

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 197/MP/2020, 201/MP/2020, 263/MP/2020 and 556/MP/2020**

**Coram:**

**Shri Jishnu Barua, Chairperson  
Shri I. S. Jha, Member  
Shri Arun Goyal, Member  
Shri P. K. Singh, Member**

**Date of Order: 04.08.2023**

**In the matter of:**

Petition under section 28 (3) (e) of the Electricity Act, 2003 read with clause 1.5 of IEGC 2010 for establishment and maintenance of Communication facilities by the users of the North-Eastern Region in terms of Clause 4.6.2 of IEGC, 2010, read with Regulation 6(3) of CEA (Technical Standards for Connectivity to the Grid) Regulation, 2007 to ensure availability of reliable real time data at NERLDC.

**And**

**In the matter of:**

North Eastern Regional Load Despatch Centre (NERLDC), .....Petitioner  
Power System Operation Corporation Ltd. (POSOCO),  
(A Govt. of India Enterprise).B-9, Qutub Institutional Area, 1<sup>st</sup> Floor,  
Katwaria Sarai, New Delhi -110016

**Versus**

**Petition No. 197/MP/2020**

1. SLDC Arunachal Pradesh,  
Department of Power, Government of Arunachal Pradesh,  
Itanagar-791111
2. Power Grid Corporation of India Limited,  
NERSTS, Shillong- 793006
3. Devi Energies Private Limited,  
E-351, Rupa Vill & Town, Rupa Post,



West Kameng District, Arunachal Pradesh-79003

.....Respondents

4. NERPC,  
NERPC Complex, Dong Parmaw,  
Lapalang, Shillong-793006.

..... Proforma Respondents

**Petition No. 201/MP/2020**

1. Tripura State Electricity Corporation Limited (TSECL),  
Bidyuth Bhavan, North Banamalipur,  
West Tripura District, Agartala-799001
2. Power Grid Corporation of India Limited,  
NERSTS, Shillong- 793006
3. SLDC Agartala,  
TSECL, AG Quarter Road, 79-Tilla,  
Tripura (West)-799006

.....Respondents

4. NERPC, NERPC Complex, Dong Parmaw,  
Lapalang, Shillong-793006.

..... Proforma Respondents

**Petition No. 263/MP/2020**

1. Department of Power,  
Government of Nagaland, Electricity House, A.G. Colony,  
Kohima, Nagaland-797001
2. SLDC Nagaland,  
Electricity Colony, Full Nagarjan,  
Dimapur, Nagaland – 797112
3. Power Grid Corporation of India Limited,  
NERSTS, Shillong- 793006

.....Respondents

4. NERPC,  
NERPC Complex, Dong Parmaw,  
Lapalang, Shillong-793006.

.....Proforma Respondents

**Petition No. 556/MP/2020**

1. Power & Electricity Department,  
O/o Engineer in Chief, Kawlphetha,  
New Secretariat Complex, Khatla,  
Aizawl, Mizoram-796001
2. Power Grid Corporation of India Limited,  
NERSTS, Shillong- 793006

..... Respondents

3. NERPC,  
NERPC Complex, Dong Parmaw,



**Parties Present:**

Shri S. P Barnwal, NERLDC  
Ms. Himani Dutta, NERLDC  
Shri Akhil Singhal, NERLDC  
Shri Raj Singh Nirajan, Advocate, Dept. of Power, AP  
Shri Rajni Patel, Advocate, Dept. of Power, AP  
Shri Utham Harish, Advocate, Dept. of Power, AP  
Shri Nangkong Perme, Dept. of Power, AP  
Shri S. I Asangba Tikhir, Dept. of Power, Nagaland  
Shri H. Zonunsanga, CE (RE), Mizoram  
Shri Benjamin L. Tlumtea, SE (Comml), Mizoram  
Shri Abhijit Daimari, PGCIL  
Shri R. Debbarman, TSECL/TPTL  
Shri Anil Debbarma, TSECL/TPTL

**ORDER**

North Eastern Regional Load Despatch Centre (NERLDC) has filed Petition Nos. 197/MP/2020, 201/MP/2020, 263/MP/2020, and 556/MP/2020, respectively, with each petition for a particular state of North-East India, under section 28 (3) (e) of the Electricity Act, 2003, read with Clause 1.5 of IEGC 2010, for establishment and maintenance of communication facilities by the users of the North-Eastern Region in terms of Clause 4.6.2 of IEGC, 2010, read with Regulation 6(3) of CEA (Technical Standards for Connectivity to the Grid) Regulation, 2007 to ensure availability of reliable real time data at NERLDC.

2. The Petitioner has made the following prayers in the present petition:

**Prayer in Petition No. 197/MP/2020**

- i. Department of Power, Govt. of Arunachal Pradesh may be directed to:*
  - a. Ensure data and voice availability of every grid connected station in Arunachal Pradesh to its SLDC and NERLDC within a stipulated time period.*
  - b. The top management of Department of Power, Govt. of Arunachal Pradesh to send periodic reports of the monthly progress to the Hon'ble Commission till there is 100% availability of data to its SLDC and NERLDC.*



- c. *Ensure the availability of standby communication channel for data and voice.*
- d. *To comply with pervious CERC orders, regulations and IEGC on the subject matter.*
- ii. *Power Grid Corporation of India Limited, NERTS may be directed to:*
  - a. *Undertake immediate steps for establishing communication link between 132 kV Roing, Tezu, Namsai and NERLDC, Shillong.*
- iii. *Devi Energies Private Limited, Hyderabad may be directed to:*
  - a. *Undertake immediate steps to integrate real-time data of Dikshi HEP and 132 kV Tenga Stations with SCADA system of SLDC Arunachal Pradesh.*
- iv. *Pass any other order in this regard as the Hon'ble Commission may deem appropriate in the circumstances pleaded above.*

### **Prayer in Petition No. 201/MP/2020**

- i. *Tripura State Electricity Corporation Limited may be directed to:-*
  - a. *Ensure data and voice availability of every grid connected station in Tripura to its SLDC and NERLDC within a stipulated time period.*
  - b. *The top management of Tripura to send periodic reports of the monthly progress to the Hon'ble Commission till there is 100% availability of data at its SLDC and NERLDC.*
  - c. *Ensure the availability of standby communication channel for data and voice.*
  - d. *Provide execution time line for two (02) numbers of optical fibre links under NER FO expansion projects, for which requisite material is handed over to TSECL by POWERGRID-NERTS as stated in 14<sup>th</sup> NETeST meeting.*
  - e. *Provide detailed action plan for the stations, which are not covered in NER FO expansion project as, brought out in para 5.*
  - f. *Provide detailed action plan for the stations, which are connected on islanded link as brought out in para 6.*
  - g. *To comply with pervious CERC orders, Regulations and IEGC on the subject matter.*
- ii. *Power Grid Corporation of India Limited, NERTS may be directed to:-*
  - a. *Expedite the projects of fiber optics on urgent basis of remaining four (04) number of central sector links and five (05) number of links of state ownership as brought out in Annexure B.*
- iii. *Pass any other order in this regard as the Hon'ble Commission may deem appropriate in the circumstances pleaded above.*

Relevant extracts of Para 5 and Para 6 of this petition as referred to in the prayers are at Para 4(a) and Para 4(b), respectively. of this order. Further, Annexure B as referred to in the prayer consists of a list of 12 number of links, which are being executed by POWERGRID under the fiber optic projects in the State of Tripura, and their status of implementation..

### **Prayer in Petition No. 263/MP/2020**

- i. *Department of Power, Nagaland may be directed to:*
  - a. *Ensure data and voice availability of every grid-connected station in Nagaland to its SLDC and NERLDC within a stipulated time period.*
  - b. *The top management of Nagaland to send periodic reports of the monthly progress to the Hon'ble Commission till there is 100% availability of data at its SLDC and NERLDC.*
  - c. *Ensure the availability of standby communication channel for data and voice.*
  - d. *Provide detailed action plan for the stations, which are not covered in NER FO expansion project as, brought out in para 7.*
  - e. *Provide detailed action plan for the stations, which are connected on wideband link as brought out in para 8.*
  - f. *Identify a nodal officer who shall supervise and be in-charge of the progress in development of communication system.*



- g. *Comply with pervious CERC orders, Regulations and IEGC on the subject matter.*
- ii. *Power Grid Corporation of India Limited, NERTS may be directed to:-*
  - a. *Provide a time bound action plan and expedite the projects of fiber optics on urgent basis of remaining three (03) numbers of links under FO Expansion works as brought out in Annexure B.*
  - b. *Undertake all necessary steps to ensure prompt and accelerated development of reliable communication systems in all stations in Nagaland.*
- iii. *Pass any other order in this regard as the Hon'ble Commission may deem appropriate in the circumstances pleaded above.*

Relevant extracts of Para 7 and Para 8 of this petition as referred to in prayer are at Para 5(a) and 5(b) of this order, respectively. Further, Annexure B as referred to in the prayers is the list of 8 number of links, which are being executed by POWERGRID under two (02) Fiber Optic projects: North-Eastern Region Fiber Optic (NER FO) expansion (3 links in State ownership and 3 links in Central ownership) and Microwave Vacation (MW Vacation) (2 links in State ownership) in the state of Nagaland, and the status of implementation of these projects.

#### **Prayer in Petition No. 556/MP/2020**

- i. *Department of Power, Mizoram may be directed to:*
  - a. *Ensure data and voice availability of every grid-connected station in Mizoram to its SLDC and NERLDC within a stipulated time.*
  - b. *The top management of Mizoram to send periodic reports of the monthly progress to the Hon'ble Commission until there is 100% availability of data at its SLDC and NERLDC.*
  - c. *Ensure the availability of standby communication channel for data and voice.*
  - d. *Ensure dedicated work force for SCADA and communication related activities.*
  - e. *Model and integrate all grid-connected station under control area of DoP, Mizoram in the SCADA of SLDC Mizoram.*
  - f. *Provide detailed action plan for the stations, which are not covered in NER FO expansion project as, brought out in para 8.*
  - g. *Provide detailed action plan for the stations, which are connected on wideband link as brought out in para 7.*
  - h. *To comply with previous CERC orders, Regulations and IEGC on the subject matter.*
- ii. *Power Grid Corporation of India Limited, NERTS may be directed to:-*
  - a. *Expedite the projects of fiber optics on urgent basis of remaining three (03) number of links under FO Expansion and MW Vacation works as brought out in Annexure B.*
- iii. *Pass any other order in this regard as the Hon'ble Commission may deem appropriate in the circumstances pleaded above.*

Relevant extracts of Para 7 and Para 8 of this petition as referred to in prayer are at paras 6(a) and 6(b) of this order respectively. Further, Annexure B as referred in the prayer is the list of 4 number of links, which are being executed by POWERGRID under two (02) Fiber Optic projects: North-Eastern Region Fiber Optic (NER FO) expansion (1 link in State ownership and 1 link in Central ownership) and Microwave Vacation (MW Vacation) (2 links in State ownership) in the state of Mizoram, and the status of implementation of these projects.



### **Submissions of Petitioner in all instant petitions**

3. Petitioner has referred to previous Orders of the Commission vide order dated 11.10.2012 in Petition No. 217/MP/2011 along with IA 142/2012, Order dated 26.9.2012 in Petition No. 168/MP/2011 and Order dated 29.01.2016 in Petition No. 007/SM/2014. Vide the said Orders, it was held that there is an imperative need for all the users to establish the telemetry and associated communication system in time bound manner and directed NLDC to submit report about the status of implementation of the telemetry system. Further, the Commission vide Order dated 29.01.2016 in Petition No. 007/SM/2014, directed NLDC and respective RLDCs to up-date the status of telemetry every month at their web-site and persistent non-availability of data from the generating stations/sub-stations be taken up in RPC meetings for appropriate directions and action.

### **Submissions in Petition No. 197/MP/2020:**

4. Petitioner has made the following submissions:
  - a) The real time data of all power system elements is essential for the successful operation of modern power system. The data should be provided using a reliable and redundant communication system. At some stations in Arunachal Pradesh, a temporary arrangement of GPRS communication (being done by POWERGRID-NERTS on special request by NER states) was getting installed till any permanent communication set-up such as OPGW, VSAT, etc. is established; but till date either it has not been completed or is facing issues related to SIM card signal problems in transmitting data. The stations under the jurisdiction of the Department of Power, Arunachal Pradesh, are neither covered under the Fiber-Optic Expansion project being done by POWERGRID-NERTS through the PSDF fund nor has any concrete action-plan been prepared by DoP-AP for establishing any type of communication link (such as Fiber-optic, PLCC, etc.) for real-time data transfer to the respective



SLDC and NERLDC. DoP-AP mentioned in the 15<sup>th</sup> NETeST (NORTH EASTERN TELECOMMUNICATION, SCADA, & TELEMETRY) meeting that it has proposed a plan of VSAT for eight (08) stations to the respective administrative authorities of Arunachal Pradesh, but only one (01) location has been approved.

- b) Dikshi HEP and 132 kV Tenga Switching Stations are owned by Devi Energies Private Limited. Both stations were connected to the grid and first charged on 26th August 2019. The real time data of Dikshi HEP is not getting reported consistently since the first time charging to the SCADA system of SLDC Arunachal Pradesh. As per the undertaking dated 24.08.2019 by Devi Energies Pvt. Ltd., real time data from the Dikshi HEP /132 kV Tenga station were to be integrated by 27.08.2019. However, real time data from the above mentioned stations is yet to be integrated with the SCADA system of SLDC Arunachal Pradesh. NERLDC, POSOCO, vide letter dated 27.12.2019 has written regarding the non-availability of telemetry data of Dikshi HEP and 132 kV Tenga Station. Devi Energies Private Limited has replied to the above mentioned letter via letter dated 28.12.2019 stating that it will rectify the issue of Dikshi HEP and the 132 kV Tenga station within 7-10 days.
- c) 132 kV Roing, Tezu, and Namsai substations are owned by PGCIL and are under the control area of NERLDC, POSOCO. 132 kV Roing and Tezu Substations were charged on 10<sup>th</sup> June 2017 and 132 kV Namsai Substation was charged on 11<sup>th</sup> June 2018. The real time data of substations is not available due to the absence of communication media between substations and NERLDC, Shillong. The issues were raised in various NERPC forums, such as NETeST and TCC. However, a temporary communication was established between the 132 kV Tezu substation and NERLDC via VSAT link on 27.08.2019, but the permanent communication link has yet to be established. However, real time data of 132 kV Roing and Namsai is still not being reported to NERLDC, Shillong.
- d) In accordance with Section 2(54) of the Act, Regulation 6(3) of the Central Electricity Authority (Technical Standards for connectivity to the Grid) Regulations, 2007 and the detailed procedures of the Central Transmission Utility under the Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access, and Medium-term open access in Inter-State Transmission and related matters)



Regulations, 2009 ('2009 Connectivity Regulations'), a user, who is getting connected to the grid is solely responsible for providing the telemetry to the Load Despatch Centre. The CTU/STU are to coordinate the required communication for voice and data. The associated communication system to facilitate data flow up to the appropriate data collection point on the CTU system shall also be established by the concerned user or STU as specified by CTU in the connection agreement. All users/STUs, in coordination with CTU, shall provide the required facilities at their respective ends as specified in the Connection Agreement. The provisions relating to communication systems for the power sector have been spelled out in the Central Electricity Regulatory Commission (Indian Electricity Grid Code), Regulations, 2010 and the Central Electricity Authority (Technical Standard for connectivity to the grid) Regulation.

- e) Data availability in the North-Eastern region has been less than 50% (around 48.82%) since the inception of RLDCs. In view of the same, Regional as well as state operators are facing constraints in grid operations. The stations in Arunachal Pradesh are grid-connected stations, and any fault/disturbance in them can propagate to other parts of network leading to a Grid Disturbance. The restoration activities within the minimum possible time, in case of any major collapse of the transmission system, in Arunachal Pradesh can only be done if the real-time data visibility of its corresponding stations is available with its SLDC as well as NERLDC. The RTU availability status of stations owned by DoP, AP is tabulated below:

<b>S. No.</b>	<b>Station Name</b>	<b>Reporting/ Non-reporting</b>	<b>% availability of data</b>
1	Along	Non-reporting	Nil
2	Bhalukpong	Non-reporting	Nil
3	Daporijo	Non-reporting	Nil
4	Deomali	Non-reporting	Nil
5	Dikshi	Intermittent	Nil
6	Itanagar	Reporting	45.71%
7	Khupi	Non-reporting	Nil
8	Tenga	Non-reporting	Nil
9	Lekhi	Non-reporting	Nil
10	Pasighat	Non-reporting	Nil

The RTU availability status of stations owned by Devi Energies Pvt. Ltd.





S. No.	Station Name	Reporting/ Non-reporting	% availability of data
1	Dikshi HEP	Non-reporting	Nil
2	132 kV Tenga	Non-reporting	Nil

The RTU availability status of stations owned by PGCIL

S. No.	Station Name	Reporting/ Non-reporting	% availability of data
1	132 kV Roing S/s	Non-reporting	Nil
2	132 kV Tezu S/s	Reporting	100 (since establishment of temporary link)
3	132 kV Namsai S/s	Non-reporting	Nil

- f) The data availability of Central Sector stations has improved over the period of time but the State-Sector data availability for Arunachal Pradesh has shown no/minimal improvement.

Real-time data availability percentage of stations under jurisdiction of Arunachal Pradesh	
Month/Year	% availability
October 2018	6.97 %
November 2018	6.97 %
December 2018	0.00 %
January 2019	0.00 %
February 2019	6.20 %
March 2019	6.20 %
April 2019	8.52 %
May 2019	7.36 %
June 2019	8.52 %
July 2019	8.52 %
August 2019	8.52 %
September 2019	3.87 %
October 2019	13.67 %
November 2019	6.74%

- g) The current data-availability percentage of stations under the jurisdiction of the Department of Power, Arunachal Pradesh, is 6.74%, which is very low and a major hurdle in monitoring the grid in the respective area.
- h) As per the CERC order dated 29.01.2016 in Petition No. 007/SM/2014, continuous efforts and persuasion are being made by NERLDC with the Dept. of Power, Government of Arunachal Pradesh, still relevant data from number of generating stations/sub-stations is not being telemetered to the NERLDC as well as the respective SLDC itself. The issues have been highlighted as follows:



- i. Monthly Telemetry statistics: Posted on website and circulated to all utilities/users.
- ii. Performance report in all OCC and NETeST meetings.
- iii. Monthly report of availability under the categories:
  - a. Telemetry not provided
  - b. Telemetry provided but is not working/working intermittently
  - c. Data telemetry provided over a single communication channel, hence the lack of reliability
- iv. Letter to SLDC, Arunachal Pradesh, regarding the telemetry status of stations and an intimation for the filing of a petition.
- v. Letter to Devi Energies Private Limited regarding the non-availability of telemetry at Dikshi HEP and 132 kV Tenga stations.

#### **Submissions in Petition No. 201/MP/2020**

5. Petitioner has made the following submissions:
  - a) The real time data of all power system elements is essential for the successful operation of a modern power system. The data should be provided using a reliable and redundant communication system. There are twenty-five (25) grid connected stations in the state of Tripura. Out of twenty-five (25) stations:- eleven (11) number of stations are connected via state owned PLCC network; one (01) station is a local station connected directly to SLDC Tripura; one (01) station is connected via state owned fibre network and twelve (12) number of stations are not connected via any state owned network. At two (02) stations in Tripura, a temporary arrangement of GPRS communication (being done by POWERGRID-NERTS on special request by NER states) was installed till any permanent communication of wide band is established; but GPRS connected stations are facing issues related to SIM card signal problems in transmitting data. POWERGRID is executing the fibre optic projects in the state of Tripura, in which twelve (12) number of stations under jurisdiction of TSECL will be connected. Eleven (11) numbers of stations under the jurisdiction of TSECL are not covered under Fiber-Optic projects being done by POWERGRID-NERTS. TSECL has not submitted any concrete action-plan for



establishing any type of communication link for real-time data transfer to the respective SLDC and NERLDC. A total of seventeen (17) number of stations of TSECL out of twenty-five (25) stations are not reporting to SLDC and NERLDC, in which optical fiber links under the NER FO expansion project for three (03) number of stations are completed but the data for the same has not been made available yet.

- b) POWERGRID-NERTS is executing two (02) numbers of Fiber Optic projects in the North-Eastern Region: North-Eastern Region Fiber Optic (NER FO) expansion and Microwave Vacation (MW Vacation), including the state of Tripura. A detail about links under the NER FO expansion project is tabled below:

Sl. No.	Ownership	Executing Agency	Number of Links in project	Remarks
1.	Central	POWERGRID NERTS	Four (04)	Completion- None. For redundant communication path
2.	State	POWERGRID NERTS	Ten (10)	Completion-Five (links)
3.	State	TSECL	Two (02)	Completion – None; Material hander over to TSECL by POWERGRID
<b>Total number of fibre links in Tripura</b>			<b>Sixteen (16)</b>	

In the 15th NETeST meeting, POWERGRID stated that five (05) number of FO links have been completed in Tripura, and further respective RTUs need to be integrated via these links with the joint cooperation of TSECL. One (01) number of link is islanded due to which communication path of respected RTUs is not terminating at SLDC Tripura. However, the target date for the completion of links is delayed and repeatedly deferred in various NERPC forums.

- c) Current data availability for the North-Eastern region is less than 50% (around 49.11%). In view of the same, Regional as well as state operators are facing constraints in grid operations. Any fault/disturbance in grid-connected stations in Tripura can propagate to other parts of the network leading to a Grid Disturbance. The restoration activities within minimum possible time, in case of any major collapse of transmission system, in Tripura can only be done if the real-time data visibility of its corresponding stations is available with its SLDC as well as NERLDC. The data



availability of Central Sector stations has improved over the period, but the State-Sector data availability for Tripura has shown no/minimal improvement. A month-wise status of telemetry (real-time data) percentage available from stations under the jurisdiction of Tripura for the last one year is tabulated below:

<b>Real-time data availability percentage of stations under jurisdiction of Tripura</b>	
<b>Month/Year</b>	<b>% availability</b>
October 2018	21.46%
November 2018	21.46%
December 2018	24.21%
January 2019	21.95%
February 2019	24.54%
March 2019	17.51%
April 2019	26.07%
May 2019	27.03%
June 2019	26.07%
July 2019	23.41%
August 2019	25.75%
September 2019	27.85%
October 2019	27.92%
November 2019	21.55%
December 2019	14.56%

- d) The current average data-availability percentage for the month of December'19 of stations under the jurisdiction of Tripura is 14.56%, which is very low and a major hurdle in monitoring the grid in the respective area.
- e) As per the CERC order dated 29.01.2016 in Petition No. 007/SM/2014, continuous efforts and persuasion are being made by NERLDC with the Tripura State Electricity Corporation Limited. In spite of several efforts by NERLDC, relevant data from the number of generating stations/sub-stations is not being made available at NERLDC as well as the respective SLDC itself. The issues have been highlighted in the following ways:
- i. Weekly Telemetry Reports: Sent via email to team of SCADA and communication regularly.
  - ii. Monthly Telemetry statistics: Posted on the website and circulated to all utilities/users.
  - iii. Performance report in all OCC and NETeST meetings.
  - iv. Monthly report of availability under the categories:



- a. Telemetry not provided.
  - b. Telemetry provided but is not working/working intermittently.
  - c. Data telemetry provided over a single communication channel hence lacks reliability
- v. Letter to SLDC Tripura regarding the telemetry status of stations.
  - vi. Letter to CMD, TSECL regarding the telemetry status of stations and an intimation for filing of a petition.
  - vii. Letter to POWERGRID regarding the Status of Fiber Optics projects in NER.

### **Submissions in Petition No. 263/MP/2020**

6. Petitioner has made the following submissions:

a) There are seventeen (17) grid-connected stations in the state of Nagaland. The break-up of status related to the afore-mentioned 17 nos. of stations under the ownership of DoP, Nagaland is listed below:

- Six (06) number of stations are not connected to any network.
- Eleven (11) stations have a temporary arrangement for GPRS/Broadband communication (being done by POWERGRID-NERTS on special request by NER states). It was installed till any permanent communication in wide band is established; but GPRS connected stations are facing issues related to SIM card signal problems in transmitting data, resulting in partial reporting of the real-time data of five (05) stations and non-reporting of the rest of the six (06) stations out of eleven (11) stations.

POWERGRID is executing the fibre optic projects in the state of Nagaland, in which five (05) numbers of stations under jurisdiction of Department of Power, Nagaland, will be connected. However, twelve (12) numbers of stations under the jurisdiction of the Department of Power, Nagaland are not covered under Fiber-Optic projects being done by POWERGRID-NERTS. Department of Power, Nagaland has not submitted any concrete action-plan for establishing any type of communication link for real-time data transfer to the respective SLDC and NERLDC.



- b) POWERGRID-NERTS is executing two (02) Fiber Optic projects in the North-Eastern Region: North-Eastern Region Fiber Optic (NER FO) expansion and Microwave Vacation (MW Vacation) including the state of Nagaland. A detailed list of links under the NER FO expansion project related to Nagaland State is tabulated below:

Sl. No.	Ownership	Project	Executing Agency	Number of Links in project	Remarks
1.	State	FO Expansion	POWERGRID NERTS	Three (03)	Not Completed– OPGW stringing work yet to start.
2.	State	MW Vacation	POWERGRID NERTS	Two (02)	Completed
3.	Central	FO Expansion	POWERGRID NERTS	Three (03)	Completed
Total number of fibre links being executed by POWERGRID-NERTS				Eight (08)	

In the 15<sup>th</sup> NETeST meeting, POWERGRID stated that two (02) number of FO links are completed in Nagaland and are connected to a wide band station, and further respective RTUs need to be integrated via these links with the joint cooperation of the Department of Power, Nagaland. The target date for completion of the rest of the links is delayed and repeatedly deferred in various NERPC forums.

- c) Current data availability for the Northeastern region is less than 50% (around 49.70%). Regional as well as state operators are facing constraints in grid operations. A month-wise status of telemetry (real-time data) percentage available from stations under the jurisdiction of Nagaland for the last one year is tabulated below:

Real-time data availability percentage of stations under jurisdiction of Nagaland	
Month/Year	% availability
October 2018	2.95%
November 2018	2.95%
December 2018	1.97%
January 2019	1.38%
February 2019	3.35%
March 2019	5.72%
April 2019	18.90%
May 2019	0.00%
June 2019	18.90%
July 2019	8.28%
August 2019	22.28%



<b>Real-time data availability percentage of stations under jurisdiction of Nagaland</b>	
<b>Month/Year</b>	<b>% availability</b>
September 2019	40.83%
October 2019	35.30%
November 2019	34.30%
December 2019	36.80%
January 2020	35.13%

- d) The current average data-availability percentage for the month of January-2020 of stations under the jurisdiction of Nagaland is 35.13%, which is very low and a major hurdle in monitoring the grid in the respective area.
- e) As per the CERC order dated 29.01.2016 in Petition No. 007/SM/2014, continuous efforts are being made by NERLDC with the Department of Power, Nagaland. The issues have been highlighted in the following ways:
- i. NERLDC has developed and provided facilities for real-time telemetry availability monitoring through its real-time data portal available at the NERLDC website ([www.nerlhc.in/](http://www.nerlhc.in/) [www.nerlhc.org](http://www.nerlhc.org/)). All personnel, including senior members of any constituent, can login and monitor their historical data and real-time data of telemetry availability. Further, telemetry availability reports are also made available regularly at the NERLDC website.
  - ii. Weekly Telemetry Reports: Sent via email to team of SCADA and communication regularly.
  - iii. Monthly Telemetry statistics: Posted on the website and circulated to all utilities/users.
  - iv. Performance report in all OCC and NETeST meetings.
  - v. Monthly report of availability under the categories:
    - a. Telemetry not provided
    - b. Telemetry provided but is not working/working intermittently
    - c. Data telemetry is provided over a single communication channel hence lack of reliability.
  - vi. Minutes of Meeting between NERLDC and DoP, Nagaland at SLDC, Nagaland.
  - vii. Minutes of Meeting between NERLDC, PGCIL and DoP, Nagaland through VC.



- viii. Letter to SLDC Nagaland regarding review meeting in accordance with MoM
- ix. Letter to POWERGRID regarding the status of Fiber Optics projects in NER.

### **Submissions in Petition No. 556/MP/2020**

7. Petitioner has made the following submissions:

- a) There are fourteen (14) grid-connected stations in the state of Mizoram. The break-up of status related to the afore-mentioned 14 nos. of stations under the ownership of the DoP, Mizoram are listed below:
  - Seven (07) number of stations at 132 kV and 33 KV levels are modelled in SCADA database of SLDC Mizoram.
  - At present, four (04) stations; Bairabi, Luangmual, Sihhmui and Zuangtui, out of seven (07) are not connected over either the Fibre Optic or PLCC networks.
  - One (01) station, Kolasib, is connected over Fibre Optic network but due to the non-availability of RTU at the station, real time data from the station is not telemetered to SLDC Mizoram and NERLDC.
  - One (01) station, Tuirial HEP, is connected over PLCC, but data are not reporting due to communication failure.
  - One (01) station, Indoor, is connected over Ethernet Cable as it is a local station.
  - A project in which two (02) number stations (Luangmual and Zuangtui) out of seven (07) number of SCADA modelled stations were supposed to connect over a GPRS network. The GPRS project was not completed due to the non-availability of an appropriate configuration from the Internet Service Provider (ISP). SLDC Mizoram attended to the issue with ISP, but the issue is still not solved. This is a temporary arrangement for GPRS/Broadband communication (being done by POWERGRID-NERTS on special request by NER states). It is supposed to be installed till any permanent communication in wide band is established; but GPRS connected stations (in other states of NER) are facing issues related to SIM card signal problems in transmitting data, resulting in partial reporting or complete failure of the real-time data.





- Seven (07) stations of 132 kV and 66 kV level are not modelled in the SCADA database of SLDC Mizoram, although these stations are charged and connected to the grid also.

POWERGRID is executing the fibre optic projects in the state of Mizoram in which two (02) number of stations under the jurisdiction of the Department of Power, Mizoram, will be connected. One (01) number of station is already connected to the FO network. Eleven (11) numbers of stations under the jurisdiction of the Department of Power, Mizoram are not covered under Fiber-Optic projects being executed by POWERGRID-NERTS. Department of Power, Mizoram, has not submitted any concrete action-plan for establishing any type of communication link for real-time data transfer to the respective SLDC and NERLDC.

- b) POWERGRID-NERTS is executing two (02) Fiber Optic projects in the North-Eastern Region: North-Eastern Region Fiber Optic (NER FO) expansion and Microwave Vacation (MW Vacation), including the state of Mizoram. A detailed list of links under the NER FO expansion project related to Mizoram State is tabulated below:

S. No.	Ownership	Project	Executing Agency	Number of Links in project	Remarks
1.	State Sector	FO Expansion	POWERGRID NERTS	One (01)	Not Completed – Administrative issue
2.	State Sector	MW Vacation	POWERGRID NERTS	Two (02)	Not Completed – Administrative issue
3.	Central Sector	FO Expansion	POWERGRID NERTS	One (01)	Completed
<b>Total number of fibre links being executed by POWERGRID-NERTS</b>				<b>Four (04)</b>	

The target date for the completion for rest of the links is delayed and repeatedly deferred in various NERPC forums

- c) Current data availability for the Northeastern region is around 50% (around 51%). In view of the same, regional as well as state operators are facing constraints in grid operations. A month-wise status of telemetry (real-time data) percentage available from stations under the jurisdiction of Mizoram for the last one year is tabulated below:



<b>Real-time data availability percentage of stations under jurisdiction of Mizoram</b>	
<b>Month/Year</b>	<b>% availability</b>
October 2018	12.40%
November 2018	12.40%
December 2018	13.22%
January 2019	13.22%
February 2019	12.22%
March 2019	13.22%
April 2019	13.22%
May 2019	14.87%
June 2019	13.22%
July 2019	18.60%
August 2019	18.60%
September 2019	18.60%
October 2019	18.60%
November 2019	18.60%
December 2019	18.21%
January 2020	18.55%
February 2020	14.93%
March 2020	18.33%
April 2020	18.00%
May 2020	18.40%

- d) The current average data-availability percentage for the month of May 2020 of stations under the jurisdiction of Mizoram is 18.40%, which is very low. There is no such dedicated work force for the SCADA and communication departments under SLDC Mizoram, which leads to insufficient coordination between NERLDC and SLDC in order to carry out various projects of SCADA and Communication.
- e) As per the CERC order dated 29.01.2016 in Petition No. 007/SM/2014, continuous efforts are being made by NERLDC with the Department of Power, Mizoram. In spite of several efforts by NERLDC, relevant data from the number of generating stations/ sub-stations is yet to be made available at NERLDC as well as at the respective SLDC itself. The issues have been highlighted in the following ways:
- i. Weekly Telemetry Reports: Sent via email to team of SCADA and communication regularly.
  - ii. Monthly Telemetry statistics: Posted on the website and circulated to all utilities/users.
  - iii. Performance report in all OCC and NETeST meetings.



iv. Monthly report of availability under the categories:

- a. Telemetry not provided
- b. Telemetry provided but is not working/working intermittently
- c. Data telemetry provided over a single communication channel hence lacks reliability.

v. Letter to POWERGRID regarding the status of Fiber Optics projects in NER.

vi. Letter to Mizoram regarding the Telemetry status (real-time data) of stations under the control area of P&E Department, Mizoram.

#### **Hearing on 14.07.2020 and on 22.04.2021**

8. Petition Nos. 197/MP/2020, 201/MP/2020, and 263/MP/2020, were admitted on 14.07.2020 and Petitioner was directed to implead concerned SLDC as a party in the respective Petitions. Petition No. 556/MP/2020 was admitted on 22.04.2021.

#### **Submissions of Petitioner, NERLDC in Petition Nos. 197/MP/2020, 201/MP/2020, 263/MP/2020 and 556/MP/2023**

9. Petitioner has filed an “Amended Memo of parties” vide affidavit dated 20.07.2020, in Petition Nos. 197/MP/2020, 201/MP/2020, and 263/MP/2020 by impleading the concerned SLDC as party in the respective Petitions and vide affidavit dated 03.05.2023 in Petition No. 556/MP/2023 by impleading Engineer in Chief, Power & Electricity Department, Mizoram.

#### **Submissions of Respondent PGCIL in Petition Nos. 201/MP/2020, 197/MP/2020 and 263/MP/2020**

10. PGCIL, vide affidavit dated 10.08.2020 in Petition No. 201/MP/2020, has submitted as follows:



- a) POWERGRID is implementing a fiber optic communication system for Tripura state to provide voice and data communication for 14 stations under the “Establishment of Fiber Optic Communication system under wide band communication expansion plan in NER” project. The Project consists of 4 nos. central sector links and 12 nos. state sector links, which are responsible for TSECL data/voice telemetry. Out of this, 02 nos. of state sector links have been deleted from the POWERGRID scope as the concerned transmission lines are still under construction by TSECL, and material pertaining to the same has been handed over to TSECL as TSECL is implementing these 2 nos. links. The DOCO of these two links will be done with consent from TSECL for supply part only.
- b) Presently, 12 nos. of links have been completed out of 14 nos. links and delay in completion of balance links is mainly due to constraints in OPGW stringing due to Right of Way problems, non-availability of transmission line for OPGW stringing on 2 links, Flood, remoteness/critical terrain in NER, Bandh-Strikes, ROW-unrest due to socio-political issues like NRC-CAA-CAB, etc. which are beyond the control of POWERGRID. The same has been intimated from time to time to the NERPC main forum & sub-committee forum. Remaining 2 nos. links are expected to be completed by Dec’20.

11. PGCIL, vide affidavit dated 02.09.2020, in Petition No. 197/MP/2020, has submitted as follows:

- a) Transmission scheme covering 132 kV Roing, Tezu, and Namsai Substations was approved as a part of the “Transmission System Associated with Pallatana GBPP and Bongaigaon TPS” in the North Eastern Region, catering power supply to far-reaching remote areas of Arunachal Pradesh.
- b) A GPRS based communication system was established for these sub-stations as an interim arrangement for substation data connectivity with NERLDC in view of the delayed availability of regular communication connectivity. Constraints were being faced in having reliable communication for these stations due to service quality issues from telecom operators at these substations, which are situated in remote &



geographically far-flung locations. However, presently all three stations are reporting data to NERLDC with minor intermittency, as noticed.

- c) Communication scheme for these stations was envisaged through OPGW based fibre optic (FO) connectivity planned under the “North Eastern Region (Additional) Scheme” and “Comprehensive Scheme for Arunachal Pradesh” projects. These projects are under implementation.
  
- d) Since the establishment of Fiber Optic links for these stations has been planned under multiple projects with different implementation schedules and is anticipated to be completed only by mid-2021 tentatively, it was proposed to implement VSAT based communication at 132kV Roing, Tezu, and Namsai substations for reliable voice & data connectivity and faster implementation. The requirement of VSAT for these stations was discussed in the NETeST committee meeting and the 20<sup>th</sup> NERPC meeting held on 12.09.2019, and was agreed upon for implementation by POWERGRID only after a successful demo at one site.
  
- e) POWERGRID has taken up the VSAT project to provide data & Voice connectivity for Roing, Tezu, & Namsai with NERLDC. Tendering activities for the same are in progress. However, due to COVID19 pandemic situation, issues are being faced in getting responses from bidders. It is expected that works will be awarded by Dec’20, and completion is expected by Jan’2021-Feb2021 tentatively. POWERGRID is committed to expediting the scope of work at the earliest possible date for the betterment of data/voice telemetry, and all-out efforts are being made despite various difficulties being faced that are beyond the control of POWERGRID.

12. PGCIL, vide affidavit dated 02.09.2020, in Petition No. 263/MP/2020, has submitted the following:

- a) POWERGRID is implementing fiber optic communication system for Nagaland state for providing voice and data communication on 06 links under “Establishment of Fiber Optic Communication system under wide band communication expansion plan in NER”, of which 3 nos. of links have been completed, and 02 links under



“Establishment of Fibre Optic Communication System in lieu of existing ULDC Microwave links in NER, which have been completed.

- b) Delay in completion of balance links is mainly due to constraints in OPGW stringing due to Right of Way problems, non-availability of transmission line for OPGW stringing on 2 links, Flood, remoteness/critical terrain in NER, Bandh-Strikes, ROW-unrest due to socio-political issues like NRC-CAA-CAB, etc. which are beyond the control of POWERGRID. The same has been intimated from time to time to the NERPC main forum & sub-committee forum. Remaining 03 links are expected to be completed by Jan'21- Feb-21.

**Petitioner's Rejoinder to Reply filed by PGCIL in Petition Nos. 201/MP/2020, 197/MP/2020 and 263/MP/2020**

13. Petitioner NERLDC, vide rejoinder dated 27.08.2020 to the PGCIL reply dated 10.08.2020 in Petition No. 201/MP/2020, has submitted the following:

- a) The NER FO expansion project was approved in the 15th RPC/TCC meeting dated 21st September 2015, and since then its status is being put up in RPC forums. The original target date for completion of the project was October-2017. The reason is not specific for the delay in completion of the remaining two links and does not in any way justify such a long delay in execution of fiber-optic expansion project works in the North-Eastern region by POWERGRID.
- b) POWERGRID reply regarding reasons for delay in completion of balance two (02) number of links is not justifiable to explain indefinite delay (more than 972 days and continuing). Further, the reasons mentioned are general in nature and not specific to the remaining two links that are due for completion.
- c) Effective status monitoring of NER FO expansion project was started since 7<sup>th</sup> NETeST meeting held on 17<sup>th</sup> August 2017 i.e. about two months prior to original target / schedule date of completion. In that meeting NERTS mentioned reasons like flood, un-rest in the states of NER for delay in execution of works and committed to complete the entire scope of work by November 2018. The same target date of November 2018 was maintained till 10<sup>th</sup> NETeST meeting held on 16<sup>th</sup> July, 2018.



However, the target date was again revised to March 2019 only in 11<sup>th</sup> NETeST meeting held on 13<sup>th</sup> November 2018 which was the scheduled month for completion. In every NETeST and RPC/TCC meeting, it became a regular phenomenon to revise the schedule dates.

- d) The Fiber-Optic Expansion Project in the North-Eastern Region being executed by POWERGRID had been awarded to different contractors as separate packages for different areas, and there seems to be no correlation or dependency of one package on another. All the fiber-optic contract packages are supposed to be executed by different gangs of vendors, and hence the works are expected to be undertaken in parallel. The reasons for floods, strikes, curfew, etc. in other states such as Arunachal Pradesh, Manipur, and Meghalaya, as pointed out by POWERGRID in its reply, should not have any impact on the progress of works in Tripura for the remaining two links.
- e) There is no record substantiating the transfer of materials & associated scope of work and the modality of execution of work for two (02) links, i.e. 132 kV Rokhia-Surajmani Nagar (TSECL) and 132 kV Surajmani Nagar (TSECL) -Monarch from POWERGRID to TSECL, furnished in the RPC forum. Since these two links are also part of the approved NER FO Expansion project assigned to POWERGRID, any ambiguity in subject approach between POWERGRID & TSECL may hamper the completion of these two critical FO links. POWERGRID shall ensure taking up at the senior management level of TSECL and Technical & commercial modalities shall be consented & recorded in the forums like NERPC TCC / Board meetings.

14. Petitioner NERLDC, vide rejoinder dated 16.09.2020 to the PGCIL reply dated 02.09.2020 in Petition No. 197/MP/2020, has submitted the following:

- a) Initially, the 132 kV Roing and Tezu were charged with GPRS as a communication medium to telemeter the real-time data as well as voice communication. However, due to the unsatisfactory performance of GPRS, the charging of 132 kV Namsai S/s was carried out based on an undertaking dated 20<sup>th</sup> July 2018 submitted by POWERGRID that dedicated and reliable communication will be established for real-time data and voice at the earliest. In the undertaking, POWERGRID submitted that



during the initial stage of the project, a viable communication scheme was not envisaged, and the OPGW/FO project for Roing, Tezu,, and Namsai was approved in the 18<sup>th</sup> RPC/TCC meeting held on 10<sup>th</sup> October 2017. However, the progress report or status of such projects was never submitted in any RPC forums. POWERGRID also submitted via undertaking that forum of the 10<sup>th</sup> NETeST (held on 16<sup>th</sup> July 2018) has consented to providing a VSAT communication link for Roing, Tezu, and Namsai, which will be further put up for approval in the next RPC forum. However, the VSAT proposal was only approved at the 20<sup>th</sup> RPC/TCC meeting held on 12<sup>th</sup> September 2019, thereby further delaying the establishment of the communication link between stations and NERLDC. Since their first time charging, the above-mentioned stations have not reported consistently to NERLDC.

- b) POWERGRID replied that all three stations are reporting to NERLDC with minor intermittency, which is not acceptable. POWERGRID has restored real-time data reporting for 132 kV Roing and 132 kV Namsai on 14<sup>th</sup> May 2020 and 08<sup>th</sup> May 2020 through an internet lease line. The scheme of reporting real-time data over an internet lease line is highly intermittent. The average availability of data for 132 kV Roing S/s from the month of May-2020 to August-2020 is 17% only, and for 132 kV Namsai S/s from the month to May-2020 is 28% only.
- c) There was a delay in the implementation of the demo project regarding VSAT implementation by POWERGRID. In the 12<sup>th</sup> NETeST meeting held on 10<sup>th</sup> January 2019, POWERGRID informed the forum that VSAT will be proposed as a link for Roing, Tezu, and Namsai. In the 10<sup>th</sup> NETeST meeting the proposal for VSAT was already approved. In the 13<sup>th</sup> NETeST meeting held on 09<sup>th</sup> April 2019, POWERGRID informed the attendees that the demo of VSAT will be completed by May'2019 and if it is successful
- d) I the purchase order will be placed by June 2019. In the 14<sup>th</sup> NETeST meeting held on 11<sup>th</sup> July 2019, POWERGRID informed the attendees that equipment for the demo of VSAT will be dispatched by 22<sup>nd</sup> July 2019. The demo for telemetering real-time data and voice using VSAT technology was successfully setup between 132 kV Tezu and NERLDC in the month of September 2019. During the demo period, the average availability of data was more than 95%. The VSAT implementation was approved in the 20<sup>th</sup> RPC/TCC meeting held on 12<sup>th</sup> September 2019. Thereafter, the





postponement of the targets for the commissioning of the VSAT at the aforesaid stations became a regular phenomenon.

15. Petitioner NERLDC, vide rejoinder dated 30.09.2020 to the PGCIL reply dated 02.09.2020 in Petition No. 263/MP/2020, has submitted as follows:

- a) POWERGRID is implementing a fiber-optic communication system for Nagaland State, which will cover five (05) existing substations owned by DoP-Nagaland and one (01) under-construction substation owned by DoP-Nagaland.
- b) POWERGRID's reply regarding the non-completion of one (01) link i.e. 132 kV Kohima–Wokha, is not justifiable to explain an indefinite delay in the execution of related works. Further, as the OPGW stringing of Wokha-Kohima is already complete, the end equipment at both ends should also be commissioned at the earliest, which will facilitate the integration of associated real-time data and voice-data from grid-connected Wokha stations. The LILO portions of “Kohima -New Kohima” and “New Kohima-Wokha” should also be taken up immediately once the necessary tower infrastructure is made ready by DoP-Nagaland.
- c) The reason cited by POWERGRID for not integrating the grid-connected 132 kV Wokha substation (for which only installation and commissioning of the end equipment part is pending) in view of the non-commissioning of another substation, i.e. 220 kV New Kohima (Jadima) of which there is no definite time schedule for completion, does not seem to be justifiable and logical. POWERGRID committed in the 16<sup>th</sup> NETeST Meeting held on 20<sup>th</sup> February 2020 that Wokha substation would report to Nagaland-SLDC by March 2020.
- d) POWERGRID's reply regarding the non-completion of one (01) link, i.e. 132 Doyang–Sanis, is not justifiable. The aforesaid link was approved in the 18<sup>th</sup> TCC/RPC meeting held on 10<sup>th</sup> October 2017. Given the fact that the approved length of the link is very short (of the order of around 10 kilometers only), the OPGW stringing as well as end equipment are not yet completed and installed even after completion of thirty-five (35) months from date-of-approval, which shows the snail-paced approach of POWERGRID towards completion of the said works. The effective monitoring of said link in RPC forums was started in the 12<sup>th</sup> NETeST meeting held on 10<sup>th</sup> January 2019; thus, the work progress between October 2017 and January



2019 is not submitted in relevant RPC forums. In the 12<sup>th</sup> NETeST meeting held on 10<sup>th</sup> January 2019 NERTS mentioned the reason of non-supply of materials for delay in execution of works and committed to completing the entire scope of work by July 2019. The same target date of July 2019 was maintained till the 13<sup>th</sup> NETeST meeting held on 09<sup>th</sup> April 2019. The target date was again revised to December 2019 in the 14<sup>th</sup> NETeST meeting held on 11<sup>th</sup> July 2019 which was the scheduled month for completion. In every NETeST and RPC/TCC meeting, it has been a regular phenomenon to revise the scheduled dates by POWERGRID.

- e) The RTU is being installed at the 132 kV Sanis station under the “Up-gradation and Expansion of SCADA/EMS system of NERLDC and SLDCs” project, which is also under responsibility of POWERGRID-NERTS. The 14<sup>th</sup> NETeST held on 11<sup>th</sup> July 2019, referred to the meeting between NERLDC, POWERGRID-NERTS and DoP-Nagaland; POWERGIRD-NERTS apprised the forum that a purchase-order for the RTU of Sanis station was placed with a delivery schedule in August’19, but the RTU at Sanis station has not been installed and commissioned till date.

**Respondent PGCIL reply to Rejoinder in Petition Nos. 197/MP/2020, 201/MP/2020 and 263/MP/2020**

16. PGCIL, vide affidavit dated 02.11.2020 in reply to the Rejoinder dated 16.09.2020 in Petition No. 197/MP/2020 has submitted as follows:

- a) Original power system scheme for Roing, Tezu, & Namsai was approved without considering feasible communication connectivity with NERLDC. In the original connectivity, there were multiple PLCC hops through states, which were not reliable. Hence, for these stations, GPRS scheme was only viable, and so they opted for it. These substations were commissioned with the GPRS connectivity scheme after obtaining the necessary clearance from NERLDC. NERLDC, after verifying the same, issued a charging clearance. The GPRS scheme adopted at these substations is a standard type as per CEA technical standards for locations where OPGW is not available. GPRS connectivity was also discussed in the 9<sup>th</sup> NETEST meeting.
- b) Constraints were being faced in having reliable communication for these sub stations due to service network quality issues from telecom operators in these substations



which are situated at remote & geographically far-flung locations. This network issue resulting in intermittency in data reporting was beyond control of POWERGRID.

- c) POWERGRID proposed VSAT as a redundant connection for providing data & Voice connectivity for Roing, Tezu, & Namsai with NERLDC. The same was discussed in various NETeST meetings and then finally approved in the 20<sup>th</sup> NERPC meeting held on 12.09.2019 with the condition of completion of implementation only after a successful demo at one site. POWERGRID contacted the relevant agencies for the required VSAT demo at the site. However, agencies were hesitant to provide demos at such a remote site, citing the unrest in the North Eastern Region. After lots of persuasion, demo was successfully completed in Oct'2019. Subsequent to the successful VSAT demo, the VSAT project was put up for POWERGRID management approval, which was approved for implementation. Presently, tendering activities for the VSAT installation are in progress.
- d) OPGW's Communication scheme for Roing, Tezu, Namsai substation connectivity with NERLDC was envisaged partly under the "North Eastern Region (Additional) Scheme". Further, some fibre optic links for the above connectivity are envisaged in the Comprehensive scheme of Arunachal Pradesh, which is still under implementation.
- e) The "special Subgroup meeting of NERPC" was held by NERPC on 18.08.2020 with major constituents regarding petitions filed by NERLDC. During the meeting, it was discussed and deliberated that the completion of NER region projects within the time line is very challenging due to various reasons.
- f) NERPC is being apprised of the progress on regular basis. Procedure for submission of progress report of telecommunication regional projects was discussed and finalised during the 1<sup>st</sup> NETeST meeting held on 06.11.2015. As far as monitoring of communication project issues is concerned, NERPC and NETeST is being apprised of the progress on regular basis.

17. PGCIL, vide affidavit dated 03.11.2020 in reply to the Rejoinder dated 27.08.2020 in Petition No. 201/MP/2020 has submitted as follows:



- a) Silchar - Pallatana link was not envisaged in the original scope of the project approved in the 14<sup>th</sup> NERPC dated 04.09.2013 and was later added as additional scope in the 15<sup>th</sup> NERPC meeting held on 21.08.2015. LILO of Silchar-Pallatana at Belonia was added in the 18<sup>th</sup> NERPC meeting held on 11.10.2017. The above links got delayed as they were not part of the original scope. Presently both Silchar & Pallatana sub-stations are connected to the NER FO network, and necessary data from both ends is reported to NERLDC.
- b) The “special Subgroup meeting of NERPC” was organized by NERPC on 18.08.2020. It was agreed that completion of NER region projects within the timeline is very challenging due to various reasons. POWERGRID has also faced similar problems during the implementation of communication links covered under the “Establishment of Fiber Optic Communication system under wide band communication expansion plan in NER.
- c) 400 kV Silchar - Pallatana link was required mainly to connect Pallatana Substation with a wide band network. The purpose has already been achieved with the completion of the Pallatana – SM Nagar link, and Data & Voice of Pallatana Substation are already reporting to NERLDC.
- d) Delay reasons were considered at the time of preparation/approval of the Revised Cost Estimate (RCE) of the project, and therefore the completion schedule of the project has been revised to June’2020 in the RCE.
- e) Despite facing the adverse situation during the implementation, POWERGRID is trying its level best and making all possible efforts to complete the above-mentioned Links by Feb-March’2021.
- f) Regarding the 132 kV Rokhiya (GBPP) ~ Surajmaninagar (TSECL) & 132kV Surajmaninagar (TSECL) ~ Monarchak (NEEPCO) links, matter was discussed in the 16<sup>th</sup> & 17<sup>th</sup> NETeST and it was decided that materials are to be handed over to TSECL as fronts are not ready (execution will be taken up by TSECL, Tripura). The same was also well-explained to NERLDC during the meeting with NERLDC & TSECL dated 04.05.2020.



18. PGCIL, vide affidavit dated 27.11.2020 in reply to the Rejoinder dated 30.09.2020 in Petition No. 263/MP/2020 has submitted as follows:

a) POWERGRID is implementing a fiber optic communication system for Nagaland state to provide voice and data communication as follows:

<b>Project</b>	<b>Total links</b>	<b>Links completed</b>
Establishment of Fiber Optic Communication system under wide band communication expansion plan in NER	06	04 Balance links - 02
Establishment of Fibre Optic Communication System in lieu of existing ULDC Microwave links in NER	02	02

b) Reasons for delays in communication links are as follows:

i. Delay reasons attributed to specific links are given below:

- a. 132kv Kohima - Wokha: Part of Line i.e. LILO part of Wokha-Kohima is under construction by the state in another project. OPGW work shall be taken up by POWERGRID after tower erection done by Nagaland. POWERGRID has communicated a letter to the State requesting the completion of the abovementioned LILO portion at the earliest. Further, it was also requested to remove the LILO portion of the OPGW work from the POWERGRID scope if the link gets further delayed.
- b. 132 kV Doyang (NEEPCO) – Sanis: This link was not mentioned in the original scope, and the same was added much later by the DOP, Nagaland after approval in the 18<sup>th</sup> NERPC meeting held on Oct'2017 (whereas other links were approved in Jan'2014). Accordingly, implementation of the same was taken up. The instant project was being implemented by M/s TCIL (a Central Govt CPSU, under the administrative control of the Department of Telecommunications (DOT), Ministry of Communications, Government of India). M/s TCIL agreed to execute the work of OPGW stringing on an instant link after long persuasion. M/s TCIL cited various issues with work in remote areas of the Sanis - Doyang link and also same was not in the original scope. POWERGRID provided the June'20 target in the 16<sup>th</sup> NTEST meeting held on 20.02.2020 and since March, almost all the works has been on halt due to the COVID19 Pandemic. Accordingly, different targets were revised due to constraints beyond their control. It was discussed,



and the necessary decision was taken that Sanis may be connected over the PLCC link

**Hearing on 16.02.2023 and on 27.03.2023**

19. The Petitioner, vide RoP of hearing dated 16.02.2023 in Petition Nos. 197/MP/2020, 201/MP/2020, 263/MP/2020 and vide RoP of hearing dated 27.03.2023 in Petition No. 556/MP/2020 was directed to identify the list of sub-stations of the Respondents that impact the ISTS grid and to provide the latest status of the communication facility at these substations and the current status of RTU availability & real-time data availability percentage of these identified sub-stations. Respondents under the respective Petition were also directed to provide the current status of work done for the establishment and maintenance of communication facilities at their respective sub-stations.

**Submission of NERLDC in Petition no.197/MP/2020, 201/MP/2020, 263/MP/2020 and 556/MP/2020**

20. NERLDC, vide affidavit dated 09.03.2020 in Petition Nos. 197/MP/2020, 201/MP/2020, 263/MP/2020 and vide affidavit dated 06.04.2023 in Petition No. 556/MP/2020 has submitted as follows:

**197/MP/2020**

Status of DoP-Arunachal Pradesh Owned Stations as on 26.02.2023

Status of DoP-Arunachal Pradesh Owned Stations as on 26.02.2023										
S. No	Name of station	Operating Voltage Level (in KV)	RTU availability	Existing Type of data communication link (state owned)	Status of real-time power system operational data		Whether connected to ISTS/ISGS station?	Whether adversely impacting critical real-time grid operation?	Major Impact(s)	Availability (in%)
					as filed in Petition	as on 26.02.2023				
<b>A. Stations impacting ISTS Monitoring and critical Grid Operation</b>										



1.	Daporijo	132	Yes	Not available	Not reporting due to unavailability of communication channel	Not reporting due to damaged RTU (after a fire Incident)	Yes	Yes	Daporijo station is connected to ziro (ISTS). It is important to monitor ISTS element.	0
2.	Deomali	220	Yes	VSAT	Not reporting due to unavailability of communication channel	Inconsistently reporting as UPS supply to VSAT system is not extended	Yes	Yes	Deomali station is connected to Kathaiguri(ISTS).Thus, data is required to monitor ISTS element	0
3.	Khupi	132	Yes	VSAT	Not reporting due to unavailability of communication channel	Inconsistently reporting as UPS supply to VSAT system is not extended	Yes	Yes	Khupi is connected to Kameng Hydro (ISGS owned by NEEPCO). Thus, data availability is important for monitoring ISGS element.	0
4.	Pasighat	132	Yes	VSAT	Not reporting due to unavailability of communication channel	Not reporting due to non-availability of proper DC supply to RTU	Yes	Yes	Pasighat area is not being monitored. Moreover, data availability is important to monitor ISTS element as it is connected to Roing (PG) station.	0
5.	Itanagar (Chimpu)	132	Yes	Local LAN connected on Ethernet Cable	Partial data available through local connection	Reporting being a local station adjacent to SLDC	Yes	Yes	Monitoring of station is important as ot feeds to capital and connected to two ISGS stations and one ISTS station	95.24
6.	Tenga	132	Yes	VSAT	Not reporting due to unavailability of communication channel	Reporting as VSAT communication had been established	Yes	Yes	Tenga is connected to Balipara (ISTS)	100
7.	Lekhi	132	Yes	VSAT and Fiber	Not reporting due to unavailability of communication channel	Reporting as VSAT and fiber communication had been established	Yes	Yes	Monitoring of station is important as it feeds to the capital and connected to Pare (ISGS station owned by NEEPCO) and Nirjuli(ISTS station owned by POWERGRID)	100
8	Bhalukpong	132	Yes	VSAT	Not reporting due to unavailability of communication channel	Inconsistently reporting as UPS supply to VSAT system is not extended	Yes	Yes	Bhalukpong is connected to ISTS station i.e Balipara (Powergrid owned) via a T connection, Bhalukpong area is not being monitored	0
9	Dikshi	132	Yes	VSAT	Not reporting due to unavailability of communication channel	Inconsistently reporting over VSAT communication	No	Yes	Dikshi is only hydro station of state, thus the station data is important for demand management of the state.	100
<b>B. Stations not impacting ISTS Monitoring and critical Grid Operation</b>										
10	Along	132	Yes	VSAT	Not reporting due to unavailability of communication channel	Inconsistently reporting as UPS supply to VSAT system is not extended	No	No	Grid operators unable to monitor Along area. In near future this station will be part of important 132KV loop after the charging of 132KV Roing-Chpakhowa (AS) line.	0
11	Basar	132	Yes	Not available	Station has not charged at the time of petition	Not reporting due to unavailability of communication channel	No	No	Grid operators unable to monitor Basar area. In near future, this station will be part if important 132Kv loop after the changing 132Kv Roing-Chpakhowa (AS) line.	0



## Status of Tripura (or TSECL) Owned Stations as on 26.02.2023

Status of Tripura (or TSECL) Owned Stations as on 26.02.2023										
Sl. No	Name of station	Operating Voltage Level (in KV)	RTU availability	Existing Type of data communication link (state owned)	Status of real-time power system operational data		Whether connected to ISTS/ISGS station?	Whether adversely impacting critical real-time grid operation?	Major Impact(s)	Availability (in%)
					as filed in Petition	as on 26.02.2023				
<b>A. Stations impacting ISTS Monitoring and critical Grid Operation</b>										
1.	Ambassa	132	Yes	PLCC till PK Bari and subsequently Fiber-Optic link to SLDC	Not reporting because Fiber-Optic link between P.K Bari and SLDC is not functional due to PDH failure at P.K Bari station	Inconsistently reporting due to improper maintenance of PLCC link	Yes	Yes	Connection to PK Bari (ISTS) station, thus the availability of station is important for real time drawl calculation and monitoring of ISTS elements	3.45
2.	Dharmanagar	132	Yes	GPRS	Reporting over GPRS and Fiber-Optic link between P.K Bari and SLDC is not functional due to PDH failure at P.K. Bari station.	Not Reporting	Yes	Yes	Connection to Dullavcherra (Assam) station, thus the availability of station is important for real time drawl calculation and monitoring of ISTS elements	0
3.	Agartala(79-Tilla)	132	Yes	Local station (Fiber-Optic Cable)	Reporting	Reporting	Yes	Yes	Agartala station is most important station for feeding load to state capital.	28.85
4.	Budhjungnagar	132	Yes	PLCC	Not Reporting over PLCC and work of RTU integration is pending with Fiber-Optic link (as Fiber-Optic link had been completed)	Reporting	Yes	Yes	Budhjungnagar station is connected to SM Nagar (TSECL) station which is important as SM Nagar is connected to Comilla (Bangladesh)	28.26
5.	PK Bari	132	Yes	Fiber Optic	Intermittently reporting over GPRS. Fiber-Optic link between P.K. Bari and SLDC is not functional due to PDH failure at P.K. Bari.	Reporting	Yes	Yes	PK Bari is connected to PL Bari (ISTS) station; thus the availability of station is important for real-time drawl calculation and monitoring of ISTS elements	64.52
6.	Surajamaninagar	132	Yes	FiberOptic	Reporting over Fiber-optic (owned by Powergrid under ULDC scheme)	Reporting	Yes	Yes	SM nagar is connected to Palatana Generating station and Comilla (Bangladesh); thus the availability of station is important for real-time drawl calculation and monitoring of ISTS/international elements.	86.25
7.	Udaipur	132	Yes	Fiber Optic	Reporting over PLCC and work pending in Fiber-Optic project	Reporting	Yes	Yes	Udaipur is important station connected to two major generating stations (i.e Palatana & Monarchak) of Tripura	34.85





8	Barmura	132	Yes	PLCC	Reporting over Fiber-Optic (owned by POWERGRID under ULDC scheme)	Reporting	No	Yes	Baramura is an important gas based plant of state. Non-availability had earlier caused inconvenience in accurate monitoring of state demand and generation.	33.33
9	Monarchak	132	Yes	Fiber Optic	Reporting over PLCC Fiber-Optic link handed over to TSECL by POWERGRID. Fiber-Optic project to be executed by TSECL	Reporting	No	Yes	Monarchak is an Important gas based plant of state. Non-availability had earlier caused inconvenience in accurate monitoring of state demand and generation.	76.92
10	Rokhia	132	Yes	PLCC	Reporting over PLCC Fiber-Optic link handed over to TSECL by POWERGRID. Fiber-Optic project to be executed by TSECL	Reporting	No	Yes	Rokhia is an important gas based plant of state. Non-availability will cause inconvenience in accurate monitoring of state demand and generation	22.34
11	Dhalabil	132	Yes	Fiber Optic	Not Reporting over PLCC and work of RTU integration is pending with Fiber-Optic link(as Fiber-Optic link had been completed)	Inconsistently reporting due to improper maintenance of fiber-optic link	No	Yes	Dhalabil is an important station for connecting Baramura generating station to the grid	0
12	Gamaitila	132	Yes	Not available	Not Reporting due to no communication link connectivity	Not Reporting	No	Yes	Gamaitilla is important for connecting Baramura generating station to the grid.	0
13	Jirania	132	Yes	PLCC	Not Reporting over PLCC and work pending in a Fiber-Optic project (being executed by POWERGRID)	Not Reporting	No	Yes	Jirania is important station for connecting Baramura generating station to the grid	0
14	Kamaipur	132	Yes	Not available	Not Reporting due to no communication link connectivity	Not Reporting	No	Yes	Kamaipur is important station connecting major generating station of Tripura state with capital of Agartala.	0
15	Mohanpur	132	Yes	Fiber Optic	Station was not commissioned	Intermittently reporting	No	Yes	Mohanpur is important station connecting major generating station of Tripura state with capital of Agartala	0
16	Rabindranagar	132	Yes	Not available	Not Reporting due to no communication link connectivity	Not Reporting	No	Yes	Rabindranagar is important station connected to two major generating stations (i.e Rohkia & Monarchak) of Tripura	0
17	Amarpur	66(under upgrade to 132KV)	Yes	Not available	Not Reporting due to work pending in Fiber-Optic project	Not Reporting due to non-availability of communication channel	No	Yes	Amarpur is pooling station for hydro station Gumti. Amarpur area is not being monitored, station is under upgrade to 132KV under North Eastern Region Power System	0



									Improvement Project (NERPSIP)	
18	Gumti	66	Yes	PLCC	Not Reporting over PLCC and work pending in a Fiber-Optic project (being executed by POWERGRID)	Not Reporting	No	Yes	Gumti is hydro generating station of Tripura; its monitoring is important for demand and generation management of the state	0
<b>B. Stations not impacting ISTS Monitoring and critical Grid Operation</b>										
19	Gournagar	132	Yes	Not available	Not reporting due to no communication link connectivity	Not Reporting	No	No	Gournagar area is not being monitored	0
20	Ompi	66	Yes	Not available	Not reporting due to no communication link connectivity	Not reporting	No	No	Ompi area is not being monitored	0
21	Sabroom	66 (under upgrade to 132KV)	Yes	Not available	Not Reporting over PLCC and work is pending in Fiber-Optic project (being executed by POWERGRID)	Not Reporting	No	No	Sabroom area is not being monitored. Station is under upgrade to 132KV under NERPSIP	0
22	Belonia	66 (under upgrade to 132KV)	Yes	Not available	Not Reporting due to no communication link connectivity	Not Reporting	No	No	Belonia area is not being monitored. Station is under upgrade to 132KV under NERPSIP	0
23	Bogafa	66	Yes	Not available	Not Reporting due to no communication link connectivity	Not Reporting	No	No	Bogafa area is not being monitored	0
24	Boxanagar	66	Yes	Not available	Not Reporting due to no communication link connectivity	Not Reporting	No	No	Boxanagar area is not being monitored	0
25	Satchand	66 (under upgrade to 132KV)	Yes	GPRS	Not Reporting over PLCC and work is pending in Fiber-Optic project (being executed by POWERGRID)	Not Reporting	No	No	Satchand area is not being monitored, Station is under upgrade to 132KV under NERPSIP.	0
26	Badharghat	66 (under upgrade to 132KV)	Yes	GPRS	Not Reporting over PLCC and work of RTU integration is pending with Fiber-Optic link (as Fiber-Optic link had been completed)	Reporting	No	No	Badharghat area is not being monitored. Station is under upgrade to 132KV under NERPSIP	37.78

**263/MP/2020**

Status of Nagaland Owned Stations as on 26.02.2023:



**Status of Nagaland Owned Stations as on 26.02.2023**

Sl. No	Name of station	Operating Voltage Level (in KV)	RTU availability	Existing Type of data communication link (state owned)	Status of real-time power system operational data		Whether connected to ISTS/ISGS station?	Whether adversely impacting critical real-time grid operation?	Major Impact(s)	Availability (in%)
					as filed in Petition	as on 26.02.2023				
<b>A. Stations impacting ISTS Monitoring and critical Grid Operation</b>										
1.	Dimapur Nagarjan	132	Yes	Fiber	Partial data points are reporting over GPRS network. Fiber-Optic link between SLDC and Nagarjan has been completed. The RTU connection to be shifted to FO network by DoP network by DoP, Nagaland and POWERGRID	Partial data points are reporting (over Fiber-Optic) link	Yes	Yes	Station is important as it is connected to Dimapur (ISTS) and feeds to a large city of Dimapur	40.26
2.	Kohima	132	Yes	Fiber	Partial data points are reporting over GPRS network. ICTs and few lines' analog and digital data are not reporting.	Partial data points are reporting over fiber optics communication via Dimapur	Yes	Yes	Station feeds to Capital of Nagaland	58.14
3.	Sanis	132	Yes	PLCC	Not reporting due to no communication link connectivity	Partial data points are reporting over PLCC and Fiber-Optic link	Yes	Yes	Sanis is connected to Doyang (ISGS); thus its monitoring is important for real-time drawl calculation.	95.65
4.	Mokokchung	132	Yes	Fiber	Partial data points are reporting over Broadband. Fiber-Optic link between SLDC and Mokokchung is completed. The RTU connection to be shifted to fiber-Optic network by DoP Nagaland and POWERGRID	Not reporting due to faulty RTU at Mokokchung	Yes	Yes	Mokokchung is connected to Mokokchung (ISTS); thus data availability is important for real-time drawl calculation	3.19
5.	Kiphire	132	Yes	GRPS	Intermittently reporting due to weak GPRS signal strength	Partial data points reporting over GPRS communication medium	No	Yes	Station is connected to only hydro plant of Nagaland state i.e Likhimro Hydro	0
6.	Meluri	132	No	Not available	Not reporting due to no connectivity	Not Reporting due to non-availability of communication	No	Yes	The station is important as it connects the state hydro plant with State capital Kohima	0



						on link and RTU				
7.	Wokha	132	Yes	Fiber	Not reporting due to weak GPRS signal	Partial data points are reporting over FO link	No	Yes	Wokha station is the part of an important loop which connects Kohima capital and Dimapur load area. Further, Wokha area load also not being monitored properly	45
8	Chiephouzou	132	No	Not available	Station was not commissioned	Not reporting due to non-availability of communication channel and RTU	No	Yes	Chiephouzou stations is the part of an important loop which connects Kohima capital and Dimapur load area. Chiephouzou area is not being monitored	0
9	Longnak	132	Yes	Not available	Station was not commissioned	Not reporting due to non-availability of communication channel and RTU	No	Yes	Longnak area is not being monitored, In near future, this station will be connected to Mariani (Assam) station	0
10	Likhimro Hydro Electric Project (LHEP)	66	Yes	GPRS	Not Reporting due to weak GPRS signal	Not Reporting due to non-availability of communication link	No	Yes	LHEP is only hydro plant of state, thus data availability is important for demand management of the state	0
11	Tuensang	66(Under upgrade to 132KV level)	Yes	GPRS	Not Reporting due to weak GPRS signal	Not Reporting	No	Yes	Tuensang station is the part of an important loop which connects Kohima capital and Dimapur load area, Station will be upgraded to 132KV under NERPSIP	0
12	Power House	66	Yes	GPRS	Partial data are reporting over GPRS network	Partial data points reporting over GPRS communication medium	No	Yes	Station is important as it feeds load of large city of Dimapur	75.73
13	Singrijan	66	Yes	Not available	Not Reporting due to no communication link connectivity	Not Reporting	No	Yes	Station is important as it feeds load of large city of Dimapur	0
<b>B. Stations not impacting ISTS Monitoring and critical Grid Operation</b>										
14	Mon	66	Yes	GPRS	Not Reporting due to no communication link connectivity	Not Reporting due to non-availability of communication link	No	No	Mon area is not being monitored	80
15	Nagnimora	66	Yes	Not Available	Not Reporting due to no communication link connectivity	Not Reporting due to non-availability of communication link	No	No	Naginmora area is not being monitored	0
16	Tizit	66	Yes	Not Available	Not Reporting due to no connectivity	Not Reporting	No	No	Tizit area is not being monitored	0
17	Tuli	66	Yes	GPRS	Not Reporting due to weak GPRS signal	Partial data points reporting over GPRS communication medium. But all data are reporting	No	No	Tuli area is not being monitored	75.68



						wrong values				
18	Zuhenoboto	66 (Under upgrade to 132KV level)	Yes	GPRS	Not Reporting due to weak GPRS signal	Not Reporting	No	No	Zuheneboto area is not being monitored, Station will be upgraded to 132KV under NERPSIP	0

## 556/MP/2020

### Status of P&ED- Mizoram Owned Stations as on 05.04.2023

Status of P&ED-Mizoram Owned Stations as on 05.04.2023										
Sl. No	Name of station	Operating Voltage Level (in KV)	RTU availability	Existing Type of data communication link (state owned)	Status of real-time power system operational data		Whether connected to ISTS/ISGS station?	Whether adversely impacting critical real-time grid operation?	Major Impact(s)	Availability (in%)
					as filed in Petition	as on 14.03.2023				
<b>A. Stations impacting ISTS Monitoring and critical Grid Operation</b>										
1.	Kolasib	132	Yes	Fiber	Due to non-availability of RTU at station, real time data of station is not telemetered to SLDC Mizoram and NERLDC	Partial reporting over Fiber network	Yes	Yes	Kolasib is connected to two hydro station of Mizoram Namenly; Tuirial and Biarabi. It is also connected to two ISTS station Aizawal (PG) and Badarpur (PG). Thus, the data is important for real-time drawl calculation as well as demand management.	52.9
2.	Shimmui	132	Yes	Fiber	Station was not charged at the time of petition	Partial reporting over Fiber network	Yes	Yes	Shimmui is connected to ISTS station Melriat (PG). Thus, real time data is very imperative real time drawl calculation	0
3.	Zuangtui	132	Yes	Fiber	Not reporting due to unavailability of data communication channel	Partial reporting over Fiber network	Yes	Yes	Zuangtui is connected to ISTS station Melriat (PG). Zuangtul is part of only one important 132Kv loop of Mizoram: Aizawl (PG)-Melirat (PG)-Zuangtui-Serchhip-Lunglei-Melriat (State)-Lungmual-Aizawl (PG). Thus real time date is very imperative for Mizoram grid stability and real time drawl calculation	47.4
4.	Tuirial	132	Yes	PLCC	Data are not reporting due to communication failure	Reporting over PLCC communication network	Yes	Yes	Tuirial is an important Hydro station of Mizoram, thus the telemetry data is required for monitoring of real time demand of state	100
5.	Lungmual	132	Yes	Fiber	Not reporting due to unavailability of data communication channel	Partial reporting over Fiber network	Yes	Yes	Lungmual is connected to ISTS station Aizwal (PG). Lungmual is the part of only one important 132KV loop of Mizoram:Aizwal (PG)-Melirat(PG)-Zuangtul-Serchhip-Lunglei-	85.2



									Melriat(State)-Lungmual-Aizawl(PG).Thus, real time date is very imperative for Mizoram grid stability and real time drawl calculation	
6.	Lunglei	132	No	Not available	Station was not modeled in SCADA/EMS system of SLDC	Not Reporting due to unavailability of data communication channel and RTU	No	Yes	Lunglei is part of only one important 132KV loop of Mizoram: Aizawl (PG)-Melriat (State)-Lungmual-Aizawl (PG). Thus, real time date is imperative for Mizoram grid stability	0
7.	Melriat	132	No	Not available	Station was not modeled in SCADA/EMS system of SLDC	Not reporting due to unavailability of data communication channel and RTU	No	Yes	Melriat is the part of only one important 132KV loop of Mizoram; Aizawl (PG)-Melriat (PG)-Zuangtui-Serchhip-Lunglei-Melriat (State)-Lungmual-Aizawl (PG). Thus, real time date is very imperative for Mizoram grid stability.	0
8	Serchhip	132	No	Not available	Station was not modeled in SCADA/EMS system of SLDC	Not reporting due to unavailability of data communication channel and RTU	No	Yes	Serchhip is the part of only one important 132KV loop of Mizoram; Aizawl (PG)-Melriat (PG)-Zuangtui-Serchhip-Lunglei-Melriat (State)-Lungmual-Aizawl (PG). Thus, real time date is very imperative for Mizoram grid stability.	0
9	Vankal	132	No	Not available	Not reporting due to unavailability of data communication channel	Not reporting due to unavailability of data communication channel and RTU	No	Yes	Vankal substation is connected to 20MW Solar Park. Thus real time data is important for demand management of state.	0
10	Serlui B	33	No	Not available	Not Reporting due to unavailability of data communication channel.	Not Reporting due to unavailability of data communication channel.	No	Yes	Serlui B is an important Hydro station of Mizoram, thus monitoring of real time demand of state.	0
11	Vankal Solar	33	Yes	VSAT	Station is not charged at the time of petition	Reporting over PLCC VSAT	No	Yes	Vankal Solar is an important Solar station of Mizoram, thus the telemetry data is required for monitoring of real time demand of state.	100
<b>B. Stations not impacting ISTS Monitoring and critical Grid Operation</b>										
12	Champhal	132	No	Not available	Not Reporting due to unavailability of data communication channel and RTU	Not Reporting due to unavailability of data communication channel and RTU	No	No	Champhal area is not being able to monitor	0
13	Khawzawl	132	No	Not Available	Not reporting due to unavailability of data communication channel and RTU.	Not reporting due to unavailability of data communication channel and RTU.	No	No	Khawzawl area is not being able to monitor	0



14	Saitul	132	No	Not Available	Station was not modelled in SCADA/EMS system of SLDC	Not Reporting due to unavailability of data communication channel and RTU	No	No	Saitual area is not being able to monitor	0
15	Bairabi	132	No	Not available	Not Reporting due to unavailability of data communication channel and RTU.	Not reporting due to unavailability of data communication channel and RTU	No	No	Bairabi area is not being able to monitor	0

### **Submission of Respondents in Petition Nos. 263/MP/2020, 556/MP/2020, and 197/MP/2020**

21. Respondents, Department of Power (DoP) Nagaland and SLDC, Nagaland, vide affidavit dated 14.04.2023 in Petition No. 263/MP/2020 has submitted the following:

- a) Upgradation of GPRS Modems from 2G to 4G Modems was done on December 2022 for the following sub-stations to improve real-time Data availability at SLDC Nagaland, and the action taken report 05.12.2022 is attached with the affidavit:
  - i. 66/33kV Ganeshnagar Sub-station
  - ii. 66/33kV Tuli Sub-station
  - iii. 66/33kV Mon Sub-station
  - iv. 66/33kV Tuensang Sub-station
  - v. 66/33kV Zunheboto Sub-station
- b) The DPR for “Establishment of Reliable Communication System for 66kV and above Network in Nagaland State” has been submitted to the Power System Development Fund (PSDF). The Ministry of Power, Government of India has also accorded approval for 90% funding for the OPGW-based reliable communication project for NER States. The department is awaiting the sanction of the project from the PSDF.
- c) The DPR for the below mentioned projects has been submitted to the concerned authorities as under:



- i. Upgradation of Hardware, Software and Associated Systems for SCADA-EMS in Load Despatch Centres of North Eastern Region (NER).
  - ii. Procurement and Installation of Remote Terminal Units in selected stations of the North Eastern Region (NER).
  - iii. Establishment of VSAT Communication System in Stations at Hilly and Remote Terrain locations in the North Eastern Region (NER).
- d) The current Status Report regarding the comments and actions taken by the power department is attached to the affidavit.

22. Respondent, P&E Department Mizoram vide affidavit dated 21.04.2023 in Petition No. 556/MP/2020 has submitted as follows:

- a) To ensure data and voice availability of every grid connected sub-station in Mizoram to Mizoram SLDC & NERLD, DPRs are prepared for up-gradation of SCADA-EMS and installation of RTUs in 14 Nos. of 132 kV Sub-Stations and V-SAT communication in 17 Nos. of grid Sub Stations with the help of NERPC & NERLDC for 100% funding under PSDF. For the establishment of Optic Fibre network in 132 kV and 33 kV lines within Mizoram, a sanction of Rs 50 Crores has already been obtained under Part-V of the 'Scheme for Special Assistance to States for Capital Investment for 2022-23' which is to be executed by the Information & Communication Technology Department, Mizoram, in collaboration with the Power & Electricity Department on the poles and towers owned by the Department. The scheme shall provide both Fiber Optic and Satellite communication, which can be utilized as either primary or standby channel for data and voice communication.
- b) The formation of dedicated team for SCADA and Communication related activities can be done by selecting personnel with experience in this field.
- c) At present 132KV Sub-stations connected to ISTS are integrated into the SCADA of SLDC-Mizoram. Integration of intra grid Sub-Station, Action plane for the stations which are not covered in the NER FO expansion project and Action plans for stations, which are not covered in the NER FO expansion project will be done after the implementation of the scheme for special Assistance to states for Capital Investment for 2022-23.





- d) The financial position of the state is not sound enough to immediately meet the new technological developments demanded in the power sector.

23. Respondent, DoP Arunachal Pradesh vide affidavit dated 24.04.2023 in Petition No. 197/MP/2020 has submitted as follows:

- a) The Arunachal state grid has been operated and maintained as a dedicated entity since 2015 with a few radial segments of 132KV and 220KV transmission lines constructed by PGCIL. All these transmission lines did not have any communication media for telemetry and control apart from the non-functional PLCC at the time of taking over from the Distribution wing of the Department of Power, Arunachal Pradesh. Until the coming into existence of the transmission zone of the Department of Power, which is the deemed State Transmission Utility (STU), the state transmission was operated and maintained by the distribution wings. The Arunachal Pradesh grid could not be given the needed and adequate attention due to the circumstances of those days.
- b) Prior to 2020 and after 2015: SCADA system was coming up in the NE region, and under the implementation of the POWERGRID, DOP AP had to opt for GPRS technology for telemetry data from EHV sub-stations to the Arunachal Pradesh State Load Despatch Centre. This was the only fast and cheapest means available to us, and it was executed through PGCIL on their advice. It failed because of the inefficient cellular service network around sub-stations.
- c) Post 2020: Installation of OPGW on the upcoming transmission systems under the Comprehensive Scheme is being implemented by POWERGRID. Since no communication medium existed on the existing transmission system, the decision was taken to install the OPGW on the existing lines as well. Installation of OPGW is underway with the POWERGRID and as per information obtained from reliable sources, that they have erected OPGW on the following existing segments:
- i. Basar-Aalo 132KV Line
  - ii. Lekhi-Chimpu 132KV Line
  - iii. Pare-Chipu 132KV Line
  - iv. Holongi-Chimpu 132KV Line



- d) As we anticipated during 2018-19 that installation of OPGW on existing lines would take a long time, we decided to use VSAT for Telemetry in the Power System of DoP A.P on an experimental basis after learning from other states like Andhra Pradesh that VSAT technology is being used for power system telemetry. Due to the outbreak of Covid-19, the implementation could not happen due to widespread and prolonged lockdown. Only in April- May 2022 could we commission the VSAT system, and since then it has been functioning satisfactorily, though with occasional hiccups due to reasons beyond our control, like:
- i. link failure
  - ii. Fire incident at Daporijo Sub-station
  - iii. Inability for timely maintenance and attending issues of the system in the remotely located sub-stations due to road surface bottlenecks and difficulties during monsoon for frequent landslides and road blockades.
  - iv. Long grid outage
- e) Primary cause of data Outage:
- i. Lack of back-up Power Supply: The VSAT were installed with the power supply from the sub-station sharing the power supply resources of the grid sub-station and did not have back up. Whenever there is a prolonged power cut, reporting of telemetry data to the SLDC Control Centre fails. To do away with this, an order for procurement of a suitable backup system has been placed which is likely to be commissioned within three months.
  - ii. Lack of Adequate and Trained Manpower: The manpower was managed from the existing sanctioned post of the entire department of power with three divisions and one circle office initially that consisted of few engineers apart from the Chief Engineer as the zonal head and Superintending Engineer as the Circle head, which are not enough to operate and maintain efficiently the transmission lines and sub-stations. A proposal to augment the manpower of the transmission sector, keeping in view the assets that are coming up under the comprehensive Scheme, has been submitted and is under active consideration by the government.



## **Hearing on 25.04.2023 and 08.06.2023**

24. Petition Nos. 197/MP/2020, 263/MP/2020, 556/MP/2020 were reserved for order in the matter on hearing dated 25.04.2023 and the Commission, vide the RoP of this hearing, directed the Petitioner and Respondents, namely the Department of Power, Arunachal Pradesh, Nagaland, the Department of Power & Electricity, Mizoram, to conduct a meeting within one month and formulate an implementation plan along with a time line ( priority-wise) for establishment & maintenance of communication facilities at the sub-stations identified by the Petitioner in compliance with the CEA Grid Standards and relevant provisions under IEGC, and the Respondents to submit the same. The Commission also directed the Petitioner to make an interim arrangement in consultation with the Respondents for data transfer at these sub-stations till the communication facilities are developed.

25. The Commission, vide RoP of hearing dated 25.04.2023 in Petition No. 201/MP/2020 directed TSECL and the Petitioner to conduct a meeting within a month and formulate an implementation plan along with timeline (priority-wise) for the establishment and maintenance of communication facilities in sub-stations identified by the Petitioner to ensure the availability of reliable real time data at NERLDC, and accordingly, the Respondent TSECL to file the same on affidavit.

26. During hearing in Petition No. 201/MP/2020 on 08.06.2023, the representative of Tripura State Electricity Corporation Limited (TSECL) /Tripura State Power Transmission Limited (TPTL) submitted that TSECL, which was responsible for power generation, distribution, and transmission for the State of Tripura, has been unbundled and a separate transmission company, namely, TPTL, has been formed on 3.1.2023. He submitted that in terms of the Commission's directions vide RoP dated 25.4.2023,



a joint meeting of TSECL, TPTL, the Petitioner and other beneficiaries was held on 31.5.2023 to formulate an implementation plan and timelines for the establishment and maintenance of communication facilities in sub-stations identified by the Petitioner to ensure the availability of reliable real time data at NERLDC. Further, the representative of TSECL submitted that there are 25 RTUs, and one more RTU has been added, so the number of RTUs with TSECL and TPTL is now 26. In response to a query of the Commission regarding the status of RTUs, the representative of TSECL/TPTL submitted that 11 RTUs are operational through PLCC, 7 RTUs will be implemented by PGCIL by 31.7.2023 and 4 RTUs will be implemented by PGCIL by 31.12.2023 and the remaining 4 RTUs will be implemented by TSECL and TPTL. After hearing the representative of TSECL/TPTL, the Commission reserved the order in the matter and directed the Respondent TSECL to submit the Minutes of the meeting (MoM) held between TSECL, TPTL and the Petitioner regarding the establishment of communication facilities in sub-stations identified by the Petitioner and the detailed implementation plan (priority-wise) for the establishment of communication facilities in sub-stations identified by the Petitioner.

### **Submission of the Respondents in Petition No. 201/MP/2020**

27. TPTL on behalf of the Respondent TSECL vide affidavit dated 06.06.2023 in Petition No. 201/MP/2020 has submitted as follows:

- a) At two (02) stations in Tripura, a temporary arrangement of GPRS communication was installed till any permanent communication in wide band is established for the purpose of transmitting data. As per the GPRS Scheme, communication was subsequently set up at eleven (11) stations owned by TSECL. However, RTU Data reporting through GPRS was moderately consistent for seven (07) stations. The remaining four (04) stations connected through GPRS communication were inconsistent due to a signal strength issue. At present, the total GPRS



Communication System has collapsed as the Internet Service Provider (ISP) has changed the IP Address that was allotted to the GPRS Communication System Server at SLDC Tripura. Moreover, PMAS (an agency selected by Power Grid Nodal) has stopped providing any support for the restoration of the GPRS communication system at SLDC Tripura.

- b) TSECL has not submitted any action-plan because the eleven (11) stations are to be covered under the NERPSIP (North Eastern Region Power System Improvement Project) fibre-optic project through Nodal POWERGRID. The scheduled completion of the NERPSIP project was due by June-2022, which is getting delayed because of which, the real-time data telemetry is hampering at the concerned SLDC & NERLDC. Under the NERFO project carried out by POWERGRID, a total ten (10) stations have been connected to SLDC Tripura till date. However, presently, seven (07) stations are reporting. A detailed status, for connectivity and data reporting of each station jointly prepared by TSECL & NERLDC, GCIL on 31-05-2023 at SLDC Tripura is attached to this affidavit. Microwave Vacation (MW Vacation) is not included for the state of Tripura. The detailed NERFO communication link status is also attached with this affidavit.
- c) There are twenty-five (25) RTUs installed under TSECL and only twenty-one (21) RTUs have been reporting to date. The remaining four (04) RTUs are non-reporting because these four (04) numbers of RTUs have not been considered under any communication network project for data telemetry. However, Tripura SLDC calculates the real-time data telemetry under TSECL jurisdiction, considering the stations having established communication links with the SLDC in Tripura. The real time percentage telemetry availability calculation of the Tripura system was done from TSECL's end based on data availability at the Tripura SLDC Control Centre considering eleven (11) reporting RTU stations out of a total of twenty-one (21) RTUs (including Mohanpur). Telemetry availability calculated from TSECL's end comes to 60.06% at present.
- d) With the completion of the NERFO & GPRS projects the connectivity status by October 2020 was:

NERFO = 09, Local RTU = 01, GPRS = 07, PLCC = 02, Total = 19



Remaining five (05) Stations not yet established any communication.

- e) As a consequence of discussions in various NERPC Forums by TSECL, the NER Wide Band Communication Scheme (NERFO & NERPSIP) along with GPRS Projects through Nodal POWERGRID came into existence for data reporting from Generating Stations/Sub-Stations that are not yet connected by any means of communication with SLDC & NERLDC. However, in the year 2020, GPRS Project & NERFO expansion Project were completed but the NERPSIP is still on-going. Currently, in the absence of the GPRS System and the delay in the NERPSIP completion, only eleven (11) stations are reporting.

28. TPTL on behalf of the Respondent No. 1 TSECL vide, affidavit dated 19.06.2023 in Petition No. 201/MP/2020 has submitted the Minutes of Meeting (MoM) held among NERLDC and TPTL at Agartala on 31.05.2023. In the meeting, TPTL assured that it would be taking all the necessary measures to restore all analog points (including MW, MVAR, kV, Hz and ICT-Tap-position) and digital points (incl. Circuit Breaker and Isolator ON/OFF status) in all the stations under its jurisdiction. TPTL will also go ahead with the VSAT project with self-funding to establish the communication network for stations where there is currently no communication link available. The relevant extracts of the Minutes of the Meeting held on 31.05.2023 regarding the deliberation and decision on the tentative timeline for implementation of the communication facility are as under:

**“A. Communication/SCADA/Telemetry related Agenda: -**

**1.0 Availability of real-time power system operational data for Tripura SLDC at NERLDC**

*NERLDC mentioned that availability of real-time power system operational data is very low as far as Tripura is concern which accounts for 22% approx. (incl. Analog and Digital status data) which is becoming a hindrance in maintaining a secure grid operation of North Eastern region.*

***Deliberation:*** *NERLDC presented to forum about the areas on which TPTL can improve the telemetry in the state. NERLDC stated that low real-time availability of digital data is one of the main reasons behind the overall low availability.*



Further, NERLDC also emphasized that even after infrastructure is available in some stations (Communication network and RTU), then also real-time data is not reporting at SLDC and NERLDC.

TPTL assured that it would be taking all the necessary measures to restore all analog points (including MW, MVAR, kV, Hz and ICT-Tap-position) and digital points (incl. Circuit Breaker and Isolator ON/OFF status) in all the stations under its jurisdiction. TPTL will also go ahead with VSAT project with self-funding to establish the communication network for stations where currently there is no communication link available.

TPTL also requested POWERGRID-NERPSIP to expedite the ongoing projects, which in turn strengthen the communication network of the state. Station wise action plan with completion time-lines is attached as **Annexure-1A** (status of data reporting) and **Annexure-1B** (timeline for implementation of Communication facility).

Annexure-1A consist of list of sub-stations with status of data reporting or not reporting.

Annexure-1B

SL NO	Name of Station	Existing Communication Path	Proposed type of data communication link (state owned)	Tentative Time Line for Fiber Availability
A.	Stations impacting ISTS Monitoring and critical Grid Operation			
1	Ambassa	Ambass→PK Bari (PLCC)→Kumarghar→RC Nagar→Agartala→SLDC Tripura	Fiber connectivity: 1.Ambassa→PK Bari (ISTS)→SLDC Tripura (NERPSIL)	31.07.2023
2	Dharmanagar		Fiber connectivity: 1.Dharmanagar→ PK Bari(state)→SLDC Tripura (NERPSIP)	31.07.2023
3	Agartala (79-Tilla)		Not Project	Not Required
4	Budhjungnagar	BJ nagar→SM Nagar (state)→SLDC Tripura	Not required	Not Required
5	PK Bari	PK Bari→Kumargarh→RC Nagar→Agartala→SLDC Tripura	Not required	Not required
6	Surjamaninagar	SM nagar→Agartala	Not Required	Not Required
7	Udaipur	Udaipur→Palatana→SM Nagar→Agartala→SLDC Tripura	Not required	Not required



8	Barmura	Baramur→Agartala→SLDC Tripura	Fiber connectivity: 1.Teliamura-Barmura	Not required
9	Monarchak	Monarchak(PLCC) →Rokhia(PLCC) →Udaipur→Palatana→SM Nagar→Agaratala →SLDC Tripura	Fiber connectivity: 1.Monarchak-Rabindranagar-Rokhia-Agartala (NERPSIP)	31.12.2023
10	Rokhia	Rokhia→Udaipur →SM Nagar→Agaratala →SLDC Tripura	Not Required	Not Required
11	Dhaiabil	Dhalabil→Mohanpur→Agaratala→ SLDC Tripura	Not required	31-07-2023
12	Gamaitila		Fiber connectivity: 1.Telimura/gamitilla →Barmura→SLDC Tripura (NERPSIP)	31.07.2023
13.	Jirania		Fiber connectivity: 1.LILO at Jiriani over 132KV Agartala- Baramura (State Reliable Scheme- PSDF Project Proposed) VSAT Project (State)	31.12.2023 (for VSAT)
14.	Kamalpur		Fiber connectivity: 1.Kamalpur-Dhalabil (NERPSIP)	31.07.2023
15	Mohanpur	Mohanpur→Agaratala→SLDC Tripura	Not Required	Not Required
16.	Rabindranagar		Fiber connectivity: 1.Ranindranagar- Rokhia-Agartala (NERPSIP)	Not Required
17.	Amarpur	Amarpur→Gumti →Udaipur→Palatana→SM Nagar→Agartala →SLDC Tripura	Fiber connectivity: Amarpur-Udaipur (NERPSIP)	31.12.2023
18.	Gumti	Gumti→Udaipur →Palatana→SM Nagar→Agartala →SLDC Tripura	VSAT Project (State)	31.12.2023 (for VSAT)
<i>B. Stations not impacting ISTS Monitoring and critical Grid Operation</i>				





19.	Gournagar/Kailas har		Fiber: Kailasher→PK Bari (State)→SLDC Tripura (NERPSIP)	31.07.2023
20.	Ompi		Fiber: LILO at Ompi of 66KV Amarpur-Gamaitilla (State Reliable Scheme-PSDF Project) VSAT Project (State)	31.12.2023 (for VSAT)
21.	Sabroom		Fiber connectivity: Sabrom-Satchand- Bagafa-Udaipur (NERPSIP) VSAT State	31.12.2023
22.	Belonia		Fiber connectivity: 1.Belonia-Bagafa- Udaipur (NERPSIP)	31.12.2023
23	Bogafa		Fiber connectivity: 1.Bagafa-Udaipur (NERPSIP)	31.07.2023
24.	Boxanagar		Fiber: Rokhia- Boxnagar (State Reliable Scheme- PSDF Project) VSAT Project (State)	31.12.2023 (for VSAT)
25.	Satchand		Fiber connectivity: 1.Satchand- Bagafa- Udaipur (NERPSIP) VSAT Project (State)	31.12.2023 (for VSAT)
26.	Badharghat	Badarghat→Agart ala→SLDC Tripura	Not Required	Not Required

.....”

29. TPTL, on behalf of the Respondent No. 1, TSECL, vide affidavit dated 19.06.2023 in Petition No. 201/MP/2020 has also requested to make the following changes in point no. 3 of the RoP of hearing dated 08.06.2023:

- a. Change 'PLCC' to 'OPGW'.
- b. Change '7 RTUs will be implemented by PGCIL by 31.7.2023' to '7 RTUs will be implemented by NERPSIP-PGCIL by 31.07.2023'.



- c. Change 'RTUs will be implemented by PGCIL by 31.12.2023' to '4 RTUs will be implemented by NERPSIP-PGCIL by 31.12.2023.

### **Submission of DoP Nagaland in Petition No. 263/MP/2020**

30. Respondent DoP Nagaland, vide affidavit dated 03.06.2023 in Petition No. 263/MP/2020, has submitted the Minutes of Meeting (MoM) held among NERLDC and Department of Power, Nagaland, on 23.05.2023, extracted as follows:

#### ***“1.0 Identifying list of stations impacting ISTS monitoring and critical grid operation***

*NERLDC mentioned that a list of stations impacting ISTS monitoring and critical grid operation functions had been submitted to CERC DoP-Nagaland agreed to discuss upon the list submitted by NERLDC to CERC.*

*DoP-Nagaland informed that there is no sub-station at Singrijan location and same is only a pooling point where double-circuit line is getting converted to single-circuit lines and requested NERLDC to remove it from the list which was agreed by NERLDC.*

*The list was modified as per the latest updates available with NERLDC and DoP-Nagaland and many new information were added to make it comprehensive in nature. The timelines for some of the works was not readily available with Nagaland-SLDC which would be completed in discussion with their transmission-wing counterparts before submission to CERC and a copy to NERPC and NERLDC for reference purposes. The list is attached as Annexure-I.*

#### ***2.0 Stations with voltage level 66kV in Nagaland.***

*NERLDC mentioned that 66kV stations of DoP-Nagaland are also important as most of its grid-network is 66kV in present scenario. SLDC conveyed that in order to prioritize the activities in action-plan, firstly all the 132kV and above stations along-with important 66kV level stations can be taken up for improvement in telemetry. Later, focus can be shifted to other 66kV Sub-stations as per requirements of NERLDC and SLDC Nagaland.*

#### ***3.0 Low availability of analog and digital data in sub-stations of DoP-Nagaland***

*Nagaland-SLDC stated that many of its stations are partial reporting to SLDC and causing low telemetry percentage availability as being projected in NERPC forums.*

*NERLDC mentioned that it will submit a detailed station-wise list (refer Annexure-2) in which all unavailable analog/digital points will be mentioned (as being circulated in weekly telemetry status report also) which can be analysed by Nagaland-SLDC for planning of further course of action.*

#### ***4.0 Communication Infrastructure on Fiber-Optic network***

*DoP-Nagaland mentioned that many fiber-optic links are under "North Eastern Region Power System Improvement Project (NERPSIP)" being executed by POWERGRID on behalf of state-utilities and also under a "Reliable Communication Scheme — State" being executed by DoP-Nagaland with PSDF funding.*



It was pointed out that w.r.t Optical Ground Wire (OPGW) DOP Nagaland has submitted to PSDF secretariat for funding. Any additional requirement for OPGW, DOP Nagaland shall prepare the DPR and submit the same to PSDF Secretariat for funding as indicated in Minutes of 74th meeting [issued vide eOffice File No. CEA-GO-15-11/2/2020-NPC Division-Part(I)] of the Techno-Economic Subgroup (TESG) of PSDF held on 17th March 2023 at NLDC for TESG Members and for entities through online MS Teams platform.

#### 5.0 Interim arrangement for data transfer by DoP-Nagaland

NERLDC conveyed that in above referred ROP by CERC, it was also directed that NERLDC and DoP Nagaland need to make an interim arrangement in mutual consultation for data transfer at required sub-stations till the communication facilities are not developed. It was also mentioned that GPRS technology being used in some stations of DoP-Nagaland is not reliable and causing high intermittency in data availability.

With mutual discussion, it was decided that VSAT and PLCC communication will be explored in the required stations (as main path or alternate path, as applicable) to maintain redundancy till dual fiberoptic physically redundant communication paths are established. It was also conveyed by DoP Nagaland that DPR for VSAT communication is several stations has already been submitted to PSDF secretariat which is under analysis.

#### 6.0 Charging of new stations under NERPSIP project

NERLDC mentioned that many new stations will be under commissioning stage in NERPSIP project and subsequently it will be handed over to DoP-Nagaland for operation and maintenance. It should be ensured by DoP-Nagaland that real-time power system operational data from these stations is integrated and made available in SCADA-EMS system of SLDC before charging instructions are issued by grid operator. DoP-Nagaland agreed to be more vigilant of this aspect.

.....  
.....”  
.....

31. Respondent DOP Nagaland has furnished list of sub-station with timelines as called

for during meeting held on 23.5.2023 as follows:

#### Status of Nagaland Owned Stations

S. No.	Name of Station	Proposed type of data communication link (state owned)	Tentative Time Line for			
			RTU Availability	DCPS Availability	Fiber Availability	UPS to Comm equip.
A.	Stations impacting ISTS Monitoring and critical Grid Operation					
1	Nagarjun, Dimapur	Not required	Available	Available	Available	Available
2	Kohima	Not required	Available	Available	Available	Available
3	Sanis	Not required	Available	Available	Available	Available
4	Mokokchung	Not required	Available	Available	Available	Available
5	Kiphire	Fibre connectivity: 1.Kiphire-Meluri (State Project to be funded by PSDF)	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and	



		2.Meluri-Pfutsero New - Kohima (NERPSIP Project) PLCC connectivity:			above Network in Nagaland State." by PSDF.
6	Meluri	Fiber connectivity: 1.Meluri-Pfutsero New-Kohima (NERPSIP Project)	24 months from the date of Sanction of fund for DPR for "Procurement and Installation of Remote Terminal Units in selected stations of North Eastern Region (NER)" by PSDF.		Fiber connectivity covered under NERPSIP project and under execution by NERPSIP.
7	Wokha	Not required	Available	Available	Available Available
8	Chiephobozou	Fiber connectivity 1.Wokha-Chiephobozou-Kohima (State Project to be funded by PSDF)	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.		
9	Longnak	Fiber connectivity: 1.Longnak LILO Point-Mokokchung (State Project to be funded by PSDF) 2. PLCC on interim solution: Longnak-Mokokchung (MD-50 to be developed at site)	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.
10	Likhimro Hydro Electric Project (LHEP)	VSAT (State Project) Fiber Project:LHEP-Kiphire (State Project to be funded by PSDF)	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.
11	Tuensang	Fiber connectivity: 1.Tuensang-Mokokchung (NERPSIP) 2.Tuensang-Kiphire (State Project to be funded by PSDF)	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.
12	Power House	Fiber connectivity: 1.Powerhouse-Nagarjan (State Project to be funded by PSDF)	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.



## **Analysis and Decision**

32. We have considered the submissions of the Petitioner, and the Respondents and perused all relevant documents on record and the relevant regulations of the Commission. The main issue raised by the Petitioner NERLDC, through these Petitions is to seek directions to the respective Respondents under each Petition for the establishment and maintenance of Communication facilities by the users of the North-Eastern Region power system in terms of Clause 4.6.2 of IEGC, 2010, read with Regulation 6(3) of CEA (Technical Standards for Connectivity to the Grid) Regulation, 2007 to ensure the availability of reliable real time data at NERLDC and SLDC.

33. Petitioner NERLDC has submitted that data availability in the North-Eastern region is less than 50%, because of which, Regional as well as state operators are facing constraints in grid operations. The stations in Arunachal Pradesh, Tripura, Nagaland, and Mizoram States are grid-connected stations, and any fault or disturbance in them can propagate to other parts of the network leading to a grid disturbance. The restoration activities within the minimum possible time in case of any major collapse of the transmission system can only be done if the real-time data visibility of its corresponding stations is available with its SLDC as well as NERLDC. The current data-availability percentage of stations under the jurisdiction of the Department of Power in Arunachal Pradesh for the month of November 2019 is 6.74%, Tripura for the month of December, 2019 is 14.56%, Nagaland for the month of January 2020 is 35.13% and Mizoram for the month of May 2020 is 18.40%, which is very low and a major hurdle in monitoring the grid in each area.



34. The Petitioner submitted that POWERGRID is executing the fibre optic projects in the state of Arunachal Pradesh, Tripura, Nagaland and Mizoram, and many of the links to these projects have been delayed and are still not completed by POWERGRID.
35. Petitioner has referred to the Commission's order dated 11.10.2012, in Petition No. 217/MP/2011 with IA 142/2012 and the order dated 29.01.2016, in Petition No. 007/SM/2014 and has submitted that continuous efforts are being made by NERLDC with the Respondents through letters enclosing the Telemetry status of stations under their control area, weekly Telemetry Reports; circulating the monthly telemetry statistics to all entities, and posting of the same on the website. In spite of several efforts by NERLDC, relevant data from a number of generating stations and sub-stations is not yet made available at NERLDC as well as at the respective SLDC.
36. Respondent POWERGRID submitted that 12 links out of the remaining 14 links have been completed in Tripura. POWERGRID is also implementing a fiber optic communication system for Nagaland state for providing voice and data communication on 06 links out of which 03 links have been completed and 02 links under "Establishment of Fibre Optic Communication System in lieu of existing ULDC Microwave links in NER" have also been completed. Delay in completion of balance links is mainly due to constraints in OPGW stringing due to Right of Way problems, non-availability of transmission line for OPGW stringing on 02 links, floods, remoteness/critical terrain in NER, Bandh-Strikes, ROW-unrest due to socio-political issues like NRC-CAA-CAB. Similarly, implementation of the VSAT project in the State of Arunachal Pradesh for providing data & Voice connectivity for Roing, Tezu, & Namsai with NERLDC was delayed due to the COVID-19 pandemic situation. Further, the OPGW Communication scheme for Roing, Tezu, and Namsai substations



connectivity with NERLDC was envisaged partly under the “North Eastern Region (Additional) Scheme” and some fibre optic links for the above connectivity are envisaged in the Comprehensive scheme of Arunachal Pradesh, which is still under implementation.

37. Petitioner has submitted the list of Substations, under the respective Respondents in each petition, that impact the ISTS grid and the latest status of the communication facility at these substations. As per the list, many of the sub-stations that impact the ISTS grid are either not reporting or inconsistently reporting the real-time power system operational data to the Control Centres.

38. TSECL & TPTL (Respondents under Petition No 201/MP/2020) and the Department of Power, Government of Nagaland (Respondents under Petition No. 263/MP/2020) conducted meetings with the NERLDC on 23.05.2023 and 31.05.2023 to finalise the tentative timeline for that implementation of communication facilities at the substations identified by the Petitioner. The timeline, as agreed in the mentioned meetings, for the substations where communication links are to be implemented, is as under:

**Petition No. 201/MP/2020 (Tripura)**

SL NO	Name of Station	Tentative Time Line for Fiber Availability
A	Stations impacting ISTS Monitoring and critical Grid Operation	
1	Ambassa	31.07.2023
2	Dharmanagar	31.07.2023
3	Monarchak	31.12.2023
4	Dhaiabil	31-07-2023
5	Gamaitila	31.07.2023
6	Jirania	31.12.2023 (for VSAT)
7	Kamalpur	31.07.2023
8	Amarpur	31.12.2023
9	Gumti	31.12.2023 (for VSAT)
B.	Stations not impacting ISTS Monitoring and critical Grid Operation	
10	Gournagar/Kailashar	31.07.2023



11	Ompi	31.12.2023 (for VSAT)
12	Sabroom	31.12.2023
13	Belonia	31.12.2023
14	Bogafa	31.07.2023
15	Boxanagar	31.12.2023 (for VSAT)
16	Satchand	31.12.2023 (for VSAT)

### Petition No. 263/MP/2020 (Nagaland)

SL NO	Name of Station	Tentative Time Line for			
		RTU Availability	DCPS Availability	Fiber Availability	UPS to Comm equip.
A	Stations impacting ISTS Monitoring and critical Grid Operation				
1	Kiphire	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.	
2	Meluri	24 months from the date of Sanction of fund for DPR for "Procurement and Installation of Remote Terminal Units in selected stations of North Eastern Region (NER)" by PSDF.		Fiber connectivity covered under NERPSIP project and under execution by NERPSIP.	
3	Chiephobozou	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.			
4	Longnak	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.	
5	Likhimro Hydro Electric Project (LHEP)	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.	
6	Tuensang	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of Reliable Communication System for 66KV and above Network in Nagaland State." by PSDF.	
7	Power House	Available	Available	33 months from the date of Sanction of fund for DPR for "Establishment of	





				Reliable Communication System for 66KV and above Network in Nagaland State.” by PSDF.
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39. We have considered the submissions of the Petitioner and Respondents and have also perused the facts on record. The various relevant sections of the Act, Central Electricity Authority (Technical Standards for connectivity to the Grid) Regulations, 2007, and the Indian Electricity Grid Code Regulations, 2010 are as follows:

40. Sub-section (3) of the Section 28 of the Electricity Act, 2003 is extracted as under:

**“Section 28. (Functions of Regional Load Despatch Centre):**

.....  
 (3) *The Regional Load Despatch Centre shall –*  
 (a) *be responsible for optimum scheduling and despatch of electricity within the region, in accordance with the contracts entered into with the licensees or the generating companies operating in the region;*  
 (b) *monitor grid operations;*  
 (c) *keep accounts of quantity of electricity transmitted through the regional grid;*  
 (d) *exercise supervision and control over the inter-State transmission system; and*  
 (e) *be responsible for carrying out real time operations for grid control and despatch of electricity within the region through secure and economic operation of the regional grid in accordance with the Grid Standards and the Grid Code.”*

As per the above, sub-section (3) of Section 28 of the Electricity Act, 2003 provides the details of the responsibility of the RLDC, which inter-alia includes carrying out of real time operations for grid control and despatch of electricity within the region through secure and economic operation of the regional grid in accordance with the Grid Standards and the Grid Code.

41. Regulation 1.5 of the Indian Electricity Grid Code Regulations, 2010 provides as under:

**“1.5 Compliance Oversight**

*(i) RLDCs shall report to the Commission instances of serious or repeated violation of any of the provisions of the IEGC and incidences of persistent non-compliance of the directions of the RLDCs issued in order to exercise supervision and control required for ensuring stability of grid operations and for achieving the maximum economy and efficiency in the operation of the power system in the region under its control.*



(ii) *The Regional Power Committee (RPC) in the region shall also continuously monitor the instances of non-compliance of the provisions of IEGC and try to sort out all operational issues and deliberate on the ways in which such cases of non-compliance are prevented in future by building consensus. The Member Secretary RPC may also report any issue that cannot be sorted out at the RPC forum to the Commission. The RPC shall also file monthly reports on status of UI payment and installation of capacitors by states vis-à-vis the requirement/targets, as decided in the RPC.*

(iii) *The Commission may initiate appropriate proceedings upon receipt of report of RLDCs or RPCs referred to in (i) and (ii) above respectively.*

(iv) *In case of non-compliance of any provisions of the IEGC by NLDC, RLDC, SLDC, RPC and any other person the matter may be reported by any person to the CERC through petition.*

(v) *Notwithstanding anything contained in these regulations, the Commission may also take suo-motu action against any person, in case of non-compliance of any of the provisions of the IEGC."*

As per the above, the RLDCs shall report instances of serious or repeated violations of the provisions of the IEGC and persistent non-compliance with the RLDC's directions, to the Commission. Further, RPC shall also monitor instances of non-compliance, try to sort-out all operational issues at the RPC forum, and may also report such issues that cannot be sorted out at the RPC forum to the Commission. The Commission may initiate proceedings upon receipt of such report from RLDCs and RPCs.

42. Regulation 4.6.2 of Indian Electricity Grid Code Regulations, 2010 provides as under"

**"4.6.2. Data and Communication Facilities**

*Reliable and efficient speech and data communication systems shall be provided to facilitate necessary communication and data exchange, and supervision/ control of the grid by the RLDC, under normal and abnormal conditions. All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches/ transformer taps etc. in line with interface requirements and other guideline made available by RLDC. The associated communication system to facilitate data flow up to appropriate data collection point on CTU's system shall also be established by the concerned User or STU as specified by CTU in the Connection Agreement. All Users/STUs in coordination with CTU shall provide the required facilities at their respective ends as specified in the Connection Agreement."*

As per the above, all Users, STUs and CTU need to provide systems to telemeter power system parameters in line with interface requirements and other guidelines



made available by RLDC, and further, the concerned User or STU needs to establish the associated communication system to facilitate data flow up to the appropriate data collection point on the CTU's system.

43.Regulation 6(3) of the Central Electricity Authority (Technical Standards for connectivity to the Grid) Regulations, 2007 provides as under:

**"6. General Connectivity Condition**

.....  
*(3) The requester and user shall provide necessary facilities for voice and data communication and transfer of online operational data, such as voltage, frequency, line flows and status of breaker and isolator position and other parameters as prescribed by the appropriate load dispatch centre."*

As per the above, the requester, which seeks Connectivity to the Grid, needs to provide the necessary facilities for voice and data communication and the transfer of online operational data to the Load Dispatch Centre.

44.Central Electricity Regulatory Commission (Communication System for Inter-state transmission of electricity), Regulations, 2017 provide as under:

**"7.2 Role of CTU**

*(i) The CTU shall in due consideration of the planning criteria and guidelines formulated by CEA, be responsible for planning and coordination for development of reliable National communication backbone Communication System among National Load despatch Centre, Regional Load Despatch Centre(s) and State Load Despatch Centre(s) and REMCs along with Central Generating Stations, ISTS Sub-Stations, UMPPs, inter-State generating stations, IPPs, renewable energy sources connected to the ISTS, Intra-State entities, STU, State distribution companies, Centralised Coordination or Control Centres for generation and transmission. While carrying out planning process from time to time, CTU shall in addition to the data collected from and in consultation with the users consider operational feedback from NLDC, RLDCs and SLDCs.*

.....  
*(iv) The CTU shall integrate communication planning with transmission and generation project planning in a comprehensive manner.*

.....  
*(x). The CTU shall extend the required support to Control Centres for integration of communication system at respective ends.*

**7.5 Role of RLDCs**

*(i) The Regional Load Despatch Centre shall be nodal agency for integration and supervision of Communication System of the ISTS, ISGS, SLDCs and IPPs at RLDC end*



*for monitoring, supervision and control of Power System and adequate data availability in real time.*

.....

#### *7.6 Role of SLDCs*

*(i) The State Load Despatch Centres shall be nodal agency for integration of Communication System in the intra-State network, distribution system and generating stations at SLDC end for monitoring, supervision and control of Power System and adequate data availability in real time.*

.....

#### *7.7 Role of STUs*

*(i) The STU shall be responsible for planning, coordination and development of reliable communication system for data communication within a State including appropriate protection path among State Load Despatch Centre, Area LDC, Sub-LDC and DISCOM LDC including Main and backup as applicable along with STU Sub Stations, intra-State Generating Stations.*

*(ii) The STU shall also plan redundant communication system up to the nearest Inter-State Transmission System wideband communication node for integration with the inter-State communication system at appropriate nodes.*

.....

*(v) The STU shall extend the required support to Control Centres for integration of communication system at respective ends.*

#### *7.8 Role of Users:*

*(i) The Users including renewable energy generators shall be responsible for provision of compatible equipment along with appropriate interface for uninterrupted communication with the concerned control centres and shall be responsible for successful integration with the communication system provided by CTU or STU for data communication as per guidelines issued by NLDC.*

*(ii) Users may utilize the available transmission infrastructure for establishing communication up to nearest wideband node for meeting communication requirements from their stations to concerned control centres.*

*(iii) The Users shall also be responsible for expansion /up-gradation as well as operation and maintenance of communication equipment owned by them.*

As per the above, the responsibility of CTU, STUs, RLDCs, SLDCs and the Users has been clearly specified to provide communication systems for uninterrupted communication of real time power system data to Control Centers.

45. We note that Tripura Power Transmission Limited (TPTL) has made a submission, vide affidavit dated 06.06.2023, representing TSECL under Petition No. 201/MP/2020. However, TPTL is not impleaded as a Respondent, only the TSECL, SLDC Tripura, and PGCIL NERTS are impleaded as Respondents under Petition No. 201/MP/2020. We further note that in the hearing on 08.06.2023, the representative of TSECL / TPTL submitted that TSECL, which was responsible for power generation,



distribution, and transmission for the State of Tripura, has been unbundled and a separate transmission company, namely, TPTL, has been formed on 3.1.2023. Considering the unbundling of TSECL and subsequent the formation of a separate transmission company as TPTL, we are of the view that the submission made by TPTL can be considered a submission made on behalf of TSECL.

46. We observe that the non-availability of real time telemetry data from the grid connected substations to SLDCs and RLDC is a serious concern for reliable grid operation. In the absence of real time data, the corresponding SLDC or RLDC will not be in a position to monitor, supervise, and take appropriate action, and any incident in the grid can have a catastrophic effect on the grid. In view of the critical importance of telemetry of power system parameters to control centers and associated systems for ensuring reliability in the operation of the grid and optimization of the transmission system, there is an imperative need for all the users to establish the telemetry and associated communication system in a time bound manner so that the power system can be operated in a reliable manner.

47. We note that the Respondent, DoP Government of Arunachal Pradesh, and the Power & Electricity Department, Mizoram, under Petition No.197/MP/2020 and 556/MP/2020 respectively, have yet to conduct the meeting with NERLDC to finalize the tentative timeline for implementation of communication facilities at the substations identified by the Petitioner.

48. Considering the above, we hereby direct;



- a. TSECL & TPTL and Department of Power, Government of Nagaland, shall adhere to the timelines mentioned at Para 38 of this Order, which have been finalised in their meetings with the NERLDC.
- b. DoP, Government of Arunachal Pradesh, and the Power & Electricity (P&E) Department, Mizoram, shall without fail conduct a meeting with NERLDC within a month of issuance of this order to finalise the timelines for implementation of communication facilities at the substations identified by the Petitioner. Further, the P&E Department, Mizoram, shall also discuss in this meeting and finalise the implementation plan for the integration of grid connected substations under their control area with the SCADA of SLDC Mizoram.
- c. The Petitioner shall make an interim arrangement, wherever feasible, in consultation with the Respondents for data transfer at sub-stations identified by the Petitioner that impact ISTS grid, till the communication facilities are developed.
- d. POWERGRID shall implement the remaining links, of the fibre optic projects being executed by POWERGRID in the North Eastern Region adhering to the timelines so as to ensure early establishment of communication facilities for real time data communication to Control Centers.
- e. NERPC shall monitor the work of the implementation of Communication facilities by Department of Power, Govt. of Arunachal Pradesh; Tripura State Electricity Corporation Limited; Department of Power, Nagaland; P&E Department, Mizoram; POWERGRID and Devi Energies Private Limited, and shall submit a quarterly progress report to the Commission till the establishment of the Communication facilities at the substations identified by the NERLDC. Any issue faced during the implementation of Communication facilities shall be discussed at the RPC forum and sorted out.
- f. NERLDC shall monitor the establishment & maintenance of Communication facilities by the users of the North-Eastern Region and update the status of telemetry every month at their web-site.
- g. Department of Power, Govt. of Arunachal Pradesh; Tripura State Electricity Corporation Limited; Department of Power, Nagaland, and P&E Department, Mizoram shall finalize the implementation plan and timelines for the development of standby communication channels in coordination with NERPC and NERLDC to



ensure transfer of data and voice communication between the concerned SLDC and NERLDC. NERPC shall monitor implementation of standby communication channels.

- h. Department of Power, Govt. of Arunachal Pradesh; Tripura State Electricity Corporation Limited; Department of Power, Nagaland and P&E Department, Mizoram shall identify one person from their top management as a nodal officer, who shall submit a monthly progress report on the implementation of the communication facilities to the NERPC and NERLDC, till the availability of 100% data to their respective SLDC and NERLDC.
- i. The Respondent, Devi Energies Private Limited, in Petition No. 197/MP/2020, shall take immediate steps for the integration of real-time data from Dikshi HEP and 132 kV Tenga Stations with the SCADA system of SLDC Arunachal Pradesh and submit the monthly progress report to NERPC and NERLDC till the completion of this integration work.

49. The Petition Nos. 197/MP/2020, 201/MP/2020, 263/MP/2020 and 556/MP/2020 are disposed of in terms of the above.

<b>Sd/-</b>	<b>Sd/-</b>	<b>Sd/-</b>	<b>Sd/-</b>
<b>(P. K. Singh)</b> <b>Member</b>	<b>(Arun Goyal)</b> <b>Member</b>	<b>(I. S. Jha)</b> <b>Member</b>	<b>(Jishnu Barua)</b> <b>Chairperson</b>

