भारत सरकार Government of India

विद्युत मंत्रालय Ministry of Power

उत्तर पूर्वी क्षेत्रीय विद्युत समिति North Eastern Regional Power Committee

AGENDA NOTES FOR DISCUSSION

OF

22ND TCC MEETING

(UNDER THE AEGIS OF NEEPCO)

Venue : Hotel Radisson Blu, Guwahati

Date (TCC) : 26th March, 2022

CONTENTS

ANNEXURES

SN	DESCRIPTION
I	Annexure- A.20
II	Annexure- A.21
III	Annexure- A.22
IV	Annexure- B.05

1. MEETING SCHEDULE

SN	Meeting	Date	Time	Venue
1	TCC	26.03.2022	3:00 PM	"Hotel Radisson Blu" Guwahati
2	NERPC	28.03.2022	10:00 AM	"Hotel Taj Vivanta" Guwahati

2. CONFIRMATION OF THE MINUTES OF 21ST TCC MEETING & 21ST NERPC MEETING

The minutes of the 21st TCC & 21st North Eastern Regional Power Committee (NER Power Committee) meetings held on 4th February, 2021 at Kohima were circulated vide letter no. NERPC/OP/Committee/2021/5346-5419 dated 15th March, 2021.

TSECL vide letter dated. 07th April'2021 has submitted comments/observations as follows:

1. ITEM NO. B.06 : APPROVAL OF SCHEMES APPROVED IN THE 1ST AND 2ND NERPCTP - NERTS

A. By POWERGRID under RTM

(iv) North Eastern Region Strengthening Scheme - XIV (NERSS-XIV)

i. LILO of Palatana - Surajmaninagar (ISTS) 400kV D/c line at 400/132kV Surajmaninagar (TSECL) S/S

ii. 4 no. of 400kV line bays at Surajmaningar (TSECL) S/S for termination of above LILO

Deliberation of TCC

"The proposals have not been agreed by TSECL and hence referred back by TCC to NERPC -TP for deliberation."

Comments of TSECL

i) Up-gradation work of Surjamaninagar 400 KV sub-station (TSECL) has already been awarded by TSECL on 11th January, 2021 with completion period of 12 months. **PowerGrid may expedite 400 KV LILO line work of**

Palatana - Surajmaninagar (ISTS) 400kV D/c line at 400/132kV Surajmaninagar Sub-station (TSECL).

ii) In line with letter No. 12/18/2017-Trans, dated 19.08.19 of Ministry of Power, Govt. of India communicated to the Ministry of DoNER, Govt. of India, 2 (two) No. 400 KV line bays at Surjamaninagar sub-station (TSECL) and 2 (two) No. 400 KV line bays at Surjamaninagar (ISTS) sub-station are envisaged under the scope of ISTS.

TSECL will be constructing 2(two) no. 400 KV line bays within the Up-gradation Scope under NESIDS for Palatana Loop-in at Surjamaninagar 400 KV sub-station (TSECL). Scope of Up-gradation of Surjamaninagar sub-station (TSECL) has already been communicated by TSECL to CEA and PowerGrid (CTU) on dated 10th December, 2019.

For Palatana Loop - out, **only 2(two) no. 400 KV line bays will be required under ISTS scope at Surjamaninagar 400 KV sub-station (TSECL). Requirement of 4(four) nos. 400 KV line bays at Surjamaninagar 400 KV sub-station (TSECL) under ISTS scope may be reviewed.**

2. ITEM NO. B.06: APPROVAL OF SCHEMES APPROVED IN THE 1ST AND 2ND NERPCTP - NERTS

B TBCB

1.1. Following ISTS schemes were approved in the 2nd meeting of North Eastern Regional Power Committee (Transmission Planning) held on 25.09.2020 through Video Conference. Such schemes requiring approval of TCC & NERPC are given below:

(iii) Shifting of Surajmaninagar (TSECL) - Comilla (Bangladesh) 400kV cross border link to Surajmaninagar (ISTS)

i. Shifting of Surajmaninagar (TSECL) —`Comilla (Bangladesh) 400kV D/c (operated at 132kV) line to Surajmaninagar (ISTS) and operation as

Surajmaninagar (ISTS) -Comilla (Bangladesh) 400kV D/c (operated at 132kV) line.

ii. 2 no. 132kV line bays at Surajmaninagar (ISTS) 400/132kV S/s for termination of Surajmaninagar (ISTS) - Comilla (Bangladesh) 400kV D/c (operated at 132kV) line.

Deliberation of TCC :

The proposals have not been agreed by TSECL and hence referred back by TCC to NERPC -TP for deliberation.

Comments of TSECL

Bangladesh has affirmed to draw power only at 132 KV and the extension of link between Comilla and Surjamaninagar sub-station (TSECL) to Surjamaninagar 400/132 KV substation (ISTS) will entail an additional cost which can be saved by retaining the present transmission configuration between Surjamaninagar sub-station (TSECL) and Comilla. Government of Tripura has already taken up the above issue with the Ministry of Power, Govt. of India, which is awaiting decision.

Surjamaninagar 400 KV sub-station (TSECL) will be connected with 400 KV transmission line from Palatana for both drawal and dispatch of power. Moreover, major Generating plants in the State periphery will be all connected at Surjamaninagar 400 KV sub-station (TSECL). As such, cross border power supply to Bangladesh can be maintained reliably and more efficiently from Surjamaninagar 400 KV sub-station (TSECL) rather than from Surjamaninagar sub-station (ISTS).

From operational point of view, power supply to Bangladesh is always being maintained by TSECL in co-ordination with NERLDC.

Bangladesh power supply from Tripura was made through strong persuasions and initiations by the State Government. Thus, future power supply to Bangladesh cannot be considered exclusively on commercial venture, rather, it has to be managed with common understanding on account of technical, economic and social relation with Bangladesh.

Moreover, Tripura has always maintained its commitment of power supply to Bangladesh. Government of Tripura has already proposed to the Ministry of Power, Govt. of India to extend Power Supply Agreement for sale of power to Bangladesh for a further period of five years, which is under active consideration by Ministry of Power, Govt. of India.

Ministry of Power, GoI has already taken a meeting on 22nd Dec, 2020 on the issue where Tripura has given all justifications in support of retention of Surajmaninagar (TSECL) -Comilla line at Surjamaninagar sub-station (TSECL).

Tripura is therefore urging again for consideration of retention of Surajmaninagar (TSECL) - Comilla line at Surjamaninagar sub-station (TSECL).

3. ITEM NO. B.07 : APPROVAL OF SCHEMES APPROVED IN THE 1ST NERPCTP - NERPC

N. Shifting of Palatana - Surajmaninagar (TSECL) 400kV D/c line (operated at 132kV) to the 400/132kV ISTS S/s at Surajmaninagar - implementation by POWERGRID (by NORTH EASTERN REGIONAL POWER COMMITTEE 30 July 2020) as already allocated to them by MoP, GoI was approved in the 1st NERPCTP meeting. The same is put up for TCC/RPC approval.

Deliberation of TCC :
TCC noted and recommended for approval of RPC.

Deliberation of RPC :
RPC noted and approved the recommendation of TCC.

Comments of TSECL :

There will be a time-lag between the commissioning of Surjamaninagar 400 KV sub-station (ISTS) and Surjamaninagar 400 KV sub-station (TSECL). During this interim period, on disconnection of Palatana Surjamaninagar (TSECL) link (presently charged at 132 KV), Tripura system stability will be highly affected.

It was proposed by Tripura that single circuit 400 KV link of Palatana - Surjamaninagar (charged at 132 KV) should be continued till the completion of Surjamaninagar 400 KV substation (TSECL). The second circuit of double circuit Palatana - Surjamaninagar line may be extended to Surjamaninagar (ISTS) 400 KV sub-station. In this arrangement, power from Palatana can be evacuated both through Surjamaninagar (TSECL) and Surjamaninagar (ISTS) sub-stations until

completion of up-gradation works of Surjamaninagar sub-station (TSECL) into 400 KV.

NERLDC, POSOCO has conducted system study considering normal loading pattern and with N-1 and N - 2 contingency conditions during the interim period with disconnection of Palatana - Surjamaninagar 400 KV double circuit from Surjamaninagar 132 KV sub-station (TSECL) and the study also suggests that the disconnection of Palatana - Surjamaninagar 400 KV double circuit line (presently operated at 132 KV) from Surjamaninagar 132 KV substation (TSECL) will lead Tripura system to be vulnerable and highly insecure to run.

Government of Tripura has already taken up with Ministry of Power, Govt. of India for Palatana to remain connected with Surjamaninagar sub-station (TSECL), Tripura during the interim period between the commissioning of Surjamaninagar 400 KV sub-station (ISTS) and Surjamaninagar 400 KV sub-station (TSECL) to avoid vulnerability of Tripura Power System.

MoP, GoI has already taken a meeting on 22nd Dec, 2020 on the issue where Tripura has requested for retention of Palatana with Surjamaninagar (TSECL) sub-station during interim period of commissioning of Surjamaninagar 400 KV sub-station (ISTS) and Surjamaninagar 400 KV sub-station (TSECL) which will affect Tripura Power System severely.

It may kindly be noted that the State 'Government has--been intimated by the Ministry of Power, Govt. of India vide letter dated 22nd February, 2021 that the proposal of TSECL has been referred to the National Committee on Transmission (NCT) for consideration and giving its recommendation to the Ministry of Power, Govt. of India.

Tripura is therefore urging again for consideration of Palatana 132 KV connectivity retention at Surjamaninagar sub-station (TSECL) until its up-gradation to 400 KV.

No other comments or observations were received from any constituents, the TCC and NER Power Committee may confirm the minutes of above meetings with above modifications.

3. ARRANGEMENT OF AGENDA OF 21ST TCC MEETING:

SN	DESCRIPTION	CATEGORY
1	ITEMS FOR DISCUSSION	A
2	ITEMS FOR APPROVAL	B
3	COMMERCIAL ISSUES	C
4	ITEMS FOR INFORMATION	D
5	ITEMS TO BE REFERRED TO SUB-COMMITTEE	E

1. CATEGORY - A : ITEMS FOR DISCUSSION

ITEM NO. A.01 : IMPORTANCE OF DEVELOPING SMALL HYDRO PROJECTS IN THE NER STATES UNDER MNRE, GOI:SHP SCHEME – DoP NAGALAND

The NE (North Eastern) States of the country is endowed with vast hydropower potentials to provide clean renewable energy without affecting much of the river ecosystems and the environments. The HEPs (Hydro Electric Projects) in this region require considerably smaller space and have minimal impact of displacement and rehabilitation as it involves less land area due to favourable topography.

The development of HEPs is not only important in the North Eastern states to enhance renewable capacity addition in line with the Govt of India's road map to achieve 175 GW, but also it will be a move towards fulfillment of Renewable Purchase Obligation (RPO).

The development of HEPs is capital intensive and hence, it becomes difficult for the States to develop such projects independently due to resource constraint and are left with the alternative of importing power from outside incurring huge financial burden on the State resources.

Earlier till the 12th 5 Year Plan (2007-2012), the MNRE (Ministry of New & Renewable Energy) was supporting the development of SHPs (Small Hydro Projects) to the NE States through SHP schemes @ INR 7.5 Crore/MW, which indeed has helped many projects come into picture in the North East States. However, with the discontinuance of the said SHP Scheme by the MNRE from April 2017 onwards, the most important and viable revenue generating sector of the NE States is left alone.

It is also imperative to note that the North East states being resource crunch states needs support of the MNRE, GOI to develop revenue generating SHPs as many rivers are still yet to be exploited of their potential and harnessing renewable energy from hydro potential sites is a sustainable goal which needs to be achieved.

The MNRE, GOI may therefore reconsider the implementation of SHP scheme to support the potential and viable hydropower projects.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.02	**:**	**STATUS OF RENOVATION AND UPGRADATION OF PROTECTION AND CONTROL SYSTEM OF 66kV SUBSTATION – DoP NAGALAND**

The 21st TCC/RPC meeting on 04th Feb'2021 approved the DPR for Renovation and Upgradation of 66kV Transmission System in Nagaland.

DoP Nagaland has already sent the proposal for PSDF funding thereafter. The exact status may be intimated.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.03	**:**	**FREQUENT TRIPPING OF 33kV FEEDERS AT ZIRO S/S – NERTS**

Frequent tripping of 33kV Feeders at Ziro Ss has been observed which has stresses the Transformer winding and leads to reduction of Transformer Residual life. Table below shows that a total of 1422 tripping has occurred since May'2020 to October'2021. During such tripping heavy fault current passes through the transformer. As such it is requested

to take necessary action for monitoring of Transmission lines so that reducing the tripping.

Total	Kurung Kumey		Kimin		Old Ziro	
	O/C	E/F	O/C	E/F	O/C	E/F
May'20 to Nov'20	229	109	149	55	62	24
Jan'21 to Oct'21	207	156	224	145	37	25
Total	436	265	373	200	99	49
Total (Since May'20 to Oct'21)	**701**		**573**		**148**	

Deliberation of the 184th OCC meeting held on 26th November, 2021

Chief Manager(AM), NERTS informed that due to persistent fault in the downstream of Ziro S/Sn the ICT condition has degraded. Even though the 33kV feeder protection settings have been made sensitive the repeated through fault current has led to huge axial forces and core damage. He requested the guidance of forum to resolve this long-standing issue. Member Secretary, NERPC stated that this issue has not been resolved by DoP Ar. Pradesh even after repeated persuasion. After detailed deliberation the forum advised DoP Ar. Pradesh to clear the infringement of 33kV feeders connected at Ziro(PG) S/Sn so that un-due stress on Transformer can be avoided. Further forum referred the matter for further deliberation in TCC/RPC.

Deliberation of the 4th CMETS

CTU mentioned that NERPC has informed that frequent tripping of 33kV feeders at Ziro (POWERGRID) 132/33kV, 1x15MVA S/s has been observed which stresses the transformer winding and may lead to reduction in life of transformer. 1422 no. of tripping have occurred from May 2020 to October 2021, viz. average 7-8 tripping per day. During such tripping, heavy fault current passes through the transformer. In this situation, ICT outage may result into interruption of power supply. Thus, it has been proposed to install new 50MVA 132/33kV ICT at Ziro S/s considering future load growth.

Arunachal Pradesh mentioned that the outgoing 33kV lines from Ziro are very long, some of them being even more than 100km. These lines pass through thick vegetation and difficult terrain areas, and thus are prone to more faults.

It was suggested that O&M may be done to avoid faults in feeder. Further, it was mentioned that Ziro (New), 132/33kV, 1x15MVA substation is under construction

under Comprehensive Scheme and some arrangement could be made by Arunachal Pradesh in the distribution system so that in case of contingency at Ziro S/s, some of the demand can be met from Ziro (New) S/s.

Arunachal Pradesh mentioned that POWERGRID may be requested from this forum to expedite commissioning of Palin, Kholoriang and Ziro-New (Yazali) 132kV substations under Comprehensive Scheme to improve power supply in Ziro area and improve reliability of power supply.

Considering the above, early commissioning of 132kV Ziro to Ziro-New(Yazali), 132kV Ziro-New to Palin, 132kV Palin to Koloriang alongwith 132/33kV stations at Yazali, Palin, Koloriang is very much required.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.04	**:**	**STATUS OF IMPLEMENTATION OF IMPORTANT ISTS PROPOSALS – DoP ARUNACHAL PRADESH**

Kathalguri-Namsai 220 kV D/C transmission line with 2x10 MVA, 220/132 kV Sub-Station at Namsai:

Above proposal, being one of the top priority scheme for Central and Eastern Arunachal Pradesh in terms of ensuring an adequate redundancy and supplementing the long radial 132 kV line of Ranganadi HEP to Namsai via Ziro, Daporijo, Aalo, Pasighat, Roing and Teju, to create a ring loop with the NE grid for power reliability, was suggested in the 1st Meeting of North Eastern Regional Standing Committee on Transmission (NERSCT) and on recommendation in the Joint System Study meeting on 05.08.2019, at Gurugram, it was approved in the 2nd Meeting of the North Eastern Regional Power Committee (Transmission Planning) (NERPCTP) held on 8th Nov. 2019 at Shillong. It was also approved in the 21st Meeting of TCC & RPC at Kohima on 3rd and 4th February 2021.

It was later given to understand that Ministry of Power, Government of India, had notified the proposal for implementation through TBCB route by appointing RECPDCL as Bid Processing Coordinator (BPC). The tender for the execution was to be opened in First Week of March 2022.

As such, considering the urgency and priority importance of the approved proposal,

detailed updated status and scheduled completion timeline may be elucidated.

Roing-Chapakhowa 132 kV D/C Transmission Line:

This project is also a very important inter-state connectivity link between Assam/NE grid with Arunachal Pradesh grid requiring urgent completion and commissioning for availability reliable & stable power in the grid of Central Arunachal Pradesh as redundancy to the lone long radial line of RHEP-Namsai 132 kV transmission line.

As briefed by the implementing agency in the 21st TCC and NERPC meeting at Kohima on 3rd & 4th Feb. 2021, the project was to be commissioned by April 2022. The updated progress status and firmed up commissioning timeline may be elucidated.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.05	**:**	**COMPREHENSIVE SCHEME FOR STRENGTHENING OF TRANSMISSION & DISTRIBUTION SYSTEM IN ARUNACHAL PRADESH(CSST&DS-AP) – DoP ARUNACHAL PRADESH**

Provision of PLCC systems in Arunachal Pradesh:

It is understood from the POWERGRID authorities that no PLCC system is provided in the scope of works under CSST&DS-APon the pleathat OPGW Communication System is adequate and reliable.

However, in consideration of Regulation 27 of CEA (Technical Standard for Communication in Power System Operation) Regulation, 2020, and Regulation 12 of CERC (Communication System for Inter-State Transmission of Electricity) Regulation, 2017, it may have to be included in the transmission system of Arunachal Pradesh under the packages of CSST&DS-AP.

On one hand, the Regulation 27 of the CEA Regulation, 2020 states the requirements of technical standards of PLCC for speech, data & tele-protection requirements of the power system, while on the other hand, Regulation 12 of CERC Regulation, 2017,

states that the communication system availability should be 99.99% annually and 100% with backup communication system.

Looking at the two regulations quoted above, it maybe implied that redundancy in the communication system for 100% availability is a must. While it is agreed that OPGW communication system is the most secured, reliable and efficient system, PLCC system have to be installed for ensuring protection and communication system back-up and redundancy. The matter needs a wider deliberation and discussion of the forum to take a decision on the issue.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.06	**:**	**TAWANG-BHUTAN 132kV INTERNATIONAL CONNECTIVITY BETWEEN LUMLA(INDIA) AND 600MW KOLONGCHU HEP IN BHUTAN – DoP ARUNACHAL PRADESH.**

The upcoming 132 kV transmission line from Khuppi to Tawang under Comprehensive Scheme would become a long radial line of about 190 kilometres terminating at Lumla in Tawang district, the easternmost tip of Arunachal Pradesh bordering the neighbouring country, Bhutan. Such a long radial line in extreme high altitude topography, aggravated with treacherous path the system that would pass through in difficult terrain and the snow cladded Sela pass could cause huge concern for stable maintenance of grid reliability and pose serious operational challenges and issues. Tawang, one of the most popular tourist destinations of the region, would very likely suffer due to low reliability in a radial feeder configuration.

Further, considering the huge military cantonment establishments in the districts of Tawang and enroute West Kameng, the demand and requirement of reliably stable and quality power supply are rising rapidly. Hence, meeting such defence related reliable power demand would be a herculean task if the transmission system is left to be a long radial one.

To overcome this bottleneck, it is proposedfor initiating establishment of a suitable transmission line between Lumla in Tawang (India) and the 600 MW Kholongchu Hydro Electric Power Station in Bhutan, which would be about 40 kilometres aerially from Lumla. Such a connectivity, apart from improving the reliability of both the Grids of India and that of Bhutan, also will help in furtherance of bilateral exchange of energy in times of needs.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.07 : RESTORATION OF 132kV ROING - PASIGHAT – DoP ARUNACHAL PRADESH.

Due to flooding in April 2020, two towers of Pasighat-Roing 132 kV transmission line of POWERGRID were damaged along Dottung river bank in Lower Dibang Valley district. Since then, the transmission line is on an Emergency Restoration System (ERS) till date, which had also to be shifted for sustenance of the supply due to continued erosion of the river bank. Presently too, the ERS is still remaining precariously vulnerable, with threat of collapse due to erosion.

It may be noted that above segment of the Pasighat-Roing 132 kV transmission line is part of the only radial backbone lengthy power line from Ranganadi to Namsai via Ziro, Daporijo, Aalo, Pasighat, Roing, Teju and Namsai, for powering the entire Central-Eastern Arunachal Pradesh. Hence, ensuring proper & regular safe transmission system of this entire line is extremely vital.

For permanent restorative works, POWERGRID had ventured for pile foundation works to be completed within April 2021. But, even after two years, the pile foundation towers could not be installed at Loc. 212P and Loc. 214P. The critical situation was personally inspected by Member Secretary, NERPC on 19.02.2022; whereon, it was found that only 6 out of the 16 piles of tower Loc. 214P was complete, no work was yet initiated for the Loc. 212P.

In view of the abnormal delay caused, and considering the inescapable importance and urgency in completion of the permanent system, it was asserted for invoking all available alternative means & approaches for expediting the works in order to complete and commission the same before onslaught of the upcoming monsoon. The representatives of NERTS, POWERPGRID, and the executing agency had assured and committed for completion of the pile works of Loc. 214P by April 2022 and Loc. 212P by July 2022. The Chief General Manager, POWERGRID, NERTS, present on spot had assured completion of the entire works and charge the renovated line by September 2022; and he also further assured to ensure stability of the ERS system till such time with such measures to avoid any power supply disruption of the transmission line.

NERTS, POWERGRID, may update the status of the latest work progress and confirm the completion timeline.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.08	**:**	**PROVISION OF TESTING & DIAGNOSTIC TOOLS AND EQUIPMENT FOR POST COMMISSIONING OPERATION AND MAINTENANCE OF TRANSMISSION LINES – DoP ARUNACHAL PRADESH.**

Under the CSST&DS-AP project, a staggering length of more than 2,000 kilometres of 132 kV transmission lines shall be laid across entire Arunachal Pradesh and handed over to State Utility after their completion and commissioning for subsequent operations & maintenances.

However, it is given to understand that there is no provision of providing any test & diagnostic tools & equipment for their post commissioning operation & maintenance

needs. If it is so, it will be a huge setback to the efficient operation & maintenance of the assets created under the ambitious flagship project.

Hence, the forum may approve and argue the Project Implementing Agency to provision such indispensable needs in consultation with the state utility and provide the required tools & equipment and hand over along with the assets so created.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.09 : PROVIDING SPARE MATERIALS UNDER NERPSIP – MSPCL.

The following works are taken up in Manipur under NERPSIP.

i. Construction of 2 (two) nos. of 132/33 kV substations at Gamphazol and Tamenglong;
ii. Construction of 13 (thirteen) nos of 33/11 kV substations at Hiyangthang, Keithelmanbi, Top Khongnangkhong, Andro, Kwakta, Leimapokpam, Porompat, Thangal, Sanjembam, Lamphel, Takyel and Pishum (GIS);
iii. Capacity augmentation of 4 (four) nos. of 132/33 kV substations at Ningthoukhong, Jiribam, Kongba and Ukhrul; and
iv. Capacity augmentation of 21 (twenty one) nos. of 33/11 kV substations.

The original project cost of Manipur under NERPSIP was **Rs. 442.22 crore** and later on, it was revised to **Rs. 638.72 crore.**

It is noted that in the scope of work, no spare is included. The failure of any critical electrical equipment like CT, PT, Breaker etc. will lead to outage of supply to the area covered by the affected substation.

PGCIL is requested to make arrangement to procure **spare equipment** and hand over to the respective states at the time of handing over of the completed works. *Normally, 3% of the project cost is considered for procurement of spare equipment.*

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.10 : REQUIREMENT OF MANPOWER – MSPCL.

The new substations/lines taken up under NERPSIP in Manipur can be maintained by the existing Engineers of MSPCL. However, MSPCL do not have surplus staff to maintain these substations as all the existing staffs are already utilized.

MSPCL has submitted the minimum manpower required for the operation and maintenance of the substations taken up under NERPSIP in Manipur to NERPC via. e-mail as detailed below.

Total number of Junior System Assistant required = 7x13 + 11x2 = 113
Total number of WCCA required = 1x13 + 2x2 = 17

The new substations/lines taken up under NERPSIP in Manipur can be operated and maintained with additional 113 nos. of JSA and 17 nos. of WCCA.

MSPCL do not have fund to bear the expenditure for the additional manpower requirement. The only option left is to request for financial assistance from the Government of India/PGCIL (NERPSIP) for appointment of the required manpower either regular appointment or outsourcing.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.11 : COMPLETION OF SUBSTATIONS – MSPCL.

In the meeting held on 03.03.2022 under the aegis of Ministry of Power, it was decided that the following substations under NERPSIP for Manipur will be completed within 3 (three) months.

i. 132/33 kV substations at (a) Gamphazol and (b) Tamenglong
ii. 33/11 kV substations at (a) Lamphel and (b) Takyel

It is observed that a little progress has been made for the construction of the above substations till date.

TCC may kindly deliberate the progress made for these substations and provide the completion target.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.12	**:**	**FIBER OPTIC COMMUNICATION- MePTCL**

In line with the 18th RPC MOM dated: 10th October, 2017, MePTCL requested M/s PGCIL for renewal of the agreement in line with CERC Regulation -2020 for revenue sharing if PGCIL intended to continue using MePTCL assets otherwise to return the assets to MePTCL on expiry of the ULDC agreement. The details of ULDC fiber to be handed over to MePTCL are:

i) Kahelipara (AEGCL) to Umiam III (MePTCL) – 59.132 km
ii) Umiam III to Umiam I – 17.455 km
iii) Umiam I to NEHU – 10.257 km
iv) NEHU to Khliehriat (ckt-1) – 64.094 km

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.13	**:**	**ESTABLISHMENT OF STATE OF THE ART TRAINING CENTRES AT JOWAI AND TURA - MePTCL**

Under CBIS it is necessary to enable the existing and new man power with capability to operate and maintained the assets so as to impart on the job training and to avoid dislocation of man power.

The forum may explore the possibility of setting up of Power Training Institute at Shillong for the interest of the region.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.14	**:**	**SANCTION OF GRANT FROM PSDF TOWARDS CONSTRUCTION OF 132kV S/C KHLIEHRIAT – PANCHGRAM AND 132kV D/C UMIAM STG-I TO STG-III LINE BY HTLS - MePTCL**

The terms and conditions for implementation of PSDF for the above two project as per clause (viii) with regards to opening of "Letter of Credit" (LC) need to be removed, since MePTCL has no outstanding dues with GENCO (MePGCL).

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.15 : PROVIDING SPARE MATERIALS IN TRANSMISSION LINE, EHV SUB-STATION AND DMS PACKAGES UNDER NERPSIP - TSECL

247 KM of New 132 kV Transmission line with 1372 KM of conductor and 895 Nos. of 132 kV towers of different types, 9 nos. new EHV sub-stations and 7 nos. Augmentation / Extension EHV sub-stations are presently in progress of construction and installation in different parts of the State under Tranche – I Scope of Work of Govt. of India and World Bank funded NER Power System Improvement Project (NERPSIP), where Power Grid Corporation of India Limited (PGCIL) is the Implementing Agency.

It is learnt that spare materials have not been incorporated in the BOQ of Power Grid in any of the ongoing Transmission / 33 KV DMS Packages under NERPSIP : Tripura. Providing of spare materials to TSECL is very much essential to meet up any future exigency situation in this massive upcoming transmission network in the State. In addition some spare materials will also be required to maintain the upcoming 33 KV DMS network under NERPSIP in Tripura.

In the above context, spare materials required to be provided to TSECL is furnished here-under:

Sl.	Item	Component	Spare requirement
A	**Transmission Line Package**		
	132 kV Tower:		
1.	A – Type	Basic	1 No.
		+ 3 Extension Portion	1 No.
		+ 6 Extension Portion	1 No.
		+ 9 Extension Portion	1 No.
		Stub	1 Set
2.	B – Type	Basic	1 No.
		+ 3 Extension Portion	1 No.
		+ 6 Extension Portion	1 No.
		+ 9 Extension Portion	1 No.
		Stub	1 Set
3.	C – Type	Basic	1 No.
		+ 3 Extension Portion	1 No.
		+ 6 Extension Portion	1 No.
		+ 9 Extension Portion	1 No.
		Stub	1 Set
4.	D – Type	Basic	3 Nos.
		+ 3 Extension Portion	1 No.
		+ 6 Extension Portion	1 No.

		+ 9 Extension Portion	3 Nos.
		Stub	1 Set

The

Sl.	Item	Component	Spare requirement
5.	Multi-Circuit Tower	Basic	1 No.
		+ 3 Extension Portion	1 No.
		Stub	1 Set
6.	Conductor		10 KM
7.	Conductor Hardware accessories		3 % of total supply quantity
8.	Long Rod Insulator with suitable hardware fittings		
B.	**EHV Sub-station Package**		
1.	EHV Sub-station Equipments		3 % of total supply quantity
C.	**33 KV DMS Package**		
1.	33 KV Sub-station Equipments		3 % of total supply quantity
2.	33 KV line materials		

requirement of spare materials as indicated above is proposed to be met up by Power Grid from the project cost of NERPSIP.

Power Grid has been already communicated by TSECL in the above matter on 16.03.2022.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.16 : INSTALLATION OF TLSA IN 400KV D/C PALATANA TRANSMISSION SYSTEM – NETC

Major portion of the 400 kV Silchar-Byrnihat-Azara line is traversing through the State of Meghalaya which falls under high isokeraunic level 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.

In 183rd OCC meeting 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 43rd CCM endorsed NETC proposal and referred to next TCC/RPC meeting.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.17	**:**	**ADDITIONAL SHARE ALLOCATION SUBSEQUENT TO COMMISSIONING OF ALL 4 UNITS OF KAMENG – NEEPCO**

600 MW (i.e. 4 X 150 MW) Kameng HEP at Arunachal Pradesh is operating in full capacity after declaration of commercial operation of the project on 12th February 2021.

As the house may be aware, the share allocation order for the plant places 345 MW of the plant capacity at the disposal of NEEPCO for merchant sale.

Therefore, further to the deliberations on the issue of additional allocation at the 38th & 43rd CCM and 20th TCC & RPC Meetings, with the commissioning of the full installed capacity, the esteemed house is once again requested to discuss the issue and consider additional allocation from the Kameng HEP. In this context it is mentioned that the tariff application has been already filed before the Hon'ble CERC and it is seen that the tariff is expected to be very competitive and attractive. On confirmation of the additional requirement NEEPCO will take up the matter with the Ministry of Power, Government of India for share allocation.

Further, it is intimated to the house that 600 MW Kameng HEP is comes under the Renewable Purchase Obligation (RPO) trajectory where Hydro Power Obligation (HPO) is considered as a separate entity within the Non-Solar RPO. In view of above, it is requested to the beneficiary states (i.e. Manipur, Mizoram and Tripura) to consider the Kameng power to their future benefit for HPO obligation.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.18	**:**	**MOBILE SUBSTATION FOR EMERGENCY RESTORATION OF EHV SYSTEM IN NER – NERPC.**

In 21st TCC/RPC meeting the Mobile Substation was approved with following scope: One no. 220kV bay with all EHV equipment & protection system and one no. 132kV bay with all EHV equipment & protection system to be procured by NERTS as regional spare with the modalities as approved in the 17th TCC/RPC meeting with funding from PSDF. In 181st OCC meeting held on 20th August, 2021 NERTS informed that the DPR for Mobile Substation Bays for NER has been submitted to NLDC/NPC for PSDF funding.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.19	**:**	**TRANSMISSION SYSTEM FOR PROVIDING CONNECTIVITY TO DIBANG HEP – NERPC.**

M/s NHPC Ltd. had requested for grant of 2880MW connectivity for its Dibang HEP (12x240MW) generation project in Arunachal Pradesh. Arunachal Pradesh has huge hydro potential. CEA has developed a Master Plan for power evacuation of about 37GW hydro projects in Arunachal Pradesh to other parts of the country through 7 no. ±800kV, 7000MW HVDC bipole lines. The hydro projects in different basins are being taken up in phases. With phased development of hydro project, various high capacity EHV substations are required to be established in border areas of Arunachal Pradesh and Assam for pooling of hydro power, and further establishment of high capacity evacuation lines from these pooling points are necessary for power evacuation. Such transmission systems need to be developed in ISTS for seamless integration of various hydro projects at pooling points located in Arunachal Pradesh or Assam. Due to absence of any pooling point in upper Assam or Arunachal Pradesh, Dibang HEP needs to be pooled at a new poling point such that the same pooling point could also be utilized for pooling of other hydro projects in future. Also, there was requirement of a

new 400kV substation in upper Assam (north of Brahmaputra river) to augment power supply to areas in upper Assam and Arunachal Pradesh. Considering the availability of land in upper Assam (north of Brahmaputra river) and Arunachal Pradesh, terrain and Row of Way (RoW) requirement in that area for future transmission lines, optimisation of transmission system is very essential. Accordingly, it is planned to provide Connectivity to Dibang HEP at its switchyard through ISTS line so that as per requirement this immediate evacuation line under ISTS can also be used for power evacuation from other HEPs in future. In view of the above, a new 400kV substation has been planned at Gogamukh through LILO of one D/c (ckt-1 & ckt-2 of D/c line-1) of Lower Subansiri – Biswanath Chariali 400kV (Twin Lapwing) 2xD/c lines, which are being taken up for implementation under NERES-XVI scheme (expected by Mar 2025). The Dibang HEP has been planned to be pooled at Gogamukh through 400kV 2xD/c (Quad) ISTS lines. For further power evacuation, Gogamukh – Biswanath Chariali 400kV (Quad) D/c line has been planned.

Name of the Scheme: Transmission system for providing connectivity to Dibang HEP

Scope of the Scheme

i. Dibang – Gogamukh 400kV 2xD/c (Quad) line

ii. Extension works at Gogamukh S/s at 400kV level

• 4 no. of 400kV line bays for termination of Dibang – Gogamukh 2xD/c lines

• 4x63MVAr switchable line reactors at Gogamukh end of Dibang – Gogamukh 400kV 2xD/c lines, one in each circuit

Upstream network associated with the scheme

Upstream network to be implemented under ISTS:

(a) Establishment of Gogamukh 400/220/132kV substation under NERES-XVI by Mar 2025. Upstream network to be implemented by Dibang HEP developer:

(b) 4 no. of 400kV line bays at Dibang HEP switchyard for termination of Dibang – Gogamukh 400kV D/c 2xD/c (Quad) lines along with 4x63MVAr switchable line reactors at Dibang end, one in each line.

To be implemented matching with Dibang HEP(expected by May 2029) and after completion of Gogamukh S/S(expected in Mar 2025).

Inclusion of wildlife/protected area: The transmission line route may infringe Mehao wild life sanctuary in the state of Arunachal Pradesh. However, for details of forest/protected areas survey is required to be done.

Estimated Cost: INR 1650 Cr.

Impact on Annual Transmission Charges (considering levelized tariff @ 15% of estimated cost): INR 247.50Cr.

Name of the Scheme: Transmission system for power evacuation from Dibang HEP

Scope of the Scheme

i. Gogamukh – Biswanath Chariali 400kV D/c (Quad) line

ii. Extension works at Biswanath Chariali (POWERGRID) S/s at 400kV level

• 2 no. of 400kV line bays for termination of Gogamukh – Biswanath Chariali 400kV D/c (Quad) line at Biswanath Chariali

iii. Extension works at Gogamukh S/s at 400kV level

• 2 no. of 400kV line bays for termination of Gogamukh – Biswanath Chariali 400kV D/c (Quad) line

• 2x80MVAr switchable line reactors at Gogamukh end of Gogamukh –Biswanath Chariali 400kV D/c line, one in each circuit

Upstream network associated with the scheme

Upstream network to be implemented under ISTS:

(a) Establishment of Gogamukh 400/220/132kV substation under NERES-XVI by Mar 2025.

To be implemented matching with Dibang HEP (expected by May 2029) and after completion of Gogamukh S/S (expected in Mar 2025).

Estimated Cost: INR 852Cr.

Impact on Annual Transmission Charges (ATC): INR 127.80Cr.

Name of the asset		**From Station**	**To Station**	**Scope**
Line	400kV Quad Moose 2xD/C Line	Dibang HEP	Gogamukh	TBCB
	400kV Quad Moose D/C line	Gogamukh	Biswanath Chariali	

Bays	400kV bays at Dibang HEP – 4nos	Dibang		NHPC
	400kV bay extension – 4nos	Gogamukh		TBCB
	400kV bay extension- 2nos	Biswanath Chariali		TBCB
	400kV bay extension- 2nos	Gogamukh		TBCB
Reactors	4x63MVAR switchable Line Reactors at Dibang for Gogamukh	Dibang		NHPC
	4x63MVAR switchable Line Reactors at Gogamukh for Dibang	Gogamukh		TBCB
	2x80MVAR switchable Line Reactors at Gogamukh for BNC	Gogamukh		TBCB

Approved link assets

Name of the asset		**From Station**	**To Station**	**Scope**
Line	LILO of 400kV Twin Lapwing Lower Subansiri – BNC D/C -I	Lower Subansiri	Gogamukh	TBCB
		Gogamukh	BNC	TBCB
Station	400/220/132kV GSS at Gogamukh			TBCB

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.20	**:**	**UPGRADATION OF SCADA/EMS SYSTEMS AT REGIONAL/STATE LEVEL IN NER - NERPC**

A MoU related to free-of-cost consultancy with a detailed responsibility matrix was circulated in 19th and 21st NETeST meeting under which it was proposed that all SLDCs and NERLDC can upgrade in a unified manner to get benefits of seamless integration, joint capacity building and economies of scale in terms of cost implications.

It was agreed in-principle to sign the draft MoU and corresponding funding through PSDF by routing the DPR – prepared by NERLDC(attached at **Annexure-A.20**) through TCC/NERPC meeting. As present the status of signing of MoUs is mentioned in table below.

S N	States	Remarks
1.	Arunachal Pradesh	Under administrative approval process in Secretariat office.
2.	Assam	Signed on 06th January 2022.
3.	Manipur	Under consideration process in MD office. Getting slightly delayed because of restrictions due to ongoing state-elections.
4.	Meghalaya	Signed on 28th October 2021.
5.	Mizoram	Signed on 01st November 2021.
6.	Nagaland	Signed on 01st March 2022.
7.	Tripura	Under administrative approval process in MD office.

Total cost estimate INR 311.2497 Cr.(incl. of GST). The amount will be divided into 7 state utilities in NER in equal part i.e. INR 44.4642 Cr. for Main and Backup SLDCs. Proposed for 100% PSDF funding.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.21	**:**	**ESTABLISHMENT OF VSAT COMMUNICATION IN SELECTED REMOTE LOCATIONS FOR STATE UTILITIES IN NER – NERPC.**

A DPR (attached at **Annexure-A.21**) has been prepared by NERLDC for establishing Very Small Aperture Terminal(VSAT) communication between remote Sub-stations of NER and Control Centers.

Cost-estimate of 8,29,95,243 INR (incl. GST) from which funding is to be divided among state-utilities on the basis of quantum of VSAT installation in the respective substations. The scheme is proposed for 100% PSDF funding.

- **MePTCL (Meghalaya):** 6 VSATs plus VSAT at SLDC i.e. ***₹ 31,71,792.69***
- **MSPCL (Manipur):** 8 VSATs plus VSAT at SLDC i.e. ***₹ 42,29,056.93***
- **P&ED (Mizoram):** 17 VSAT plus VSAT at SLDC i.e. ***₹ 89,86,745.97***
- **DoP (Arunachal Pradesh):** 42 VSAT plus VSAT at SLDC i.e. ***₹ 2,22,02,549.62***
- **DoP (Nagaland):** 51 VSATs plus VSAT at SLDC i.e. ***₹ 2,69,60,237.93***
- **AEGCL (Assam):** 18 VSATs plus VSAT at SLDC i.e. ***₹ 95,15,378.09***
- **TSECL (Tripura):** 15 VSATs plus VSAT at SLDC i.e. ***₹ 79,29,481.74***

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.22	**:**	**DEPLOYMENT OF NEW RTUS IN SELECTED SUBSTATIONS OF NER - NERPC**

A DPR (attached at **Annexure-A.22**) has been prepared by NERLDC for deployment of new Remote Terminal Units(RTU) in Sub-stations of NER.

RTUs in selected stations: Cost-estimate of 35,03,76,845 INR (incl. GST) from which funding is to be divided among state-utilities on the basis of quantum of RTUs required for installation. The scheme is proposed for 100% PSDF funding.

- **MePTCL (Meghalaya):** 20 RTUs i.e. ***₹ 5,51,77,455.90***
- **MSPCL (Manipur):** 3 RTUs i.e. ***₹ 82,76,618.38***
- **P&ED (Mizoram):** 14 RTUs i.e. ***₹ 3,86,24,219.13***
- **DoP (Arunachal Pradesh):** 15 RTUs i.e. ***₹ 4,13,83,091.92***
- **DoP (Nagaland):** 42 RTUs i.e. ***₹ 11,58,72,657.40***

- **AEGCL (Assam):** 33 RTUs i.e. ***₹ 9,10,42,802.24***

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.23	**:**	**READINESS OF DOWNSTREAM OF NEW KOHIMA SUBSTATION - NERLDC**

During the 5th SCM of NER held at Imphal on 8-08-2015, the following elements have been approved:

a) Imphal-New Kohima 400 kV D/C line (under TBCB)

b) 2 no. 400 kV line bays and 1x125 MVAR bus reactor (2nd) at Imphal (PG) (by POWERGRID)

c) Establishment of 2x500 MVA 400/220 kV S/s at New Kohima along with 4 no. 400 kV line bays, 2x125 MVAr bus reactor and 4 no. 220 kV line bays (under TBCB).

d) New Kohima (400/220 kV TBCB) – New Kohima (220/132kV - Nagaland) 220 kV D/c line with high capacity / HTLS conductor equivalent to twin moose (by Nagaland)

Note: Nagaland may plan and inform the utilisation of remaining 2 no. 220 kV bays at New Kohima 400/220 kV substation.

"It is to be noted that the point d is yet to be implemented by Nagaland, as a result of which no power flow will occur in 2x500 MVA 400/220 kV ICTs at New Kohima. The entire cost of the ICTs will have to be borne by Nagaland and the YTC of Rs. 17.98 Crores/Annum has been submitted by Kohima Mariani Transmission Limited for 400/200 kV, 2 x 500 MVA Substation at New Kohima."

Implementation of point **"d"** needs to be expedited by Nagaland.

During the 21st TCC Meeting held on 3rd February, 2021 at Kohima, the forum referred the matter to next NERPC-TP meeting with a note that the utilization of the 2 nos. spare 220 kV bays at New Kohima may be decided by NERPC-TP.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.24 : ACCURATE LOAD FORECASTING AND INSTALLATION OF AWS - NERLDC

The Median of the RMSE values of the NER States for the last three months is given as under:

	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura
Feb'22	10	7	10	8	11	14	10
Jan'22	12	4	7	7	12	8	10
Dec'22	8	11	19	14	17	14	11

States are requested to endeavour to bring down the error value. This would lead to better grid discipline and efficient dispatch of electricity.

It was informed in 158th OCCM that RMC, IMD, Guwahati would install Automatic Weather Station (AWS) in NER. As per the proposed list of stations by the constituents, IMD has surveyed the stations and has mentioned the requirement of NoC for the suitable stations.

The receipt of NOC from the concerned constituents are pending and IMD is not able to move forward with the installation of AWS in the selected stations.

It is requested to all the constituents to provide the NoC to IMD so that the installation of AWS can be done at the earliest. This would improve the weather data availability and would further improve the load forecasting of the states.

TCC Deliberation :

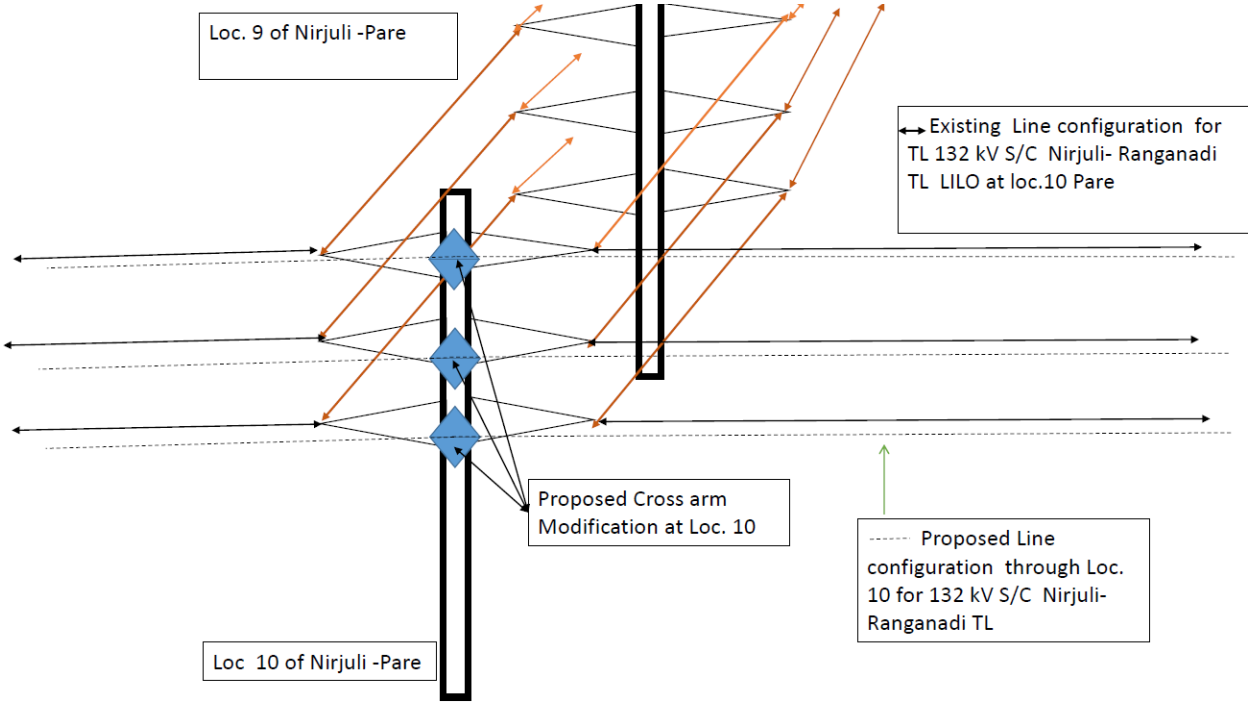
NERPC Deliberation :

ITEM NO. A.25 : STRAIGHTENING OF 132kV RHEP-NIRJULI-LEKHI LINE AND UPGRADATION OF LILO PORTION AT PARE HEP - NERPC

In the Special Meeting convened by NERPC on 18th Nov'2021 with presence of NERTS-POWERGRID, NEEPCO, NERLDC and M/s STERLITE the following solution was agreed by NERTS-POWERGRID and M/s STERLITE for straightening of the line:

(i) To provide additional Auxiliary cross arms in 132kV Tower(DD type) at Loc 10 of the LILO portion so that Line will go directly from Nirjuli -Lekhi to

Ranganadi via Loc 10, without any connection with 132kV D/C Pare-Lakhimpur line of M/s STERLITE. Necessary strengthening (if any) may be taken care of by NEEPCO Ltd. Arrangement proposed is shown in the sketch below:



(ii) Connection of 132kV Pare-N.Lakhimpur and 132kV Pare-Nirjuli via Tower at Loc 9 as suggested by M/s STERLITE.

Also, mechanical strength verification of the towers/ conductors due to the proposed scheme of tapping from mid span between Loc 9 & Loc 10 to be looked into by M/S STERITE.

After detailed deliberation, the above solution was referred to NCT/CEA for approval.

Regarding upgradation of the LILO portion, NEEPCO agreed to execute as per approval of the 6th Standing Committee of NER after approval of the above solution for straightening of the line.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. A.26	**:**	**DIVERSION OF 132kV GOHPUR – NIRJULI LINE DUE TO CONSTRUCTION OF GREENFIELD AIRPORT AT HOLONGI(ITANAGAR) IN ARUNACHAL PRADESH - NERTS**

Diversion of 132kV Gohpur Nirjuli line is required to facilitate under construction Hollongi Airport. The said work is being carried out as per MoU signed with Dept. of Civil Aviation, Govt. of Ar. Pradesh. Details as per MoU are as given below: -

MoU Signed on – 05th July'2021

Target completion of the line as per MoU – Dec'2022

In this regard, it is to mention here that vide letter dtd 10/03/2022 received from Dept. of Civil Aviation, Itanagar, Govt. of Ar. Pradesh, it was informed that the work is to be completed at the earliest as the Hollongi airport is to be made functional by 15/08/2022 as targeted by PMO (copy attached).

Since this airport is highly important as emphasized by the government to facilitate the construction of Airport & clearing of air funnel area, the line is to be dismantled as directed, by 30/04/2022.

In view of above, it is proposed that outage of 132kV Gohpur Nirjuli Line may be accorded from 15th April'2022 onwards for dismantling of the towers so that further inspection of the airport approach funnel may be carried out by the regulatory bodies.

Moreover, the outage of the line may be provided under deemed outage category till restoration of the line after completion of diversion works though scheduled completion is Dec'22. It is assured that POWERGRID shall take all necessary actions to complete the diversion before Dec'22.

After detailed deliberation in the 188th OCC meeting on 16th March, 2022 the item was referred for discussion in TCC/RPC meeting.

TCC Deliberation :

NERPC Deliberation :

2. CATEGORY - B : ITEMS FOR APPROVAL

ITEM NO. B.01 : INTRA-STATE SCHEMES OF ASSAM – AEGCL

In the 3rd NERPCTP meeting held on 19th July, 2021 the following schemes were approved:

Establishment of 220kV Dhaligaon S/Sn

220kV New Dhaligaon Substation with LILO of both circuits of 220kV Rangia-Salakati at New Dhaligaon by AEGCL.

Inter-connection to Diphu

220kV New Mariani – Diphu D/C and 220kV Sankardevnagar – Diphu D/C lines by AEGCL. 02 no. 220kV line bays at New Mariani to be used for termination of 220kV New Mariani – Diphu D/C line.

Establishment of 132/33kV Ghilamora S/S

Establishment of 132/33kV Ghilamora S/Sn with LILO of existing 132kV North Lakhimpur – Dhemaji S/C line at Ghilamora by AEGCL

Establishment of 132/33kV Modertoli S/S

132/33kV S/S at Modertoli near Kampur with S/C LILO of 132kV Samaguri-Sankardevnagar D/C line by AEGCL.

Establishment of 132/33kV Lakhipur S/S

132/33kV Grid S/S at Lakhipu(Tikrikilla) through LILO of 132kV Agia-Hatsingimari D/C by AEGCL

Capacity augmentation of transformers

1. 220/132/33kV Sarusajai Substation: New 3x50MVA 132/33kV transformers to replace old 3x31.5MVA transformer.

2. 132/33kV Sibsagar Sub-station: New 2x50MVA 132/333kV transformer to replace old 2x16MVA transformers.
3. 132/33kV Sishugram Sub-station: New 2x50MVA 132/33kV transformer to replace old 2x30MVA transformers.
4. 132/33kV Samaguri Sub-station: New 2x50MVA 132/33kV transformers to replace old 2x25MVA transformers
5. 220/132kV Kukurmara Sub-station: New 2x160MVA 220/132kV transformers to replace old 2x50MVA transformers.
6. 132/33kV Agla Sub-station: New 1x50MVA 132/33kV transformer to replace old 1x1.25MVA transformer
7. 132/33kV Khaloigaon Sub-station: New 2x50MVA 132/33kV transformers to replace old 2x25MVA transformers

Re-conductoring of important transmission lines

Reconductoring of important lines as follows:

1. 132kV Sonabil-Depota S/C line
2. 132kV Sonabil-Pavoi S/C line
3. 132kV Sonabil-Gohpur S/C line
4. 132kV Pavoi-Gohpur S/C line
5. 132kV Kahilipara – Amingaon both line sections with one circuit via Kamakhya and other via Sishugram

Interconnecting lines between existing stations

220kV Rowta – Sonabil D/C line and 132kV Bokajan- Diphu S/C line by AEGCL

Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.02	**:**	**RECONDUCTORING OF IMPORTANT LINES IN MANIPUR SYSTEM - MSPCL**

In 3rd NERPC-TP held on 19th July'2021 upgradation of the following lines(with HTLS) along with bay equipments at both ends were approved:

a) 132kV Imphal-Yurembam D/C line
b) Existing 132kV Leimatak – NingthoukhongS/C line (subject to under construction Leimatak – NingthoukhongS/C line also to be reconductored/implemented with HTLS of same rating).
c) 132kV Yurembam-Yaingangpokpi D/C line(agreed with CoD of 2027).

Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.03	**:**	**INTRA-STATE STRENGTHENING SCHEMES OF MEGHALAYA – MePTCL.**

In 3rd NERPC-TP held on 19th July'2021 the following lines were approved under Intra-State Strengthening Scheme to be executed by MePTCL:

a) 132kV New Shillong – Sohra D/C line.
b) 220kV New Shillong – Nangalbibra D/C line.

Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.04	**:**	**STRENGHTENING OF CONNECTIVITY TO CHAMPHAI – P&ED MIZORAM.**

In 3rd NERPC-TP held on 19th July'2021 second 132kV Khawzawl to Champhai S/C line was approved to fulfill N-1 scheme and increase in reliability of power supply to Champhai area. The line to be constructed under Intra-state scheme.

Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.05 : RECONDUCTORING OF INTRA-STATE LINES WITH HTLS– TSECL.

In 3rd NERPC-TP held on 19th July'2021 re-conductoring of following 132kV intra-state lines/section by TSECL with HTLS conductor having ampacity of 800A:

a) 132kV Surjamaninagar(TSECL) to LILO point of Surjamaninagar(ISTS) – 5.493km
b) 132kV Bodhjungnagar(TSECL) to LILO point of Surjamaninagar(ISTS) – 12.867km
c) 132kV Surjamaninagar(TSECL) to Bodhjungnagar(TSECL) – 18.36km
d) 132kV Ambassa(TSECL) to LILO point of P.K.Bari(ISTS) – 35.45km alongwith LILO portion at 132kV Manu S/Sn.
e) 132kV P.K.Bari(TSECL) to LILO point of P.K.Bari(ISTS) – 6.407km
f) 132kV P.K.Bari(TSECL) to Kumarghat(PG) – 2.40km

DPR is attached at **Annexure-B.05.** Total estimated cost INR 70.93 Cr.

Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.06 : DPR OF RELIABLE COMMUNICATION SCHEMES - NERPC

The DPR of Reliable Communication Schemes are revised as per discussions in the 22nd NETeST meeting held in Guwahati on 17th March'2022. Estimated cost as follows:

Assam – INR 25 Cr.

Manipur – INR 15 Cr

Meghalaya – INR 20Cr.

Mizoram – INR 50 Cr.

Nagaland – INR 66 Cr.

Tripura – INR 60 Cr.

Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.07 : INTRODUCTION OF SPS IN MLHEP – MePGCL

PROPOSAL: 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 line, NERPC stated that under NERPSIP, 132kV LeshkaKhliehriat D/C line will be LILO at 132/33kV Mynkre S/S. However, even after LILO of this line at Mynkre, full generation of Leshka cannot be safely evacuated via the other circuit in case of N-1 contingency

Explanatory Note:

The evacuation of power from Myntdu Leshka (3X42 MW) Stage-I Power Station is through two 132 Kv Double Circuit Line Connecting with 132 Kv Khliehriat Grid Sub-Station. However, due to frequent tripping of these lines especially during monsoon season, the generation from this Power Station has reduces the reliability of generation of Meghalaya Power System.

MePGCL is in the process of exploring the feasibility for finalising the SPS Scheme based on the suggested logics in the 57thPCC, in consultation with the OEM of the MLHEP, OEM Communication / Protection, at both end of the 132 KV Khliehriat — MLHEP D/C Line, in assisting for preparation of the architecture for providing the necessary command signal etc for implementation of the scheme.

A concept note on the implementation of the SPS will be prepared on obtaining the comprehensive feasibility report, scheme, architecture etc from the OEM MLHEP and OEM Communication/Protection and submitted to the competent authority for concurrence.

MePGCL is requesting the forum to consider recommending the funding of this project from PSDF.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.08	**:**	**REQUIREMENT FOR REPLACEMENT OF 400kV 50MVAR BUS REACTOR-I&II AND 400kV 50MVAR 400kV BONGAIGAON - BALIPARA-II LINE REACTOR AT BONGAIGAON S/S – NERTS**

BHEL make 400kV, 50MVAR Bus Reactor-I&II and 400kV 50MVAR Balipara-II LR at Bongaigaon S/S was commissioned in 1999 under Kaithalguri TS. Details of the reactors are mentioned below:

Sr. No.	Details of Equipment	Name of Substation	Make	Year of Manufacturing	Age
1.	400kV, 50MVAR Bus Reactor-I	Bongaigaon	BHEL	1987	35 yrs
2.	400kV, 50MVAR Bus Reactor-II	Bongaigaon	BHEL	1994	28 yrs
3.	400kV, 50MVAR LR of Balipara-II	Bongaigaon	BHEL	1994	28 yrs

Condition based monitoring/ maintenance of transformers/ reactors like DGA, Tan delta measurement of bushings & windings, oil parameters, Furan analysis, FDS, IR of core insulation etc are being carried out by POWERGRID to know the healthiness. During condition monitoring of the said reactors, violation has been observed in the test parameters and condition of the reactors found not good. M/s CPRI (Third party) was approached by POWERGRID to analyze the test results of said equipment and to know the condition of the equipment. The test results were analyzed by CPRI and based on the test results, CPRI has recommended to replace the said units.

The above-mentioned reactors are very old and due to ageing, chances of its failure is always high. Non-availability of the reactor may lead to lack of reactive power support and high Bus voltage which may cause threat to the grid. Therefore, It is proposed to replace the 400kV, 50MVAR Bus Reactor-I&II and 400kV 50MVAR Balipara-II LR at Bongaigaon S/S under ADDCAP and to be shared by constituents as per Sharing Regulation of CERC.

Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

ITEM NO. B.09 : INCORPORATION OF BUS BAR PROTECTION FOR 132kV SUBSTATIONS OF POWERGRID – NERTS

In order to prevent unwarranted tripping of lines due to bus fault in a particular station it is necessary to have bus bar protection system implemented in a station. However, it has been observed that the old 132kV schemes does not have the provision of bus bar protection scheme. As such in order to improve the protection system of 132kV Substations it is proposed to approve implementation of Bus Bar protection in the following stations of NERTS: -

a) 132kV Melriat Ss
b) 132kV Bays of 220kV Mokokchung Ss
c) 132kV Tezu Ss
d) 132kV Namsai Ss
e) 132kV Ziro Ss
f) 132kV Side of 400kV Balipara Ss.

Estimated expenditure is approx. INR 1.5 Cr.
The point was approved in-principle in 188th OCC and referred to next TCC/RPC for approval.

It is proposed that the aforesaid expenditure may be shared by constituents as per Sharing Regulation of CERC.
Submitted for approval of TCC/NERPC Members.

TCC Deliberation :

NERPC Deliberation :

3. CATEGORY - C : COMMERCIAL ISSUES

ITEM NO. C.01 : OUTSTANDING DUES - NEEPCO

Outstanding dues of beneficiaries payable to NEEPCO as on 17.03.2022 are as follows.

Rs. In Crore

S. No.	State (UT)	Name of Beneficiary	Outstanding already due (> 45 days)	Late Payment Surcharge (LPS) Due	Total Due (Inclusive of LPS)	Outstanding yet to due (< 45 days)
1	ASSAM	APDCL	0.80	0	0.80	61.07

2	MIZORAM	Power & Electricity Dept, Mizoram	12.63	0.05	12.68	27.95
3	MANIPUR	MSPDCL, Manipur	20.52	0.06	20.58	13.86
4	TRIPURA	TSECL	173.36	0.13	173.49	68.75
5	Ar. PRADESH	Dept. of Power, Ar. Pradesh	0	0	0	0
6	NAGALAND	Dept. of Power, Nagaland	0	0	0	3.86
7	MEGHALAYA	MePDCL, Meghalaya	0	0	0	0
8	CHHATTISGARH	CSPDCL	0	0		1.95
9	HARYANA	HPPC	0	0	0	0.89
10	UTTAR PRADESH	UPPCL	1.49	0	1.49	0
	Grand Total		208.80	0.24	209.04	178.33

The above statement reflects an alarming situation. Yet, it has to be appreciated that some states are paying regularly and some are trying hard to clear the dues.

Due to accrual of such outstanding dues, NEEPCO is facing difficulty to meet its day to day expenditure including fuel costs required for operating its thermal power stations. In the interest of extending better service to its beneficiaries, NEEPCO earnestly requests all the beneficiaries to make the payment on regular basis.

Members may update the status.

ITEM NO. C.02 : Renewal of PPA with Arunachal Pradesh for supply of power of 600 MW Kameng HEP - NEEPCO

For renewal of the earlier PPA dated 21.05.2005 which expired on 20.05.2020, NEEPCO has been in discussion with the Department of Power, Govt. of Arunachal Pradesh (AP) and the following issues are yet to be concluded:

i) The DoP, Govt of AP has been insisting for incorporation of a provision in the PPA that requires NEEPCO to purchase the unused portion of the free power allocated to the state. NEEPCO has explained that as per prevailing regulations, NEEPCO, being a generating company, is debarred from purchasing power for the purpose of sale. However, DoP, Govt, of AP continues to insist for inclusion of the above provision in the PPA.

ii) The DoP, Govt. of AP has proposed for 1% additional free power for Local Area Development Fund. Since, the Kameng HEP had been sanctioned before the Hydro Policy 2008, the 1% LADF is not applicable. The, power allocation order from CEA was accordingly issued. It was also clarified by NEEPCO that it cannot deviate from the share allocation order issued by the Ministry of Power, GoI and NERPC.

iii) The DoP, Govt. of AP has also been insisting to include a provision for termination of the PPA any time with prior notice of 90 days. NEEPCO has responded with the clarifications that since PPAs are based on the share allocations issued by MoP / NERPC, this provision would be unnecessary. However, DoP, GoAP continues to insist for the same.

As a result, although all other provisions have been agreed upon, the PPA could not be finalized for renewal so far for want of consensus on the above-mentioned points.

Therefore, the above is placed for deliberation and decision in the house under the aegis and guidance of NERPC mainly for i) & ii) above, which involves conformity with prevalent regulations.

Arunachal Pradesh may update the status.

ITEM NO. C.03 : Non-receipt of payment from TSECL - NEEPCO

Outstanding dues of TSECL, Tripura payable to NEEPCO as on 17.03.2022 are as follows:

Beneficiary	**Outstanding > 45 days (₹ in crore)**	Outstanding < 45 days (₹ in crore)	Total (₹ in crore)
TSECL, Tripura	**173.49**	68.75	242.24

Due to accrual of huge outstanding dues, NEEPCO is facing acute financial crunch to meet its day to day expenditure including fuel costs and other expenses required for operating its thermal power stations.

The above is for deliberation of the house, with a request to TSECL, Tripura to appraise the house on their action plan for early settlement of the said dues.

TSECL may update the status.

ITEM NO. C.04 : NHPC commercial issues with Meghalaya - NHPC

A. Outstanding dues of NHPC for more than 45 days (from December 2014):

Out of Rs. 29.64 Cr., MeECL/MePDCL, Meghalaya has paid Rs. 14.12 Cr. on dated 19.03.2021 through 1st tranche & Rs. 14.12 Cr. on dated 22.10.2021 through 2nd tranche under "Aatma Nirbhar Bharat Abhiyan" package. MeECL/MePDCL has cleared their maximum outstanding dues, which is appreciable and presently balance outstanding dues remain only Rs. 1.40 Cr.

Since the said payment is due from December 2014 and MeECL/MePDCL is not taking power from NHPC, therefore MeECL/MePDCL may kindly be impressed upon to clear the balance outstanding dues (Rs. 1.40 Cr.) immediately to settle the pending dues forever.

B. Pending reconciliation statement for verification:

NHPC has submitted the reconciliation statements for the verification at MeECL, Meghalaya but these are long pending since January 2020.

There conciliations are long pending since January 2020 and CAG auditor raised query in this regard. Therefore MeECL/MePDCL, Meghalaya may kindly be impressed upon to verify the same urgently.

Meghalaya may update the status.

ITEM NO. C.05 : NHPC commercial issues with Manipur - NHPC

As on date, the old outstanding dues of Rs. 6.83Cr. remains to be paid by MSPDCL, Manipur. Though they are clearing payment but irregularly, as a result a chunk of amount always remain outstanding since March 2021.

The issue has also been discussed in every CCM and TCC meetings wherein MSPDCL, Manipur has given assurance to clear all dues after availing Rs. 130 Cr. loan from PFC. Further, NHPC has also given "Bill Discounting" option to Manipur to clear all outstanding dues. Till date, MSPDCL, Manipur has neither cleared all dues nor taken any decision. In present scenario, all the NE discoms except MSPDCL, Manipur have cleared their old dues.

Thus, MSPDCL, Manipur may kindly be impressed upon to clear the outstanding dues at the earliest to avoid encashment of LC/regulation of power as per MoP guidelines.

Manipur may update the status.

ITEM NO. C.06	**:**	**Dues and Opening of Letter of Credit (LC) against purchase energy from Baramura Gas Thermal Project, Tripura - TSECL**

Manipur has on date, an amount of Rs.34 Crores as outstanding. Therefore, Manipur is requested to ensure monthly payment to avail rebate as well as to avoid surcharge. Manipur is also requested for opening of LC as per the guidelines of Ministry of Power, Govt. of India.

Mizoram is requested for opening of LC as per the guideline of Ministry of Power, Govt. of India.

Manipur and Mizoram may update the status.

ITEM NO. C.07	**:**	**NERPC WORKSHOP ON DRAFT GENERAL NETWORK ACCESS(GNA) REGULATION 2021**

NERPC has organized workshop on Draft Network Access (GNA) regulation 2021 on 25th February, 2022. From the discussion, it reveals that the own Generation is not considered for GNA calculation. Ministry of Power has considered state wise drawal of last three years data and on that basis GNA of Tripura is 311 MW. GNA is considered only for Transmission connectivity instead of present POC mechanism. It was also raised and discussed in the workshop on the cross border issue. TSECL has requested NERPC to exclude cross border Transaction issue as the Agreement with Bangladesh is Valid up to March, 2026. In the draft regulation it is observed that, Tripura GNA is considered with Bangladesh Drawal, where the same has been proposed to be excluded.

NERPC may update the status.

ITEM NO. C.08	**:**	**HIGH COST OF BONGAIGAON THERMAL POWER PROJECT - TSECL**

Present tariff of BgTPP is Rs.2.40/kwh (Fixed Charge) and Rs.2.94/kwh (Energy Charge) respectively after part implementation of Expert Committee Report. It was expected that tariff reduction over fixed charge of Rs.0.21/kwh over the plant life of 25 years instead of 12 years. Regarding this TSECL already consented for Deferred Depreciation method to NTPC for filling before CERC. Balance proposal of Expert Committee are yet to be executed / implemented like Interest Subvention, Transfer of equity to NE states etc.

TSECL may please deliberate.

ITEM NO. C.09 : OUTSTANDING DUES OF NER BENEFICIARIES - OTPC

The current total outstanding dues of OTPC from the NER beneficiary states (as on 19-03-2022) are as under:

(*Amount in Rs Crores*)

Sl.No.	Beneficiary	Outstanding Dues (>45 Days)	Total Outstanding
1	Manipur	32.70	47.64
2	Mizoram	6.76	15.40
3	Tripura	86.52	149.19
	Total	**125.98**	**212.23**

The total outstanding dues as on 19-03-2022 are Rs 212.23 Crores out of which outstanding beyond 45 days is Rs 125.98 Crores. The outstanding dues of Tripura, Manipur and Mizoram have accumulated to concerning levels. The auditors have been regularly reflecting the issue of outstanding dues especially of Tripura and Manipur as a special concern in our Board Meetings. Tripura, Manipur and Mizoram are hence requested to clear the outstanding dues over 45 days, at the earliest. The forum is also requested to impress the urgency of the liquidation of dues in view of MoP guidelines for encashment of LC/Regulation of power and non-scheduling of power by RLDC.

Members may update the status.

ITEM NO. C.10 : DEVIATION POOL ACCOUNT OUTSTANDING - NERLDC

Manipur is the major defaulter of Deviation charges.

Manipur – Net O/s Payable to Pool is **₹ 3.68 Crores** [Breakup: Deviation Principal, ₹ 2.98 Crores + Deviation Interest, ₹ 0.70 Crores].

DSM Principal O/s greater than 90 days (13 Weeks) is ₹ 2.05 Crores.

Clearance of O/s payable had been regularly followed up.

Members may update the status.

ITEM NO. C.11 : NON-PAYMENT OF NERLDC FEES AND CHARGES BILLS - NERLDC

Although we were receiving payments against NERLDC Fees & Charges billing from our all-registered users regularly, but from last few months we are not receiving payment against NERLDC Fees & Charges billing from P&E Department, Mizoram on time.

The status of latest outstanding is as below:

Sl	Bill Description	Bill Date	Bill No	Amount (₹)	Remarks
1	Previous outstanding			-29949.00	
2	PLI Bill for the FY 2019-20	20-Sep-21	NER/2019-20/0016	634137.00	Outstanding more than 45 Days
3	Late Payment Surcharge Bill	31-Jan-22	NER/MO/ 501/504	42194.00	
4	Monthly bill for Jan' 22	1-Feb-22	NER/2021-22/0160	395588.00	
5	Monthly bill for Feb' 22	1-Mar-22	NER/2021-22/0178	392587.00	
	Total			**1434557.00**	

It is to be mentioned that the PLI Bill for ₹6,34,137/- which was raised on 20/09/2021 has crossed more than five months and it has attracted Late payment surcharge as per Fees & Charges regulation due to delay in payment.

Mizoram may liquidate outstanding dues at the earliest to avoid further accumulation of late payment surcharge due to delay in payment.

Members may update the status.

4. CATEGORY - D : ITEMS FOR INFORMATION

ITEM NO. D.01 : UPDATE ON PROTECTION DATABASE MANAGEMENT SYSTEM – NERPC

In compliance with the Task Force Report on Grid Disturbance Analysis in 2012, a Protection Database for different regions in India was envisaged. Accordingly, the web-based Protection Database Management System and Protection Setting Calculation Tool (PSCT) for entire North Eastern Region was thus sanctioned from PSDF in 2018. The project was commissioned on 14th February, 2020. Presently, it is under 3rd year of Comprehensive AMC from 15.02.2022 onwards.

This is for the information of members.

ITEM NO. D.02 : UPDATE ON AUTOMATIC DEMAND MANAGEMENT SYSTEM – NERPC

In the 19th TCC/RPC meeting held on 14.01.2019, Automatic Demand Management System for NER states (funded from PSDF) were approved. Accordingly, on 04.06.2019 LoA was awarded with target completion schedule of March'2020. The present status is as follows:

Name of the utility	SAT Completion	DoCO
DoP Ar. Pradesh	27-01-2021	01-02-2021
AEGCL/APDCL	07-12-2020	10-03-2021
MSPCL	24-11-2020	To be finalized
MePTCL/MePDCL	31-08-2020	04-09-2020
P&ED Mizoram	22-02-2021	To be finalized
DoP Nagaland	17-11-2020	To be finalized
TSECL	24-12-2020	Mar'21

This is for the information of members.

ITEM NO. D.03 : UPDATE ON SCHEDULING ACCOUNTING, METERING AND SETTLEMENT OF ELECTRICITY(SAMAST) – NERPC

In the 21st TCC/RPC meeting held on 04.02.2021, LoA by NERPC of SAMAST for NER states (funded from PSDF) was approved. Accordingly, on 11.02.2021 LoA was awarded for Assam & Meghalaya with target implementation by August'2022. For Arunachal Pradesh, Manipur, Mizoram, Nagaland and Tripura LoA was awarded on 23.09.2021 with target date of implementation by March'2023. At present the work is under various stages of execution.

This is for the information of members.

ITEM NO. D.04 : AUDIT OF BOARD FUND OF NERPC – NERPC

The Board Fund of NERPC for FY 2018-19, 2019-20 and 2020-2021 has been audited by constituents of NERPC who are based in Shillong i.e. MeECL, NERTS & NEEPCO.

This is for the information of members.

5. CATEGORY - E : ITEMS TO BE REFERRED TO SUB-COMMITTEE

ITEM NO. E.01 : CONNECTIVITY BETWEEN LIKABALI AND BASAR - DoP ARUNACHAL PRADESH

132 kV S/C on D/C Inter-Connectivity Transmission Link between Likabali and Basar: The upcoming 400 kM long 'Khuppi-Pasighat 132 kV line via Seppa, Rilo, Sagalee, Naharlagun, Gerukamukh, Likabali, Niglok and Napit under Comprehensive Scheme shall be running in parallel to the existing 132 kV long radial line of RHEP to Pasighat via Ziro, Daporijo, Aalo and Pasighat of equal length without any interconnecting anchoring and power source in between.

Hence, for stabilized power flow in both these two lines and increase redundancies for reliable availability of power in the grid, the proposed inter-connecting line is essential. This proposal was referred to next meeting of NERPC-TP as discussed in 21st Meeting of TCC on 3rd Feb. 2021, which may therefore be accorded formal approval of TCC & NERPC.

Tentative Length: 80 kms; Cost: Rs. 225 Crs.

Estimated Time of Completion: 24 months from date of sanction.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.02 : CONNECTIVITY TO NAHARLAGUN – DoP ARUNACHAL PRADESH

132kV LILO Link of Pare-Chimpu Transmission Line to upcoming Naharlagun/Yupia 132 kV Sub-Station: The existing Pare-Chimpu line with associated system has power sources at Pare and Ranganadi HEPs and grid connectivity at Biswa Nath Chariali 400/220/132 kV Sub-Station via Gohpur; while the upcoming Naharlagun/Yupia 132/33 kV Sub-Station under Comprehensive Scheme is connected on the long Khuppi-Pasighat 132 kV line under the same scheme without any intermediate

anchoring and connectivity to any power source or grid system till Pasighat. Hence, for stabilized power flow on the Khuppi-Pasighat line corridor, the proposed LILO connectivity is inevitably essential. This was also suggested by the CTU in the System Study Meeting on 05.08.2019, at Gurugram.This proposal was referred to next meeting of NERPC-TP as discussed in 21st Meeting of TCC on 3rd Feb. 2021. Hence,formal approval of TCC/NERPC is required for this proposal.

Tentative Length: 2 kms; Cost: Rs. 25 Crs.

Estimated Time of Completion: 18 months from date of sanction.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.03 : CONNECTIVITY BETWEEN JONAI AND NIGLOK– DoP ARUNACHAL PRADESH

This proposal is important for ensuring reliable redundancy of the grid systems of both the states of Arunachal Pradesh and Assam for stable grid power flow.This proposal was agreed in the Joint System Study Meeting on 05.08.2019, at Gurugram, on reference form the NERSCT in its 1st meeting. The same was also referred to next meeting of NERPC-TP as discussed in the 21st Meeting of TCC at Kohima. Therefore, formal approval of TCC & NERPC be accorded.

Tentative Length: 5 kms; Cost: Rs. 30 Crs.

Estimated Time of Completion: 18 months from date of sanction.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.04 : NEW EHV SUBSTATIONS FOR IMPORTANT DISTRICT HEADQUARTERS– DoP ARUNACHAL PRADESH

2x10 MVA, 132/33 kV Sub-Station at Kimin in Papum Pare District: Kimin is a fast burgeoning township having a regular local administrative Sub-Division and huge military establishments with fast growing local industrial and tourism sector set ups. Though the 132 kV transmission line of Khuppi to Pasighat via Seppa, Rilo, Sagalee, Naharlagun, Grukamukh, Likabali, Niglok and Napit had been envisaged to pass

nearby the Kimin township, however, provision of the 132/33 kV Sub-Station at Kiminskipped from its scope. Presently, the township is powered through a lengthy and unreliable 33 kV Sub-Transmission lines all the way from Naharlagun and Ziro which travers through thick jungles causing unwanted frequent tripping in addition to poor voltage regulations and hazards to upstream systems and equipment. Hence, the requirement of the proposed Sub-Station has arisen, which will be powered from the upcoming Naharlagun - Gerukamukh 132 kV line through LILO arrangement to be included in the Sub-Station project.

Tentative Cost: Rs. 75 Crs.

Estimated Time of Completion: 24 months from date of sanction.

2x10 MVA, 132/33 kV Sub-Station at Raga in Kamle District:

Kamle is a new district carved out from Lower Subansiri and Upper Subansiri districts of Central Western Arunachal Pradesh, that will have a full fledged District Head Quarter at Raga. It is the present Sub-Divisional administrative Head Quarter. With creation of this new independent district, rapid developmental activities are taking place for establishment of infrastructures, and hence consequential rapid load growth too is being expected and more are foreseen in coming days in the district and locality, for which a stable power supply system needs to be put in place, and accordingly the proposed Sub-Station, which would be powered via 132 kV LILO line on the existing Ziro-Daporijo 132 kV S/C line, the cost of which would be included in the project proposed.

Presently Raga is fed power with long 11 kV local feeders from Tamen 33/11 kV Sub-Station whoseupstream power is via a lengthy 33 kV radial line passing through dense jungles from Ziro 132/33 kV Sub-Station.

Tentative Cost: Rs. 75 Crs.

Estimated Time of Completion: 24 months from date of sanction.

2x5 MVA, 132/33 kV Sub-Station at Garu in Lower Siang District: Presently, the powers at Gensi (Sub-Divisional administrative HQ), Garu and nearby areas in Lepa Rada district in Central Arunachal Pradesh are fed on 33 kV Distribution systems through

a lengthy and unreliable 33 kV line all the way from Aalo 132/33 kV Sub-Station, which poses very poor voltage regulations in addition to frequent disruptions due to the thick jungles and hilly terrains through which the line passes. Such frequent tripping also have huge impact on the lives of Sub-Station transformers and equipment.

As such, one 132/33 kV Sub-Station is essentially required to be established at Garu, which beside being local load centre along the Highway is also at equidistance from Gensi, Igo and other load localities. The proposed Sub-Station shall be powered through LILO connectivity from the proposed Likabali-Basar 132 kV line.

Tentative **Cost: Rs. 6OCrs.**

Estimated **Time of Completion: 24 months** from date of sanction.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.05	**:**	**ESTABLISHMENT OF 400kV NAHARKATIA SUBSTATION– AEGCL**

Lines:

i) 400 KV D/C Line to Gogamukh SS(PGCIL)
ii) 400 KV D/C Line to New-Mariani utilising the existing 400 KV D/C Lines from New-Mariani to Kathalguri (Now charged at 220 KV) upto the location near Naharkatia
iii) 220 KV Naharkatia-Kothalguri D/C Line utilising the remaining part of the 400KV D/C line (Now charged at 220KV upto Kothalguri)
iv) 2 No of 500MVA, 400/220 KV ICT
v) 2 No 220/33 KV 50MV Transformer for supplying load to DISCOM
vi) 2X125MVA Bus reactor (Switchable)

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.06	**:**	**ESTABLISHMENT OF 132/33kV DOULASAL SUBSTATION WITH LILO FROM 132kV BARPETA-AMAYAPUR D/C– AEGCL**

Associated Line:

132 KV Barpeta-Amayapur D/C Line with S/C LILO at Doulasal.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.07	**:**	**ESTABLISHMENT OF 220/132kV BARNAGAR SUBSTATION WITH LILO FROM 220kV RANGIA-SALAKATI– AEGCL**

132 KV Bus extension at Barnagar with 2 no of transformer LV side Bay for 2X50 MVA, 220/132 KV transformer

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.08	**:**	**ESTABLISHMENT OF 50MVA 132/33kV JONAI SUBSTATION– AEGCL**

Lines: Jonai-Silapathar S/C Line on D/C Tower.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.09	**:**	**AMPACITY AUGMENTATION OF LINES– AEGCL**

(i) HTLS conversion of conductors from 132 KV Amingaon Substation to Dhaligaon Substation (excluding Rangia-Nathkuchi section)

(ii) Reconductoring of 132 KV Hailakandi-Dullavchera line

(iii)Reconductoring of 132 KV Panchgram-Hailakandi line

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.10	**:**	**ENHANCEMENT OF CAPABILITY OF 132kV PANCHGRAM – LUMSHNONG, 132kV HAILAKANDI – DURLAVCHERRA, 132kV PANCHGRAM – HAILKANDI, 132kV SRIKONA – PAILAPOOL – NERLDC**

The following lines have crossed the useful life of 35 years of age and need upgradation.

Sl. No.	Name of the Line	Year of Commissioning
1	132 kV Panchgram – Lumshnong line	1969 (Approx.)
2	132 kV Hailakandi – Dullavcherra line	1970 (Approx.)
3	132 kV Panchgram – Hailakandi line	1970 (Approx.)
4	132 kV Srikona - Pailapool line	1970 (Approx.)

It has been observed that the above-mentioned lines are unable to carry power to the tune of the thermal rating of the ACSR Panther conductor (79 MW approx.). The above elements are therefore not able to provide grid security and reliability in the case of tripping of any parallel path. Also, due to low capability of the lines, reliability of power supply to Tripura, Meghalaya and South Assam Power System is reduced. NERLDC vide letter to AEGCL dated 17.02.22 already highlighted the same.

It is therefore urgently requested to take up necessary steps to enhance the capability of the aforementioned lines of Assam Power System so that the grid can be run more securely and reliably.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.11	**:**	**EVACUATION OF POWER FROM NANGALBIBRA ISTS AT 400kV – MePTCL**

The ISTS project under Nangalbibra-Bongaigoan Transmission Ltd, TBCB envisages the construction of 400kV line (to be charged at 220kV) between Bongaigaon and Nangalbibra along with a 220/132kV substation at Nangalbibra. It is therefore imperative that evacuation plan at 400kV be also made from this substation in order to fully ensure a robust system of 400kV transmission.

In the 21st NERPC meeting, proposal for construction of 400KV, 220KV and 132KV transmission systems along the southern border of Meghalaya to facilitate the export of power to Bangladesh was made. The present proposal for this power corridor are:

(i) 400 KV D/C line charged at 220KV from Mynkre to Nongalbibra ISTS via Ichamati to connect the proposed ISTS 400 KV line from Bongaigaon to Mynkre.

(ii) MePGCL has submitted the proposal for construction of the Myntdu Leshka Stage-II project (210 Mw) to the Govt. of Meghalaya (GoM) for funding. As of today, the status of the MLHEP-II project is that the High Powered Committee of the GoM, has been constituted and to be funded as an Externally Aided Project (EAP). Based on this, MePTCL has submitted a proposal to evacuate power through a 220KV D/C line and to LILO the 400KV Silchar-Byrnihat-Bongaigoan line at Mynkre sub station. For this, construction of a 400/220KV, 2*315MVA GIS Sub-station and 220/132KV, 2*160MVA GIS substation at Mynkre is also proposed in the project cost. Land of 12 acre is available at Mynkre. In the earlier NERPC meeting this project was propose to be taken upon the coming up of Leshka-II which is being actively considered.

The proposal of 400kV South Meghalaya corridor connecting Mynkre and Nangalbibra (ISTS) will shorten the distance from Silchar to Bongaigoan and create a robust 400kV Transmission System besides ensuring evacuation.

The associated lines and substations for evacuation includes

(i) 400kV LILO and substation at Ichamati.

(ii) 132KV substation at Baghmara (District Headquarter of South Garo Hills) along with associated lines from Nongalbibra.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.12	**:**	**EVACUATION OF POWER FROM NERPSIP PROJECTS – MePTCL**

The Ongoing projects of NERPSIP constitute the following substation with associated lines:-

i) 220/132kV substation at Mawphlang.
ii) 220/132kV substation at New Shillong.
iii) 132/33kV substation at Phulbari.
iv) 132/33kV substation at Mynkre.

a. Evacuation from 220/132kV substation at Mawphlang.
   i) 220 kV line to Ichamati with associated substation at Ichamati.

b. Evacuation from 220/132kV substation at New Shillong.
   (i) 132kV line to Nongpoh alongwith substation at Bhoirymbong (near Shillong Airport)
   (ii) 132kV line and LILO at nearby IIM Shillong substation.

c. Evacuation from Mynkre.
   (i) 132kV line to Lumshnong Substation.

d. Evacuation from Phulbari
   (i) 132kV Phulbari-Mendipathar .

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.13	**:**	**NEED FOR AUGMENTATION OF EHV LINES AND SUBSTATIONS IN RIBHOI ASPIRATIONAL DISTRICT – MePTCL**

This district has been declared as Aspirational District by NITI Aayog. It is also the most industrialized district of the State of Meghalaya contributing to the economy and development of the State and the region. It has the maximum number of Hydro stations in the state and also the oldest Hydro Power Station in the region. Besides this district lies between Shillong and Guwahati. Although a number of Grid stations have been installed in the industrial area of the district but the head quarter is not having any

132KV substation to cater to the growing load demand and power supply reliability for the common public.

Further areas adjacent to Byrnihat 400/220/132kV substation which are contiguous to Guwahati city do not have a single 132/33kV substation rendering poor quality of power supply to residents of Khanapara, Pillangkatta and Patharkhmah areas.

It is therefore proposed that following Grid substations and associated lines be set up in the interests of the general public.

i) 132/33KV Substation at Nongpoh with LILO of Stage III- Umtru line.
ii) 132/33kV Substation at the existing 400/220/132kV Killing Substation with LILO of 132kV Umtru – Kahelipara D/C.
iii) 132/33kV Substation at Pillangkatta with LILO of 132kV Killing- Kahilipara D/C line.
iv) 132/33kV Substation at Pathatkhmah with associated line from Nongpoh.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.14 : INDO-BANGLA BORDER TRANSMISSION SYSTEM IMPROVEMENT – MePTCL

a. Improvement of power supply: A large number of 33Kv substations in the Indo-Bangla border areas have been constructed under DDUGJY, RAPDRP, SAUBHAGYA, Indo Bangla Border Lighting, IPDS, ADB and NERPSIP etc but there is no existence of 132/33kV substations all along the international border.

b. Improvement of Border Trade and Tourism: There is a large presence of border LACs and internationally known tourist areas such as Mawlynnong and Dawki. 132KV connectivity is required as follows:
   i) 132/33KV substation at Balat with associated line from Ichamati
   ii) 132/33KV substation at Pongtung with Associated lines from Sohra/ Mawlyndep
   iii) 132/33KV substation at Mawkyrwat with associated line from Balat.

Expansion of Intra state network and connectivity of missing 132kV links:

For Intra State connectivity and power system stability the following lines are required:

i) 220kV Mynkre-Mustem. Evacuation of power from MLHEP-II (Leshka) of 210 MW.

ii) LILO of 220kV Nangalbibra (ISTS) – New Shillong with substation at Mustem.

iii) 132kV MLHEP-I (Leshka) - Mustem with LILO and substation at Amlarem (Alternate evacuation route for Leshka-I). During high generation monsoon period, 2x7, 126 Mw power evacuation is dependent on only one D/C 132kV feeder to Khliehriat S/S which is susceptible to outages due to severe monsoon weather.

iv) 132 kV Ampati-Dalu-Baghmara with substation at Baghmara.

v) 132kV Stage III- Nongkhlaw –Nongstoin with substation at Nongkhlaw.

vi) New Grid Substation and Lines: The creation of new transmission elements proposed up to 2030 need to be initiated as follows:

  i) 132kV Ichamati/Sohra-Balat-Bagmara. For ringmain connection of Sohra and Bagmara with ISTS Nangalbibra.

  ii) 132kV LILO of NEIGRIHMS-Khliehriat at Shangpung along with substation. For N-1 of Khliehriat and load demand growth of Laskein Block.

  iii) Stringing of 2nd circuit from Ganol P/S to Ampati on existing towers. For N-1 relief to Ganol P/S and Ampati.

  iv) LILO of 400kV Silchar-Byrnihat at New Shillong. For ringmain connectivity of New Shillong-Killing-Mawngap and evacuation from NERPSIP New shilling project.

  v) 400kV Killing-Nangalbibra (charge at 220kV) with LILO and substation at Nongstoin. This will provide alternate evacuation from Nangalbibra ISTS to New Shillong.

Shillong Load: To cater to growing demand of the capital city of Shillong, 132KV substations and associated lines are proposed at:

i) 132/33KV substation at Mawlynrei with associated line from NEIGRIHMS.

ii) 132/33KV substation at Laitlyngkot with associated line from Mawlyndep.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.15 : CAPACITY AUGMENTATIONS AND EXTENSIONS OF EXISTING SUBSTATIONS – MePTCL

Sl No	AUGMENTATIONS AND EXTENSIONS OF EXISTING SUBSTATIONS	
1	132/33KV NEHU S/S	New 132/33kV, 2x50MVA in place of old 2x20 MVA transformers
2	132/33KV Rongkhon S/S	132/33kV, capacity upgradation from 45 MVA to 60 MVA
3	132/33KV,EPIP-II,Norbong S/S	132/33kV, Augmentation from 1x50MVA to 2x50 MVA transformers
4	132/33 KV Nongstoin S/S	New 132/33kV, 2x50MVA in place of old 2x20 MVA transformers
5	132/33KV Mawphlang S/S	New 132/33kV, 2x50MVA in place of old 2x20 MVA transformers
6	132/33KV Umiam S/S	New 132/33kV, 2x50MVA in place of old 2x20 MVA transformers
7	132/33KV Lumshnong S/S	New 132/33kV, GIS 2x25MVA in place of old 1x10 MVA transformer
8	132/33KV Khliehriat S/S	Upgradation & modernisation of Khliehriat 132/33 kV Substation including providing 33kV Switchyard
9	132/33KV,EPIP-I, Rajabagan S/S	132/33kV, Augmentation from 2x20MVA to 2x50 MVA transformers
10	132/33KV,Mawlyndep S/S	132/33kV, Augmentation from 2x20MVA to 2x50 MVA transformers
11	132/33KV,Mendipathar S/S	132/33kV, Augmentation from 2x20MVA to 2x50 MVA transformers
12	132/33KV,Mustem S/S	132/33kV, Augmentation from 2x20MVA to 2x50 MVA transformers

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.16 : RE-CONDUCTORING OF TRANSMISSION LINES – MePTCL

Sl No	RECONDUCTORING OF TRANSMISSION LINES (HTLS)
1	132kV NEHU–Mawlyndep- Mustem- Khliehriat S/C line –COD 1996
2	132kV Stage 1 –Umiam S/C line COD- 1991
3	132kV Umiam-NEHU S/C line COD 1991
4	132kV Stage 1- Mawlai S/C line COD 1964
5	132kV Stage I- Stage-II S/C line COD 1969
6	132kV Umtru- Stage III D/C line COD 1964
7	132kV Umtru- Kahilipara D/C line COD 1964
8	132kV NEHU-Mawlai COD 1996
9	132kV Umtru-Sarusajai COD 1996

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.17 : RE-STRENGTHENING OF INTRA-STATE 132kV TRANSMISSION LINES – TSECL

Power flow through 132 KV network in the State of Tripura has increased considerably with addition of new generating stations in the system. As a result there has been frequent occurrence of flashing in jumpers and snapping of conductors with current flowing above thermal limit through some intra-state line sections.

As such re-strengthening of the intra-state line sections by replacement of existing conductor with HTLS (High Temperature Low Sag) conductor of equivalent size with suitable insulator & hardware fittings on same tower structure to cope up with increased power flow with improved reliability is a necessity. The HTLS conductor though having lesser weight has much higher current carrying capacity compared to ASCR conductor.

Presently power is being evacuated through 2(two) nos. 132 KV intra-state line corridors as appended below :

i) 79 Tilla Grid – Bodhjungnagar – Jirania – Baramura – Gamaitilla – Ambassa – P.K. Bari – MissionTilla

ii) 79 Tilla – Mohonpur – Dhalabil – Kamalpur – P.K. Bari.

Out of the above EHV line sections, DPR for re-conductoring of the 132 KV line section from Ambassa to P.K. Bari via P.K. Bari (ISTS) by HTLS conductor has been already submitted to NERPC for consideration of funding through PSDF.
Moreover, providing of HTLS conductor in 132 KV line section from MissionTilla (Tripura) to Durllavcherra (Assam) may also be explored.

Re-strengthening of the balance intra-state transmission line sections by replacing old aged conductor, hardware etc. with HTLS conductor of equivalent size with suitable insulator & hardware fittings being essentially required is envisaged in the proposal for stability of the intra-state grid in respect of power flow / evacuation.
Cost Estimate along-with Detail Project Report (DPR) will be submitted for approval of the proposal by NERPC and consideration of NERPC for funding through 100 % Grant from PSDF.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.18	**:**	**PROVIDING OF HTLS CONDUCTOR WITH ALLIED ACCESSORIES AT EXISTING 132kV TRANSMISSION LINE SECTIONS – TSECL**

The said new 132 KV connectivity to Udaipur from Palatana Generating Station with HTLS conductor shall strengthen intra-state transmission system in terms of adequate power flow even for added generation at Palatana with more reliability and improved voltage profile which will be beneficial not only for the Gomati and South Districts but the State as a whole considering the future load growth.
Rokhia Generating Station is presently connected with two major intra-state transmission lines at 79 Tilla Agartala Grid and Udaipur. The existing 132 KV double circuit link from 79 Tilla Agartala Grid to Rokhia has been already provided with HTLS conductor (98 % completed).

The 132KV single circuit transmission line from Udaipur to Rokhia GTP was constructed and commissioned around 20 years back with ASCR “PANTHER” conductor. Since commissioning the line has gone through different wear-tear condition and overtime the power flow through this line has also been increased,

mechanical strength of the power conductors have deteriorated to a great extent due to prolong use causing frequent intra-state grid disturbance. By providing HTLS conductor in this 132 KV line section, the power evacuation corridor from Rokhia GTP will be completed.

As such, for adequate power evacuation from Palatana Generating Station and Rokhia GTP and to maintain grid reliability, stability and improve the voltage profile, providing of HTLS conductor in both the existing 132 KV transmission line sections from Palatana to Udaipur and Udaipur to Rokhia is very much technically essential.

Replacement of old panther conductor having low ampacity with the highest system availability and quality need be considered to achieve most reliable power transmission system in the State.

Cost Estimate along-with Detail Project Report (DPR) will be submitted for approval of the proposal by NERPC and consideration of NERPC for funding through 100 % Grant from PSDF.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.19	**:**	**INSTALLATION OF RACCOON COVERED CONDUCTOR FOR OUTSIDE SOURCE OF 33kV POWER SUPPLY OF UMIAM STG-IV – MePGCL**

PROPOSAL: Installation of 33KV Racoon covered conductor with accessories etc for Outside source 33KV power supply of Umiam Stage IV Power Station, coming from Umiam Stage III power station, under MePGCL

Explanatory Note:

Stage IV power station is a generating station with two installed Units, where each unit is of capacity of 30 MW. The overall generating capacity of this station is 60MW.

The above 33KV outside source power supply line from Stage **III** Power station to Stage IV power station which runs through the reserved forest is prone to frequent power

supply outages due to frequent falling of bamboos and small trees on the naked conductors of the line. Although triming of trees is done regularly, the growth of shrubs, trees and bamboos are very fast which caused frequent outages of the line.

Therefore, in this connection it is felt necessary to replace the existing naked racoon conductor with 33KV covered racoon conductor in order to avoid frequent outages of the line.

Due to lack of fund, MePGCL is requesting the forum to consider recommending the funding of this project from PSDF.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.20	**:**	**INSTALLATION OF TWO NUMBERS GENERATOR TRANSFORMER FOR LESHKA – MePGCL**

PROPOSAL: Procurement of (2) nos. Generator Transformer **10,** 17.5 MVA, 132/33 KV with accessories etc as spares for MLHEP Power Station.

Explanatory Note:

Myntdu Leshka Power Station is a generating station with three installed Units, where each unit is of capacity of 42 MW. The overall generating capacity of this station is (3 X 42 mw). Each unit of the Myntdu Leshka (3X42 MW) Stage-I Power Station is provided with three single phase generator transformers. In the event of failure any one of the generator transformers, a spare transformer will be required for its replacement to maintain the smooth functioning and un-interrupted generation of power supply.

However, the spare transformer which was available at the MLHEP, has failed many a times and is now not reliable with the history of similar failure in the past. Considering the importance of maintaining un-interrupted generation and grid stability in the NER, at high hydro monsoon season, it is very vital to arrange for procurement of a new Generator Transformer 10, 17.5 MVA, 132/33 KV with accessories etc, for the MLHEP Power Station, to meet the System Demand.

MePGCL is requesting the forum to consider recommending the funding of this project from PSDF.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.21	**:**	**UPGRADATION OF EXISTING SCADA SYSTEM OF MLHEP – MePGCL**

Up-gradation of the existing SCADA system of Myntdu Leshka Stage — I Power Station from the obsolete windows XP operating system to windows 10 of the latest version. The existing SCADA system's response is very slow and hanging of the system is experienced on and off. This is mainly due to very low RAM and Hard Disk capacity and necessary requirement of up-gradation of the system software to the latest available version. It may be noted that the installed software of the SCADA system i.e., Windows XP is already obsolete and there is no more technical support for the same. The tentative cost of the project will be tentatively Rs2.5Cr(Inclusive of Packaging, 1-7&I, Testing & Commissioning etc).

MePGCL is requesting the forum to consider recommending the funding of this project from PSDF.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.22	**:**	**UPGRADATION OF 132kV DHEP- MOKOKCHUNG – DoP NAGALAND**

Up-gradation of the existing 132kV DHEP – Mokokchung S/C line on S/C tower from existing Panther conductor with Single HTLS conductor and strengthening of tower, wherever required(ampacity of single HTLS shall be 798 A – equivalent to Single ACSR Moose conductor for 45^{O}C ambient and 85 ^{O}C maximum conductor temperature) alongwith upgradation of associated bays alongwith upgradation of 1 no of 132kV bay each at Doyang and Mokokchung(NAG) Sub-station. This is to relieve congestion and complete utilization of available transformation capacity for delivering power to Dimapur load center. Applied for funding under PSDF.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.23	**:**	**RENOVATION AND UPGRADATION OF PROTECTION SYSTEM IN THE EHV SUB-STATIONS OF TRIPURA – TSECL**

Augmentation of 5 nos. existing 132 KV sub-stations of Tripura at Udaipur, Jirania, Dhalabil, Kailashahar & Ambassa are presently in progress of installation under Tranche – I Scope of Work of Govt. of India and World Bank funded NER Power System Improvement Project (NERPSIP), where Power Grid Corporation of India Limited (PGCIL) is the Implementing Agency.

Modernisation & Renovation by replacing old aged, obsolete equipments and Protection system in the balance 132 KV sub-stations of the State viz, Surjamaninagar, Bodhjungnagar, Gamaitilla, Kamalpur is very much essential to be implemented being not covered also within the ongoing scope of work of "Renovation & Up-gradation of Protection System in the Sub-Stations" under PSDF in Tripura.

In addition, left out portions of 79 Tilla Grid, P.K. Bari and Missiontilla 132 KV sub-stations in respect of renovation and up-gradation of protection system also need be considered to achieve most reliable power transmission system in the State.

Cost Estimate along-with Detail Project Report (DPR) will be submitted for approval of the proposal by NERPC and consideration of NERPC for funding through 100 % Grant from PSDF.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.24	**:**	**DEMOLITION AND RECONSTRUCTION OF RESIDENTIAL/NON-RESIDENTIAL BUILDINGS IN THE SUBSTATION PREMISES AT HAFLONG, JIRIBAM, AIZAWL & KUMARGHAT UNDER ADDITIONAL TRANSMISSION FOR GOHPUR ITANAGAR (ATGI) PROJECT & SALAKATI UNDER CHUKKHA PROOJECT THROUGH ADDITIONAL CAPITALIZATION TARIFF BLOCK 2019-24 – NERTS**

Residential and Non-Residential buildings at Haflong, Jiribam, Aizawl & Kumarghat are constructed under Additional Transmission for Gohpur Itanagar (ATGI) and buildings at Salakati are constructed under Chukkha project.

In order to ascertain Structural Strength of these buildings, Structural Assessment of Residential & Non-residential buildings are carried out at Salakati and Haflong by BINESWAR BRAHMA ENGINEERING COLLEGE, Kokrajhar (BTC), Assam. Report has been received for Salakati station and same is attached as Annexure-II. It was observed during the assessment that most of the structures at Salakati were found not fit for residential purpose. Structural assessment report for Haflong station is expected to be received soon. Structural assessment of the buildings at balance stations are also being taken up.

Accordingly, it is proposed for construction/demolition of buildings as per following details:

Name of Substation	Year	No of Existing Quarters	No of Quarters to be demolished	Nos of quarters to be Constructed
ATGI Project				
Haflong	1987	46	16	16
Jiribam	1985	76	16	16
Aizawl	1988	57	16	16
Kumarghat	1989	32	16	16
Chukkha TS				
Salakati	1987	45	08	08

Quarters and Admin buildings at above mentioned substation are in dilapated conditions. However as per present requirements, it is proposed for demolition and reconstruction of 16nos quarters at Haflong, Jiribam, Aizawl & Kumarghat and 08nos

quarters at Salakati substation under ADDCAP. Moreover, 1no Transit camp and Admin building each at Haflong, Jiribam, Aizawl and Kumarghat substation are also needs to be demolished and reconstructed under ADDCAP.

Estimated Cost for Demolition/ Reconstruction for Residential & Non-Residential buildings under ATGI project: Rs 23.14 Crs

Estimated Cost for Demolition/ Reconstruction for Residential buildings under Chukkha TS: Rs 2.12 Crs

Although above requirement is coming under Clause 25, 2(a) of CERC Tariff Regulation 2019, however, honourable CERC vide its order for ATGI and Chukkha project, has advised to get the consent of RPC. Accordingly, the same is being put up for consent of NERPC.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.25	**:**	**COMMUNICATION SYSTEM PACKAGE FOR "RELIABLE COMMUNICATION SCHEME" UNDER CENTRAL SECTOR FOR NER – NERTS**

In 18th and 19th NERPC meeting, implementation of Reliable Communication Scheme under Central Sector for NER was approved. Estimated cost of Rs. 75 Cr was indicated in 19th NERPC meeting dt. 28th,29th Nov'18 which was based on contracts awarded in 2018-19.

Contract for the above project has been placed on 12.11.2021, however the DPR cost is revised due to the following reasons-

a) Tender for OPGW based communication packages being carried out through Domestic Competitive Bidding for the first time in line with guidelines on public procurement.
b) Restriction of participation of OPGW manufacturers who have beneficial owners in countries land bordering with India in public procurements, in line with section 144 of GFR (General Financial Rules) guidelines issued by Department of Expenditure, GOI in July'20. Qualified bidders in these tenders were reduced to 3 from 5.

c) There is an increase in price of raw materials like Aluminium and steel over the last 5 years also.

Revised estimated DPR cost of the said project is approximately **Rs. 84.83 Cr**.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ITEM NO. E.26	**:**	**ADDITIONAL 132kV D/C LINE BETWEEN KAMENG HEP AND KHUPI 132kV SUB-STATION IN VIEW OF OVERLOADING ON THE EXISTING S/C LINE – DoP ARUNACHAL PRADESH**

In the 1st Consultative Meeting for Evolving Transmission System of North Eastern Region held virtually by CTU on 25.11.2021, it was made out that as per system study, the existing Kameng/Kimi-Khupi 132 kV S/C line is critically loaded in base case itself. In case of N-1 of Gerukamukh-Naharlagun (Upcoming New) line results in further increase in power flow on Kameng/Kimi-Khupi 132 kV S/C line; thus, requiring strengthening of this segment of transmission element.

Extract of minutes of 1st Consultative Meeting for Evolving Transmission System of NER:

"*However, Kameng/Kimi – Khupi 132kV S/C line is observed to be critically loaded in base case itself, N-1 of 132kV Gerukamukh – Naharlagun(New) S/C line results in further increase in power flow on Kameng/Kimi – Khupi line. Thus re-conductoring of Kameng/Kimi- Khupi 132kV S/C line is required, in view of critical loading in base case and overloading during contingencies.*

Representative of Arunachal Pradesh informed that they are planning to construct additional Kameng – Khupi 132kV D/C line in place of re-conductoring of existing circuit as the towers in the existing line are in dilapidated condition. Accordingly, the proposal of re-conductoring of the Kameng – Khupi 132kV S/C line may be dropped."

Hence, forum may approve this proposal for construction of 132 kV Double Circuit line with associated bays at Kimi and Khupi Sub-Station ends.

The item is to be discussed in Sub-Committee meetings of NERPC and is referred back to the Sub-Committee(s) of NERPC.

ANNEXURES