MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION

1st Floor (Front Block Left Wing), New Administrative Building, Lower Lachumiere, Shillong – 793 001
East Khasi Hills District, Meghalaya

CASE No 21 /2023

In the matter of:

Approval of Business Plan for the 4th MYT Control Period from FY 2024-25 to FY 2026-27.

And

Meghalaya Power Transmission Corporation Limited (MePTCL) ..... Petitioner

Coram

P.W. Ingty, IAS (Retd),

Chairman

R.K. Soni, District Judge (Retd.),

Member

ORDER

Date: 16. 11. 2023

1. The Meghalaya Power Transmission Corporation Limited (herein after referred to as MePTCL) is a deemed licensee in terms of section 14 of the Electricity Act, 2003 (herein after referred to as Act), engaged in the business of transmission of electricity in the State of Meghalaya.
2. In exercise of powers conferred in clause (Zc), (Zd) and (Ze) of sub-section 2 of section 18, read with sections 61, 62, 64, 65 and 86 of the Electricity Act 2003 and all other powers enabling in that behalf and after previous publication, the Meghalaya State Electricity Regulatory Commission (herein after referred to as MSERC or the Commission) issued MSERC (Multi-Year Tariff) Regulations, 2014 (herein after referred to as MYT Regulations,2014).
3. The Commission, vide proceedings no. MSERC /MYT Regulations/2014/02 Dated.03.08.2023 has amended the sub-Regulation 1.4 of MYT Regulations, 2014 and extended the MSERC (Terms and Conditions of Multi Year Tariff) Regulations 2014 for the fourth control period beginning from 01.04.2024 to 31.03.2027.

4. As per provisions of sub-Regulations 1.4 (amended) and Regulation 8 and 66 of the MYT Regulations, 2014, MePTCL has filed the Petition for approval of Business Plan for the fourth MYT Control Period FY 2024-25 to FY 2026-27 with capital out lay for each year of the Control Period.
5. As per provisions of sub-Regulations 8.1, 8.2 and 8.3, the Business Plan shall comprise of but not limited to details of capital investment plan, financing plan and physical targets.
6. The Commission, in exercise of powers vested in Clause 8.4 of MYT Regulations, 2014, provisionally passed this order approving the Business Plan (attached herewith) for the fourth MYT control period FY 2024-25 to FY2026-27.
7. MePTCL shall submit the Tariff petition for determination of ARR and transmission charges for MYT Control Period from FY 2024-25 to FY 2026-27 on or before 30th November, 2023 in accordance with Regulation 18.1 of MYT Regulations, 2014.
8. This Order shall be placed in the website of the Commission and a copy shall be sent to MePTCL, MePDCL, MePGCL and MeECL.

Sd/-

Shri. R.K. Soni, District Judge (Retd.)

Member

Sd/-

Shri P.W.Ingty, IAS(Retd)

Chairman

Business Plan for 4th MYT Control Period FY 2024-25 to FY2026-27

1.1 Introduction

The Meghalaya Power Transmission Corporation Limited (MePTCL) shall file its Business Plan for the control period of FY 2024-25 to FY 2026-27 in accordance with Regulation 8 of the MSERC (Multi Year Tariff) Regulations 2014. The relevant excerpt of the regulations is reproduced below:

*"**8 Business Plan***

8.1 The applicant, Transmission licensee, MePTCL, shall file a Business Plan for the Control Period of three (3) financial years FY 2024-25 to FY 2026-27, which shall comprise but not limited to capital investment plan, financing plan and physical targets, in accordance with guidelines and formats, as may be prescribed by the Commission from time to time:

Provided that a mid-term review of the Business Plan/Petition may be sought by the applicant, Transmission Licensee MePTCL through an application filed three (3) months prior to the specified date of filing of Petition for truing up for the second year of the Control Period and tariff determination for the third year of the Control Period.

8.2 The capital investment plan shall cover separately, on-going projects that will spill over into the Control Period, and new projects (along with justification) that will commence in the Control Period but may be completed within or beyond the Control Period. The Commission shall consider and approve the capital investment plan for which the applicant. Transmission Licensee MePTCL, may be required to provide relevant technical and commercial details.

8.3 …..

8.4 The applicant, Transmission Licensee MePTCL shall get the Business Plan approved by the Commission.

1.2 Preamble

The Business Plan for the Control Period was filed in accordance with regulation 1.4 read with regulation 8 of MSERC MYT Regulations 2014 for the control period FY 2024-25 to FY 2026-27.

Meghalaya Power Transmission Corporation Limited (MePTCL) is required to forecast the Aggregate Revenue Requirement (ARR), based on the Business Plan, for the fourth Control Period FY 2024-25 to FY 2026-27. As per the MYT Regulations, Business Plan should comprise capital investment plan, financing plan, physical targets, etc.

MePTCL had submitted that the aforementioned Business Plan depends upon various factors such as historical data, current and future financial estimates, growth estimates, economic, financial and business-related assumptions, current operational requirements, other foreseeable changes/ requirements in future etc. MePTCL has taken a rational and scientific approach while forecasting various components of Business Plan in order to arrive at realistic forecast with minimal expected deviations. The approach undertaken for preparation of various plans and forecasts is explained in detail in the relevant sections of Business Plan. This Business Plan, as submitted under MYT Regulations 2014 will be considered as a base for determination of ARR and tariff for future period.

1.3 Business Plan

As per the regulations of the Commission, MePTCL submitted Business plan for the fourth control period FY 2024-25 to FY 2026-27.

A business plan is conventionally defined as:

"Business Plan is a formal statement of a set of business goals, the reasons why they are believed attainable, and the plan for reaching those goals. It may also contain background information about the organization or team attempting to reach those goals."

Accordingly, this business plan is developed for the Control period bearing in mind the growth plan for the control period after considering the strength and weakness of the company and evaluating its business environment. MePTCL has taken a rational and

scientific approach while forecasting various components of Business Plan in order to arrive at realistic forecast with minimal expected deviations. The approach undertaken for preparation of various plans and forecasts is explained in detail in the relevant sections of Business Plan.

There are a number of internal and external factors which affect the planning of the company and thus it makes this document a very dynamic document and which calls for regular reviews of the plan with a view to introduce any mid-term corrections.

The primary objectives for developing the business plan are as follows:

- Providing a tool for Strategic Planning: The Business Plan is intended to chart out the Company's way forward. The key objective for developing the business plan is to analyze and anticipate the major requirements of transmission infrastructure commensurate with the expected demand growth of electricity. Business Plan may prove to be a tool to strategically plan for capital investments and it's financing. Further, it may help in timely execution and monitoring of the work.
- For the regulatory compliance of submission of Business Plan as mandated by MSERC MYT Regulations, 2014.
- Aid in Decision Making and better operational efficiency: The Business Plan may aid in decision making while planning and in the execution of the project. Further, proactive actions may be taken during the execution of the project in order to achieve the company's goal of supplying quality power to all. This may help in improving the operational efficiency by running the transmission network in accordance with the set performance target.

Due to changing business environment and uncertainty over the regulations governing the Transmission business, it is submitted that Hon'ble Commission may take cognizance of the fact that the business plan is a dynamic document which may need to be updated at various intervals to align the growth path of the company with the external business environment and internal factors affecting the business/ operations of the company.

2. Company Profile

2.1 Background and Profile of MePTCL

The Company is a Transmission Licensee within the meaning of Section 2 (73) of Electricity Act 2003. Further, Section 42 and 43 of the Electricity Act 2003 prescribes the following major duties of the Transmission Licensee:

- To undertake transmission of electricity through intra- State transmission system.
- To build, maintain and operate an efficient, co-ordinated and economical intra-State transmission system.
- To comply with such technical standards, of operation and maintenance of transmission lines, in accordance with the Grid Standards, as may be specified by the Authority.
- To provide non-discriminatory open access to its transmission system for use by any licensee or generating company on payment of the transmission charges or any consumer as and when such open access is provided by the State Commission, on payment of the transmission charges and a surcharge thereon, as may be specified by the State Commission.

As per Meghalaya Power Sector Transfer Scheme, MePTCL has been vested with the function of transmitting power by the State Government of Meghalaya, the Business Scope of the Company falls within the legal framework as specified in the Act and includes:

- Undertaking transmission of electricity through intra-State transmission system.
- Ensuring development of an efficient, coordinated and economical system of intra-State transmission lines for smooth flow of electricity from a generating station to the load centers.
- Discharging all functions of planning and co-ordination relating to intra-state transmission system with Central Transmission Utility, State Government, Generating Companies, Regional Power Committees, Authority and Licensees.

- To provide non-discriminatory open access to its transmission system for use by any licensee or generating company or any consumer as and when such open access is provided by the State Commission.
- Engaging in any business for optimum utilization of assets, with prior intimation to the State Commission.

MePTCL has inherited a very old network from MeSEB which itself had inherited the network from Assam State Electricity Board (ASEB) in 1975. However, both erstwhile MeSEB and MePTCL have added significant network assets in previous few years in order to sustain the load growth and to provide reliable power transmission corridor to the state of Meghalaya. The Key Achievements of MePTCL are highlighted below:

Table 1 : Key Achievements from 2020 to 2023

Details	31.03.2020	31.03.2023
Length of 400 KV lines (cKm)	4.648	4.648
No. of 400KV/ 220KV Grid Substations	1	1
No. of 400kV Bays	6	6
Capacity of 400KV Transformers (MVA)	630	630
Length of 220 KV lines (cKm)	226.84	226.84
No. of 220KV/ 132KV Grid Substations	1	1
Capacity of 220KV Transformers (MVA)	520	520
No. of 220kV Bays	10	10
Length of 132 KV lines (cKm)	1053.098	1263.524
No. of 132KV/33KV & 132/33/11KV Grid Substations	18	18
Capacity of 132KV Transformers (MVA)	590	645
No. of 132kV Bays	106	112
No. of 33kV Bays under MePTCL	75	82

3. Key Performance Parameters (Actual and Projected)

Petitioner's Submission

Meghalaya's transmission network is highly interconnected with the neighboring Assam network, it is connected at 400 Kv (Killing – Bongaigaon, Killing - Silchar), at 220 Kv (Killing – Misa), and at 132 Kv (Khliehriat (PG) – Badarpur (PG), Khliehriat (Meghalaya) – Panchgram (Assam), Mendipathar Substation to Agia (Assam) at 132 Kv Khliehriat (Powergrid) – Khandong D/c (NEEPCO) and Umtru HEP - Kahelipara). The existing transformation capacity available at 400 and 220 Kv for import from the North-Eastern Grid is 1790 MVA. This transformation capacity serves both Assam and Meghalaya.

For a transmission utility, it is most important to deliver un-interrupted power supply to its consumers. Also, transmission loss and Network Construction are two additional parameters which have greater impact on the transmission business. Day by day transmission system is getting more and more complex with network addition. Further, with the implementation of the schemes proposed in this Business Plan and Independent Power Producer (IPP) evacuation plan, MePTCL will operate a larger transmission system by the end of the Business Plan. With the growth in transmission network, it will be more challenging to improve the system availability and to reduce the transmission losses over the period.

3.1 Transmission System Availability (TSA)

TSA is an indicator of safe, secure and efficient operation of the transmission system. It indicates system reliability and stability, which are necessary to ensure continuous and uninterrupted supply to end consumers of the distribution company as well as providing continuous transmission access to the State generating stations, Central generating stations and Open Access customers. MePTCL is making all out efforts to supply the power required by the State through its transmission system comprising 22 sub-stations and more than 1497.584 ckt.km (as on March 2023) of transmission lines of different voltage classes spread across Meghalaya. MePTCL has been undertaking repair and maintenance work for optimizing system performance. As an outcome of

this, the licensee has been able to maintain close to 99% TSA. The table below represents TSA of MePTCL from FY 2019-20 to FY 2022-23.

Table 2 : Transmission System Availability from FY 2019-20 to FY 2022-23

	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
Intra State	99.12	97.35	98.82	98.65
Inter State	99.98	99.95	99.89	99.79
Overall	**99.55**	**98.65**	**99.35**	**99.22**

3.2 Transmission Loss

MePTCL is undertaking continuous efforts to reduce transmission losses by replacing meters, and metering system at interface/ boundary with the Generators and Distributors as well as implementing a strict regime of operation and maintenance of the lines and sub stations.

As an outcome of these initiatives, the licensee has been able to reduce the transmission losses continuously from 5.18% in FY 2016-17 to 3.80% in FY 2020-21 till 3.16% in FY 2022-23 which comes well within the target set by the Hon'ble Commission. The table below presents year-on-year reduction in transmission loss of the licensee.

Table 3 : Transmission Loss from FY 2019-20 to FY 2022-23

Particulars	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
Transmission Loss (%)	3.94	3.49	3.01	3.16

For further reduction of transmission losses, MePTCL has initiated the following steps:

a) **<u>Metering upgradation</u>**: For replacing the existing meters & the metering system at interface boundary with the GENCO & the DISCOM by ABT compliant meters of accuracy class 0.2S as per the latest CEA meter regulation, SAMAST project at an estimated cost of Rs. 8.48 crores, will be completed by 2023-24.

Furthermore, for more accuracy and as per the latest CEA regulations, MePTCL has taken up with the MoP for funding of the work for replacing current transformers, potential transformers (of 132kV and above) etc of accuracy class 0.5S with accuracy class of 0.2S under the project, 'Renovation and Upgradation of Protection & Control System alongwith different Station Equipment in different

Grid S/s of Meghalaya (Phase-II)' to be funded under the Power System Development Fund (PSDF) at an estimated cost of Rs. 44.36 crores.

Additionally to improve the communication system in the transmission network, a project 'Reliable Communication & Data Acquisition System upto 132kV' to be funded under PSDF at an estimated cost of Rs. 18.51 Crores is being taken up for funding.

b) **Transmission line up-gradation:** Some of the transmission lines are very old and as such line loading capacity of these lines have reduced and thereby technical losses have increased due to ageing of conductors. Re-conductoring of these lines are required to enable to increase the line loading capacity as well as to reduce the line losses. In this regard, MePTCL has taken up the Re-engineering and Strengthening work of the 132Kv line from Stage I – Stage III by HTLS conductor at an estimated expenditure of Rs.21.74 Crores as well as Re-engineering and Strengthening work of the 132Kv line from Khliehriat – Panchgram by HTLS conductor at an estimated expenditure of Rs.42.89 Crores funded under the Power System development Fund and the works will be completed by November 2023. Further to facilitate drawal of power from the 220/132kV ISTS Nangalbibra Sub Station, survey works for construction of 132kV D/C line from 132kV Nangalbibra (MePTCL) to 220/132kV Nangalbibra (ISTS) Substation as well as survey works for construction of 220kV D/C line from 132kV Nangalbibra (ISTS) to 220/132kV New Shillong Substation are being undertaken and these will be completed soon. The matter of funding for construction of these two lines is being taken up with the State Government for funding.

DPRs for reconductoring with HTLS and strengthening of several old transmission lines are being pursued for funding under PSDF.

c) **Capacity addition:** DPR has been prepared for necessary funding for construction of 132/33kV, 2*20MVA Substation at Nongpoh, Ri Bhoi District and 132/33kV, 2* 25MVA Killing GIS Substation as well as the Replacement of Power transformers and Re engineering of Bus bar of NEHU and Mawphlang Sub stations.

Projected Performance Parameters of MePTCL

3.3 Projected Transmission System Availability:

The overall transmission system availability on 2022-23 is close to 99.22%. Details of the system availability has been shown in table 10 (Section 3.2). Based on the actual performance and the projected system improvement works, MePTCL has considered the system availability for the period FY 2023-24 to FY 2026-27 as follows:

Table 4 : System Availability Projection for FY 2023-24 to FY 2026-27

System Availability	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
Intra State (%)	98.65%	98.70%	98.75%	98.75%
Inter State (%)	99.79%	99.80%	99.80%	99.80%
Overall (%)	99.22%	99.25%	99.28%	99.28%

3.4 Future Trend of Transmission Loss:

Based on the projected capacity addition and overall aim to deliver reliable and quality power supply to the consumers, MePTCL has proposed the following loss trajectory:

Table 5 : System Loss Projection for FY 2023-24 to FY 2026-27

Parameters	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
System Loss (%)	3.18	3.18	3.18	3.18

3.5 Roll Out Plans:

Based on the ongoing and upcoming works in the remaining control period, the rollout plan prepared as per the Business plan for MePTCL is given below:

Table 6 : Rollout Plan for FY 2024-25 to FY 2026-27

Plan	Existing Capacity (31.03.2023)	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	Total expected Capacity as on 31.03.2027
		Projected				
Transmission (Inter-State)						
Transmission Line (Ckt Km)	498.989	-	-	-	-	498.989
Transformation Capacity (MVA)	1150	-	-	-	-	1150
Transmission (Intra-State)						
Transmission Line (Ckt Km)	996.023	438.77	23.10	7.00	299.00	1763.893
Transformation Capacity (MVA)	645	1040	350	100	-	2135

The existing intra-state transmission network for evacuation and transfer of power within the state is mainly at 132 kV level. Presently the state has 1263.524 Ckt. Km at 132 kV,226.84 Ckt. Km at 220 kV and 4.648Ckt. Km at 400 kV of inter & intra

level which are more or less adequate to meet the present controlled peak requirements of the state. The aggregate capacity at 132/33 kV is 645 MVA. The above capacity is generally adequate to meet the present controlled/restricted peak requirements of the state.

With the increase in demand, transmission constraints are felt especially during the winter months hence it is felt that the existing transmission network needs augmentation and it is necessary that new lines and sub stations be added to the network to ensure transmission of reliable and quality power to the consumers as well as to take care of the overloaded and overstressed lines and sub stations.

Commission's Analysis

The licensee has projected system overall availability for FY 2023-24 at 99.22 % and considering projected system improvement works during the control period FY 2024-25 to FY 2026-27 it is estimated availability to be 99.28%.

The system losses projected considering the improvement works contemplated during the control period FY 2024-25 to FY 2026-27 loss projection assessed to be 3.18 %.

MePTCL has projected capacity addition in the transmission lines to the extent of 767.87ckm and 1490 MVA transformation capacity during the FY 2023-24 to FY 2026-27, keeping in view of the increase in demand, augmentation of existing capacity to maintain quality and reliable power to the consumers overcoming the winter constraints.

Commission considers the projection of capacity addition provisionally during the 4th control period FY 2024-25 to FY 2026-27.

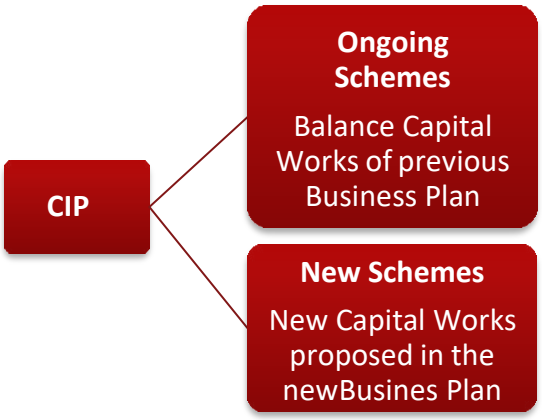
Table 7 : Transmission loss approved for FY 2023-24 to FY 2026-27

Parameters	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
Transmission Loss (%)	3.18	3.18	3.18	3.18

4. Capital Investment Plan (CIP)

Petitioner's Submission

4.1 Details of Capital Expenditure



4.1.1 Purpose of Capital Investment Plan (CIP):

The purpose of the Capital Investment Plan (CIP) is to provide MePTCL with a roadmap for planning and implementation of proposed projects & schemes for the control period. The CIP has been prepared keeping in view various long-term needs and areas for capital expenditure as highlighted below:

- Strengthening of Aging Network
- Evacuation of Power from upcoming generating stations
- Transmission Corridor development for new load centres.
- Increasing Transmission capacity for increased load
- Increased Quality and Reliability of Power Transmitted
- Appropriate Loading of Transmission Network
- Increased Control and Protection for Grid Stability
- Metering and Loss Assessment
- Loss Reduction
- Outage Reduction

4.1.2 Capital Investment Plan (CIP)

CIP includes schemes envisaged to be implemented in future. The key factors that are considered while formulating a capital investment plan includes:

a) Anticipated growth in load requirement during the control period

b) Need for system augmentation to reduce/ remove overloading in transmission lines and substations.

c) Scope for improvement in reliability of the equipment and thereby the overall transmission system so as to provide high TSAF consistently

Several assumptions have been taken to project the various attributes such as scope of work, funding pattern, funding sources, project cost, commencement/ completion dates and construction period etc. The assumptions have been taken considering historical inputs and anticipated project attributes. These attributes are expected to become clearer with preparation of Detailed Project Reports (DPR), Approval by concerned authority/ financial institution and commencement of execution. Similarly, to finance the capital expenditure, MePTCL primarily depends on financial assistance provided by Government of Meghalaya and Government of India through various schemes as well as external aided funding by international institutions such as World Bank. Most of the funding is available/ expected to be available to MePTCL in the form of Grants & Equity. Loan component is also expected to be provided by the Government of Meghalaya. The details of schemes which are part of the present investment plan along with their funding pattern is given below.

Table 8 : Details of Ongoing and Proposed Schemes

Sr. No.	Schemes	Project Cost (Rs. Cr)	Funding Pattern (Rs. Cr)		
			Equity	Loan	Grant
New Schemes					
1	**State Plan**				
	Construction/ Upgradation of Transmission lines	41.10	0.00	4.57	45.67
	Construction/ Upgradation of Substations	0.00	0.00	0.00	0.00
	Sub-total	**41.10**	**0.00**	**4.57**	**45.67**
2	**Center Sponsored Schemes**				
A	**EAP**				
	Construction/ Upgradation of Transmission lines	807.42	0.00	0.00	807.42
	Construction/ Upgradation of Substations	88.63	0.00	0.00	88.63
	Sub-total	**896.05**	**0.00**	**0.00**	**896.05**
B	**NEC**				
	Construction/ Upgradation of Transmission lines	20.70	0.00	2.30	23.00
	Construction/ Upgradation of Substations	27.00	0.00	3.00	30.00
	Sub-total	**47.70**	**0.00**	**5.30**	**53.00**
3	**PSDF**				
	Construction/ Upgradation of Transmission lines	161.73	0.00	0.00	161.73
	Other New Works	61.02	0.00	1.85	62.87
	Sub-total	**222.75**	**0.00**	**1.85**	**224.60**
	Total	**1207.60**	**0.00**	**11.72**	**1219.32**
Sr. No.	**Schemes**	**Project Cost (Rs. Cr)**	**Funding Pattern (Rs. Cr)**		
			Equity	**Loan**	**Grant**
Ongoing/ Completed Schemes					
1	**Center Sponsored Schemes**				
A	**SPA**				
	Construction/ Upgradation of Transmission lines	10.74	0.00	1.193	11.93
	Construction/ Upgradation of Substations	14.11	0.00	1.57	15.68
	Sub-total	**24.85**	**0.00**	**2.763**	**27.61**
B	**NEC**				
	Construction/ Upgradation of Transmission lines	**4.47**	**0.00**	**0.497**	**4.967**
2	**PSDF**				
	Construction/ Upgradation of Transmission lines	64.63	0.00	0.00	64.63
	Other on-going works	6.86	0.00	0.00	6.86
	Sub-total	**71.49**	**0.00**	**0.00**	**71.49**
3	**NERPSIP**				
	Construction/ Upgradation of Transmission lines	**733.68**	**0.00**	**0.00**	**733.68**
	Construction/ Upgradation of Substations				
	Sub-total				
5	**NESIDS**				
	Other on-going works	**49.80**	**0.00**	**0.00**	**49.80**
6	**State Plan**				
	Construction/ Upgradation of Transmission lines	**0.98**	0.00	0.00	0.98
	Construction/ Upgradation of Substations	**2.22**	0.00	0.00	2.22
	Sub-total	**3.20**	**0.00**	**0.00**	**3.20**
	Total	**887.48**	**0.00**	**3.26**	**890.74**
	Grand total	**2095.08**	**0.00**	**14.98**	**2110.06**

Commission's Analysis

The investment plan projected for construction of Transmission lines and substations on 100% grant basis. The petitioner shall prioritize execution of works for which Govt. grants and contributions available with the utility under ongoing schemes.

Commission approves ongoing and proposed new schemes to be undertaken during the 4th control period FY 2024-25 to FY 2026-27 provisionally.

Construction/up gradation of Transmission lines and substations projected under NERPSIP at a cost of Rs.733.68 Crore need not be included in the Capex, since this project is being executed by the Power Grid Corporation India Limited (PGCIL) on 100% grant basis

4.2 Details of Fund Requirement and Capitalization

Petitioner's Submission

4.2.1 Fund Requirement

Within Meghalaya, the objective of the schemes is to revitalize the power sector to achieve sustainable development in the long term. The State has to implement the listed projects below on time to ensure availability of transmission system for 24x7 supply and will monitor the loading of lines and substations on periodic basis keeping in view the actual growth in loading of the load centers along with changes in consumer mix. Given below is the capital expenditure proposed for FY 2023-24 to FY 2026-27 under the various schemes mentioned above:

Table 9 : Capital Expenditure Plan

Sl. No.	Category	Fund Requirement (in Rs. Crs)				
		FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	Total
1	Transmission Lines	65.19	330	375.47	284.02	1054.68
2	Substations	30.86	22.00	37.50	10.50	100.86
3	Other works	30.05	51.92	17.36	17.00	116.33
4	NERPSIP	129.22	0.00	0.00	0.00	129.22
Total Fund Requirement (in Rs. Crores)		**255.32**	**403.92**	**430.33**	**311.52**	**1401.09**

4.2.2 Capitalization in Fourth Control Period

The addition of new transmission lines, and substations is required for relieving the existing overloaded lines and substations of MePTCL. This is also necessary to meet the growing demand of the state. Given below is the capital expenditure proposed for

fourth control period under the various schemes mentioned above:

Table 10 : Details of Capitalization for the year FY 2023-24 to F Y 2026-27

Sl. No.	Category	Capitalization (in Rs. Crores)				
		FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	Total as on 31.03.2027
1	Transmission Lines	72.74	57.60	93.27	896.72	**1120.33**
2	Substations	15.00	30.67	30.00	58.63	**134.30**
3	Other works	9.08	68.31	0.00	44.36	**121.75**
4	NERPSIP	733.68	0.00	0.00	0.00	**733.68**
Total Asset Addition (in Rs. Crores)		**830.50**	**156.58**	**123.27**	**999.71**	**2110.06**

Commission's Analysis

The fund requirement and capitalization as projected in the petition is approved provisionally excluding the NERPSIP for Rs.733.68 Crore for control period FY 2024-25 to FY 2026-27.

4.3 Details of Schemes

Petitioner's Submission

The details of various schemes which are a part of the CIP are provided in the following sections.

4.3.1 North East Region Power System Improvement Project (NERPSIP)

North Eastern Region Power System Improvement Project (NERPSIP) is being implemented as a Central Sector Scheme through Power Grid Corporation of India Limited (PGCIL). The scheme is funded by the Government of India and the World Bank on 50:50 basis. The scheme comprises of development of Transmission, Sub-Transmission/ Distribution system upto 33 KV. Within Meghalaya, the objective of the scheme is to revitalize the power sector to achieve sustainable development in the long term. The addition of new substations and construction of new lines is required for relieving the existing overloaded lines and substations catering to Shillong, areas of Khasi Hills and GaroHills districts. The added capacity is also required for catering to the growing demand throughout the state.

The total approved cost under tranche-I for Meghalaya for transmission scheme is Rs. 598.73 crore. The date of approval of the project is 01.12.2014. The approved revised cost estimate is Rs.733.68 crores which was approved on 24.12.2020. Most

of the works are completed and the project is expected to be completed by Dec 2023. The works included are as follows:

- Construction of 220 kV double circuit line from Killing (Byrnihat) sub-station to Mawngap (Mawphlang) sub-station and finally up to New Shillong Township (244 circuit km) complete with up-gradation of 132/33 kV Mawngap sub-station to 220/132 kV, 2 x 160 MVA (GIS) Sub station, and a new 220/132 kV, 2 x 160 MVA, &132/33 kV, 2 x 50 MVA sub-stations (GIS) at New Shillong.
- Construction of Loop In Loop Out (LILO) of both circuits of MLHEP – Khliehriat double circuit line (38 circuit km) along with a 132/33 kV, 2 x 50 MVA sub-station at Mynkre.
- Construction of 132 kV double circuit line from Ampati to Phulbari (138 circuit km) along with 132/33 kV , 2 x 50 MVA sub-station at Phulbari.

4.3.2 **Power System Development Fund (PSDF)**

The Government of India has approved a scheme for operationalization of Power System Development Fund (PSDF) in the year 2014. PSDF is a fund constituted under Central Electricity Regulatory Commission (Power System Development Fund) Regulations, 2014to be utilized for the following purpose:

- Transmission systems of strategic importance based on operational feedback by Load Dispatch Centers for relieving congestion in inter-State transmission system (ISTS) and intra-State Transmission Systems which are incidental to the ISTS.
- Installation of shunt capacitors, series compensators and other reactive energy generator for improvement of voltage profile in the Grid.
- Installation of special protection schemes, pilot and demonstrative projects, standard protection schemes and for setting right the discrepancies identified in the protection schemes and for setting right the discrepancies identified in the protection audits on regional basis.
- Renovation and Modernization (R&M) of transmission and distribution system for relieving congestion.
- Any other scheme/ project in furtherance of the above objectives such as

technical studies and capacity building.

Based on decision taken in the in NERPC forum, a third-party audit on protection was carried out in 135 sub-stations and generating stations of NER at 132KV voltage level and above. The teams comprising of members from PGCIL, NEEPCO, NHPC, NERPC and NERLDC was formed. The protection audit of the sub-stations and generating stations in NER was completed in February 2013. The findings of the audit team were discussed in the Commercial Sub-Committee and Protection Sub-Committee meetings of NERPC. Subsequently, the Ministry of Power directed for preparation of the Detail Project Report based on the recommendations of the protection audit team for rectifying the defects. The same was sent to CEA with the request for funding through PSDF or any other sources without any financial burden to the constituents.

In order to further its objectives of having enhanced grid stability, MePTCL plans to carry out Renovation and Upgradation of Protection & Control system with funding available through PSDF. For Meghalaya, the protection audit was carried out in 1 No. 400KV and 19 Nos. 132KV substations/generating stations. The scope of work includes the following:

- Modification in switching scheme
- Replacement of existing EM/static relays by numerical relays/ bay control and protection units and substation automation system (SAS) and providing Time Stamping of Events (TSE), Disturbance Recording (DR) & Events Logging (EL).
- Replacement of old obsolete equipments (Circuit Breakers, Surge Arresters, Isolators, Earthing switches, CTs, PTs/CVTs and materials.
- Establishment of reliable communication link and providing carrier inter-trip facility.
- Improvement in DC system and providing DG sets.
- Improving existing Earthing system.
- Providing required firefighting system.
- Providing modern diagnostic tools.
- Any other improvement required.

This project has been divided into two phases i.e. Phase I which was completed and commissioned in 2021 and Phase II at an estimated cost of Rs.44.36 Crores is being taken up for funding under PSDF.

Ongoing Schemes funded under PSDF to MePTCL are as follows:

- Replacement of the 400 KV, Bus Reactor at 400/220/132 KV Substation, Killing is Sanctioned as a grant under PSDF by MoP vide Letter No. 10/1/2014-OM dated 20.03.2020 for an amount of Rs. 6.86 Crores and is due to be completed by August 2023.
- Re engineering and strengthening by HTLS conductor of 132kV S/C line from Khliehriat to Panchgram is also sanctioned under PSDF by MoP vide letter No. 10/1/2014-OM dated 05.04.2021 for an amount of Rs.42.89 crores is scheduled to be completed by October, 2023.
- Re engineering and strengthening by HTLS conductor of 132kV D/C line from Umiam Stage-I to Stage-III Power Station is also sanctioned under PSDF by MoP vide letter No. 10/1/2014-OM dated 05.04.2021 for an amount of Rs.21.74 crores and the work is completed on 23.12.2022.

Under the PSDF scheme, funding shall be provided to various MePTCL projects such as:

- Re engineering and strengthening of 132 KV D/C LILO of Umtru – Kahelipara Line at Killing with HTLS, with a total capital expenditure of Rs. 45.00 crores will be taken up for funding under PSDF. The project is scheduled to be completed by 31.03.2025.
- Re-conductoring of 132 KV UPS-Sarusajai line with HTLS, with a total capital expenditure of Rs. 40.00 Crores will be taken up for funding under PSDF. The project is scheduled to be completed by 31.03.2026.
- Installation of TLSA along the 132kV D/C Leshka-Khliehriat line, with a total capital expenditure of Rs. 2.16 Crores will be taken up for funding under PSDF. The project is scheduled to be completed by 31.03.2024.
- Renovation and upgradation of Protection & Control System of MePTCL Phase-

II). This project will be funded under Power System Development Fund (PSDF) at an estimated cost of Rs. 44.36 crores and the matter is being pursued with the appraisal committee of PSDF for completion by 2026-27.

- Installation of Reliable Communication & Data Acquisition System upto 132kV at an estimated amount of Rs. 18.51 Crores is being pursued with the appraisal committee of PSDF.
- Re conductoring and strengthening by HTLS conductor of 132kV S/C line: Stage I – Mawlai, Staege I – Umiam, Umiam – NEHU, Khliehriat (MePTCL) – Khliehriat (PG 2) and Mawlai - NEHU at an estimated amount of Rs.25.27 crores is being pursued with the appraisal committee of PSDF for completion by 2025-26.
- Other Central Sponsored Schemes
- Some of the other works in the investment plan have been funded by other central sponsored schemes like NEC and NESIDS. The details are given in Annexure I (a) and I (b).

i. North Eastern Council:

Under the schemes of North Eastern Council (NEC), the funds are available in form of grants to MePTCL.

The following ongoing and projected projects are being implemented under the NEC Scheme:

- Construction of 132 kV double circuit LILO on Mawlai-Cherra line at Mawngap (Mawphlang) sub- station, with a total capital expenditure of Rs. 4.97 crores. The project is scheduled to be completed by 31.03.2024.
- Construction of LILO of the 132 KV D/C line from Stage-III Powerhouse to Umtru Powerhouse on Multi Circuit Towers at Nongpoh along with a Sub station at Nongpoh, with a total capital expenditure of Rs. 53.00 crores is being taken up for funding from NEC. The project is scheduled to be completed by 2025-26
- The projects under the existing Schemes of NEC will accrue socio-economic benefits to the people of North Eastern Region enhancing their capabilities and livelihood.

ii. North East Special Infrastructure Development Scheme (NESIDS):

The North East Special Infrastructure Development Scheme, or commonly known as NESIDS, was sanctioned by the Government of India to focus on projects relating to infrastructure creation concerning water supply, power and connectivity, and thereby enhancing tourism. It also focuses on the social infrastructure of the primary and secondary sectors of health and education. The scheme is to be implemented by the Ministry of Development of North Eastern Region. The projects related to the above-mentioned sectors proposed by the State Governments in North East are being considered, in consultation with the respective line Ministries.

The following projects are being carried out under NESIDS:

- Augmentation of 132/33KV, 2X20 MVA Mawlai substation to 132/33KV, 3x50 MVA substation including re-engineering of the 132 KV Busbar' with capital expenditure of Rs. 49.8 crores. It is scheduled to be completed by March 2025.

4.3.3 **Special Plan Assistance (SPA)**

A number of major infrastructures have been created in the State under this Scheme supported by the erstwhile Planning Commission, Government of India. The details of the ongoing projects and proposed projects under this scheme is presented in **Annexure I (a)** and **Annexure I (b)** respectively.

4.3.4 **State Plan**

A number of major infrastructures have been created in the State under this. The details of the ongoing projects and proposed projects under this scheme is

- Construction of 132kV D/C Rongkhon-Ampati line along with sub station at Praharinagar with a total capital expenditure of Rs. 37.60 crores is scheduled to be completed by 2024-25.
- Construction of 132 KV D/C Nangalbibra – Nangalbibra (ISTS) line with HTLS along with construction of bay & renovation of 132kV Nangalbibra S/s, with a total capital expenditure of Rs.45.67 crores is being taken up with the State Government for funding under State Plan. The project is scheduled to be completed by 31.03.2024.

4.4 External Aided projects

As the project under NERPSIP (Tranche I) with the aid from the Government of India, Government of Meghalaya and World Bank will be completed by 2024, the following projects are being proposed to be taken up as Externally Aided projects:

- Construction of 220kV D/C line from Nangalbibra (ISTS) to New Shillong at an estimated capital cost of Rs.574.02 crores. This project is scheduled to be completed by 2026-27.
- Construction of 132kV D/C line from New Shillong to Sohra Grid Sub station at an estimated capital cost of Rs.222.00 crores. This project is scheduled to be completed by 2026-27.
- Construction of 132kV D/c Killing–Killing (New) line along with 132/33kV, 2*25MVA GIS Sub station at Killing (New) at an estimated capital cost of Rs.70.03 crores. This project is scheduled to be completed by 2026-27.
- Replacement of 132/33kV, 2*20MVA ICTs with 2*50MVA ICTs at NEHU sub station along with re engineering of busbar at an estimated capital cost of Rs.15 crores. This project is scheduled to be completed by 2023-24.
- Replacement of 132/33kV, 2*20MVA ICTs with 2*50MVA ICTs at Mawphlang substation along with re engineering of busbar at an estimated capital cost of Rs.15 crores. This project is scheduled to be completed by 2024-25.

4.5 Schemes under Implementation

There are several schemes which are under implementation currently and have been included in the Capital Investment Plan. The details of the ongoing schemes are attached as Annexure **I (a)**.

4.6 New Schemes: Proposed/ to be Proposed for Implementation

There are several schemes which are envisaged to be implemented in future keeping in view objectives mentioned earlier. For the purpose of CIP, the cost estimates, completion period, start date etc. have been projected based on MePTCL experience. These schemes are highlighted in **Annexure I (b).**

4.7 Funding of Capital Expenditure

MePTCL plans on funding majority of its capital expenditure through grants available under central sponsored schemes and state government funding. The funding for the works with a loan component is envisaged through State Government loans/ Power Finance Corporation/ Rural Electrification Corporation.

Commission's Analysis

Commission considers the status of the various ongoing augmentation works and other improvement works contemplated under central sponsored schemes and external aided projects along with the scheduled completion dates provisionally for the 4th control period FY 2024-25 to FY 2026-27 projected vide para 4.3 to 4.7 of the petition.

4.8 Detailed Investment Plan as per MSERC Formats

Petitioner's Submission

The detailed Capital Expenditure plan for the remaining control period is provided as **Annexure I** as per prescribed format of MSERC vide MYT Regulations, 2014. The CIP includes the ongoing and proposed works under different schemes, total project cost, startand end date of completion of works and its funding pattern.

I (a): Investment Plan for ongoing schemes spilling into FY 2023-24 and FY 2024-25

Sl. No	Project Details: Name of scheme	Project Start Date(DD-MM-YY)	Project Completiondate (DD- MM-YY)	Total Capital Expenditure approved by MSERC/ Govt/ DPR/ FI (Rs. Cr.)	Project outlayin FY 2023-24 (Projected) in Rs. Cr.	Project outlay in FY2024-25 (Projected) in Rs. Cr.	Source of Financing for Scheme: Equity component	Debt Component: Loan amount (Rs. Cr.)	Debt Component: Loan source	Capital Subsidies/ Grants Component (Rs. Cr.)	Funding Agency
A	**Transmission lines on-going works**										
1	Construction of 132 kV double circuit LILO on Mawlai-Cherraline at Mawngap sub- station	22.03.2011	31.03.2024	4.97	1.24			0.497	State Govt	4.47	NEC
2	Construction of 132 kV doublecircuit LILO line of 132 kV Rongkhon-Ampati line at Praharinagar	01.04.2014	30.03.2025	11.93	4.04	4.00		1.193	State Govt	10.74	SPA
3	Re engineering and strengthening of 132kV S/Cline from Khliehriat to Panchgram by HTLS conductor	12.05.2022	October 2023	42.89	4.50					42.89	PSDF
4	Re engineering and strengthening of 132kV D/Cline from Stage I to Stage IIIPower Station by HTLS conductor	12.05.2022	23.12.2022	21.74	2.26					21.74	PSDF
5	Survey for construction of 132kV D/C line from 220/132kV New Shillong to 132/33kV Sohra S/s	2023-24	2023-24	0.221	0.221					0.221	State Plan
6	Survey for construction of 220kV D/C line from 220kVNangalbibra (ISTS) to 220/132/33kV New Shillong S/s	2023-24	2023-24	0.758	0.51					0.758	State Plan
				82.50792	**12.7722**	**4**		**1.6895**		**80.8184**	
B	**Sub-station on-goingworks**										
1	132 kV sub-station at Praharinagar	01.04.2014	30.03.2025	15.67	5.86	5.00		1.57	State Govt	14.11	SPA
C	**Others on-going works**										
	Replacement of the 400 KV,									6.86	PSDF

Sl. No	Project Details: Name of scheme	Project Start Date(DD-MM-YY)	Project Completiondate (DD- MM-YY)	Total Capital Expenditure approved by MSERC/ Govt/ DPR/ FI (Rs. Cr.)	Project outlayin FY 2023-24 (Projected) in Rs. Cr.	Project outlay in FY2024-25 (Projected) in Rs. Cr.	Source of Financing for Scheme: Equity component	Debt Component: Loan amount (Rs. Cr.)	Debt Component: Loan source	Capital Subsidies/ Grants Component (Rs. Cr.)	Funding Agency
2	Bus Reactor at 400/220/132KV Substation, Killing	03.06.2021	31.08.2023	9.08	3.66					2.22	State Plan
3	Augmentation of 132/33KV, 2X20 MVA Mawlai substationto 132/33KV, 3x50 MVA substation including re-engineering of the 33KV Busbar'	01.06.2019	31.03.2027	49.8	26.39	23.41				49.80	NESIDS
				58.88	**30.05**	**23.406**				**58.88**	
D	**NERPSIP**										
1	220 kV double circuit Byrnihat (Killing) – Mawngap – New Shillong line	01.04.2016	31.03.2024	733.68					Govt. of India	733.68	NERPSIP
2	LILO of both circuit of MLHEP-Khliehriat 132 kV double circuit line at Mynkre										
3	132 kV double circuit line from Phulbari to Ampati										
4	220/132 kV sub-station atNew Shillong										
5	220/132 kV sub-station at Mawngap										
6	132 / 33 kV, 2 x 50 MVA sub-station at New Shillong										
7	132/ 33 kV, 2 x 50 MVA sub-station at Mynkre										
8	132/ 33 kV, 2 x 50 MVA sub-station at Phulbari										
				733.68						**733.68**	

I (b): Investment Plan for Proposed Schemes in FY 2024-25 to FY 2026-27

Sl. No	Project Details: Name of scheme	Project Start Date(DD-MM- YY)	Project Completion Date (DD-MM-YY)	Total Capital Expenditure Projected by Govt/ DPR/ FI (Rs. Cr.)	Project outlay in FY2023-24 (Projected)in Rs. Cr.	Project outlay in FY2024-25 (Projected)in Rs. Cr.	Project outlay in FY2025-26 (Projected)in Rs. Cr.	Project outlay in FY2026-27 (Projected)in Rs. Cr.	Source of Financing for Scheme: Equity component	Debt Component: Loan amount (Rs.Cr.)	Debt Component: Loan source	Capital Subsidies/ Grants Component (Rs. Cr.)	Funding Agency
A.	**Transmission Line New works**												
1	Construction of 132kV D/C line from 220/132kV Nangalbibra (ISTS) S/s to 132/33kV Nangalbibra (MePTCL) S/s	2023-24	2023-24	45.67	45.67					4.57	State Govt	41.10	State Plan
2	Construction of 220kV D/C line from Nangalbibra (ISTS) S/s to New Shillong	2023-24	2026-27	574.02		190.00	200.00	184.02				574.02	EAP
3	Construction of 132kV D/C line from 220/132kV New Shillong to 132/33kV Sohra S/s	2023-24	2026-27	222.00		50.00	100.00	72.00				222.00	EAP
4	Construction of the LILO of the 132 KV D/C line from Stage-III Powerhouse to Umtru Powerhouse on Multi Circuit Towers at Nongpoh.	2023-24	2025-26	23.00	6.00	11.00	6.00			2.30	State Govt	20.70	NEC
5	Re engineering & Strengtheningof 132 KV D/C LILO of Umtru – Kahelipara Line at Killing with HTLS conductor	2023-24	2025-26	45.00	13.50	18.00	13.50					45.00	PSDF
6	Re engineering & Strengthening of 132 KV UPS-Sarusajai line withHTLS conductor.	2023-24	2026-27	40.00	5.00	7.00	16.00	12.00				40.00	PSDF
7	Construction of 132kV D/C Killing – Killing (New) line	2025-26	2026-27	11.40			5.40	6.00				11.40	EAP
8	Installation of Transmission Line Surge Arrestor along the 132kV D/C Leshka-Khliehriat line	2023-24	2023-24	2.16	2.16							2.16	PSDF
9	Re conductoring and strengthening of 132kV S/C Transmission lines : Stage I - Mawlai, Stage I - Umiam, Umiam - NEHU, Khliehriat (MePTCL) -	2023-24	2025-26	25.27		20.00	5.27					25.27	PSDF

	Khliehriat (PG2) and Mawlai - NEHU												
10	Re-conductoring of the 132 kV S/C line from Khliehriat to Ratacherra by HTLS conductor (Meghalaya portion)	2024-25	2026-27	49.30		10.00	29.30	10.00				49.3	PSDF
				1037.82	**52.33**	**326.00**	**375.47**	**284.02**		**6.87**		**1030.95**	
B.	**Sub-Station New works**												
1	Replacement of 132/33, 2*20MVA ICTs with 2*50MVA ICTs at NEHU sub-station alongwith reengineering of Bus-bar	2024-25	2024-25	15.00	15.00							15.00	EAP
2	Replacement of 132/33, 2*20MVA ICTs with 2*50MVAICTs at Mawphlang sub-station along with reengineering of Bus-bar	2023-24	2024-25	15.00	10.00	5.00						15.00	EAP
3	Construction of 132/33 KV, 2 x 25 MVA sub-station at Nongpoh.	2023-24	2025-26	30.00		12.00	18.00			3.00	State Govt	27.00	NEC
4	Construction of the 132/33 KV, 2 x 25 MVA GIS sub-station at Killing, Byrnihat	2024-25	2026-27	58.63		28.63	19.50	10.50				58.63	EAP
				118.63	**25.00**	**45.63**	**37.50**	**10.50**		**3.00**		**115.63**	
C.	**Others New Works**												
1	Reliable Communication & Data Acquisition System Upto 132 KV	2023-24	2024-25	18.51		18.51				1.85	State Govt	16.66	PSDF
2	Renovation & upgradation of Protection & Control System along with different Station Equipment in Grid S/s (Phase II)	2023-24	2024-25	44.36		10.00	17.36	17.00				44.36	PSDF
				62.87		**28.51**	**17.36**	**17**		**1.851**		**61.02**	

Commission's analysis:

Commission has examined the capital investment/expenditure plan submitted by the MePTCL.

The Licensee has furnished the breakup of Capitalization and fund requirement vide table no.11 of petition projecting sum total of project cost for Rs.2095.08 Crore instead of Rs.2110.06 Crore.

Commission approves the capital investment/expenditure plan provisionally for Rs.2110.06 Crore of which Rs.2095.08 Crore is considered as Grant as shown in the Scheme wise breakup with the details of funding by way of Govt. Grants and loans vide para 5 Annexure-I

The approval has been considered provisionally keeping in view of the proposed strengthening of intra-state transmission system and distribution system requirement, to provide 24 x 7 Power to All and to meet the demand growth in the state. The yearly capex and capitalization as projected in the petition with reference to the date of completion of the scheme for the 4th control period FY 2024-25 to FY 2026-27 is considered.

Commission approves the scheme-wise capital investment plan for MYT control period of FY 2024-25 to FY 2026-27 as depicted in the table below:

Table 11 : Scheme-wise/work-wise capital investment plan approved for FY 2022-23, FY 2023-24 and MYT control period from FY 2024-25 to FY 2026-27

Investment Plan for ongoing schemes spilling into FY 2023-24 and FY 2024-25

(Rs.in Crore)

Sl. No.	Name of the scheme	Approved Outlay	Source of funding				FY 2022-23		FY 2023-24		FY 2024-25		FY 2025-26		FY 2026-27		Total	
			Equity	Grant	Loan	Total	Capex	Capitalization	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
1	2	3	4	5	6	7=(4+5+6)	8	9	10	11	12	13	14	15	16	17	18=(8+10+12+14+16)	19=(9+11+13+15+17)
A	**Ongoing lines**																	
	Transmission lines																	
1	Construction of 132 kV double circuit LILO on Mawlai-Cherraline at Mawngap sub- station	4.97	-	4.47	0.497	4.97			1.24	0.00							1.24	1.24
2	Construction of 132 kV double circuit LILO line of 132 kV Rongkhon-Ampati line at Praharinagar	11.93	-	10.74	1.193	11.93			4.04	-	4.00	0.00					8.04	8.04
3	Re engineering and strengthening of 132kV S/Cline from Khliehriat to Panchgram by HTLS conductor	42.89	-	42.89	-	42.89			4.50	0.00							4.50	4.50
4	Re engineering and strengthening of 132kV D/Cline from Stage I to Stage IIIPower Station by HTLS conductor	21.74		21.74		21.74		0.00	2.26	0.							2.26	2.26
	Survey for construction of 132kV D/C line from 220/132kV New Shillong to 132/33kV Sohra S/s	**0.221**		0.221		0.221			0.221	0.221							0.221	0.221
	Survey for construction of 220kV D/C line from 220kVNangalbibra (ISTS) to 220/132/33kV New Shillong S/s	**0.758**		0.758		0.758			0.51	0.00							0.51	0.51
	Total	**82.509**		**80.81**	**1.69**	**82.509**			**12.771**	**0.221**	**4.00**						**16.771**	**16.771**

Sl. No.	Name of the scheme	Approved Outlay	Source of funding				FY 2022-23		FY 2023-24		FY 2024-25		FY 2025-26		FY 2026-27		Total	
			Equity	Grant	Loan	Total	Capex	Capitalization	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
1	2	3	4	5	6	7=(4+5+6)	8	9	10	11	12	13	14	15	16	17	18=(8+10+12+14+16)	19=(9+11+13+15+17)
				9														
	Sub-stations on going works																	
5	132 kV sub-station at Praharinagar	**15.67**		**14.11**	**1.56**	**15.67**			**5.86**		**5.00**						**10.86**	**10.86**
	Others ongoing works																	
6	Replacement of the 400 KV, Bus Reactor at 400/220/132KV Substation, Killing	9.08		9.08	-	9.08			3.66								3.66	3.66
7	Augmentation of 132/33KV, 2X20 MVA Mawlai substationto 132/33KV, 3x50 MVA substation including re-engineering of the 33KVBusbar'	49.8		49.80		49.80			26.39		23.41					49.80	49.80	49.80
	Sub-total – Others Ongoing schemes	**58.88**		**58.88**		**58.88**			**30.05**		**23.41**					**49.80**	**53.46**	**53.46**
	NERPSIP																	
10	220 kV double circuit Byrnihat (Killing) – Mawngap – New Shillong line	733.68		733.68		733.68			733.68	733.68							733.68	733.68
11	LILO of both circuit of MLHEP-Khliehriat 132 kV double circuit line at Mynkre																	
12	132 kV double circuit line from Phulbari to Ampati																	
13	220/132 kV sub-station atNew Shillong																	
14	220/132 kV sub-station at Mawngap																	
15	132 / 33 kV, 2 x 50 MVA sub-station at New Shillong																	

Sl. No.	Name of the scheme	Approved Outlay	Source of funding				FY 2022-23		FY 2023-24		FY 2024-25		FY 2025-26		FY 2026-27		Total	
			Equity	Grant	Loan	Total	Capex	Capitalization	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
1	**2**	**3**	**4**	**5**	**6**	**7=(4+5+6)**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18=(8+10+12+14+16)**	**19=(9+11+13+15+17)**
16	132/ 33 kV, 2 x 50 MVA sub-station at Mynkre																	
17	132/ 33 kV, 2 x 50 MVA sub-station at Phulbari																	
	Sub-total – NERPSIP	**733.68**		**733.68**		**733.68**			**733.68**	**733.68**							**733.68**	**733.68**
	SLDC																	
18	Automatic Demand Management System' (ADMS)																	
B	**Upcoming/new schemes**																	
	Transmission Lines - New works																	
1	Construction of 132kV D/C line from 220/132kV Nangalbibra (ISTS) S/S to 132/33kV Nangalbibra (MePTCL) S/S	45.67	-	41.10	4.57	45.67			45.67								45.67	45.67
2	Construction of 220kV D/C line from Nangalbibra (ISTS) S/S to New Shillong	574.02		574.02		574.02					190.00		200.00		184.02		574.02	574.02
3	Construction of 132kV D/C line from 220/132kV New Shillong to 132/33kV Sohra S/S	222.00		222.00		222.00					50.00		100.00		72.00		222.00	222.00
4	Construction of the LILO of the 132 KV D/C line from Stage-III Powerhouse to Umtru Powerhouse on Multi Circuit Towers at Nongpoh.	23.00		20.70	2.30	23.00			6.00		11.00		6.00	23.00			23.00	23.00
5	Re engineering & Strengthening of 132 KV D/C LILO of Umtru – Kahelipara Line at Killing with	45.00		45.00	0.00	45.00			13.50		18.00		13.50	45.00			45.00	45.00

Sl. No.	Name of the scheme	Approved Outlay	Source of funding				FY 2022-23		FY 2023-24		FY 2024-25		FY 2025-26		FY 2026-27		Total	
			Equity	Grant	Loan	Total	Capex	Capitalization	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
1	2	3	4	5	6	7=(4+5+6)	8	9	10	11	12	13	14	15	16	17	18=(8+10+12+14+16)	19=(9+11+13+15+17)
	HTLS conductor																	
6	Re engineering & Strengthening of 132 KV UPS-Sarusajai line with HTLS conductor.	40.00		40.00	0.00	40.00			5.00		7.00		16.00		12.00	40.00	40.00	40.00
7	Construction of 132kV D/C Killing – Killing (New) line	11.40		11.40	0.00	11.40							5.40		6.00	11.40	11.40	11.40
8	Installation of Transmission Line Surge Arrestor along the 132kV D/C Leshka-Khliehriat line	2.16		2.16	0.00	2.16			2.16	2.16	-	-	-	-	-	-	2.16	2.16
9	Re conductoring and strengthening of 132kV S/C Transmission lines : Stage I - Mawlai, Stage I - Umiam, Umiam - NEHU, Khliehriat (MePTCL) - Khliehriat (PG2) and Mawlai - NEHU	25.27		25.27	0.00	25.27					20.00		5.27	25.27	-	-	25.27	25.27
10	Re-conductoring of the 132 kV S/C line from Khliehriat to Ratacherra by HTLS conductor (Meghalaya portion)	49.30		49.30	0.00	49.30					10.00		29.30		10.00	49.30	49.30	49.30
	Total Transmission Lines - New works	**1037.82**		**1030.95**	**6.87**	**1037.82**			**72.33**	**2.16**	**306.00**		**375.47**	**93.27**	**284.02**	**100.70**	**1037.82**	**1037.82**
	Sub-Station New works																	
13	Replacement of 132/33, 2*20MVA ICTs with 2*50MVA ICTs at NEHU sub-station along with reengineering of Bus-bar	15.00		15.00		15.00			15.00								15.00	15.00
14	Replacement of 132/33, 2*20MVA ICTs with 2*50MVA ICTs at Mawphlang sub-station	15.00		15.00		15.00			10.00		5.00						15.00	15.00

Sl. No.	Name of the scheme	Approved Outlay	Source of funding				FY 2022-23		FY 2023-24		FY 2024-25		FY 2025-26		FY 2026-27		Total	
			Equity	Grant	Loan	Total	Capex	Capitalization	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
1	2	3	4	5	6	7=(4+5+6)	8	9	10	11	12	13	14	15	16	17	18=(8+10+12+14+16)	19=(9+11+13+15+17)
	along with reengineering of Bus-bar																	
15	Construction of 132/33 KV, 2 x 25 MVA sub-station at Nongpoh.	30.00		27.00	3.00	30.00					12.00		18.00				30.00	30.00
16	Construction of the 132/33 KV, 2 x 25 MVA GIS sub-station at Killing, Byrnihat	58.63		58.63		58.63					28.63		19.50		10.50	58.63	58.63	58.63
17	**Total Substation New Works**	**118.63**		**115.63**	**3.00**	**118.63**			**25.00**		**45.63**	**30.00**	**37.50**	**30.00**	**10.50**	**58.63**	**118.63**	**118.63**
28																		
	Others New Works																	
29	Reliable Communication & Data Acquisition System Upto 132 KV	18.51		16.66	1.85	18.51					18.51	18.51					18.51	18.51
30	Renovation & upgradation of Protection & Control System along with different Station Equipment in Grid S/s (Phase II)	44.36		44.36		44.36					10.00	44.36	17.36		17.00		44.36	44.36
31	**Total Other Works**	**62.87**		**61.02**	**1.85**	**62.87**					**28.51**	**62.87**	**17.36**		**17.00**		**62.87**	**62.87**
	Sub-total Upcoming/new schemes																	
	Total capital investment	**2110.059**		**2095.089**	**14.97**	**2110.059**			**879.691**	**736.061**	**412.55**	**92.87**	**430.33**	**123.27**	**311.52**	**209.13**	**2034.091**	**2034.091**

Details of Capital Expenditure/Capitalization for the control period

Licensee has not projected correct capex/capitalization breakup figures in the Annexure-I of para 5 of the petition.

In the absence of the year wise capex/capitalization breakup, Commission considers the capital expenditure provisionally as shown below.

Table 12 : Details of Capital Expenditure approved for FY 2023-24 to FY2026-27

Sl. No.	Category	Capital Expenditure (in Rs. Crore)				
		FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	Total as on 31.03.2027
1	Transmission Lines	72.74	57.60	93.27	820.75	**1044.36**
2	Substations	15.00	30.67	30.00	58.63	**134.30**
3	Other works	9.08	68.31	0.00	44.36	**121.75**
4	NERPSIP	733.68	0.00	0.00	0.00	**733.68**
Total Asset Addition		**830.50**	**156.58**	**123.27**	**923.74**	**2034.09**

The above breakup shall be subject to correction after filing of the True up petition for each year of the control period.

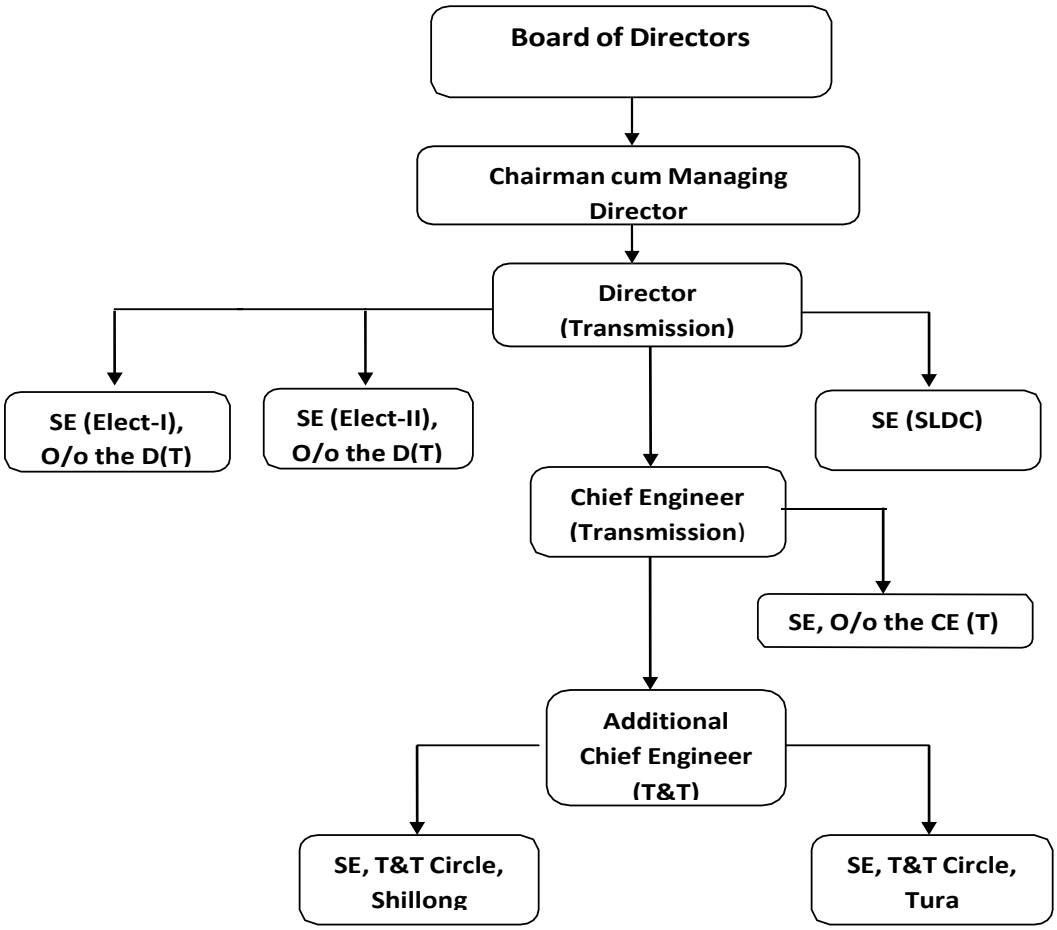
5. Human Resource

Petitioner's Submission

5.1 Organization Structure

MePTCL has its Corporate Office at Shillong. Shri Sanjay Goyal, as CMD, heads the Company. The broad organization chart is shown below:

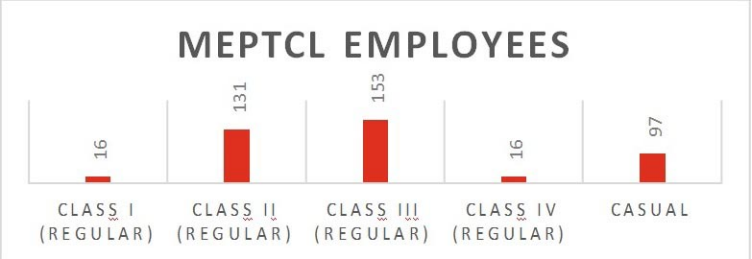
Figure 1: Organization Chart of MePTCL



5.2 Existing Human Resource

As present, MePTCL has 316 regular employees on regular payroll and 97 contractual employees as on 30.06.2023. The class-wise number of Regular & Casual employees of MePTCL and SLDC is highlighted in the graph below:

Figure 2: Employee Details of MePTCL



5.3 Manpower Requirement and Recruitment Plans of MePTCL

With the growing demand, the transmission lines and network has increased and new sub-stations to be commissioned soon, etc. as well as increasing quantity of power to be handled and compliance of several regulations and guidelines, MePTCL would require additional employees to carry out their operation in an efficient manner.

Manpower Requirement Plan of MePTCL

The licensee has planned to recruit personnel which will be engaged in the Sub stations constructed under NERPSIP when the same would be fully operational such as 220/132KV sub-station at Mawphlang & New Shillong, 132/33KV sub-stations at Mynkre & Phulbari as well as fresh recruits for the upcoming 132/33KV sub-stations at Praharinagar, Nongpoh and Killing (New) . The table below represents the financial year wise employee requirement of MePTCL during the control period.

Table 13: Financial Year Wise Employee Requirement for MePTCL for the Control Period from FY 2023-24 (Second Half) to FY 2026-27

Sl. No.	Designation	Requirement			
		FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
Class I					
	Superintending	1			1
1	Executive Engineer (Electrical)	2	-	1	1
	Sub-total (I)	**3**	**-**	**1**	**2**
Class II					
1	Assistant Executive Engineer (Electrical)	3	7	3	2
2	Assistant Engineer (EI)	10	14	1	1
3	Divisional Accounts Officer	4	1	1	1
	Sub-total (II)	**17**	**22**	**5**	**4**
Class III					
1	Junior Engineer (Electrical)	25	26	5	5
2	JDA	18	1	1	1
3	LDA cum Typist	7	1	1	21
	Sub-total (III)	**50**	**29**	**7**	**28**
Class IV					
1	Engineering Subordinate	5	4	23	4
1	Lineman/ Jugali	82	89	14	14
2	Peon	10	1	15	1
3	Sweeper cum Cleaner	10	12	1	1
4	Security Personnels	20	6	6	54
5	LV Drivers	4	1	2	1
	Sub-total (IV)	**131**	**131**	**65**	**77**
	Grand Total (I+II+III+IV)	**283**	**284**	**92**	**125**

5.4 Revision of Pay for MeECL and its Subsidiaries.

Before corporatization, Meghalaya State Electricity Board (MeSEB) had a policy for considering revision of pay scale of employees every 5 years. This policy of revision of pay has continued till date even for the successor entities of MeSEB as per the decision taken by

the Employees Association and the Management in the year 2010.

As per this policy, MeECL and its subsidiary companies are to implement a revised pay scale of employees effective from January 2025 with the following impact.

Table 14 : Impact of RoP 2025 on Employee Expenses

Particulars	Amount (Rs. Cr)
Existing Monthly Employee Costs before ROP 2025	**2.83**
Revised Monthly Employee Costs after ROP 2025	**3.56**
Total Financial Implications due to ROP 2025	**0.72**
% Change in Employee Costs due to ROP 2025	**25.5%**

For the fourth control period MYT, MePTCL will take into account the impact of ROP 2025 in its employee expense projections.

5.5 Capacity Building

In order to meet the increasing demand for electricity, there is a requirement for addition of generating capacity, expansion of associated transmission and distribution networks and upgrading of technology. The challenge to provide power to all requires a corresponding increase, not only in the quantity, but also in the quality of human resources. Hence, the purpose of establishing the Human Resources Development Centre (HRDC) is to ensure that skilled manpower in adequate numbers is made available across various activities of MeECL. The HRDC therefore identifies the skill gaps, frame occupational standards, facilitate development of practical as well as high quality training contents and ensure adequate availability of faculty for capacity building. Thus, training and upgrading the skills of the available manpower is the primary objectives of HRDC.

At the national level, the Central Electricity Authority (CEA) which is a statutory body, was constituted under the Electricity Act to promote measures for advancing the skill of persons engaged in electricity industry. CEA has already setup the standards for mandatory training required for various skill for the generation, transmission, distribution, etc. The CEA has recognized 74 (seventy-four) training institutes throughout the country under the Government and Private Sector, for providing such trainings at various levels.

Three types of training infrastructures and facilities are available for personnel in the power industry:

- Training institutes recognized by CEA for imparting statutory induction training: These training institutes recognized by the CEA, cater to the training needs of personnel

working in thermal power stations, hydro generating stations, transmission utilities and distribution utilities. For example, the National Power Training Institute (NPTI) has established a Centre for Advanced Management & Power Studies (CAMPS) at its Faridabad campus. In addition to several short-term courses on Technology-Management interface, NPTI also conducts professional courses, integrating power-training experience with academics, like PDC & PGDC in Power Plant Engineering and B.E./ B.Tech. in Power Engineering etc. The other institution, the Central Board of Irrigation & Power (CBIP) also conducts power industry interfaced placement oriented long-term training programs in generation, transmission and distribution, besides high-end short term programs in advance technologies in all disciplines of power sector.

- Lineman Training Institutes: Most utilities are having at least one lineman-training center. These institutes are set up by the respective organizations for imparting training to their own employees.
- Other training facility include training program with academic institutions outside power sector.

5.5.1 Statutory training requirement:

The Central Electricity Authority notifies the mandatory training (measures relating to safety and electricity supply) Regulations 2010, specifically the regulations 6 & 7 of the said CEA Regulations 2010. For implementing the above regulations effectively and on rational basis, the CEA has framed guidelines and norms to prescribe the procedure to be followed by CEA/ MoP for recognition and grading of the training institutes for power sector in the country. Presently, following types of training are provided to the workforce in power segment for electricity generation, transmission and distribution personnel. Operation & Maintenance Training to all existing employees engaged in O&M of generating projects and transmission & distribution system ranging from 4 Weeks to 30 Weeks. This includes the classroom training, Simulator training for Thermal & Hydro and On-Job training.

- Induction level training for new recruits for 1 month (Technical & Non-Technical).
- Refresher/Advanced training of 5 Days in a year to all existing personnel of varying degrees in various specializations in line with National Training Policy for Power Sector.
- Management training of 5 Days in a year to the senior Executives/Managers in

India/abroad in line with National Training Policy for Power Sector.

- Distance Learning Certificate Programs on Power Distribution Management for JEs/ AEs.
- Certificate of Competency in Power Distribution (CCPD).
- Training under Distribution Reforms, Upgrades and Management (DRUM). C&D Employees Training (Non-executives in secretarial staff, accounts wing, technical staff in non executives and Class-IV are categorized as C&D employees).
- Franchisee Training.

5.5.2 Capacity Building in Meghalaya Energy Corporation Limited (MeECL)& Its Subsidiaries – Human Resource Development

Human Resources Development Centre (HRDC), Umiam, MeECL is entrusted with the training for the officers and staffs of the 3 (three) subsidiary corporations of MeECL, namely, Meghalaya Power Generation Corporation Limited (MePGCL), Meghalaya Power Transmission Corporation Limited (MePTCL) and Meghalaya Power Distribution Corporation Limited (MePDCL). Details of trainings conducted in FY 2022-23 and FY 2023-24 for the officers is given below:

Table 15 : Training Details for FY 2022-23

Sl No	Name of Institution	Field of Training (Thermal/Hydro/Transmission)Distribution/Management	Total Trainings
1	EngineeringStaffCollege of India	Engineering Staff College of India "Best practices in O&M ofHydro Power Plants"(for MePGCL, MePDCL, MePTCL) Total Personnel=12	12x14 Days
2	M/s DGM & Associates	M/s DGM & Associates Consultants Technical & Accounts"Preparation of Cost records"	118x 4Days
3	BOP(ER)	Apprenticeship Training for Engineering stream	20x365 Days
4	BOP(ER)	Apprenticeship Training for General Stream	13x 365 Days
5	MeECL	Refresh Course Programme for Accounts Wings from 16th ,17th & 19th March,2022, 22nd to 24th March, 2022, and 14th to 16th June2022 Total Personnel =68	68x12days
6	Directorate of Accounts and Treasuries , Lachumiere, Shillong	e-Procurement System held on 14.04.2022Total Personnel =5	5x1Day
7	Meghalaya State Disaster Management Authority, Shillong	Long Term Recovery and Reconstruction Strategies held from 30.05 to 03.06.2022 Total Personnel=2	2x5Days
8	M/s SIEMENS	PSS& E & Training held from the 27th June to 29th June, 2022Total Personnel=9	9x3Days
9	NPTI, Faridabad	Basic Level Training and Certification Program on Cyber Securityheld from the 27th June 2022 to 8th July, 2022 Total personnel=2	2x10Days
10	PGCIL, Shillong	CERC Tariff Regulations held on the 15th July, 2022Total Personnel=21	21x1 Day
11	Department of Expenditure, Ministryof Finance	Online Training Programme on PFMS held on the 12th ,25th and 29th August 2022 Total Personnel=8	8x8 Days
12	NPTI-NER, Guwahati	Contract Management, Electrical Safety and Inspection of Electrical Installation under IE Norms, Maintenance & Protection of Transformers and Distribution Metering held on 25.08.2022 to 26.08.2022, 22.08.2022 to 24.08.2022, 18.08.2022 to 19.08.2022 and 16.08.2022 to 20.08.2022 Total Personnel=8	8x12 Days

13	NPTI-NER, Guwahati	Online Training Programme on Open Access, Power Trading, Tariff, ABT and Forecasting held from the 21st November 2022 to25th November, 2022 Total Personnel=5	5x5 Days
14	NPTI-NER, Guwahati	Online Training Programme on Open Access, Power Trading, Tariff, ABT and Forecasting held from the 12.12.2022 to16.12.2022 Total Personnel=5	4x5 Days
15	IEEMA, New Delhi	ELECRAMA -2023 Exhibition held from 21st to 22nd February,2023 Total Personnel=2	2x2 Days
16	NPTI-NER, Guwahati	Operation and Maintenance of Transmission System held from the 6th to 10th February, 2023 Total Personnel=10	10x5 Days
17	Meghalaya StateDisaster Management Authority, Shillong	Technological Innovation in Weather forecasting, Early warningand last Mile Connectivity held from the 14th to 16th March,2023 Total Personnel=2	2 x 5 Days
18	M/s FIBCOM	Training on SDH Equipment and its associated systems held from the 15th to 17th March, 2023 Total Personnel=3	3x3 Days

Table 16 : Training Details for FY 2023-24 (As on June)

Sl No	Name of Institution	Field of Training (Thermal/Hydro/Transmission) Distribution/Management	Total Trainings
1	NPTI-NER Guwahati	Operation & Maintenance of Transmission System held from the 24th to 28th April 2023 Total Personnel=15	15x 5 Days
2	M/s PWC	SAMAST User Training Session held from the 8th to 10th May, 2023 Total Personnel=20	20x3 Days
3	NPTI-NER Guwahati	Operation & Maintenance of Transmission System held from the 22nd to 26th May, 2023, Total Personnel =15	15x 5 Days
4	NPTI-NER Guwahati	One week capacity building Programme " Open Access, Power Trading, Tariff & Forecasting" from the 5th to 9th June,2023 Total Personnel=8	5x5 Days
5	NPTI-NER Guwahati	One week capacity building Programme " Operation and maintenance system" from 26th to 30th June 2023 Total Personnel=12	12x 5 Days
6	NESAC	Course on development of geospacial dashboard & mobile applications and geo wed analytical tools from 17th to 21st July 2023 at NESAC outreach centre	5*6=30
7	MATI	Awareness Programme on "Legal Awareness on Woman & Child" from the 20th June, 2023	1*2=2

Human Resources Development Centre (HRDC), Umiam, MeECL is entrusted with the training for the officers and staffs of the three subsidiary corporations of MeECL, namely, MePGCL, MePTCL and MePDCL. Various initiatives taken for capacity building are highlighted as below:

- Capacity building under World Bank Project - The World Bank has proposed funding for capacity building for MePTCL and MePDCL for the next three years. Proposal under this scheme is being prepared by the nodal officers of the two corporations, namely, Chief Engineer (Transmission) & Chief Engineer (Distribution).
- Capacity building in various Training Institutes - Officers from the three subsidiary corporations are being sent regularly to free training programme organized by various training institutes like National Power Training Institute (NPTI), Indian Institute of Technology (IIT), Roorkee, National Thermal Power Corporation Limited (NTPC) and

many more. For such training, the respective corporations bear the expenditure of travelling and boarding only.

- Capacity building through own resources -The capacity building measures mentioned above are required to be supplemented by training programmes specifically required for the three corporations. These include training for field engineers in technical areas, management and human relationships, among others. For such training programmes, funding is being allocated in the budget of the respective corporations.

5.6 Way forward

In accordance with the CEA Guidelines & Apprentices Act, the HRDC, MeECL has been imparting On-the-job training, Induction training, C&D Trainings, R-APDRP Trainings, trainings on behavioral attitudes, etc as required. The HRDC is striving to develop the entire human resources of MeECL by meeting the growing and evolving demands of the technological advancement.

Commission's Analysis

The capacity building is part of the operational efficiency of the utility to be achieved. MePTCL shall ensure improve the performance of the utility by providing training to the existing personnel in the advanced technologies within the available resources and attain the performance parameters laid down by CEA/MOP.

The Projection of impact of Revision of Pay for 01.01.2025 to 31.03.2027 is part of the O&M expenses to be Regulated as per the MYT Regulations 2014, no specific approval in the business plan shall be considered.

Sd/-

Shri. R.K. Soni, District Judge (Retd.)

Member

Sd/-

Shri P.W.Ingty, IAS(Retd)

Chairman