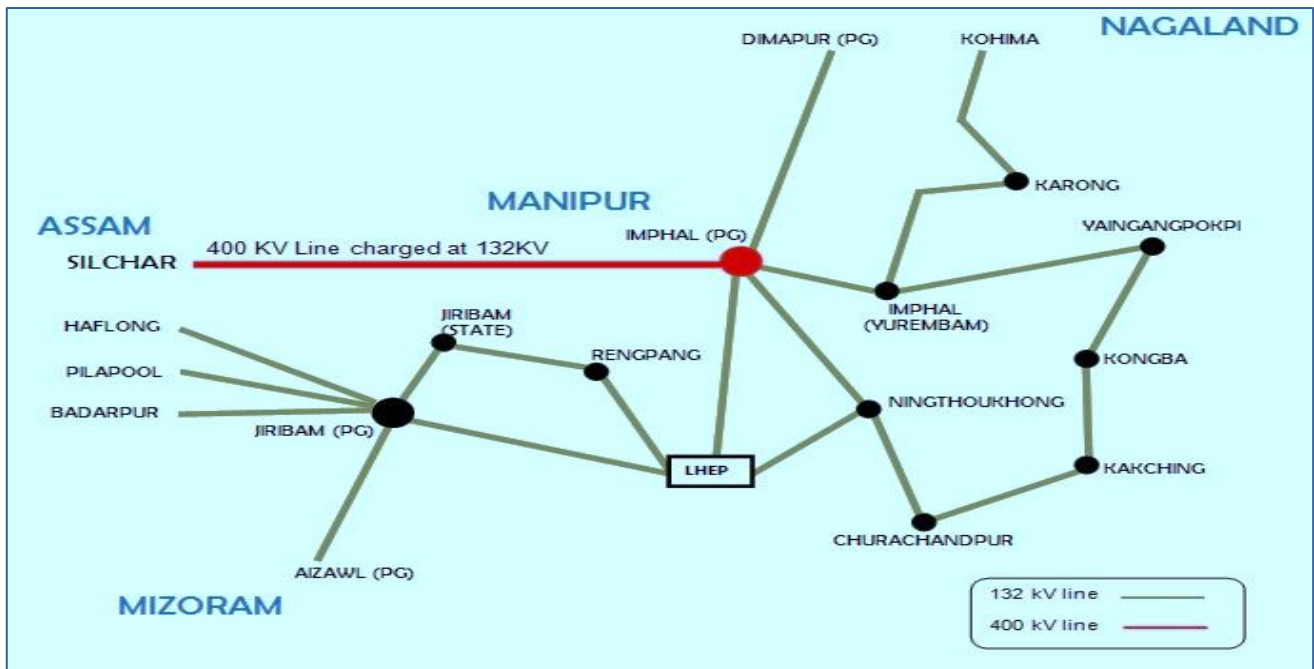
HOUR	LOAD DRAWN ON 31-12-16 [MW]	FORECAST FOR 31-12-16 [MW]	FORECAST ADJUSTED FOR 1-1-17 [MW]	LOAD DRAWN ON 1-1-17 [MW]
0	68.7	88	88	65.7
1	65.2	70	70	65.7
2	65.9	70	70	63.3
3	65.5	70	70	62.3
4	64.1	78	78	67.5
5	77.75	103	90**	70.9
6	109.9	118	118	103
7	136	140	140	124
8	138.5	141	141	132
9	123.65	128	128	127.5
10	109.25	108	108	110.95
11	98.5	95	95	96.3
12	90.35	80	80	83.05
13	81.3	80	80	76.25
14	83.82	85	85	75.86
15	87.94	100	90**	78.06
16	104.6	128	108**	93.66
17	134.6	151	144***	128.8
18	138.7	145	145	137.8
19	130.5	135	135	127.66
20	114.83	121	121	117.36
21	106.5	110	110	105.36
22	93.8	110*	100**	90.2
23	80	110*	100**	76.7

*[high forecast with consideration of NEW YEAR EVE Celebration]

**[reduced forecast according to loading pattern of the previous day]

***[reduced forecast due to 132kV Yurembam-Yaingangpokpi line constraint as 132kV Kakching SS is supplied from Kongba (instead of Churachanpur) and about 6 MW affected during evening peak hour]
 [Reason due to Shutdown of 132kV Churachanpur-Kakching line]



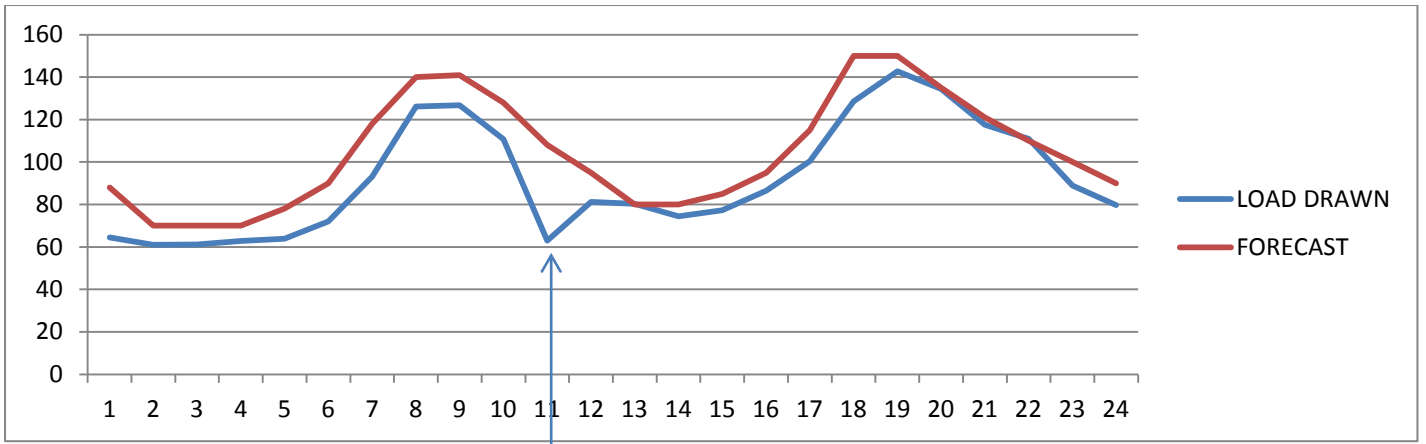


B) FOR DATE 4-1-17

HOUR	LOAD DRAWN ON 3-1-17 [MW]	FORECAST FOR 3-1-17 [MW]	FORECAST ADJUSTED FOR 4-1-17 [MW]	LOAD DRAWN ON 4-1-17 [MW]
0	66	88	88	64.5
1	63.4	70	70	61
2	61.3	70	70	61.1
3	61.8	70	70	62.8
4	65.1	78	78	63.9
5	74.8	90	90	72.04
6	93.1	118	118	93.2
7	134.5	140	140	126.2
8	137.95	141	141	126.7
9	120.45	128	128	110.75
10	104.2	108	108	63.05
11	87.96	95	95	81.25
12	79.85	80	80	80.27
13	77.25	80	80	74.4
14	82.13	85	85	77.32
15	83.4	90	95*	86.49
16	96.4	108	115**	100.3
17	114.6	144	150**	128.5
18	129.7	145	150**	142.7
19	119.4	135	135	134.4
20	114.54	121	121	117.5
21	100.8	110	110	111
22	84.7	100	100	88.9
23	71	100	90*	79.7

*[reduced forecast according to loading pattern of the previous day]

**[increased forecast due to return of 132kV Churachanpur-Kakching line Shutdown; hence constraint of 6MW is removed]

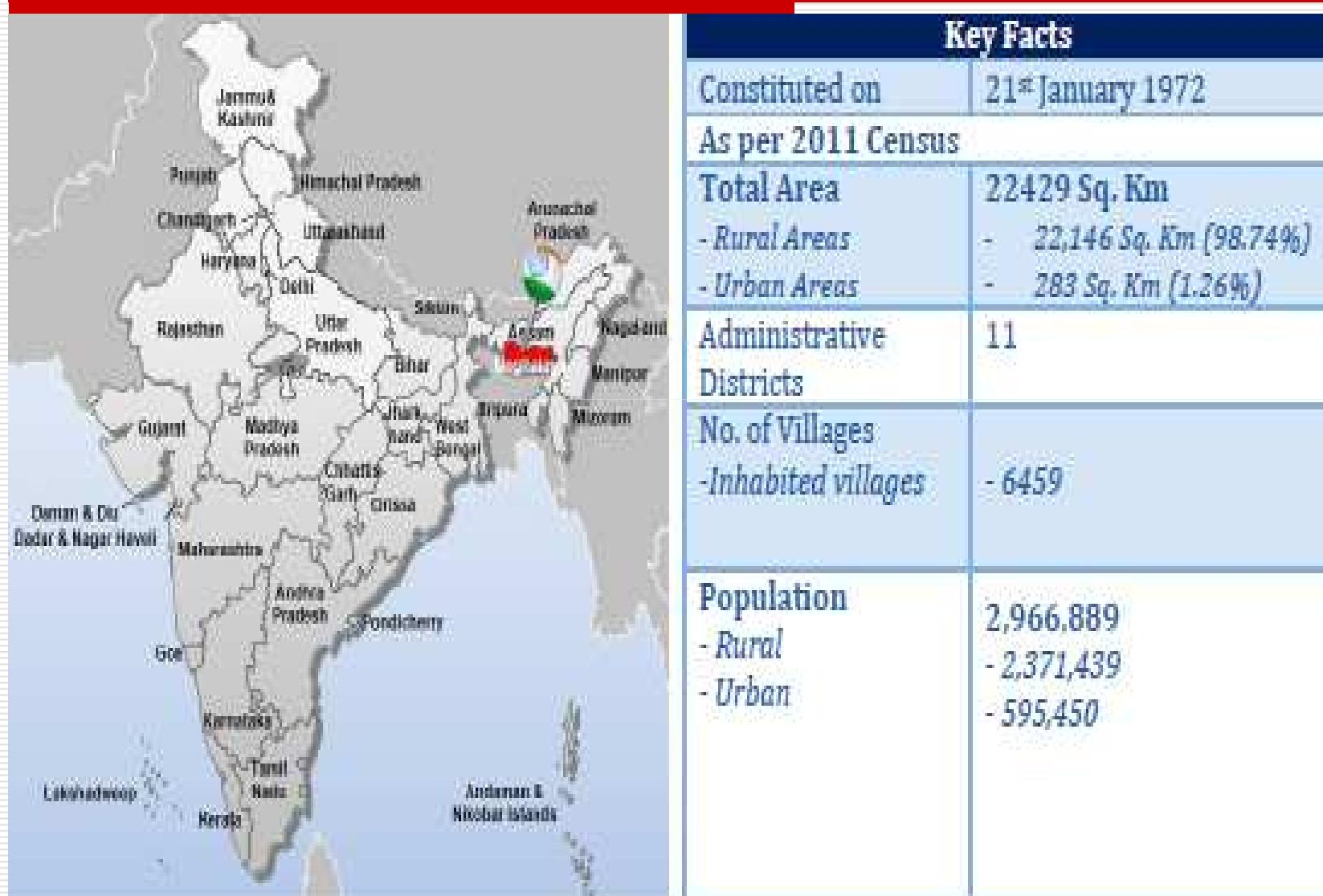


[Due to tripping of 132kV Leimatak-Ningthoukhong line @09:55hrs]

Electricity Demand Pattern & Forecasting in Meghalaya

Presented by
SLDC Meghalaya

Meghalaya (Key facts)



MePDCL Household Data for Meghalaya

Particulars	Electrified	Un-Electrified	Total HHs
FY15 (MePDCL)	3,94,785	2,15,601	6,10,486
Rural			
	2,82,185	1,94,933	4,77,118
Urban			
	1,12,600	20,668	1,33,268

The number of electrified households is expected to grow at the decadal CAGR of 2.60% in rural areas and at the decadal CAGR of 3.20% in urban areas .

About Meghalaya

- Meghalaya is one of the few states in India which despite having high hydro potential and availability has
 - Lower per capita consumption than National Average of 1000kwh
 - Per capita consumption of the state has marginally grown from 456kwh in FY12 to 499kwh in FY15. (source: Meghalaya 24x7 PFA).
 - Rapidly growing demand due to
 - High GDP growth in the state
 - Access to power for all by 2019
 - Growth in demand has exceeded capacity addition
 - Widening of gap between demand and supply
 - Domestic category is presently still suppressed owing to localized capacity constraints.
-

Per Capita-Consumption

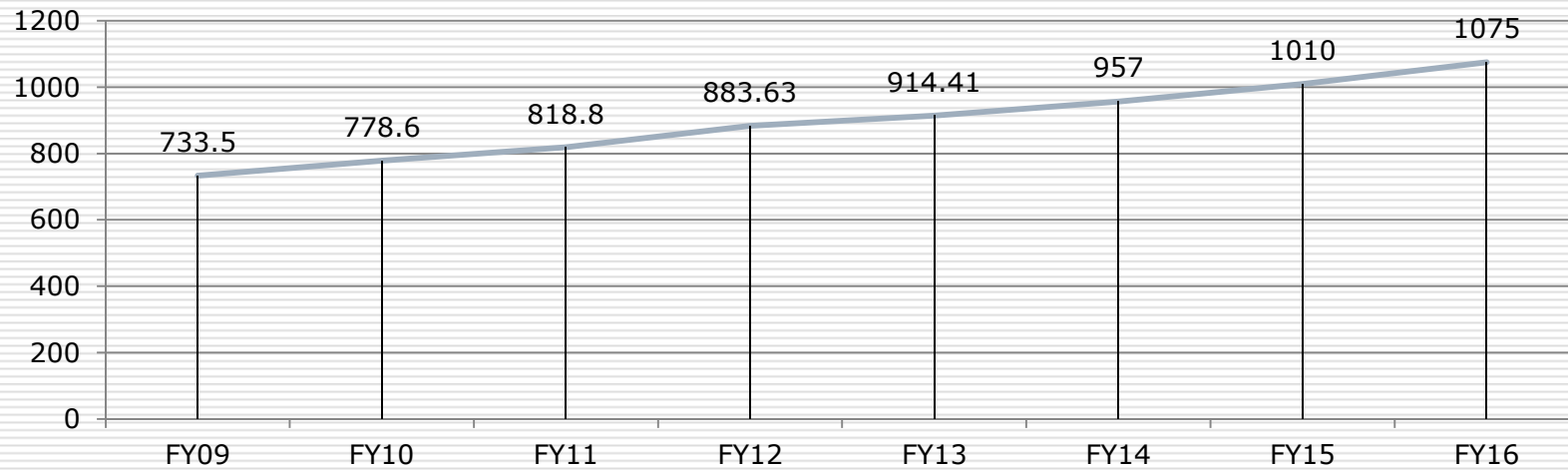


Figure All India annual Per -Capita consumption of Electricity(kWh)

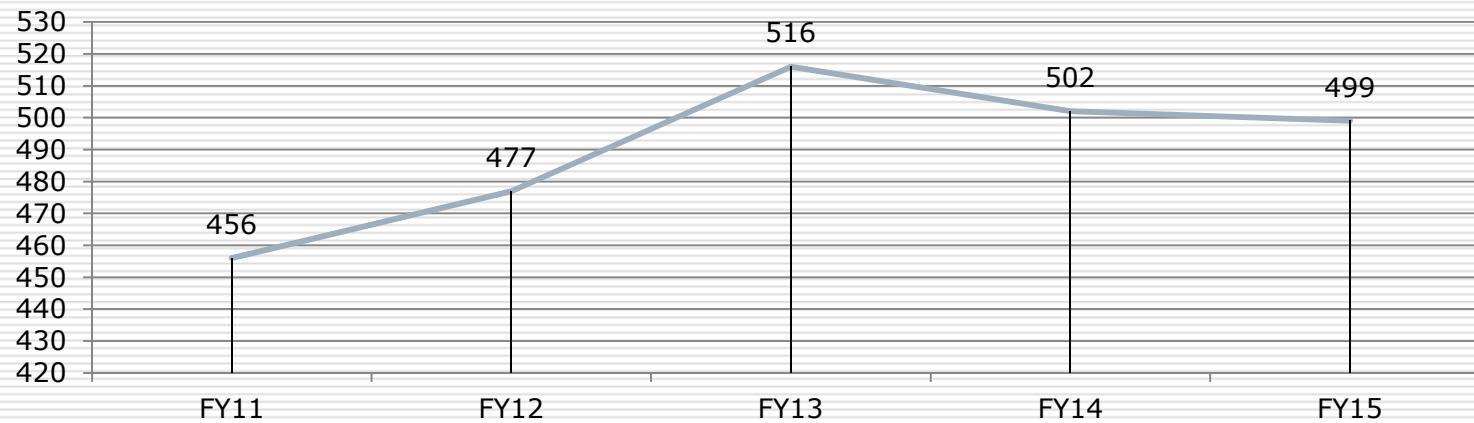
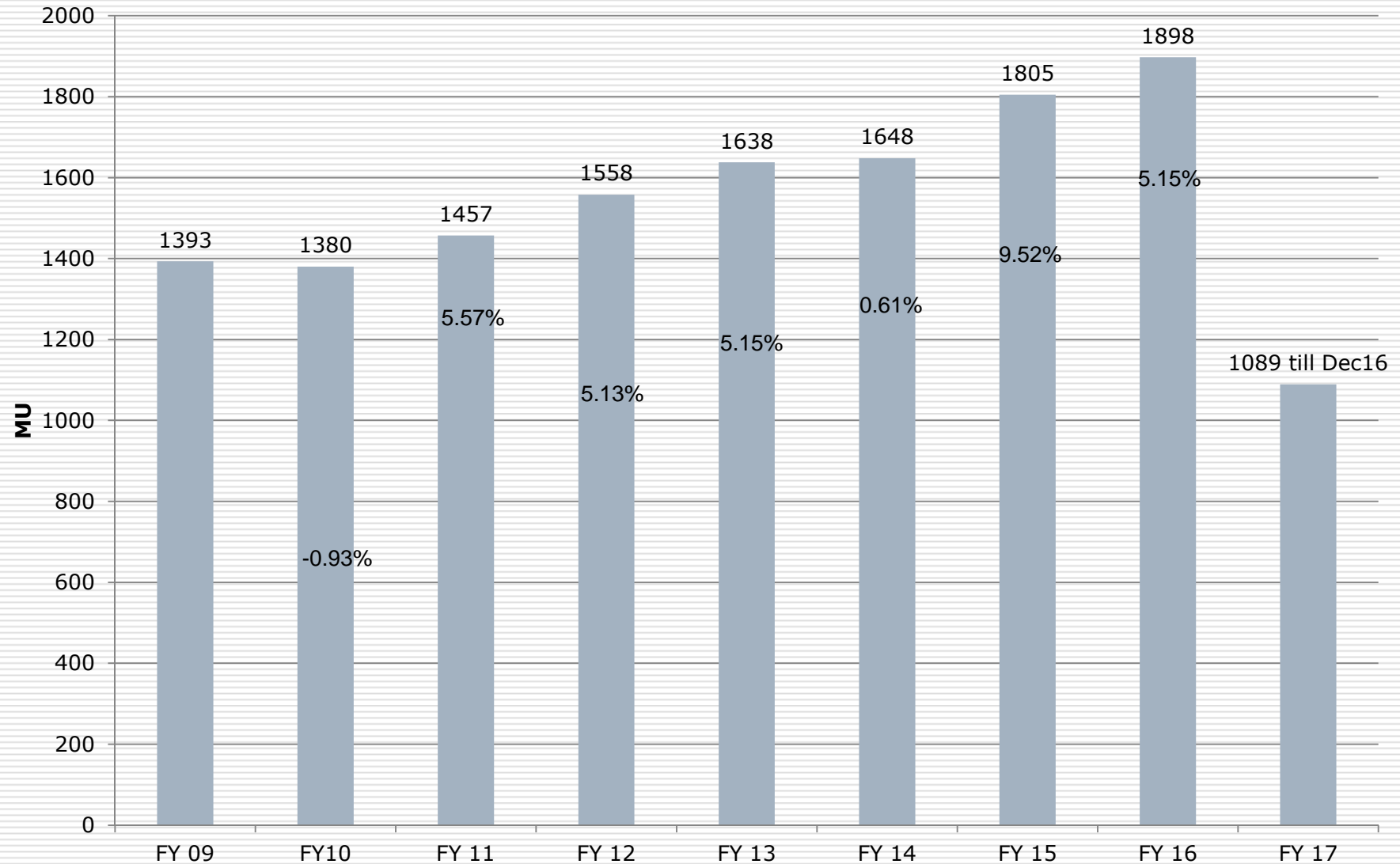
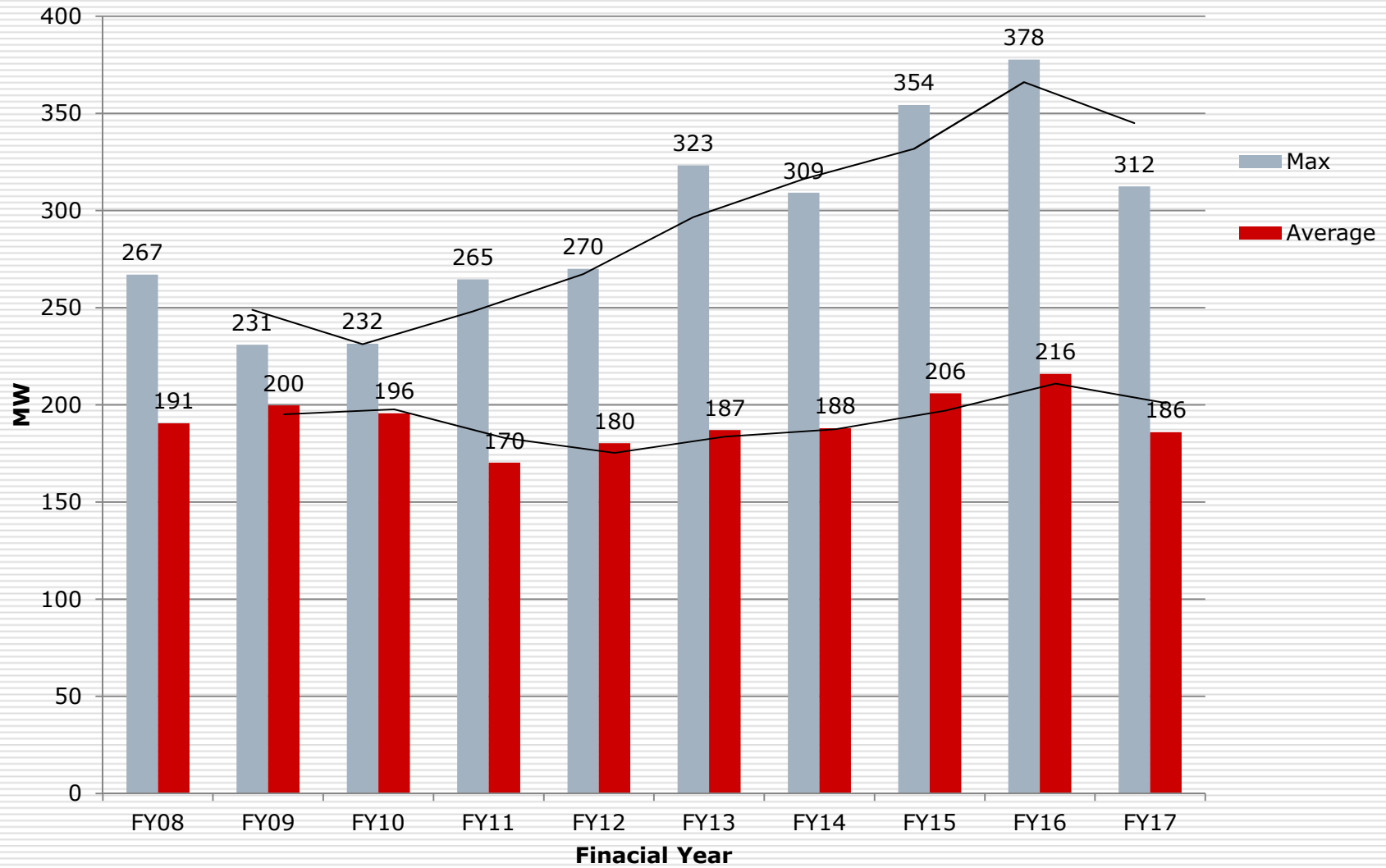


Figure Meghalaya Per -Capita consumption of Electricity(kWh per person) in recent year

Actual Energy Requirement of the Meghalaya (MU)



Max Demand Met/Average Demand Met



-
- Per Capita consumption declining trend from FY13 onwards due to decrease in industrial production over the year.
 - Demand has not increased substantially over the years owing to fact that some of the key industries have either closed down or shifted to CPP/OA.
 - Due to geographical features of the state (i.e. location, accessibility, and weather) along with current tariff levels play a significant role in determining the current and future demand.
 - The future demands have been derived by estimating the urban and rural household consumption after taking into account the growth in number of electrified households on the one hand and the growth in average consumption per household on the other hand.
-

Typical Daily Load Curves of Meghalaya

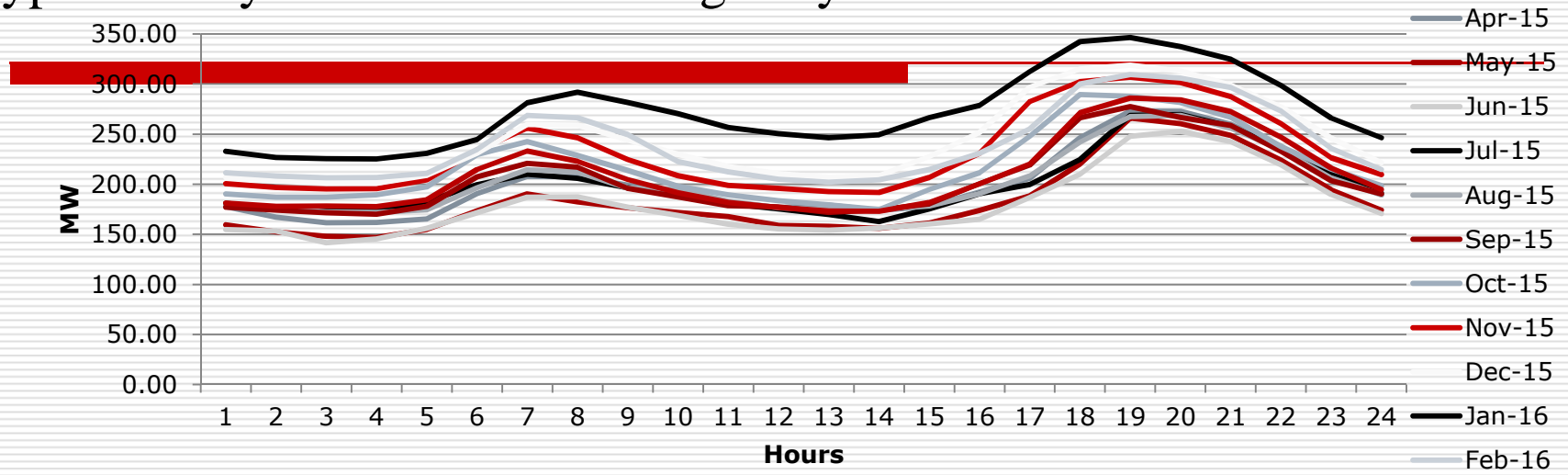


Figure: Daily load curves for the year 2015 -2016

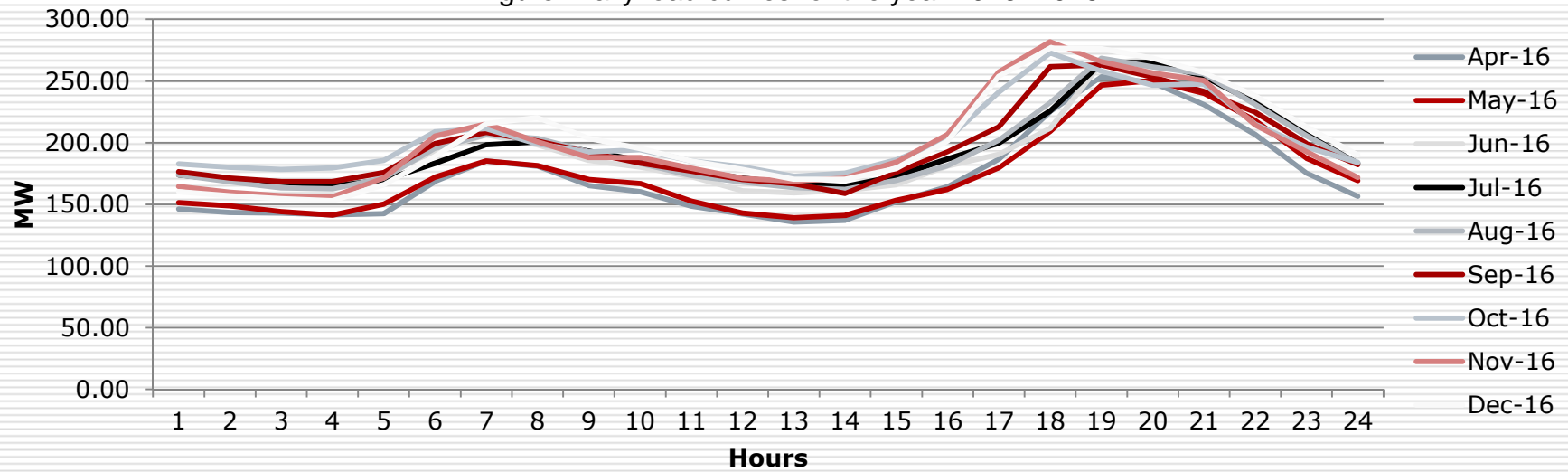


Figure: Daily load curves for the year 2016 -2017

-
- Daily Load curves show that irrespective of seasonal variation , there is peaking in the evening hours only which is attributed to the fact that there is substantial impact of domestic load in the evening.
 - Consistently seen a variation in minimum and maximum demand across the year i.e. from about 150 MW to more than 300 MW whereas the average/base demand is about 200 MW only.
 - Adoption of various energy efficiency measures like energy efficient lighting (use of LEDs), adopting demand side management initiatives like introduction of Pre-Paid metering system, etc., would also help in reducing to some extent the peak demand of the state.
-

Actual Energy Requirement 2015-16 vs Projected LGBR 2016-17

All units in Mu														
		Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Total
A	Total Energy Consumed(MePDCL)	133	131	121	132	127	128	134	144	160	166	151	146	1673
B	Total Energy Consumed(Including OA)	145	141	129	150	154	146	159	169	185	198	167	153	1898
C	OA's Customer Energy Consumed (MU)(C=B-A)	13	10	8	18	27	18	25	25	25	32	17	7	225
D	Allotted Energy to OA's customer	32	32	33	33	33	32	33	32	33	33	31	33	395
E	OA Customer Not Consumed (MU) (E=D-C)	20	23	25	15	6	14	9	7	9	1	15	26	170
F	Total (F=B+E)	165	163	154	165	161	160	168	176	194	199	182	180	2068
G	Projected LGBR 2016-17	170	175	165	175	175	170	185	195	210	220	185	190	2215
	% in difference(F-G)	3	7	7	6	9	6	10	11	8	10	2	6	

Actual Energy Requirement 2016-17 Vs Projected LGBR 2017-18

All units in Mu														
		Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total
A	Total Energy Consumed(MePDC L)	116	123	129	130	118	124	128	125					
B	Total Energy Consumed(Including OA)	121	128	135	140	135	139	150	141					
C	OA's Customer Energy Consumed (MU)(C=B-A)	5	5	5	10	18	15	21	17					
D	Allotted Energy to OA's customer	32	32	33	33	33	32	33	32	33	33	31	33	
E	OA Customer Not Consumed (MU) (E=D-C)	27	28	28	24	16	17	12	16					
F	Total (F=B+E)	148	156	163	164	151	157	162	157					
G	Projected LGBR 2017-18	158	153	141	160	164	167	174	184	202	216	182	167	2068
	% in difference(F-G)	7	-2	-13	-2	9	7	7	17					

Table: Energy requirement of Meghalaya during FY 18 would be 2068MU. With 24X7 supply to be provided across the state the demand would likely increase .

Arriving at Load Generation Balance Report (LGBR)

Inputs:

- Data from CEA's Electric Power Survey (EPS) pertaining to Energy Consumption, Energy Requirement and Peak Load for Meghalaya.
- MeECL's Commercial Data pertaining to Total Connected Load and Energy Consumption consumer category-wise.
- Joint Initiative Paper between Government of India and Government of Meghalaya regarding 24x7 Power for all (Meghalaya).
- Anticipated / booked Open Access quantum.
- MePGCL's Generation targets / Maintenance Schedule.
- MePTCL's Maintenance Schedule

Procedure:

- Latest available connected load from MePDCL. A power factor of 0.85 was considered for arriving at the connected load term in MW.
 - Long Term forecast of Energy Requirement and Projected Peak Demand from the latest EPS is considered for the Financial Year for which the LGBR is being prepared.
 - Latest available consumer category-wise monthly energy consumption pattern from MeECL's Commercial Data is noted.
 - As per the 18th EPS, the Load factor is fixed at 57.5%. However, from Power flow data available from the SCADA system of SLDC, it is observed that there is a varying trend in the load factor for Meghalaya. Accordingly, scaling of the Load Factor was done.
-

Arriving at Load Generation Balance Report (LGBR) contd.

- Arrived Load Factor, the month wise Maximum Restricted Demand is computed by dividing the Monthly energy requirement (consistent with the latest EPS) by the corresponding load factor.
- The arrived month wise Maximum Restricted Demand should be consistent with the actual month wise Maximum Restricted Demand met of the previous months / years coupled with the anticipated / booked / actual quantum of Open Access / collective transactions.
- Consideration is to be given to the actual generating capacity season wise along with the associated interstate / intrastate transmission line loadings.

Issue/Challenges:

- The Demand profile of Meghalaya keeps on fluctuating due to a reduction in industrial load attributed to permanent / temporary disconnections, market dynamics, discontinuance etc.
 - The Maximum Restricted Demand has a direct correlation with month wise availability of generation and related transmission constraints as per different configurations of Meghalaya's power system in conjunction with NER grid.
 - The quantum of Open Access / collective transactions has been found to vacillate.
-

Load Forecasting

Objective :

To get the accurate forecast of system/ area loads in the state.

Inputs :

- Load History (Normally stored from actual SCADA data)
- Loads as function of Weather data
- Effective weather forecast
- Weather history data
- Formula to get derived forecast variable
- Planning Inputs

Load Forecast Type:

1. Short Term (for every 5 minutes or real time)
 2. Medium Term (Hourly or weekly forecast and daily planning)
 3. Long Term (Monthly Planning and Year>1year)
-

Load Forecast Methodologies with the new SCADA system

- Load Shapes (Saved load curved in history can be used for forecasting)
 - Load curved are cyclic in nature over the week.
 - With appropriate load growth(say 5% over year /month)

This technique can effectively be used.

Challenges: Highly dependent on weather, special days, planning impact cannot be handled.

- Similar day (based on similar weather day in history)
 - Takes care of weather dependencies
 - Gets the weather forecast for the selected day
 - Identify similar weather day in history (closest match)
 - take it as base load and apply load growth

Challenges: Weather Sensors are required to be installed incorporating with RTU .

- Average Day (for instance, average of 01.01.17 - 06.01.17 to current forecast 07.01.17)
 - Takes the average of time block previous/week days and forecast to current date.
-

Load Forecasting

- **Meghalaya load forecasting is adopted from average day method in 15 minute time block based from historical data with appropriate load scaling and shifting technique (Normally stored from actual SCADA data)**
- **Average day forecast gives more accurate than other two methodologies.**

Issue/ Challenges:

- Highly dependent on historical data/weather data forecast
 - All techniques (Load shapes+Similar day+Average day) can be effectively used only if weather sensors are installed in all respective substations in the state incorporating with RTU.
 - For Long term load forecasting –
 - Appropriate Load growth and the planning indices are crucial.
 - Dependent on RTU and strong communication with control centre
-

THANK YOU
FOR YOUR PATIENT HEARING KIND ATTENTION

Per Capita-Consumption

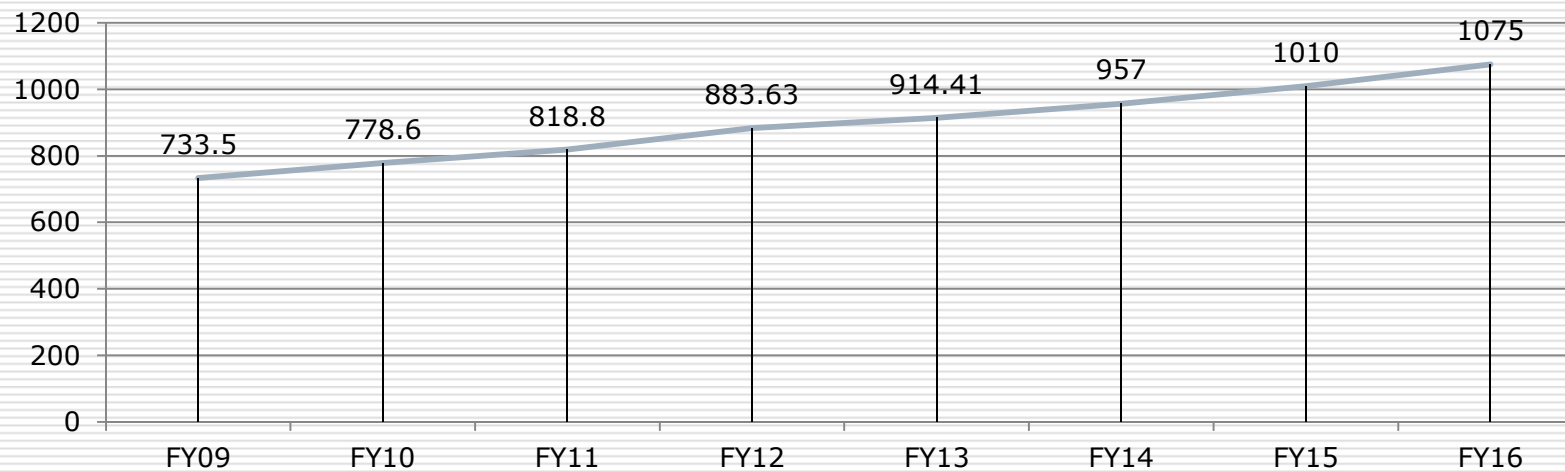


Figure All India annual Per -Capita consumption of Electricity(kWh)

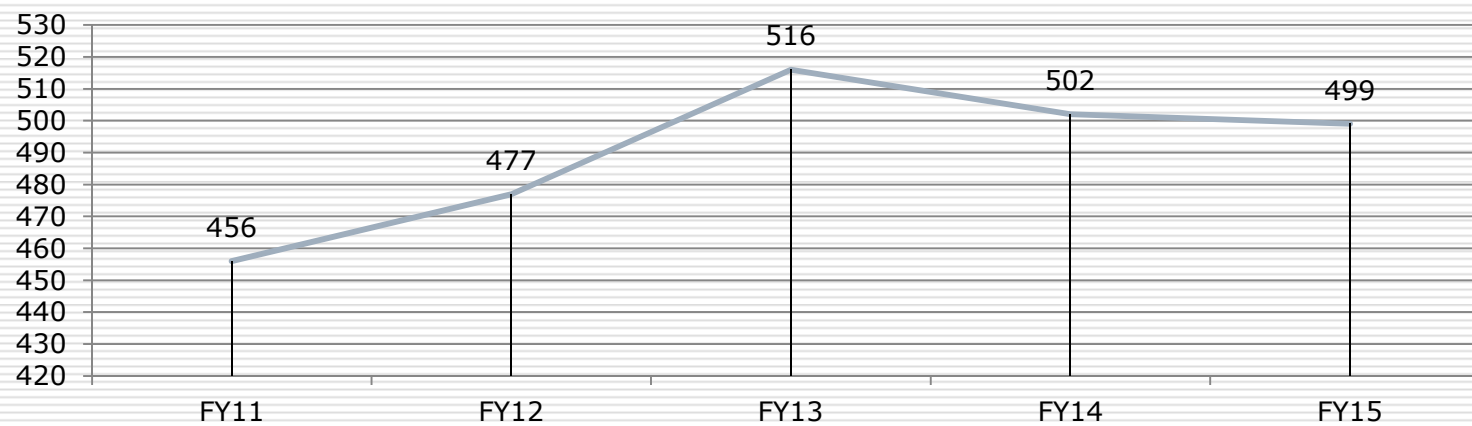


Figure Meghalaya Per -Capita consumption of Electricity(kWh per person) in recent year



**SALE OF URS POWER IN MARKET
AS PER CERC IEGC FIFTH
AMENDMENT REGULATIONS**

**OTPC
DATE 28/07/2017**

Preamble



- IEGC 5th Amendment came into force w.e.f. 01st May 2017
- The following points has been added after 6.5.4 of principal regulation in the 5th amendment
 - The original beneficiary shall communicate its consent to the ISGS by 0945 AM each day about the quantum and duration of power for next day for sale in the market.
 - The original beneficiary may also provide a standing consent to the ISGS for sale of power in the market. for specified duration and specified quantum
 - The ISGS shall not sell the power of any beneficiary in the market without its expressed consent

Preamble



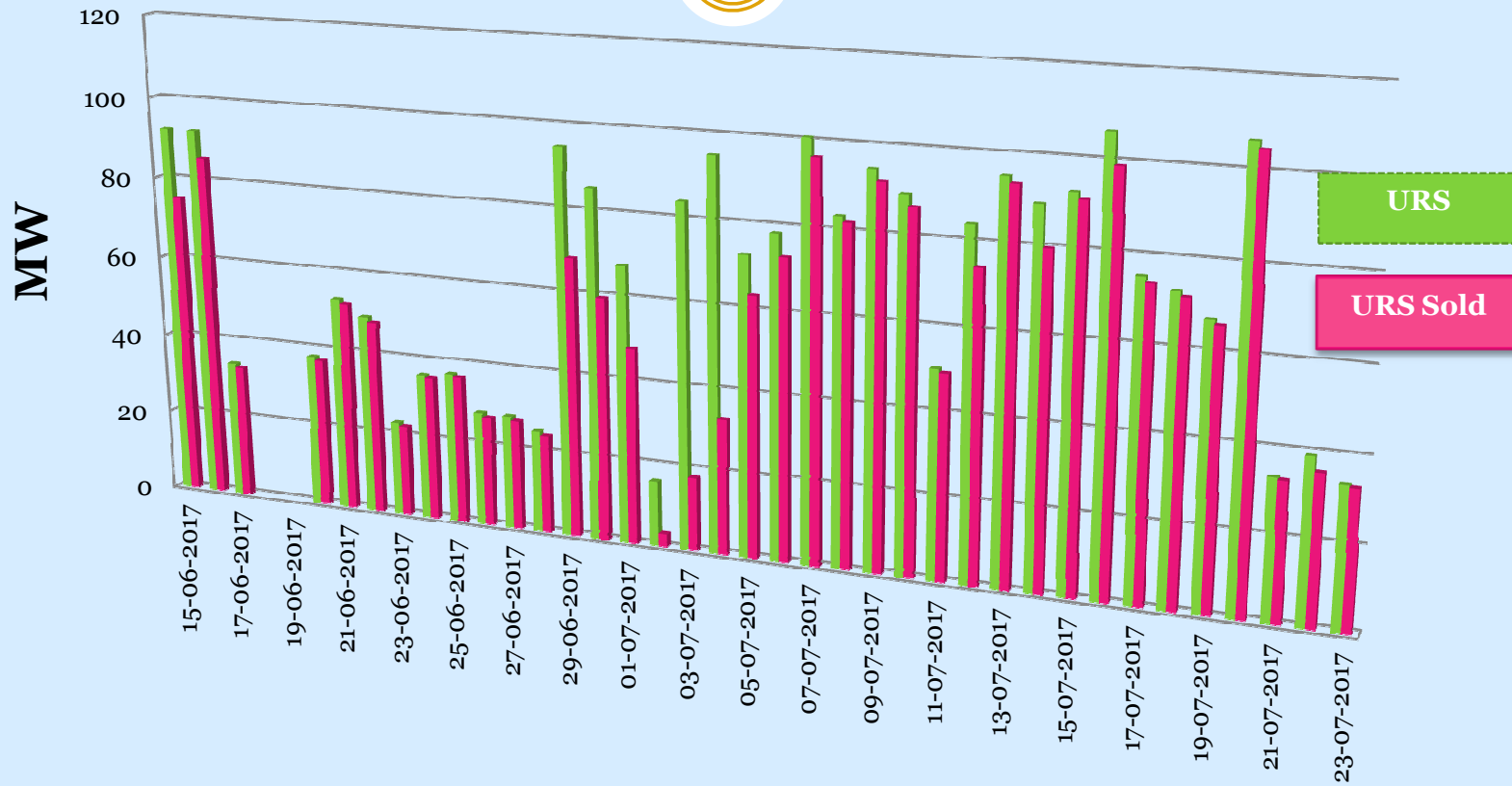
- The following points has been added after 6.5.4 of principal regulation in the 5th amendment Contd...
 - The beneficiary shall not be allowed to schedule the power for which consent has been given by the beneficiary to the ISGS except in cases where power is still available with the ISGS after sale through bilateral and collective transactions. Also if the beneficiary wants to recall the power for which they have already given consent for sale in the market(not sold by the ISGS), they should take consent from the respective ISGS and then apply to RLDC for recalling back their power from that ISGS.
 - In case of sale of share of original beneficiaries in market by ISGS for which consent has been given, the realized gains shall be shared between the ISGS and the concerned beneficiary in the **ratio of 50:50** or as mutually agreed by the ISGS and concerned beneficiary in the billing of the following month

Day Ahead URS from Nagaland



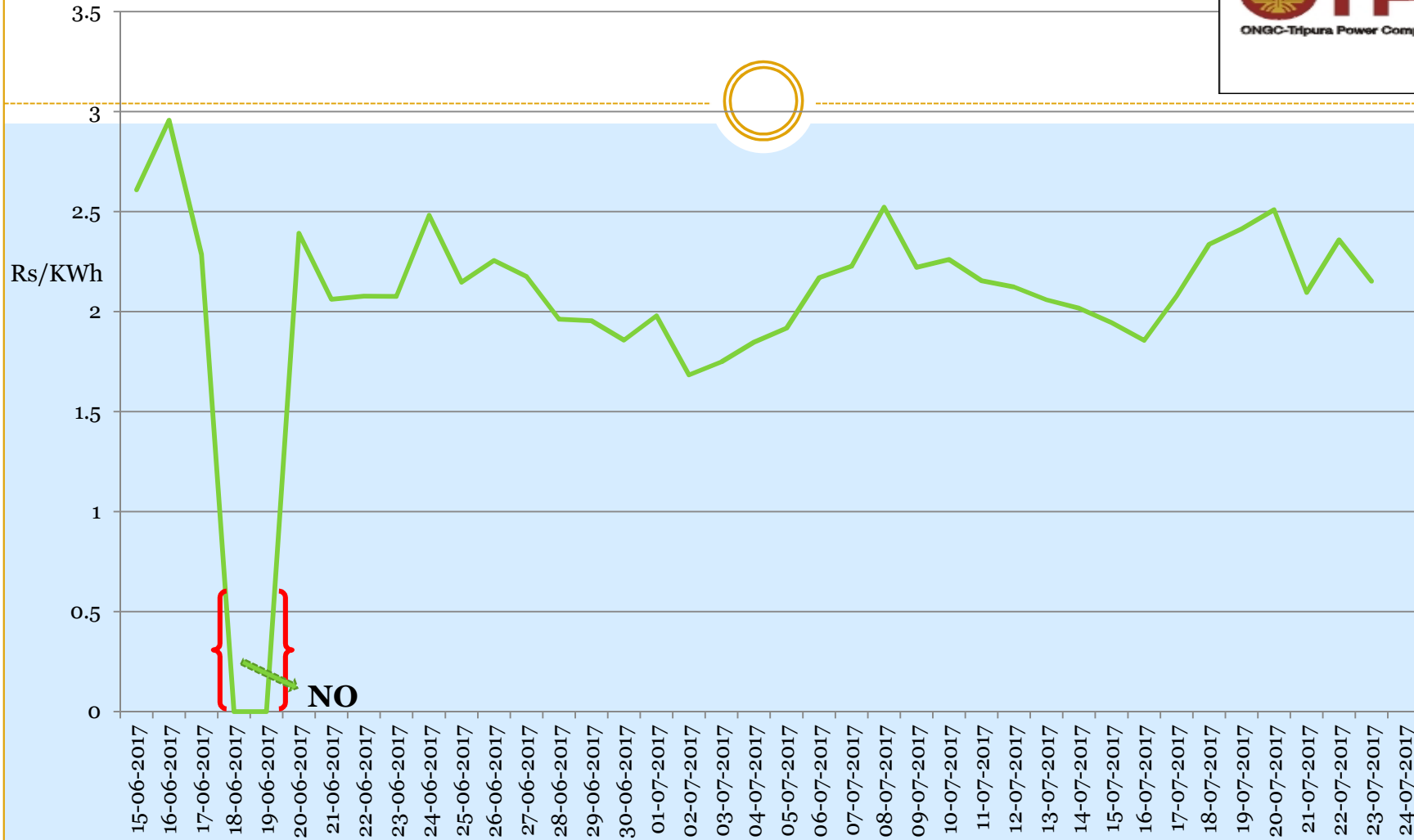
- On Dated 15/06/2017 1st time Nagaland given Day Ahead URS of 92.04 MW in which 75 MW was sold
- Till 24/07/2017 Nagaland have declared Day Ahead URS of 2.2274 MU, in which 2.12965 MU was sold in Exchange
- Total Sale value in INR Till 24/07/2017: Rs 4679653.48
- Tentative gain of Nagaland: Approx Rs 613450/- (Value may change on real calculation)
- On Dated 25/07/2017 1st time Meghalaya given Day Ahead URS of 0.41176 MU

URS Clearance Vs URS Sold



	15-06-2017	16-06-2017	17-06-2017	18-06-2017	19-06-2017	20-06-2017	21-06-2017	22-06-2017	23-06-2017	24-06-2017	25-06-2017	26-06-2017	27-06-2017	28-06-2017	29-06-2017	30-06-2017	01-07-2017	02-07-2017	03-07-2017	04-07-2017	05-07-2017	06-07-2017	07-07-2017	08-07-2017	09-07-2017	10-07-2017	11-07-2017	12-07-2017	13-07-2017	14-07-2017	15-07-2017	16-07-2017	17-07-2017	18-07-2017	19-07-2017	20-07-2017	21-07-2017	22-07-2017	23-07-2017
■ Series1	34	39	34	10	67	73	75	10	93	89	95	84	50	89	95	83	10	78	73	95	84	16	68	85	95	25	28	28	37	36	23	49	53	38			34	92	92
■ Series2	33	36	33	10	66	72	74	99	91	80	94	74	50	87	92	82	96	73	63	33	18	3	48	59	68	24	27	27	37	36	23	48	52	37			33	85	75

Average Price



What we can Do



- Constituents are giving URS on real time bases and subsequently we are processing the same in TAM with all necessary NOC, but the probability of power sale in TAM is very low.
- In the view of above kindly declare Day URS from OTPC Palatana plant, and it will be in the best interest of OTPC and constituents as realization gain will be shared 50:50.



Thanks