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. 16/2020

In the matter of:

Approval of Business Plan for the Control Period from FY 2021-22 to FY 2023-24.

And

Meghalaya Power Distribution Corporation Limited …….. **Petitioner**

Coram

Shri. P.W Ingty, IAS (Retd)
Chairman

Shri. Roland Keishing
Member

ORDER

Date: 09.10.2020

1. The Meghalaya Power Distribution Corporation Limited (herein after referred to as MePDCL) 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 distribution of electricity in the State of Meghalaya.
2. In exercise of powers conferred by clause (Zc), (Zd) and (Ze) of sub-section 2 of section 18, read with sections 61, 62, 64, 65 and 86 of the Act and all other powers enabling on that behalf and after previous publication, the Meghalaya State Electricity Regulatory Commission (here in after referred to as MSERC or Commission) issued MSERC (Multi-Year Tariff) Regulations, 2014 (herein after referred to as MYT Regulations, 2014).
3. The Commission has amended and substituted the sub-Regulation 1.4 of MYT Regulations, 2014 as reproduced below:

   "1.4. These Regulations shall be applicable for the determination of Tariff in all cases covered under these Regulations effective from 1st April, 2015 onwards to 31st March, 2018 and also for the next MYT Control Period beginning from 1st April, 2018 to 31st March, 2021".

Further the Commission has amended via notification dated 18th June, 2020 as below:

"The applicability of these Regulations is here by extended for a further period of 3 years with effect from 01-04-2021 to 31-03-2024 onwards"

4. As per provisions of sub-Regulations 1.4 (amended) and Regulations 8 and 78 of MYT Regulations, 2014, MePDCL has filed the Petition for approval of its Business Plan for the 3rd Control Period of FY 2021-22 to FY 2023-24 with details 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 detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets.
6. In exercise of powers vested in Clause 8.4 under Regulation 8 of MYT Regulations, 2014, this order is passed by the Commission, approving the Business Plan for three years of the 3rd Control Period of FY 2021-22 to FY 2023-24, based on the information submitted by MePDCL.
7. MePDCL shall submit the MYT Petition for Control Period from FY 2021-22 to FY 2023-24 on or before 30th November, 2020 in accordance with Regulation 18 of MYT Regulations, 2014.
8. This Order shall be placed on the website of the Commission and a copy shall be sent to MePDCL and MeECL.

Sd/-
Shri. Roland Keishing
Member

Sd/-
Shri. P.W Ingty, IAS (Retd)
Chairman

1. Introduction

1.1. Meghalaya Power Distribution Corporation Limited (MePDCL)

MePDCL is a distribution licensee within the meaning of section 2(17) of Electricity Act, 2003. MePDCL started functioning as an independent commercial entity from 1st April, 2013 after unbundling of the erstwhile Meghalaya State Electricity Board (MeSEB) as per the State Government Notification; "The Meghalaya Power Sector Reforms Transfer Scheme 2010". As per Meghalaya Power Sector Transfer Scheme, MePDCL has been vested with the function of distributing power by the State Government of Meghalaya and the Business Scope of the Company falls within the legal framework as specified in the Act and can include:

- To supply electricity on an application of the consumer in accordance with the provisions specified in the Electricity Act 2003
- To develop the required distribution infrastructure within the State of Meghalaya to meet the demand of the consumers
- To operate & maintain the existing distribution infrastructure efficiently & effectively
- Merchant Sale of Power in the event of availability of surplus power after meeting the requirement of own consumers with whom the capacity is contracted presently

1.2. Meghalaya State Electricity Regulatory Commission (MSERC)

MSERC is an independent statutory body constituted under the provisions of the Electricity Regulatory Commission Act, 1998 which was superseded by Electricity Act, 2003.

The Commission is vested with the authority of regulating the power sector in the State inter alia, including determination of Tariff of electricity consumers.

1.3. MSERC (Multi Year Tariff)Regulations, 2014

In exercise of the powers conferred by clauses (Ze), (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 on that behalf and after pervious publications, the

Commission has issued the Meghalaya State electricity Regulatory Commission (Multi-Year Tariff) Regulations, 2014.

The Commission has amended and substituted the Regulation 1.4 of the above Regulations as reproduced below:

"1.4. These Regulations shall be applicable for the determination of tariff in all cases covered under these regulations effective from 1st April, 2015 and onwards upto 31st March, 2018 and also for the 31st March, 2018 and also for the next MYT Control Period beginning from 1st April, 2018 to 31st March, 2021".

Further the Commission amended via notification dated 18th June, 2020 as below:
"The applicability of these Regulations is here by extended for a further period of 3 years with effect from 01-04-2021 to 31-03-2024 onwards"

1.4. Petition for Approval of Business Plan for the Control Period FY 2021-22 to FY 2023-24

As per the above amended Regulation 1.4 and Regulations 8 & 78 of the MYT Regulations, 2014, MePDCL has to file a Business Plan for the third Control Period of FY 2021-22 to FY 2023-24. The relevant Regulations are reproduced below:

"8 Business Plan

8.1 The Generating Company, Transmission licensee, and Distribution Licensee for Distribution Business, shall file a Business Plan for the Control Period of three (3) financial years from 1st April 2015 to 31st March 2018, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, 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 Generating Company, Transmission Licensee and Distribution Licensee 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 show separately, on-going projects that will spillover 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 Generating Company, Transmission Licensee, and Distribution Licensee for the Distribution Business, may be required to provide relevant technical and commercial details.

8.3 The Distribution Licensee shall project the power purchase requirement based on the Merit Order Dispatch principles of all Generating Stations considered for power purchase, the Quantum of Renewable Purchase Obligation (RPO) under Meghalaya State Electricity Regulatory Commission (Renewal Energy Purchase Obligation and Compliance) Regulations, 2010 and the target set, if any, for Energy Efficiency (EE) and Demand Side Management (DSM) schemes.

8.4 The Generating Company, Transmission Licensee, and Distribution Licensee for the Distribution Business, shall get the Business Plan approved by the Commission.

78 Business Plan

78.1 The Distribution Licensee shall submit a Business Plan full details as stipulated by the Commission from time to time and in the manner specified in Chapter 2 of these Regulations. The business plan shall comprise among other details like capital investment plan, financing plan and fiscal targets in accordance with the guidelines/formats as may be stipulated by the Commission from time to time."

1.5. Approach of the Order

The MSERC Multi-Year Tariff Regulations, 2014 provides for approval of Business Plan of MePDCL for the three years Control Period FY 2021-22 to FY 2023-24. MePDCL has filed the petition before the Commission for approval of Business Plan for MYT Control Period FY 2021-22 to FY 2023-24 on 08.09.2020.

The Commission has examined the petition and taken on record as Case No ……../2020. The Commission has undertaken approval of Business Plan for the Control Period FY 2021-22 to FY 2023-24 based on the MYT Regulations, 2014.

1.6. Contents of the Order

This Order is in three Chapters as detailed below:

Chapter 1: Introduction

Chapter 2: Summary of Business Plan submitted by the Petitioner for Control Period FY 2021-22 to FY 2023-24

Chapter 3: Approval of Business Plan for Control Period FY 2021-22 to FY 2023-24.

2. Summary of Business Plan Petition for Control Period FY 2021-22 0to FY 2023-24

2.1. Business Plan Petition

MePDCL has submitted the petition on 08.09.2020 seeking approval of Business Plan for the Control Period FY 2021-22 to FY 2023-24. The summary of the Business Plan petition is as detailed under.

2.2. Category-wise Energy Sales

MePDCL has projected the category-wise energy sales for FY 2019-20 (Actual) and projections for FY 2020-21 and for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 2.1: Energy Sales

Categories	FY 2019-20 (MU)	Growth Rate Considered (%)	FY 2020-21 (P) (MU)	FY 2021-22 (P) (MU)	FY 2022-23 (P) (MU)	FY 2023-24 (P) (MU)
LT Category						
Domestic LT	392.56	1.02%	396.57	400.62	404.71	408.85
Commercial LT	71.76	2.50%	73.55	75.39	77.27	79.20
General Purpose	17.52	0.00%	17.52	17.52	17.52	17.52
Industrial LT	5.84	2.07%	5.96	6.09	6.21	6.34
Water Supply LT	10.02	8.40%	10.86	11.78	12.77	13.84
Kutir Jyoti	48.50	As per Connected Load Increase	72.98	85.11	86.55	87.42
Public Lighting	0.12	0.00%	0.12	0.12	0.12	0.12
Agriculture	0.31	36.42%	0.43	0.59	0.80	1.09
Crematorium	0.19	3.37%	0.19	0.20	0.21	0.21
HT Category						
Commercial HT	27.43	0.53%	27.58	27.72	27.87	28.02
Domestic HT	24.13	1.39%	24.46	24.80	25.14	25.49
Industrial HT	160.74	3.00%	165.56	170.53	175.64	180.91
Ferro Alloy HT	32.66	3.00%	33.64	34.64	35.68	36.75
Water Supply HT	31.84	1.55%	32.33	32.84	33.35	33.86
Bulk Supply	84.86	6.89%	90.71	96.96	103.64	110.78
EHT Category						
Industrial EHT	51.68	Average of Consumption in 15-16 to 18-19	116.34	116.34	116.34	116.34
Ferro Alloy EHT	299.32	3.00%	308.30	317.55	327.08	336.89
Total Sale	**1,259.48**		**1,377.11**	**1,418.79**	**1,450.90**	**1,483.63**

2.3. Category-wise number of consumers and connected load

MePDCL has projected the category-wise number of consumers and connected load for FY 2019-20 (Actual) and projections for FY 2020-21 and the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 2.2: Category-wise number of Consumers and Connected Load

Sl. No	Consumer category	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
		No. of cons.	Connected load (MVA)	No. of cons.	Connected load (MVA)	No. of cons.	Connected load (MVA)	No. of cons.	Connected load (MVA)	No. of cons.	Connected load (MVA)
A	**LT Category**										
1	Domestic (DLT)	327754	417.41	335758	445.27	343957	475	352356	506.69	360961	540.51
2	Commercial (CLT)	28784	72.6	30204	75.95	31693	79.45	33256	83.12	34897	86.95
3	Industrial (ILT)	695	11.35	695	11.35	695	11.35	695	11.35	695	11.35
4	Agriculture (Ape)	112	0.28	160	0.28	228	0.28	326	0.28	465	0.28
5	Public Lighting (PL)	57	0.43	59	0.44	60	0.46	62	0.47	64	0.49
6	Water Supply (WSLT)	436	6.86	455	7.05	476	7.24	497	7.44	519	7.64
7	General Purpose (GP)	2421	15.27	2456	15.5	2492	16.69	2528	17.97	2565	19.34
8	Kutir Jyoti (KJT)	141677	50.39	226477	75.83	268477	88.43	273477	89.93	276477	90.83
9	Crematorium (CRM)	1	0.15	1	0.15	1	0.15	1	0.16	1	0.16
	Sub Total	501937	575	596265	631.82	648080	679.1	663199	717.41	676643	757.56
B	**HT Category**	0	0								
1	Domestic HT	86	18.47	90	19.38	95	19.79	99	20.21	104	20.64
2	Water Supply (WSHT)	27	8.37	27	8.37	27	8.79	27	9.23	27	9.69
3	Bulk Supply (BS)*	208	45.89	222	48.93	236	49.04	252	49.16	269	49.27
4	Commercial (CHT)	167	29.37	167	29.37	167	30.43	167	31.53	167	32.67
5	Industrial (IHT)	132	135.4	132	135.4	132	150.3	132	166.87	132	185.25
6	Ferro Alloy (FAHT)		10		10		10.3		10.61		10.93
	Sub Total	620	248	638	251.45	657	268.7	677	287.6	699	308.44
C	**EHT Category**										
1	Industrial	8	10.7	9	11.5	9	11.5	10	11.5	11	11.5
2	Ferro Alloy		56		56		57.68		59.41		61.19
	Sub Total	8	66.7	9	67.5	9	69.18	10	70.91	11	72.69
	Grand Total	**502565**	**888.96**	**596911**	**950.78**	**648746**	**1017**	**663886**	**1075.9**	**677353**	**1138.69**

2.4. Loss Trajectory

MePDCL has submitted the Distribution loss trajectory actual for FY 2017-18 and provisional for FY 2018-19 and for FY 2019-20 and estimated for FY 2020-21 and projections for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 2.3: Distribution Loss Trajectory

Particulars	FY 2017-18 (Actuals)	FY 2018-19 (Provisional)	FY 2019-20 Provisional)	FY 2020-21 (Estimated)	2021-22 (Projected)	2022-23 (Projected)	2023-24 (Projected)
T&D Loss	34.93%	32.55%	26.90%	25.40%	23.90%	22.90%	21.90%

MePDCL has submitted the Collection Efficiency projections for FY 2020-21 and for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below.

Table 2.4: Collection Efficiency

Particulars	FY 2020-21 (Estimated)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Collection Efficiency	96.00%	96.50%	97.00%	97.50%

MePDCL has submitted the Aggregate Technical and Commercial (AT&C loss) trajectory projections for FY 2020-21 and for the control period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 2.5: AT&C Loss Trajectory

Particulars	FY 2020-21 (Estimated)	2021-22 (Projected)	2022-23 (Projected)	2023-24 (Projected)
AT&C Loss	28.38%	26.56%	25.21%	23.85%

2.5. Power Procurement

MePDCL has submitted the Power (in MW) and Energy (in MU) availability from various long term sources for FY 2019-20 (Actual) and projections for FY 2020-21 and for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 2.6 Source-wise Power Availability (MW)

Sl No	Name of Station	Capacity (MW)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)
			2019-20		2020-21		2021-22		2022-23		2023-24	
A	**MePGCL**											
1	Umiam I	4X9	36	107.31	36	116.68	36	116.68	36	116.68	36	116.68
2	Umiam II	2X10	20	54.91	20	45.55	20	45.55	20	45.55	20	45.55
3	Umiam III	2X30	60	140.97	60	139.28	60	139.28	60	139.28	60	139.28
4	Umiam IV	2X30	60	163.38	60	207.61	60	207.61	60	207.61	60	207.61
5	MLHEP	3X42	126	417.87	126	485.65	126	485.65	126	485.65	126	485.65
6	Umtru	4X2.8	11.2	-0.06	11.2	44.15	11.2	44.15	11.2	44.15	11.2	44.15
7	Sunapani	1X1.5	1.5	3.55	1.5	5.52	1.5	5.52	1.5	5.52	1.5	5.52
8	New Umtru	2X20	40	180.15	40	180.46	40	180.46	40	180.46	40	180.46
9	Ganol	2X12.5	21.5	0	21.5	54.75	21.5	54.75	21.5	54.75	21.5	54.75
10	Lakroh	1X1.5	1.5	2.08	1.5	11.01	1.5	11.01	1.5	11.01	1.5	11.01
Sub Total MePGCL		**381.2**	**377.7**	**1070.2**	**377.7**	**1290.7**	**377.7**	**1290.7**	**377.7**	**1290.7**	**377.7**	**1290.7**
B	**NEEPCO**											
1	KOPILI	200	35.05	107.23	35.05	82.23	35.05	82.23	35.05	82.23	35.05	82.23
2	KOPILI-Ext	25	3.45	12.63	3.45	8.48	3.45	8.48	3.45	8.48	3.45	8.48
3	KHANDONG	50	8.51	27.14	8.51	17.53	8.51	17.53	8.51	17.53	8.51	17.53
4	RANGANADI	405	47.1	126.91	47.1	131.25	47.1	131.25	47.1	131.25	47.1	131.25
5	DOYANG	75	8.69	19.18	8.69	23.65	8.69	23.65	8.69	23.65	8.69	23.65
6	AGBPP	291	34.74	161.19	34.74	187.65	34.74	187.65	34.74	187.65	34.74	187.65
7	AGTPP CC	130	16.57	90	16.57	119	16.57	119	16.57	119	16.57	119
8	Pare	2x55	14	53.55	14	42.92	14	42.92	14	42.92	14	42.92
9	Kameng	4x150	15	0	15	45.99	15	45.99	15	45.99	15	45.99
Sub-Total NEEPCO		**1176**	**183**	**598**	**183**	**659**	**183**	**659**	**183**	**659**	**183**	**659**
C	**NHPC-Loktak**	**105**	**0**	**0**	**0**	**0**	**13.14**	**40.28**	**13.14**	**40.28**	**13.14**	**40.28**
D	**OTPC-**	**726**	**78.99**	**400.63**	**78.99**	**436.79**	**78.99**	**436.79**	**78.99**	**436.79**	**78.99**	**436.79**

Sl No	Name of Station	Capacity (MW)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)
			2019-20		2020-21		2021-22		2022-23		2023-24	
	Pallatana											
E	**NTPC**											
1	BTPS	250	90.78	0	90.78	0	90.78	0	90.78	0	90.78	0
2	FSTPS	1600	10.84	0	10.84	0	10.84	0	10.84	0	10.84	0
3	KHSTPS-I	840	5.69	0	5.69	0	5.69	0	5.69	0	5.69	0
4	KHSTPS-II	1500	20.33	0	20.33	0	20.33	0	20.33	0	20.33	0
5	TSTPS-I	1000	6.78	0	6.78	0	6.78	0	6.78	0	6.78	0
Sub -Total NTPC		**5190**	**134.43**	**0**	**134.43**	**0**	**134.43**	**0**	**134.43**	**0**	**134.43**	**0**
TOTAL		**7578**	**774**	**2069**	**774**	**2386**	**787**	**2426**	**787**	**2426**	**787**	**2426**

2.6. Energy Balance

Based on the energy sales projected, the energy availability projected, MePDCL has projected the energy balance for FY 2020-21 and for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 2.7: Energy Balance

Sr. No.	Particulars	Calculation	FY 2020-21 (Estimated)	2021-22 (Projected)	2022-23 (Projected)	2023-24 (Projected)
1	Power purchased from the Eastern Region (ER)	A	0	0	0	0
2	Inter-state transmission loss for ER	B	1.80%	1.80%	1.80%	1.80%
3	Net power purchased from the ER	C=A*(1-B)	0.00	0.00	0.00	0.00
4	Power purchased from the North -Eastern Region (NER)	D	1095.49	1095.49	1095.49	1095.49
5	Inter-state transmission loss for NER	E	3.00%	3.00%	3.00%	3.00%
6	Net power available at state bus from external sources on long term	F=(C+D)* (1-E)	1,062.62	1,062.62	1,062.62	1,062.62
7	Power purchased from generating stations within the state	G	1290.67	1290.67	1290.674	1290.674
8	Power purchased from other sources	H				
	Total Availability at MePDCL Periphery	**I=F+G+H**	**2353.30**	**2353.30**	**2353.30**	**2353.30**
9	Power to be sold to consumers within the state (including ASEB)	J	1377.11	1418.79	1450.90	1483.63
10	Transmission & Distribution Losses (%)	K	25.40%	23.90%	22.90%	21.90%
11	Net power requirement at state bus for sale of power within the state	L=J/(1-K)	1846.00	1864.37	1881.84	1899.66
12	Surplus Power (for sale outside state)	M = I - L	**507.30**	**488.93**	**471.46**	**453.64**

2.7. Capital Investment

MePDCL has submitted that the capital expenditure for the control period FY 2021-22 to FY 2023-24 has been prepared keeping in view various long term needs and

areas. The summary of the proposed projects and cost are as shown in the Table below:

Table 2.8: Summary of Project Costs

Schemes	Project Cost (Rs. Cr)	Funding Pattern (Rs. Cr)			
		Equity	Loan	Grant	Consumer Contribution
1) New Schemes*					
IPDS Phase II: IT & ERP Implementation	44.59		2.23	42.36	
MePSIP under ADB Funding	1143.00			1143.00	
State Government Funded Schemes	119.95			119.95	
Rooftop Solar Programme	1.63		0.65	0.98	
Total	**1309.17**		**2.88**	**1306.29**	
*includes scheme starting in FY 2020-21 (2nd half) also					
2) Ongoing Schemes					
Saubhagya	657.06			657.06	
Deendayal Upadhyaya Gram Jyoti Yojna	276.54			276.54	
Indo Bangla Border Flood Lighting	147.63				147.63
IPDS Phase I	20.89		1.04	19.85	
Additional Special Plan Assistance (ASPA)	5.79			5.79	
NEC	5.70			5.70	
Total	**1113.61**		**1.04**	**964.94**	**147.63**

2.8. Funding Requirement

MePDCL has proposed the year-wise funding requirement for the projected capital expenditure for FY 2020-21 and for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 2.9: Funding Requirement

Sl. No.	Category	2020-21	2021-22	2022-23	2023-24	Total
1	IPDS	6.27	14.86	14.86	14.86	**50.86**
2	Saubhagya	173.00				**173.00**
3	MePSIP under ADB Funding		378	377	387	**1142.00**
4	State Government Funded		28.89	49.77	27.74	**106.40**
5	DDUGJY	63.29				**63.29**
6	Indo Bangla Border Flood Lighting	59.20				**59.20**

Sl.	Category	2020-21	2021-22	2022-23	2023-24	Total
7	NEC	2.64				**2.64**
8	Rooftop Solar Program	0.82				**0.82**
9	Additional Special Plan Assistance (ASPA)	2.90	2.90			**5.79**
Total Fund Requirement (Distribution)		**308.11**	**424.65**	**441.64**	**429.60**	**1603.99**

2.9. Prayer to the Commission

MePDCL has requested the Commission to pass appropriate order on the following:

a) Approval of Business Plan for the Control Period of FY 2021-22 to FY 2023-24

b) To approve the principles and methodology proposed by MePDCL.

c) To pass such orders, as Hon'ble Commission may deem fit and proper and necessary in view of the facts and circumstances of the case.

d) To condone any inadvertent omissions, errors & shortcomings and permit the applicant to add/change/modify/alter this filing and make further submissions as required.

3. Business Plan for Control Period FY 2021-22 to FY 2023-24

3.1. Business Plan for Control Period FY 2021-22 to FY 2023-24

Petitioner's Submission

MePDCL submitted that the Business Plan for the Control Period FY 2021-22 to FY 2023-24 is developed bearing in mind the growth plan for the control period after considering the strength and weakness of the company and evaluating its business environment. MePDCL 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. There are 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. Due to changing business environment and uncertainty over the regulations governing the Distribution business, the 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.

MePDCL submitted that the present infrastructure of the Licensee in terms of lines and substations as on 31.03.2020 are as outlined in the table below:

Table 3.1: Key Achievements as on 31.03.2020

Details	Units	As on 31.03.2020
Number of 33/11 KV Sub-Stations	No.	101
Capacity of 33/11 KV Sub-Stations	No.	578.36
Length of 33 KV Lines	No.	2291.564
Number of 11/0.4 KV Sub-Stations	No.	11088
Capacity of 11/0.4 KV Sub-Stations	MVA	2489.778
Number of 11/0.24 KV Sub-Stations	No.	294
Capacity of 11/0.24 KV Sub-Stations	MVA	213.003
Length of 11. KV Lines	CKm	15244.93
Total No. of Distribution Transformers	No.	11406
Length of LT Lines	CKm	21254

3.2. Human Resource

Petitioner's Submission

3.2.1 Existing human Resource of MePDCL

MePDCL has submitted that currently they have 1831 nos. Regular employees on Regular payroll and 1053 nos. Casual employees as on 31.03.2020. The class-wise number of Regular & Casual employees is highlighted in the graph below:

Category	Class I	Class II	Class III	Class IV
Regular	64	147	726	894
Casual	-	-	526	527

3.2.2 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 identify 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 manpower is the primary objectives of HRDC.

3.2.3 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).

In accordance with the CEA Guidelines & Apprentices Act as stated above, the HRDC, MeECL has been imparting On-the-job training, Induction training, C&D 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.

Details of trainings conducted in FY 2019-20 and FY 2020-21 for the officers is attached as Annexure – B

3.3. Consumer Categories

MePDCL serves over 5.02 lakh consumers in its licensed area as on 31.03.2020 and the consumers are broadly categorised as under.

Sl. No.	Category
	LT Category
1	Domestic (DLT)
2	Commercial (CLT)
3	Industrial (ILT)
4	Agriculture (AP)
5	Public Lighting (PL)
6	Water Supply (WSLT)
7	General Purpose
8	KutirJyoti
9	Crematorium
	HT Category
10	Domestic (DHT)
11	Water Supply (WS HT)
12	Bulk Supply
13	Commercial (CHT)
14	Industrial (IHT)
15	Ferro Alloy (CFA HT)
	EHT Category
16	Industrial
17	Ferro Alloy

3.4. Past Demand Growth within the State

Petitioner's Submission

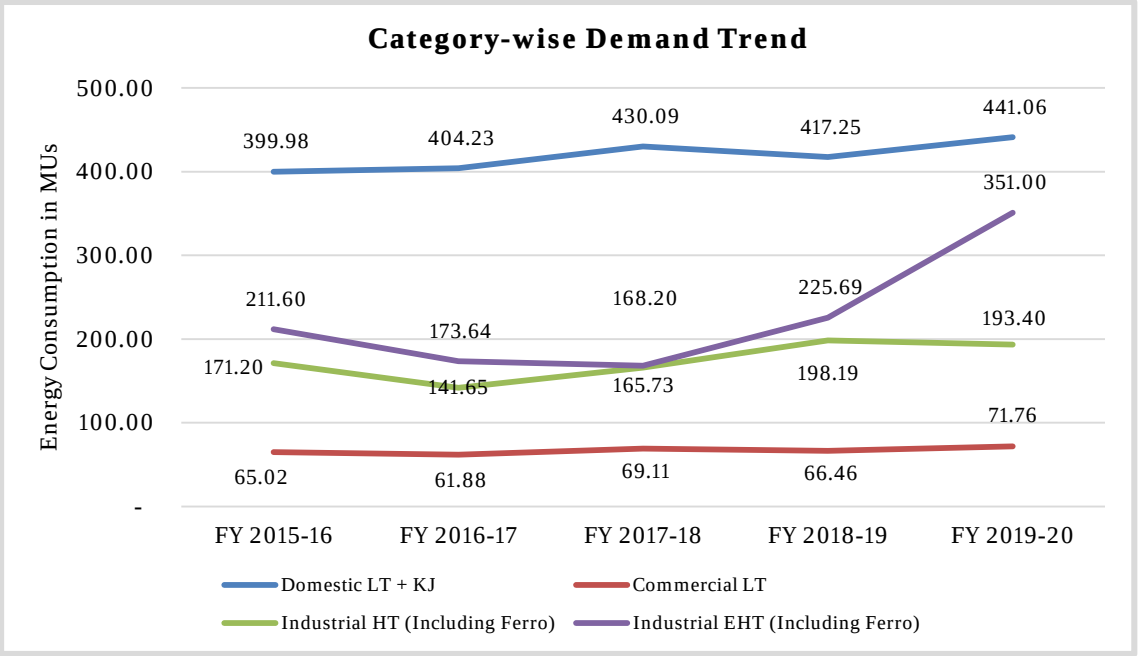
MePDCL submitted that the energy requirement within Meghalaya has increased at a CAGR of approx. 4%in the period from FY 2015-16 to FY 2019-20. The table below provides an overview of variation in demand in the state of Meghalaya from FY 2015-16 to FY 2019-20:

Table 3.2: Demand growth within the state

Year	State Demand (MU)	YoY Growth
FY 2015-16	1058.32	
FY 2016-17	972.38	-8.12%
FY 2017-18	1016.17	4.50%
FY 2018-19	1105.01	8.74%
FY 2019-20	1259.48	13.98%

MePDCL has submitted that It can be seen from the above table that there have been substantial and unexpected fluctuations in the overall demand of the state. The reason for the fluctuations in demand can be found in detailed analysis of category-wise demand growth for major consumer categories from FY 2015-16 to FY 2019-20, as highlighted below:

Figure 1: Category-wise Past Demand Trend



MePDCL has submitted that the above graph shows that demand of Industrial EHT and HT consumers which had declined in previous years has shown a steady increase in FY 2018-19 and FY 2019-20. This can be attributed to incentives offered by the

licensee including Time of Day Tariff, discounted tariff to Ferro Alloy Consumers. The Commercial LT demand growth looks stagnated and shows a positive CAGR of approx. 2.5% from FY 2015-16 to FY 2019-20.

On the other hand, the Domestic LT and KJ demand has grown consistently in the last 4 years due to electrification schemes in the state. This is expected to further peak in next control period with the licensee striving to achieve 100% electrification in the state.

As Industrial HT and EHT consumers contribute to nearly 40% of the consumption in the state, the increased demand from these consumers has led to an overall increased demand in the state of Meghalaya in the last 2 years.

3.5. Category-wise Energy Sales

Petitioner's Submission

Methodology for Energy Sale Projection for the control period

MePDCL submitted that for the purpose of energy sales projection for the third control period for FY 2021-22 to FY 2023-24, it has analysed the past trend of energy sale for last five years and projected demand for different categories.

Table 3.3: Past Trend of Energy Sale

(MU)

Years	Total Sale (Inc. ASEB)	Outside Sale
FY 2015-16	1,058.32	637.47
FY 2016-17	970.77	524.73
FY 2017-18	1,072.53	309.52
FY 2018-19	1,040.93	456.23
FY 2019-20	1,058.32	637.47

The projections for energy sales in the state is based on the following assumptions:

a) For Kutir Jyoti:

The increase in consumption has been done based on the projected increase in consumers due to Saubhagya scheme (proportionate increase as the increase in connected load for KJ

b) Industrial HT and EHT:

There has been already a significant increase in the Ferro Alloy consumption over the last 2 years and the licensee expects Ferro Alloy consumption to grow at a nominal rate of 3% in the control period.

For other industries:

For Industries HT category, 4-year CAGR growth rate has been considered to arrive at the sales projection.

For Industries EHT:

FY 2019-20 consumption has reduced abnormally compared to consumption over the previous years (FY 2015-16 to FY 2018-19). The licensee considers this one-off year due to demand disruption and expects the industries to bring up its consumption to its normal level in the next control period. The licensee has considered the average of consumption over these 4 years to arrive at sales projection.

c) For other category of consumers:

MePDCL has considered four-year CAGR for projection of energy demand for the second control period. Further, for the categories with the negative trend of demand in the past years due to unforeseen reasons, MePDCL has considered zero percent growth for these consumer categories.

The assumptions and steps taken for energy sales projection for third Control Period are provided below:

Step 1: *Growth rate determination for different categories*

- Growth Rate considered as 4-year CAGR for all the categories
- 0% Growth Rate considered for categories having –ve CAGR

Step 2*: Within the State Energy Sale Projection for the Control Period*

- FY 20-21 Sales Projection: (FY 19-20 sales) X (1+Growth rate arrived in step 1)
- FY 21-22 Sales Projection: (FY 20-21 estimated Sales) X (1+Growth rate arrived in step 1)
- FY 22-23 Sales Projection: (FY 21-22 Projected Sales) X (1+Growth rate arrived in step 1)
- FY 23-24 Sales Projection: (FY 22-23 Projected Sales) X (1+Growth rate arrived in step 1)

Based on the above methodology (a, b, c above), energy sales of the base year FY 2020-21 and for the Control Period FY 2021-22 to FY 2023-24 are projected as shown in the table below:

Table 3.4: Energy Sales projections for Control Period FY 2021-22 to FY 2023-24

(MU)

Categories	FY 2019-20 (Actual)	Growth Rate Considered (%)	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
LT Category						
Domestic LT	392.56	1.02%	396.57	400.62	404.71	408.85
Commercial LT	71.76	2.50%	73.55	75.39	77.27	79.20
General Purpose	17.52	0.00%	17.52	17.52	17.52	17.52
Industrial LT	5.84	2.07%	5.96	6.09	6.21	6.34
Water Supply LT	10.02	8.40%	10.86	11.78	12.77	13.84
Kutir Jyoti	48.50	As per Connected Load Increase	72.98	85.11	86.55	87.42
Public Lighting	0.12	0.00%	0.12	0.12	0.12	0.12
Agriculture	0.31	36.42%	0.43	0.59	0.80	1.09
Crematorium	0.19	3.37%	0.19	0.20	0.21	0.21
HT Category						
Commercial HT	27.43	0.53%	27.58	27.72	27.87	28.02
Domestic HT	24.13	1.39%	24.46	24.80	25.14	25.49
Industrial HT	160.74	3.00%	165.56	170.53	175.64	180.91
Ferro Alloy HT	32.66	3.00%	33.64	34.64	35.68	36.75
Water Supply HT	31.84	1.55%	32.33	32.84	33.35	33.86
Bulk Supply	84.86	6.89%	90.71	96.96	103.64	110.78
EHT Category						
Industrial EHT	51.68	Average of Consumption in 15-16 to 18-19	116.34	116.34	116.34	116.34
Ferro Alloy EHT	299.32	3.00%	308.30	317.55	327.08	336.89
Total Sale	**1,259.48**		**1,377.11**	**1,418.79**	**1,450.90**	**1,483.63**

Commission's Analysis

Proper estimation of category wise energy sales for the Control Period FY 2021-22 to FY 2023-24 is essential to arrive at the quantum of power to be purchased and the likely expected revenue by sale of energy,

On a query from the Commission, MePDCL has submitted the actual category wise energy sales from FY 2015-16 to FY 2019-20 as shown in the table below:

Table 3.5: Energy Sales from FY 2015-16 to FY 2019-20 (MU)

Sl. No	Category	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
	LT Category					
1	Domestic (DLT)	376.93	379.61	404.38	392.48	392.56
2	Commercial (CLT)	65.02	61.88	69.11	66.46	71.76
3	Industrial (ILT)	5.38	5.06	5.92	9.43	5.84
4	Agriculture (AP)	0.09	0.10	0.12	0.13	0.31
5	Public Lighting (PL)	1.02	0.45	0.43	0.20	0.12
6	Water Supply (WSLT)	7.26	10.52	10.25	11.45	10.02
7	General Purpose	22.80	21.86	20.81	20.79	17.52
8	Kutir Jyoti	23.06	24.62	25.71	24.77	48.50
9	Crematorium	0.16	0.20	0.21	0.20	0.19
	HT Category					
10	Domestic (DHT)	22.83	20.47	23.53	25.41	24.13
11	Water Supply (WS HT)	29.93	24.07	25.80	29.36	31.84
12	Bulk Supply	65.00	64.75	69.17	73.16	84.86
13	Commercial (CHT)	26.86	25.75	26.26	26.84	27.43
14	Industrial (IHT)	142.83	120.40	139.59	97.89	160.74
15	Ferroy Alloy (HT)	28.38	21.25	26.14	100.31	32.66
	EHT Category					
16	Industrial	129.97	110.91	101.62	122.86	51.68
17	Ferroy Alloy (EHT)	81.63	62.73	66.58	102.83	299.32
18	Assam	29.17	17.75	0.55	0.44	0
	Total Sale within State	**1058.32**	**972.38**	**1016.18**	**1105.01**	**1259.48**

The 1 year to 4 year CAGR of above category wise energy sales, CAGR considered by the licensee and CAGR approved by the Commission for projecting the category wise energy sales for the Control Period FY 2021-22 to FY 2023-24 are shown in the table below:

Table 3.6: CAGR of Energy sales (%)

Sl. No	Category	4 year CAGR FY 2019-20 over 2015-16	3 year CAGR FY 2019-20 over 2016-17	2 year CAGR FY 2019-20 over 2017-18	YoY FY 2019-20 over 2018-19	CAGR Projected by Petitioner	CAGR Approved
	LT Category						
1	Domestic (DLT)	1.02%	1.12%	-1.47%	0.02%	1.02%	1.02%
2	Commercial (CLT)	2.50%	5.06%	1.90%	7.97%	2.50%	2.50%
3	Industrial (ILT)	2.07%	4.89%	-0.68%	-38.07%	2.07%	2.07%
4	Agriculture (AP)	36.23%	45.81%	60.73%	138.46%	36.23%	36.23%

Sl. No	Category	4 year CAGR FY 2019-20 over 2015-16	3 year CAGR FY 2019-20 over 2016-17	2 year CAGR FY 2019-20 over 2017-18	YoY FY 2019-20 over 2018-19	CAGR Projected by Petitioner	CAGR Approved
5	Public Lighting (PL)	-41.43%	-35.63%	-47.17%	-40.00%	0.00	0.00
6	Water Supply (WSLT)	8.39%	-1.61%	-1.13%	-12.49%	8.40%	8.39%
7	General Purpose	-6.37%	-7.11%	-8.24%	-15.73%	0.00	0.00
8	Kutir Jyoti	20.43%	25.36%	37.35%	95.80%	-	-
9	Crematorium	4.39%	-1.70%	-4.88%	-5.00%	3.37%	4.39%
	HT Category						
10	Domestic (DHT)	1.39%	5.64%	1.27%	-5.04%	1.39%	1.39%
11	Water Supply (WS HT)	1.56%	9.77%	11.09%	8.45%	1.55%	1.56%
12	Bulk Supply	6.89%	9.43%	10.76%	15.99%	6.88%	6.89%
13	Commercial (CHT)	0.53%	2.13%	2.20%	2.20%	0.53%	0.53%
14	Industrial (IHT)	3.00%	10.11%	7.31%	64.20%	3.00%	3.00%
15	Ferroy Alloy (HT)	3.57%	15.40%	11.78%	-67.44%	3.00%	3.57%
	EHT Category						
16	Industrial	-20.59%	-22.47%	-28.69%	-57.94%	-	-
17	Ferroy Alloy (EHT)	38.38%	68.35%	112.03%	191.08%	3.00%	3.57%

Since the actual energy sales for FY 2019-20 are available, it is considered appropriate to consider FY 2019-20 as base year and estimate the energy sales for current year FY 2020-21 and project the energy sales for Control Period FY 2021-22 to FY 2023-24 with appropriate CAGR as indicated in the above Table.

MePDCL has considered 4 year CAGR growth rate for many of the categories where there is growth in sales and 0% growth rate considered for categories having negative CAGR and the same is accepted by the Commission. For crematorium and Ferro Alloy (HT) slightly lesser growth rate than 4 year CAGR is considered by MePDCL but Commission has considered the 4 year CAGR for these two categories also. The 4 year CAGR for Ferro Alloy (EHT) works out to 38.38%, which is very high due to higher energy sales recorded in the year FY 2019-20, which may not sustain. Therefore for this category also Commission has considered the CAGR on par with Ferro Alloy HT i.e. 3.57%.

For Kutir Jyoti Category, instead of 4 year CAGR, MePDCL has projected the energy sales based on the new Kutir Jyoti connections and their connected load as many new Kutir Jyoti connections are expected in FY 2020-21 and FY 2021-22 due to Saubhagya Scheme.

For Industry (EHT) also, instead of 4 year CAGR which is negative due to very low sales recorded during FY 2019-20. MePDCL has considered average consumption of previous years i.e. FY 2015-16 to FY 2018-19 for the years FY 2020-21 to FY 2023-24 which is observed to be reasonable and accepted.

Table 3.7: Energy sales approved for the Control Period FY 2021-22 to FY 2023-24

Sl. No.	Category	CAGR Approved (%)	Base year	Current year	Control Period		
			FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
	LT CATEGORY						
1	Domestic (DLT)	1.02%	392.56	396.56	400.61	404.70	408.82
2	Commercial (CLT)	2.50%	71.76	73.55	75.39	77.28	79.21
3	Industrial (ILT)	2.07%	5.84	5.96	6.08	6.21	6.34
4	Agriculture (AP)	36.23%	0.31	0.42	0.58	0.78	1.07
5	Public Lighting (PL)	0	0.12	0.12	0.12	0.12	0.12
6	Water Supply (WSLT)	8.39%	10.02	10.86	11.77	12.76	13.83
7	General Purpose	0	17.52	17.52	17.52	17.52	17.52
8	KutirJyoti	-	48.5	72.98	85.11	86.55	87.42
9	Crematorium	4.39%	0.19	0.20	0.21	0.22	0.23
	HT CATEGORY						
10	Domestic (DHT)	1.39%	24.13	24.47	24.81	25.15	25.50
11	Water Supply (WS HT)	1.56%	31.84	32.34	32.84	33.35	33.87
12	Bulk Supply	6.89%	84.86	90.71	96.96	103.64	110.78
13	Commercial (CHT)	0.53%	27.43	27.58	27.72	27.87	28.02
14	Industrial (HT)	3.00%	160.74	165.56	170.53	175.64	180.91
15	Ferro Alloys (HT)	3.57%	32.66	33.83	35.03	36.28	37.58
	EHT CATEGORY						
16	Industrial	-	51.68	116.34	116.34	116.34	116.34
17	Ferro Alloys	3.57%	299.32	310.01	321.07	332.54	344.41
	Total		1259.48	1379.00	1422.69	1456.95	1491.96

3.6. Category-wise number of Consumers and Connected Load FY 2022-23

Petitioner's Submission

MePDCL has submitted that as on 31.03.2020, total number of consumers of MePDCL is 5,02,565. The number of consumers under Domestic category (DLT) and Kutir Jyoti (KJ) constitutes 93 % of the total consumers with 53% of the connected

load. Though the number of Industrial consumers (IHT & IEHT including Ferro Alloys) is very low (only 140), these constitute about 24% of the total connected load and about 43% of the total sales in FY 19-20.

The projections for connected load and number of consumers is based on the following assumptions:

a) For Kutir Jyoti:

The increase in consumers in MePDCL network due Saubhagya electrification scheme has been considered in the projections. Expected consumers increase for the control period is shown below:

Table 3.8: Expected Consumer Increase due to Saubhagya

Financial Year	Expected consumer addition in KJ
2020-21	84800
2021-22	42000
2022-23	5000
2023-24	3000

There has also been a corresponding increase in connected load because of KJ consumer addition. (connected load has been increased approximately 300 watt per consumer addition due to Saubhagya)

b) For all other categories:

Number of consumers and connected load is projected based on past trend and 4-year CAGR

Step 1: *Growth rate determination for different categories*

- Growth Rate considered as 4-year CAGR for all the categories
- 0% Growth Rate considered for categories having –ve CAGR

Step 2*: Projection for the Control Period*

- FY 20-21 Projection: (FY 19-20 Sale) X (1+Growth rate arrived in step 1)
- FY 21-22 Projection: (FY 20-21 Estimated Sale) X (1+Growth rate arrived in step 1)
- FY 22-23 Projection: (FY 21-22 Projected Sale) X (1+Growth rate arrived in step 1)
- FY 23-24 Projection: (FY 22-23 Projected Sale) X (1+Growth rate arrived in step 1)

Based on the above methodology Consumers and Connected Load for the base year FY 202-21 and for the Second Control Period for FY 2021-22 to FY 2023-24 is projected. The same is shown in the table below:

Table 3.9: Category-wise Number of Consumers and Connected Load Projected for FY 2020-21 to FY 2023-24

Sl.No	Consumer category	FY 2019-20		Considered Growth Rate		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
		No. of consumer	Connected load (MVA)	No. of consumers	Connected load (MVA)	No. of consumers	Connected load (MVA)	No. of consumers	Connected load (MVA)	No. of consumers	Connected load (MVA)	No. of consumers	Connected load (MVA)
A	**LT CATEGORY**												
1	Domestic (DLT)	327754	417.41	2.44%	6.67%	335758	445.27	343957	474.99	352356	506.69	360961	540.51
2	Commercial (CLT)	28784	72.6	4.93%	4.61%	30204	75.95	31693	79.45	33256	83.12	34897	86.95
3	Industrial (ILT)	695	11.35	0.00%	0.00%	695	11.35	695	11.35	695	11.35	695	11.35
4	Agriculture (Ape)	112	0.28	42.71%	0.00%	160	0.28	228	0.28	326	0.28	465	0.28
5	Public Lighting (PL)	57	0.43	2.82%	2.94%	59	0.44	60	0.46	62	0.47	64	0.49
6	Water Supply (WSLT)	436	6.86	4.47%	2.74%	455	7.05	476	7.24	497	7.44	519	7.64
7	General Purpose (GP)	2421	15.27	1.46%	7.67%	2456	15.5	2492	16.69	2528	17.97	2565	19.34
8	Kutir Jyoti (KJT)	141677	50.39	Increase due to Saubhagya		226477	75.83	268477	88.43	273477	89.93	276477	90.83
9	Crematorium (CRM)	1	0.15	0.00%	2.67%	1	0.15	1	0.15	1	0.16	1	0.16
	Sub Total	501937	575			596265	631.82	648080	679.05	663199	717.41	676643	757.56
B	**HT CATEGORY**	0	0										
1	Domestic HT	86	18.47	4.91%	2.12%	90	19.38	95	19.79	99	20.21	104	20.64
2	Water Supply (WSHT)	27	8.37	0.00%	4.98%	27	8.37	27	8.79	27	9.23	27	9.69
3	Bulk Supply (BS)*	208	45.89	6.61%	0.23%	222	48.93	236	49.04	252	49.16	269	49.27
4	Commercial (CHT)	167	29.37	0.00%	3.60%	167	29.37	167	30.43	167	31.53	167	32.67
5	Industrial (IHT)		135.4		11.02%		135.4	132	150.31	132	166.87		185.25
6	Ferro Alloy (FAHT)	132	10	0.00%	3.00%	132	10		10.3		10.61	132	10.93
	Sub Total	620	248			638	251.45	657	268.67	677	287.6	699	308.44
C	**EHT CATEGORY**												
1	Industrial		10.7		0.00%		11.5	9	11.5	10	11.5		11.5
2	Ferro Alloy	8	56	7.46%	3.00%	9	56		57.68		59.41	11	61.19
	Sub Total	8	66.7			9	67.5	9	69.18	10	70.91	11	72.69
	Grand Total	**502565**	**888.96**	**0**	**0**	**596911**	**950.78**	**648746**	**1016.89**	**663886**	**1075.92**	**677353**	**1138.69**

Commission's Analysis

(A) Number of Consumers

On a query from the Commission, MePDCL has submitted the actual category wise number of consumers from FY 2015-16 to FY 2019-20 as shown in the table below:

Table 3.10: Number of Consumers from FY 2015-16 to FY 2019-20

Sl. No	Category	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
	LT Category					
1	Domestic (DLT)	297602	322430	322459	354626	327754
2	Commercial (CLT)	23742	23868	24486	25059	28784
3	Industrial (ILT)	836	835	650	721	695
4	Agriculture (AP)	27	23	14	18	112
5	Public Lighting (PL)	51	57	55	57	57
6	Water Supply (WSLT)	366	369	388	399	436
7	General Purpose	2285	2222	2328	2335	2421
8	Kutir Jyoti	60816	64212	68668	74090	141677
9	Crematorium	1	1	1	1	1
	HT Category					
10	Domestic (DHT)	71	77	79	86	86
11	Water Supply (WS HT)	32	31	31	31	27
12	Bulk Supply	161	164	168	186	208
13	Commercial (CHT)	191	200	149	160	167
14	Industrial (IHT)					
15	Ferroy Alloy (HT)	140	129	134	133	132
	EHT Category					
16	Industrial					
17	Ferroy Alloy (EHT)	6	6	6	7	8
	Total Sale within State	386327	414624	419616	457909	502565

Table 3.11: CAGR of Number of consumers (%)

Sl. No	Category	4 year CAGR FY 2019-20 over 2015-16	3 year CAGR FY 2019-20 over 2016-17	2 year CAGR FY 2019-20 over 2017-18	YoY FY 2019-20 over 2018-19	CAGR Projected by Petitioner	CAGR Approved
	LT Category						
1	Domestic (DLT)	2.44%	0.55%	0.82%	-7.58%	2.44%	2.44%
2	Commercial (CLT)	4.93%	6.44%	8.42%	14.86%	4.93%	4.93%
3	Industrial (ILT)	-4.51%	-5.93%	3.40%	-3.61%	0.00	0.00
4	Agriculture (AP)	42.71%	69.50%	182.84%	522.22%	42.71%	42.71%
5	Public Lighting (PL)	2.82%	0.00%	1.80%	0.00%	2.82%	2.82%

Sl. No	Category	4 year CAGR FY 2019-20 over 2015-16	3 year CAGR FY 2019-20 over 2016-17	2 year CAGR FY 2019-20 over 2017-18	YoY FY 2019-20 over 2018-19	CAGR Projected by Petitioner	CAGR Approved
6	Water Supply (WSLT)	4.47%	5.72%	6.01%	9.27%	4.47%	4.47%
7	General Purpose	1.46%	2.90%	1.98%	3.68%	1.46%	1.46%
8	Kutir Jyoti	23.54%	30.19%	43.64%	91.22%	-	-
9	Crematorium	0.00%	0.00%	0.00%	0.00%	0.00	0.00
	HT Category						
10	Domestic (DHT)	4.91%	3.75%	4.34%	0.00%	4.91%	4.91%
11	Water Supply (WS HT)	-4.16%	-4.50%	-6.67%	-12.90%	0.00	0.00
12	Bulk Supply	6.61%	8.24%	11.27%	11.83%	6.61%	6.61%
13	Commercial (CHT)	-3.30%	-5.83%	5.87%	4.38%	0.00	0.00
14	Industrial (IHT)	-1.46%	0.77%	-0.75%	-0.75%	0.00	0.00
15	Ferroy Alloy (HT)						
	EHT Category						
16	Industrial	7.46%	10.06%	15.47%	14.29%	7.46%	7.46%
17	Ferroy Alloy (EHT)						

Since the actual number of consumers for FY 2019-20 are available, it is considered appropriate to consider FY 2019-20 as base year and estimate the number of consumers for current year FY 2020-21 and project the number of consumers for Control Period FY 2021-22 to FY 2023-24 with appropriate CAGR. 4 year CAGR as projected by petitioner is accepted by the Commission where there is growth and 0% growth rate considered for category having negative CAGR. For Kutir Jyoti, number of consumers, are projected by MePDCL based on new connections to be electrified under Saubhagya Scheme. Accordingly, the Commission approves number of consumers for the Control Period FY 2021-22 to FY 2023-24 as shown in the table below:

Table 3.12: Number of consumers approved for FY 2020-21 and for the Control Period FY 2021-22 to FY 2023-24

Sl. No.	Category	CAGR Approved (%)	Base year	Current year	Control Period		
			FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
	LT CATEGORY						
1	Domestic (DLT)	2.44%	327754	335751	343944	352336	360933
2	Commercial (CLT)	4.93%	28784	30203	31692	33254	34894
3	Industrial (ILT)	0	695	695	695	695	695
4	Agriculture (AP)	42.71%	112	160	228	326	465
5	Public Lighting (PL)	2.82%	57	59	60	62	64
6	Water Supply (WSLT)	4.47%	436	455	476	497	519
7	General Purpose	1.46%	2421	2456	2492	2529	2566

Sl. No.	Category	CAGR Approved (%)	Base year	Current year	Control Period		
			FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
8	KutirJyoti	-	141677	226477	268477	273477	276477
9	Crematorium	0	1	1	1	1	1
	HT CATEGORY						
10	Domestic (DHT)	4.91%	86	90	95	99	104
11	Water Supply (WS HT)	0	27	27	27	27	27
12	Bulk Supply	6.61%	208	222	236	252	269
13	Commercial (CHT)	0	167	167	167	167	167
14	Industrial (HT)	0	132	132	132	132	132
15	Ferro Alloys (HT)						
	EHT CATEGORY						
16	Industrial	7.46%	8	9	9	10	11
17	Ferro Alloys						
	Total		502565	596904	648731	663864	677323

(B) Connected load

On a query from the Commission, MePDCL has submitted the actual category wise connected load from FY 2015-16 to FY 2019-20 as shown in the table below:

Table 3.13: Connected load from FY 2015-16 to FY 2019-20 (MVA)

Sl. No	Category	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
	LT Category					
1	Domestic (DLT)	322.34	386.84	408.19	388.66	417.41
2	Commercial (CLT)	60.62	69.26	71.70	72.01	72.60
3	Industrial (ILT)	12.75	12.33	12.06	12.01	11.35
4	Agriculture (AP)	0.28	0.28	0.27	0.26	0.28
5	Public Lighting (PL)	0.39	1.01	0.41	0.49	0.43
6	Water Supply (WSLT)	6.15	6.73	6.80	7.08	6.86
7	General Purpose	11.37	13.28	14.37	14.15	15.27
8	Kutir Jyoti	24.57	27.38	31.79	27.29	50.39
9	Crematorium	0.14	0.14	0.14	0.14	0.15
	HT Category					
10	Domestic (DHT)	16.98	18.37	15.94	19.14	18.47
11	Water Supply (WS HT)	6.89	7.79	6.10	9.15	8.37
12	Bulk Supply	45.47	44.88	28.48	54.97	45.89
13	Commercial (CHT)	25.50	23.55	15.01	28.67	29.37
14	Industrial (IHT)	89.14	90.72	147.25	130.38	135.40
15	Ferroy Alloy (HT)	6.67	5.42	10.42	13.92	10.00
	EHT Category					
16	Industrial	22.70	22.70	22.70	29.40	10.70
17	Ferroy Alloy (EHT)	46.00	46.00	46.00	46.00	56.00
	Total	**697.96**	**776.68**	**837.63**	**853.72**	**888.94**

The 1 year to 4year CAGR of above category wise connected load, CAGR considered by the licensee and CAGR approved by the Commission for projecting the connected load are shown in the Table below:

Table 3.14: CAGR of Connected Load (%)

Sl. No	Category	4 year CAGR FY 2019-20 over 2015-16	3 year CAGR FY 2019-20 over 2016-17	2 year CAGR FY 2019-20 over 2017-18	YoY FY 2019-20 over 2018-19	CAGR Projected by Petitioner	CAGR Approved
	LT Category						
1	Domestic (DLT)	6.67%	2.57%	1.12%	7.40%	6.67%	6.67%
2	Commercial (CLT)	4.61%	1.58%	0.63%	0.82%	4.61%	4.61%
3	Industrial (ILT)	-2.87%	-2.72%	-2.99%	-5.50%	0.00	0.00
4	Agriculture (AP)	0.00%	0.00%	1.84%	7.69%	0.00	0.00
5	Public Lighting (PL)	2.47%	-24.77%	2.41%	-12.24%	2.94%	2.47%
6	Water Supply (WSLT)	2.77%	0.64%	0.44%	-3.11%	2.74%	2.77%
7	General Purpose	7.65%	4.76%	3.08%	7.92%	7.67%	7.65%
8	Kutir Jyoti	19.67%	22.55%	25.90%	84.65%	-	-
9	Crematorium	1.74%	2.33%	3.51%	7.14%	2.67%	1.74%
	HT Category						
10	Domestic (DHT)	2.13%	0.18%	7.64%	-3.50%	2.12%	2.13%
11	Water Supply (WS HT)	4.98%	2.42%	17.14%	-8.52%	4.98%	4.98%
12	Bulk Supply	0.23%	0.74%	26.94%	-16.52%	0.23%	0.23%
13	Commercial (CHT)	3.60%	7.64%	39.88%	2.44%	3.60%	3.60%
14	Industrial (IHT)	11.02%	14.28%	-4.11%	3.85%	11.02%	11.02%
15	Ferroy Alloy (HT)	10.65%	22.65%	-2.04%	-28.16%	3.00%	3.00%
	EHT Category						
16	Industrial	-17.14%	-22.17%	-31.34%	-63.61%	0.00	0.00
17	Ferroy Alloy (EHT)	5.04%	6.78%	10.34%	21.74%	3.00%	5.04%

Since the actual connected load for FY 2019-20 are available, it is considered appropriate to consider FY 2019-20 as base year and estimate the connected load for current year FY 2020-21 and project the same for Control Period FY 2021-22 to FY 2023-24 with appropriate CAGR. 4 year CAGR as projected by petitioner is accepted by the Commission where there is growth and 0% growth rate considered for category having negative CAGR. For Ferroy Alloy (HT) CAGR is considered at 3% as proposed instead of 10.65% since there is no growth during the last 2 years. For Kutir Jyoti Connected Load is projected based on increase in number of new connections due to implementation of Saubhaghya Scheme. Accordingly, the Commission approves connected load for the Control Period FY 2021-22 to FY 2023-24 as shown in the table below:

Table 3.15: Connected load approved for the Control Period FY 2021-22 to FY 2023-24 (MVA)

Sl. No.	Category	CAGR Approved (%)	Base year	Current year	Control Period		
			FY2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
	LT CATEGORY						
1	Domestic (DLT)	6.67%	417.41	445	475	507	540
2	Commercial (CLT)	4.61%	72.6	76	79	83	87
3	Industrial (ILT)	0	11.35	11	11	11	11
4	Agriculture (AP)	0	0.28	0	0	0	0
5	Public Lighting (PL)	2.47%	0.43	0	0	0	0
6	Water Supply (WSLT)	2.77%	6.86	7	7	7	8
7	General Purpose	7.65%	15.27	16	18	19	21
8	KutirJyoti	-	50.39	75.83	88.43	89.93	90.83
9	Crematorium	1.74%	0.15	0.15	0.15	0.16	0.16
	HT CATEGORY						
10	Domestic (DHT)	2.13%	18.47	19	19	20	20
11	Water Supply (WS HT)	4.98%	8.37	9	9	10	10
12	Bulk Supply	0.23%	45.89	46	46	46	46
13	Commercial (CHT)	3.60%	29.37	30	32	33	34
14	Industrial (HT)	11.02%	135.4	150	167	185	206
15	Ferro Alloys (HT)	3.00%	10	10	11	11	11
	EHT CATEGORY						
16	Industrial	0	10.70	10.70	10.70	10.70	10.70
17	Ferro Alloys	5.04%	56.00	58.82	61.79	64.90	68.17
	Total		**888.94**	**966.95**	**1036.10**	**1098.45**	**1164.85**

Category-wise Number of Consumers, Connected load and Energy sales approved for Control Period FY 2021-22 to FY 2023-24 as discussed in the above paras are depicted in the Table below:

Table 3 16: Number of Consumers, Connected load and Energy sales approved for Control Period FY 2021-22 to FY 2023-24

Sl. No.	Category	FY 2021-22			FY 2022-23			FY 2023-24		
		No. of Consumers	Connected Load (MVA)	Sales (MU)	No. of Consumers	Connected Load (MVA)	Sales (MU)	No. of Consumers	Connected Load (MVA)	Sales (MU)
	LT CATEGORY									
1	Domestic (DLT)	343944	475	400.61	352336	507	404.70	360933	540	408.82
2	Commercial (CLT)	31692	79	75.39	33254	83	77.28	34894	87	79.21
3	Industrial (ILT)	695	11	6.08	695	11	6.21	695	11	6.34
4	Agriculture (AP)	228	0	0.58	326	0	0.78	465	0	1.07
5	Public Lighting (PL)	60	0	0.12	62	0	0.12	64	0	0.12
6	Water Supply (WSLT)	476	7	11.77	497	7	12.76	519	8	13.83
7	General Purpose	2492	18	17.52	2529	19	17.52	2566	21	17.52
8	KutirJyoti	268477	88.43	85.11	273477	89.93	86.55	276477	90.83	87.42
9	Crematorium	1	0.15	0.21	1	0.16	0.22	1	0.16	0.23
	HT CATEGORY									
10	Domestic (DHT)	95	19	24.81	99	20	25.15	104	20	25.5
11	Water Supply (WS HT)	27	9	32.84	27	10	33.35	27	10	33.87
12	Bulk Supply	236	46	96.96	252	46	103.64	269	46	110.78
13	Commercial (CHT)	167	32	27.72	167	33	27.87	167	34	28.02
14	Industrial (HT)	132	167	170.53	132	185	175.64	132	206	180.91
15	Ferro Alloys (HT)		11	35.03		11	36.28		11	37.58
	EHT CATEGORY									
16	Industrial	9	10.7	116.34	10	10.7	116.34	11	10.7	116.34
17	Ferro Alloys		61.79	321.07		64.9	332.54		68.17	344.41
	Total	**648731**	**1036.10**	**1422.69**	**663864**	**1098.45**	**1456.95**	**677323**	**1164.85**	**1491.96**

The Commission directs MePDCL to submit the projections of Number of Consumers, Connected load and Energy sales for Control Period FY 2021-22 to FY 2023-24 in the MYT petition to be filed, based on the audited figures of FY 2017-18 to FY 2019-20. The Commission shall revisit the projections of category-wise number of consumers, connected load and energy sales, while finalising the MYT Tariff order for the Control Period FY 2021-22 to FY 2023-24.

Distribution Loss

Petitioner's Submission

MePDCL submitted that the present distribution network is overloaded and has deteriorated over time, which is the main cause for increase in technical losses. Furthermore, the situation has aggravated after the implementation of ongoing DDUGJY and Saubhagya Scheme project. This is because apart from the inhospitable terrain and bad roads in most rural areas, there are many electrified villages which do not even have motorable roads. Therefore, maintenance of power supply and billing/collection of revenue at those remote villages is a daunting task. In addition to this, the ongoing Covid-19 scenario has made matters worse disrupting the operations of the discom and halting the revenue recovery process. Moreover, the ongoing disruption due to the health emergency will impact the demand consumption of the industries in the state, further reducing the operational efficiency of the discom.

In spite of the above issues, the licensee has been able to bring down its T&D losses over the last 2 years and is striving hard to bring down its losses below 15%. Keeping the present situation in mind and various measures & schemes undertaken to reduce Distribution Loss MePDCL has projected the following distribution losses for the 3rd Control Period:

Table 3.17: Distribution Loss Trajectory projected for Control Period FY 2021-22 to FY 2023-24

Particulars	FY 2017-18 (Actuals)	FY 2018-19 (Provisional)	FY 2019-20 Provisional)	FY 2020-21 (Estimated)	2021-22 (Projected)	2022-23 (Projected)	2023-24 (Projected)
T&D Loss	34.93%	32.55%	26.90%	25.40%	23.90%	22.90%	21.90%

Commission's Analysis

The Commission has approved the distribution loss at 21% for FY 2017-18 as per the tariff order dated 31.03.2017 in line with that approved for FY 2017-18 in the MYT order dated 31.03.2015. As against 21% distribution loss approved for FY 2017-18, MePDCL could achieve only 34.93%. However, the licensee has projected considerable reduction of distribution loss for the current year FY 2020-21 and also for the Control Period FY 2021-22 to FY 2023-24 as shown in the above Table. As per the MoU for implementation of UDAY scheme the distribution losses have to be reduced to 28.96%, 22.76%, 16.56%, 12.19% for FY 2016-17, FY 2017-18, FY 2018-19, FY 2019- 20 respectively. Considering the difficulties expressed by MePDCL and the distribution loss trajectory considered in the MoU of UDAY scheme the Commission had approved distribution loss trajectory for the 2nd Control Period FY 2018-19 to FY 2020-21 as shown below:

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
T&D Loss (%)	16.56	12.19	12.00

The Commission has retained the distribution loss trajectory at 12% in the Tariff Order FY 2020-21 dated 31.03.2020. Distribution loss at the same level of 12% is considered for all years of the MYT control period.

Commission, approves the distribution loss trajectory for the 3rd MYT control period of FY 2021-22 to FY 2023-24 shown in the Table below:

Table 3.18: Distribution loss approved for Control Period FY 2021-22 to FY 2023-24

Particulars	FY 2021-22	FY 2022-23	FY 2023-24
Distribution Loss (%)	12.00	12.00	12.00

3.7. Aggregate Technical & Commercial Loss (AT & C Loss) Trajectory

Petitioner's Submission

MePDCL has submitted that over and above the improvement in Distribution loss it is estimated that with various measures such as smart metering, pre-paid metering, CSC, online bill payment etc. there will be improvement in Collection Efficiency as well.

The Covid-19 disrupted the collection in the month of March 2020. Sans this, the collection efficiency for FY 2019-20 would be around 93%. The average collection

efficiency over the last 6 years is around 94% and the licensee is striving hard to reach 100% collection efficiency in the future years. The collection efficiency over the past 5 years and the estimates for the upcoming control period is given below:

Table 3.19: Collection Efficiency Trend

Particulars	FY 2015-16 (Actuals)	FY 2016-17 (Actuals)	FY 2017-18 (Actuals)	FY 2018-19 (Provisional)	FY 2019-20 (Provisional)
Collection Efficiency	93.05%	93.00%	89.26%	99.58%	90.90%

Table 3.20: Collection Efficiency Projection

Particulars	FY 2020-21 (Estimated)	2021-22 (Projected)	2022-23 (Projected)	2023-24 (Projected)
Collection Efficiency	96%%	96.50%	97.00%	97.50%

MePDCL submitted that based on targets for distribution losses and collection efficiency set by licensee, the projected AT&C losses for the control period 4 as given below:

Table 3.21: AT&C Loss Trajectory

Particulars	FY 2020-21 (Estimated)	2021-22 (Projected)	2022-23 (Projected)	2023-24 (Projected)
AT&C Loss	28.38%	26.56%	25.21%	23.85%

Commission's Analysis

The AT & C loss is a combination of Technical and Commercial Loss. As per MoU UDAY scheme the collection efficiency agreed is 93.86%, 94.08% and 96.80% for FY 2017-18, FY 2018-19 and FY 2019-20 respectively and the AT&C Loss trajectory agreed is 27.50%, 21.50% and 15.00% for FY 2017-18, FY 2018-19 and FY 2019-20 respectively. The Commission considers the collection efficiency at 96.50%, 97.00% and 97.50% for FY 2021-22, 2022-23 and 2023-24 respectively as projected by MePDCL and computes the AT&C Loss trajectory for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 3.22: AT&C Loss Trajectory approved for Control Period FY 2021-22 to FY 2023-24

Particulars	FY 2021-22	FY 2022-23	FY 2023-24
AT&C Loss	15.08%	14.64%	14.20%

3.8. Energy requirement

Petitioner's Submission

MePDCL has submitted the actual energy requirement for FY2020-21 and for the Control Period FY 2021-22 to FY 2023-24 as shown in the Table below:

Table 3.23: Energy requirement projected for the Control Period FY 2021-22 to FY 2023-24

Sl. No.	Particulars	Calculation	FY 2020-21 (Estimated)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
1	Power to be sold to consumers within the state (including ASEB)	J	1377.11	1418.79	1450.90	1483.63
2	Transmission & Distribution Losses (%)	K	25.40%	23.90%	22.90%	21.90%
3	Net power requirement at state periphery	L=J/(1-K)	1846.00	1864.37	1881.84	1899.66

Commission's Analysis

The total energy requirement of a distribution company to meet the total demand of its consumers would be the sum of the estimated energy and system losses (both distribution loss and transmission loss) as approved by the Commission. MePDCL has estimated the energy requirement at its distribution periphery only instead of at state transmission periphery.

The Commission has approved the Transmission loss in the Business Plan for the Control Period FY 2021-22 to FY 2022-23 to MePTCL as shown below

Particulars	FY 2021-22	FY 2022-23	FY 2023-24
Transmission Loss	3.75%	3.70%	3.65%

The total energy requirement at the state transmission periphery is as given in the table below:

Table 3.24: Energy requirement approved for Control Period FY 2021-22 to FY 2023-24

Particulars	Calculation	2021-22	2022-23	2023-24
Energy to be sold to consumers within the state(MU)	J	1422.69	1456.95	1491.96
Distribution Losses (%)	K	12%	12%	12%
Energy requirement at Distribution periphery (MU)	N=L/(1-K)	1616.69	1655.63	1695.41
Transmission loss(%)	M	3.75%	3.70%	3.65%
Energy requirement at state bus for sale of power within the state (MU)	L=J/(1-M)	1679.68	1719.24	1759.64

3.9. Power Procurement

Petitioner's Submission

The power availability in the state of Meghalaya is primarily from two key long term sources-

(a) from the generating stations of MePGCL,

(b) from the allocated share of central power sector generating companies like NEEPCO, NHPC and NTPC etc.

Further, MePDCL may need to purchase power from short term sources to meet seasonal/emergency requirements or to bridge the shortfall in actual generation and expected availability.

The estimated Power Availability from various long term sources as shown in the Table below:

Table 3.25: Projected Power (MW) and Energy (MU) Availability from various Sources (MW)

Sl No	Name of Station	Capacity (MW)	Allocation (MW)	Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)
			2019-20		2020-21		2021-22		2022-23		2023-24	
A	**MePGCL**											
1	Umiam I	4X9	36	107.31	36	116.68	36	116.68	36	116.68	36	116.68
2	Umiam II	2X10	20	54.91	20	45.55	20	45.55	20	45.55	20	45.55
3	Umiam III	2X30	60	140.97	60	139.28	60	139.28	60	139.28	60	139.28
4	Umiam IV	2X30	60	163.38	60	207.61	60	207.61	60	207.61	60	207.61
5	MLHEP	3X42	126	417.87	126	485.65	126	485.65	126	485.65	126	485.65
6	Umtru	4X2.8	11.2	-0.06	11.2	44.15	11.2	44.15	11.2	44.15	11.2	44.15
7	Sunapani	1X1.5	1.5	3.55	1.5	5.52	1.5	5.52	1.5	5.52	1.5	5.52
8	New Umtru	2X20	40	180.15	40	180.46	40	180.46	40	180.46	40	180.46
9	Ganol	2X12.5	21.5	0	21.5	54.75	21.5	54.75	21.5	54.75	21.5	54.75
10	Lakroh	1X1.5	1.5	2.08	1.5	11.01	1.5	11.01	1.5	11.01	1.5	11.01
Sub Total MePGCL		**381.2**	**377.7**	**1070.153**	**377.7**	**1290.674**	**377.7**	**1290.674**	**377.7**	**1290.674**	**377.7**	**1290.674**
B	**NEEPCO**											
1	KOPILI	200	35.05	107.23	35.05	82.23	35.05	82.23	35.05	82.23	35.05	82.23
2	KOPILI-Ext	25	3.45	12.63	3.45	8.48	3.45	8.48	3.45	8.48	3.45	8.48
3	KHANDONG	50	8.51	27.14	8.51	17.53	8.51	17.53	8.51	17.53	8.51	17.53
4	RANGANADI	405	47.1	126.91	47.1	131.25	47.1	131.25	47.1	131.25	47.1	131.25
5	DOYANG	75	8.69	19.18	8.69	23.65	8.69	23.65	8.69	23.65	8.69	23.65
6	AGBPP	291	34.74	161.19	34.74	187.65	34.74	187.65	34.74	187.65	34.74	187.65
7	AGTPP CC	130	16.57	90	16.57	119	16.57	119	16.57	119	16.57	119
8	Pare	2x55	14	53.55	14	42.92	14	42.92	14	42.92	14	42.92
9	Kameng	4x150	15	0	15	45.99	15	45.99	15	45.99	15	45.99
Sub-Total NEEPCO		**1176**	**183**	**598**	**183**	**659**	**183**	**659**	**183**	**659**	**183**	**659**
C	**NHPC-Loktak**	**105**	**0**	**0**	**0**	**0**	**13.14**	**40.28**	**13.14**	**40.28**	**13.14**	**40.28**

Sl No	Name of Station	Capacity (MW)	Allocation (MW)	Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)
			2019-20		2020-21		2021-22		2022-23		2023-24	
D	**OTPC-Pallatana**	**726**	**78.99**	**400.63**	**78.99**	**436.79**	**78.99**	**436.79**	**78.99**	**436.79**	**78.99**	**436.79**
E	**NTPC**											
1	BTPS	250	90.78	0	90.78	0	90.78	0	90.78	0	90.78	0
2	FSTPS	1600	10.84	0	10.84	0	10.84	0	10.84	0	10.84	0
3	KHSTPS-I	840	5.69	0	5.69	0	5.69	0	5.69	0	5.69	0
4	KHSTPS-II	1500	20.33	0	20.33	0	20.33	0	20.33	0	20.33	0
5	TSTPS-I	1000	6.78	0	6.78	0	6.78	0	6.78	0	6.78	0
Sub -Total NTPC		**5190**	**134.43**	**0**	**134.43**	**0**	**134.43**	**0**	**134.43**	**0**	**134.43**	**0**
TOTAL		**7578**	**774**	**2069**	**774**	**2386**	**787**	**2426**	**787**	**2426**	**787**	**2426**

Commission's Analysis

From the above Table it is observed that apart from the state generating sources, MePDCL is mainly relying on the allocation from NEEPCO, NHPC, OTPC- Pallatana and NTPC stations.

MePGCL in its Business Plan for the Control Period FY 2021-22 to FY 2023-24 has submitted that Umtru (4x2.8 MW) are out of service and so no generation from this station will be available for the years FY 2021-22 to FY 2023-24. It is also submitted that Umiam Stage – III (2x30 MW) stations will be under shut down for R&M works and hence there will be not be generation from this station during the years FY 2022-23 to FY 2023-24. Ganol (3x7.5 MW) small hydro power station is expected to be commissioned during May 2022. Therefore MePGCL has projected energy generation from this station in FY 2022-23 and FY 2023-24.

MePDCL has not projected power purchase from NTPC stations during the control period FY 2021-22 to FY 2023-24

The power procurement has to be planned based on the following:

1. Merit order principles
2. Latest allocation orders
3. Latest orders issued by CERC
4. Interstate transmission loss
5. Plant load Factors etc.,

The Commission considers it appropriate to review and approve the power purchase quantum and cost at the time of finalisation of tariff order for Control Period FY 2021-22 to FY 2023-24. The Commission directs MePDCL to submit the Energy availability from various sources during the Control Period FY 2021-22 to FY 2023-24 with full details such as allocation from various sources, PLF assumed for estimating the energy availability, percentage of auxiliary consumption, Net energy available, fixed and variable cost etc., in MYT petition to be filed for the Control Period FY 2021-22 to FY 2023-24. However, for the purpose of Business plan the Commission approves the power procurement plan for Control Period FY 2021-22to FY 2023-24 as projected by MePDCL except for MePGCL stations as shown in the Table below: For MePGCL stations the power availability is considered as approved in the Business Plan of MePGCL for the control period FY 2021-22 to FY 2023-24.

Table 3.26: Power Availability Approved for the Control Period FY 2021-22 to FY 2023-24

Sl No	Name of Station	Capacity (MW)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)	Total Allocation (MW)	Projected Availability (MU)
			2021-22		2022-23		2023-24	
A	**MePGCL**							
1	Umiam I	4X9	36	114.61	36	114.61	36	114.61
2	Umiam II	2X10	20	45.45	20	45.45	20	45.45
3	Umiam III	2X30	60	137.33	0	0	0	0
4	Umiam IV	2X30	60	203.9	60	203.9	60	203.9
5	MLHEP	3X42	126	478.71	126	478.71	126	478.71
6	Umtru (Old)	4X2.8	0	0	0	0	0	0
7	Sonapani	1X1.5	1.5	4.94	1.5	4.94	1.5	4.94
8	New Umtru	2X20	40	231.48	40	231.48	40	231.48
9	Ganol	3X7.5	0	0	22.5	66.20	22.5	66.20
10	Lakroh	1X1.5	1.5	10.87	1.5	10.87	1.5	10.87
	Sub Total MePGCL		**345.00**	**1227.29**	**307.50**	**1156.16**	**307.50**	**1156.16**
B	**NEEPCO**							
1	KOPILI	200	35.05	82.23	35.05	82.23	35.05	82.23
2	KOPILI-Ext	25	3.45	8.48	3.45	8.48	3.45	8.48
3	KHANDONG	50	8.51	17.53	8.51	17.53	8.51	17.53
4	RANGANADI	405	47.1	131.25	47.1	131.25	47.1	131.25
5	DOYANG	75	8.69	23.65	8.69	23.65	8.69	23.65
6	AGBPP	291	34.74	187.65	34.74	187.65	34.74	187.65
7	AGTPP CC	130	16.57	119	16.57	119	16.57	119
8	Pare	2x55	14	42.92	14	42.92	14	42.92
9	Kameng	4x150	15	45.99	15	45.99	15	45.99
	Sub-Total NEEPCO		**183.11**	**658.7**	**183.11**	**658.7**	**183.11**	**658.7**
C	**NHPC-Loktak**	**105**	**13.14**	**40.28**	**13.14**	**40.28**	**13.14**	**40.28**
D	**OTPC-Pallatana**	**726**	**78.99**	**436.79**	**78.99**	**436.79**	**78.99**	**436.79**
E	**NTPC**							
1	BTPS	250	90.78	0	90.78	0	90.78	0
2	FSTPS	1600	10.84	0	10.84	0	10.84	0
3	KHSTPS-I	840	5.69	0	5.69	0	5.69	0
4	KHSTPS-II	1500	20.33	0	20.33	0	20.33	0
5	TSTPS-I	1000	6.78	0	6.78	0	6.78	0
	Sub -Total NTPC		**134.42**	**0**	**134.42**	**0**	**134.42**	**0**
	TOTAL (A+B+C+D+E)		**754.66**	**2363.06**	**717.16**	**2291.93**	**717.16**	**2291.93**

3.10. Energy balance

Petitioner's Submission

MePDCL has projected the actual energy balance for FY 2020-21 and Projected energy balance for the Control Period FY 2021-22 to FY 2023-24 as shown in Table below:

Table 3.27: Projected Energy Balance from FY 2020-21 to FY 2023-24 (MU)

Sr. No.	Particulars	Calculation	FY 2020-21 (Estimated)	2021-22 (Projected)	2022-23 (Projected)	2023-24 (Projected)
1	Power purchased from the Eastern Region (ER)	A	0	0	0	0
2	Inter-state transmission loss for ER	B	1.80%	1.80%	1.80%	1.80%
3	Net power purchased from the ER	C=A*(1-B)	0	0	0	0
4	Power purchased from the North -Eastern Region (NER)	D	1095.49	1095.49	1095.49	1095.49
5	Inter-state transmission loss for NER	E	3.00%	3.00%	3.00%	3.00%
6	Net power available at state bus from external sources on long term	F=(C+D)*(1-E)	1,062.62	1,062.62	1,062.62	1,062.62
7	Power purchased from generating stations within the state	G	1290.67	1290.67	1290.674	1290.674
8	Power purchased from other sources	H				
	Total Availability at MePDCL Periphery	**I=F+G+H**	**2353.3**	**2353.3**	**2353.3**	**2353.3**
9	Power to be sold to consumers within the state (including ASEB)	J	1377.11	1418.79	1450.9	1483.63
10	Transmission & Distribution Losses (%)	K	25.40%	23.90%	22.90%	21.90%
11	Net power requirement at state bus for sale of power within the state	L=J/(1-K)	1846	1864.37	1881.84	1899.66
12	Surplus Power (for sale outside state)	M = I - L	**507.3**	**488.93**	**471.46**	**453.64**

Commission's Analysis

The Commission has computed the energy balance based on the approved energy sales, distribution and transmission losses and energy availability from various sources.

The energy balance approved by the Commission for the Control Period FY 2021-22 to FY 2023-24 is as shown in the table below:

Table 3.28: Approved Energy Balance for the Control Period FY 2021-22 to FY 2023-24

(MU)

Sl. No	Particulars	Calculation	2021-22	2022-23	2023-24
1	Energy purchased from the Eastern Region (ER)	A	0	0	0
2	Inter-state transmission loss for ER	B	1.80%	1.80%	1.80%
3	Net power purchased from the ER	C=A*(1-B%)	0	0	0
4	Power purchased from the North – Eastern Region (NER)	D	1135.77	1135.77	1135.77
5	Inter-state transmission loss for NER	E	3%	3%	3%
6	Net power available at state bus from external sources on long term	F=(C+D)*(1-E%)	1101.70	1101.70	1101.70
7	Power purchased from generating stations within the state	G	1227.29	1156.16	1156.16
8	Power purchased from other sources	H	0	0	0
9	**Total Energy available**	**I=F+G+H**	2328.99	2257.86	2257.86
10	Intra State Transmission loss at 4%	J=I*4%	93.16	90.31	90.31
11	**Total availability at MePDCL Periphery**	**K=I-J**	2235.83	2167.55	2167.55
12	Power to be sold to consumers within the state (including ASEB)	L	1422.69	1456.95	1491.96
13	Distribution Losses (%)	M	12%	12%	12%
14	Net power requirement at MePDCL periphery for sale of power within the state	N=L/(1-M%)	1616.69	1655.63	1695.41
15	**Surplus Power (for sale outside state)**	**O = K-N**	619.13	511.92	472.14

3.11. Capital Investment Plans

Petitioner's Submission

3.11.1 MePDCL has submitted that the purpose of the Capital Investment Plan (CIP) is to provide a roadmap for planning and implementation of proposed projects & schemes for the control period of FY 2020-21 to FY 2023-24. 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 MePTCL Grid Substations
- Supply of Power to new load centres
- Increasing Distribution Network capacity for increased load
- Increased Quality and Reliability of Power

- Appropriate Loading of Distribution Network
- Increased Control and Protection for Grid Stability
- Loss Reduction
- Outage Reduction

Capital Investment prepared includes the projects which are under implementation as per the investment plan of the second control period or which are expected to commence from FY 2020-21 to end of third control period i.e. FY 2023-24. As CIP includes schemes envisaged to be implemented in future, 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, Approval by concerned authority/ financial institution and commencement of execution. Similarly, certain project attributes such as construction period, actual project cost, completion dates etc. for ongoing projects also expected to change in future due to uncontrollable externalities. Therefore, the project particulars are expected to modify in future and shall be updated during subsequent filings of Mid-Term Review.

Funding of the capital expenditure, 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 Asian Development Bank etc.

The details of ongoing and proposed works for MePDCL is attached as **Annexure A.**

3.10.2 Status of Various Government Funding Schemes for CIP

I. Integrated Power Development Scheme (IPDS)

IPDS Phase 1: System Strengthening

Government of India launched Integrated Power Development Scheme (IPDS) for the Urban/Semi-urban areas with the following components:

- Strengthening of Sub-transmission and Distribution network in urban areas.

- Metering of distribution transformers / feeders / consumers in urban areas.
- IT enablement of distribution sector and distribution network strengthening for completion of the targets laid down under RAPDRP for 12th and 13th Plans by carrying forward the approved layout for R-APDRP to IPDS. Meghalaya Power Distribution Corporation Limited expects to take benefit of the IPDS project and commence implementation of projects under the scheme by last quarter of FY 2020-21. The objectives of the schemes are:

- Strengthening of sub-transmission and distribution network in the urban areas
- Metering of distribution transformers/ feeders/ consumers in the urban area
- IT enablement of distribution sector and strengthening of distribution network.

a) Under this scheme cost of implementation of the works is around Rs 62.03 Crores for the state. Based on the guidelines, the funding pattern for the scheme is given below:

Table 3.29: Funding Pattern for IPDS Scheme

Agency	Contribution	
	%	Rs Cr
Govt. of India Grant	85%	52.726
State Govt. Grant	10%	6.203
Discom Contribution	5%	3.1015
Total		62.03

b) The scheme is being implemented in 9 towns of Meghalaya. The works in Eastern Zone circle have been completed and western zone circle are expected to be completed by December 2020. The details of IPDS ongoing works is given in Annexure A

IPDS Phase 2: IT Schemes

c) Gas Insulated Sub-Stations under IPDS:

The Power Finance Corporation Limited has accorded financial assistance under IPDS (Integrated Power Development Scheme) scheme for implementation of GIS sub-stations in Meghalaya. This was conveyed vide letter No.02:10:IPDS:MePDCL:Meghalaya:060522 dated, 10.12.2018 that the IPDS Monitoring Committee of MoP/GoI, in its 13th meeting held on the 18.10.2018 has considered the project proposals and has approved Rs 24.64

Crore as project costs for 02 nos of GIS (Gas Insulated Sub-Stations) along with associated lines as follows:

- Approved DPR Costs Rs 24.64 Crore
- Govt. of India Grant Rs 20.94 Crore (85% of Sl. No. 1)
- Govt. of India (GoI) Grant for Project Management Agency Rs.0.12Crore (0.5% of Sl. No 1)

Total GoI Grant = Rs 21.06 Crore.

- Projects to be implemented on Turnkey.

Sub-Stations to be constructed in Shillong and Jowai Towns are as shown in Table below:

Table 3.30: Details of GIS Substations

Sr No.	Name of Town.	No.of GIS Approved	Capacity of 33/11 GIS S/S approved	Associated Lines	Award Cost
1	Shillong (Dhankheti)	1	2 x 10 MVA	33Kv - 1.80Km. 11 Kv - 0.8Km.	Rs 25.58 Cr
2	Jowai (near Woodland Hospital)	1	2 x 5 MVA	33Kv - 2.83Km. 11 Kv -2.00km.	

The project completion date as per IPDS guidelines is 30 months from the date of Sanction Letter.

d) ERP Implementation under IPDS:

The Power Finance Corporation Limited (PFC Ltd, a Government of India Undertaking) has accorded financial assistance under IPDS (Integrated Power Development Scheme) for implementation of Enterprise Resource Planning (ERP) an IT enablement project for Meghalaya Power Distribution Corporation Limited in the State of Meghalaya. This was conveyed vide letter No.02:18:IPDS:MePDCL:Meghalaya:060520 dated, 10.12.2018 (GoI Grant No. 64457002 and PMA Grant No. 64450001) that the IPDS Monitoring Committee of MoP/GoI, in its 13th meeting held on the 18.10.2018 has considered the project proposals and has approved Rs 19.01 Crore as project costs for ERP implementation in Meghalaya as follows:

a) Approved DPR Cost for implementation of ERP project is Rs.19.01 Crore.

b) Govt. of lndia (Gol) Grant is Rs. 16.16 Crore (85% of SI. No. 1).

c) Govt. of India (GoI) Grant for Project Management Agency is Rs. 0.09 Cr. (0.5 % of SI. No. 1).

Total Grant = Rs. 16.25 Crore

The project completion is envisaged within 30 months from date of issue of Sanction letter. Further, Project completion date as per IPDS guidelines shall be 09.06.2021 (viz. 30 months from date of sanction letter). Technical Bid for the project was opened on 15th June 2020 and evaluation is in process.

ii. Deendayal Upadhyaya Gram Jyoti Yojna (DDUGJY)

Govt. of India has recently launched DDUGJY for the rural areas with the following components:

- Separation of agriculture and non-agriculture feeders facilitating judicious rostering of supply to agricultural & non- agricultural consumers in the rural areas.
- Strengthening and augmentation of sub-transmission & distribution (ST&D) infrastructure in rural areas, including metering at distribution transformers, feeders and consumers end.
- Rural electrification, for completion of the targets laid down under RGGVY for 12th and 13th Plans by subsuming RGGVY in DDUGJY and carrying forward the approved outlay for RGGVY to DDUGJY.

The project outlay is around Rs. 276.54 Crore which includes village electrification though grid and off grid (solar), system strengthening, metering. Work for DDUGJY (phase-I) is in progress whereas for DDUGJY (Phase-II), system strengthening, and metering tendering process is in progress. Based on the guidelines available it is expected that 85% of the project cost shall be made available by Government of India as Grant. Balance 15% is expected to be State Government Grant. Both the phase I and II works are scheduled to be completed by end of 2020.

iii. Indo Bangladesh Border Flood Lighting

The scheme for Indo Bangladesh Border Lighting project has been envisaged by the Government of Meghalaya keeping in view the security requirement for 440 km long border shared between Meghalaya and Bangladesh. The Project is being financed by the

Ministry of Home Affairs, Government of India as Deposit Work Scheme.

As the project extends across several districts and corresponding divisions of MePDCL, the work has been split among the various divisions for better execution. The RE (Rural Electrification) Construction Division for Shillong, Jowai and Tura will undertake the work for the portion in East/ West Khasi Hills, Jaintia Hills and West/ South Garo Hills respectively.

The main work of the MePDCL is to develop the infrastructure at 33KV, 11KV upto the Distribution Transformer (DT) level to provide (stable) power supply and last mile connectivity to the Flood lights being installed by the NPCC along the Indo Bangladesh Border. The Project has been divided and executed under the following Sectors:

Table 3.31: Project Allocation in Meghalaya

Sl. No.	Sectors	Approx Border Length (Km)	Border Post (BP)
1	Tura Sector	107	1071 to 1130
2	Williamnagar Sector	103	1130 to 1188/2S
3	Shillong Sector	149	1188/2S to 1272/9S
4	Jowai Sector	101.8	1272/9S to 1338/MP

Currently the Scheme in Shillong, Tura & Williamnagar and Jowai Sector has been sanctioned and work is in progress. The details of scheme have been provided in Investment Plan Format as **Annexure-A.**

iv. Other Central Sponsored Schemes

1. North Eastern Council:

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

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

- Construction of new 33 kV S/C line from Rongkhon to Dadengre

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.

2. Additional Special Plan Assistance (ASPA)

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 project under ASPA funding:

- Construction of 33/11kV sub-station with 33kV & 11kV lines at Praharinagar

v. Meghalaya Power Sector Improvement Project under ADB Funding

To improve the power scenario in the state, the Licensee sought financial assistance from Asian Development Bank (ADB). ADB is a multilateral development partner in the power sector in India and has supported several states in India including north eastern State such as Assam. ADB has supported project loans for generation, transmission, and distribution projects in India and worked with state governments and utilities on various reform measures and supported the regulatory commission in the neighboring state of Assam

The project proposal from the Govt of Meghalaya for financial assistance of USD 132.9 Million from ADB for Meghalaya Power Sector Improvement Project was accorded "in principle" approval by the Dept of Economic Affairs (Fund Bank & ADB Division), Ministry of Finance during the 90th Screening Committee held on 19th December 2018, subject to concurrence from Ministry of Home Affairs, Ministry of External Affairs, Ministry of Power, DONER and NITI Aayog. The NOCs/concurrence were received from Ministry of Home Affairs, Ministry of External Affairs, Ministry of Power, CEA and NITI Aayog. The CEA approved the project cost of Rs 1,17,210.89 Lakh only on 18th March 2019 for the following works:

a. Installation of new 33/11KV sub-stations and augmentation and renovation of existing 33/11KV sub-stations.
b. Installation of new 33KV & 11KV Lines and re-conductoring, augmentation & replacement of existing 33KV & 11KV Lines.
c. Installation of new DTs and capacity enhancement and augmentation of existing DTs.
d. Metering Infrastructure Improvement – installation of 2.05 lakh smart metering system.
e. IT enablement in Metering, Billing & Collection and Customer Service Benefits.
f. Preparation of Distribution Master Plan.

Financial details for the project:

a. Total Project Cost: USD 166.13 Million.

b. Funding pattern:

- USD 132.9 Million (80% from External Assistance sought from ADB in 90:10 ratio of grants (90%) and loan (10%).
- USD 33.23 Million (20% from Counterpart funding by State).

The proposed project will strengthen the State's rural distribution network, reduce AT&C losses, improve the power quality and reduce the outages in Central Circles, West Garo Circle and East Garo Circle of the State. The proposed investments will improve the access to electricity and quality of power in the poor and backward rural areas. This will enable a conducive atmosphere for local economic activities and attract industries, thereby improving job creation in rural areas which will boost the State's economy. The duration of the projects should be 36 months for project execution and 12 months for planning and contracting. The project implementing agency is Meghalaya Power Distribution Company Limited.

Present status of work:

a) Installation of new 33/11KV sub-stations and augmentation and renovation of existing 33/11KV sub-stations:

NIT was invited on 18th October 2019 for "Distribution System Improvement: 33/11 kV Substation Development" in 4 (four) packages, namely; East Khasi (Package-1), West Khasi (Package-2), East Garo (Package-3) and West Garo (Package-4):

Table 3.32: Details of Sub Station Package under ADB Funding

Circle	New 33/11KV S/S	Augmentation of 33/11KV S/S	Upgradation/Bay Extension in 33/11KV S/S	33/11KV Mobile S/S	Oil Filtration Plant
East Khasi, Pkg-1	7	7	4	1	1
West Khasi, Pkg-2	5	9	1	0	0
East Garo, Pkg-3	8	7	3	0	1
West Garo, Pkg-4	4	12	2	0	1
Total	24	35	10	1	3

Work at present is in the Technical Bid evaluation stage.

b) Metering Infrastructure Improvement – installation of 2.05 lakh smart metering system:

NIT was invited on 4th February 2020 in 1 (one) single package, "Supply of Smart Meters and Associated Services" as follows:

Table 3.33: Metering Infrastructure Package under ADB Funding

Sl. No.	Particulars	No	Remarks
1	Supply of 1Ph Smart Meters for consumers	197505	20000 Smart Meters out of 200000 shall be initially kept as spares
2	Supply of 3Ph Smart Meters for consumers	2495	
3	Supply of HT & LT Bulk Smart Meters for consumers	515	
4	Supply of LT Smart Meters for DTs	6500	

Smart Meters shall be established with Advanced Metering Infrastructure using Cellular and PLC communications. Work at present is in the initial Technical Bid evaluation stage.

c) Installation of new 33KV & 11KV Lines and re-conductoring, augmentation & replacement of existing 33KV & 11KV Lines:

NIT was invited on 13th July 2020 for "Distribution System Improvement: 33KV & 11KV Line Development" in 2 (two) packages, namely; Garo Hills Circle (East & West), Package-1 and Khasi Hills Circle (East & West), Package-2:

Table 3.34: Lines Package under ADB Funding

Sl. No.	Particulars	Qty	Remarks
1	New 33KV Single Ckt (S/C) line (Km)	771.2	Using wolf/raccoon conductor, pole/ lattice structure
2	Conversion of existing 33KV S/C line to 100 Sqmm Covered conductor (Km)	52	
3	Re-conductoring of 33KV S/C Line (Km)	444	Wolf conductor
4	New 11KV Single Ckt (S/C) line (Km)	669	Raccoon conductor
5	Re-conductoring of 11KV S/C Line (Km)	278	Raccoon
6	Replacement of 11KV poles (No)	6310	
7	Installation of Auto-Reclosers (No)	136	
8	Installation of FPIs (No)	597	
9	Supply of Maintenance Vehicles (No)	8	

vi. Rooftop Solar Program

The scheme will be implemented through DISCOMs. The scheme provides for CFA (Central Financial Assistance) for the household owner and Group Housing Societies to set up RTS (Roof Top Solar) on the rooftop of their residence / residential campus.

The major components of this Phase II program are:

a) **Component A:** Setting up of 400 KW of Grid connected rooftop solar projects in residential sector with Central Financial Assistance (CFA)

b) **Component B:** Incentives to Electricity Distribution Companies (DISCOM) based on achievement towards initial 18000 KW of Grid Connected roof top solar plants.

Residential RTS plant would be the solar power system installed mainly on the roof of a residential building having an active residential power connection from the local DISCOM and would also include installations on open contiguous land within the premises of the Residential building. The CFA pattern for the residential sector will be as follows:

Table 3.35: Rooftop Funding Assistance Details

Type of residential sector	**CFA (as percentage of benchmark cost or cost discovered through competitive process whichever is lower).**
Residential sector (maximum up to 3 kW capacity)	40% of benchmark cost.
Residential sector (above 3 kW capacity and up to 10 Kw capacity).	40% up to 3 KW Plus 20% for RTS system above 3 Kw and up to 10 kw.
Group Housing Societies/ Residential Welfare Associations (GHS/RWA) etc. for common facilities up to 500 kWp @10 kWp per house), with the upper limit being inclusive of individual rooftop plants already installed by individual residents in that GHS/RWA at the time of installation of RTS for common activity.	20%

The Capital Investment Plan Provided is summarized in the Table below:

Table 3.36: Summary of Project cost and funding

Schemes	Project Cost (Rs. Cr)	Funding Pattern (Rs. Cr)			
		Equity	Loan	Grant	Consumer Contribution
1) New Schemes*					
IPDS Phase II: IT & ERP Implementation	44.59		2.23	42.36	
MePSIP under ADB Funding	1143.00			1143.00	
State Government Funded Schemes	119.95			119.95	
Rooftop Solar Programme	1.63		0.65	0.98	
Total	**1309.17**		**2.88**	**1306.29**	
*includes scheme starting in FY 2020-21 (2nd half) also					
2) Ongoing Schemes					
Saubhagya	657.06			657.06	
Deendayal Upadhyaya Gram Jyoti Yojna	276.54			276.54	
Indo Bangla Border Flood Lighting	147.63				147.63
IPDS Phase I	20.89		1.04	19.85	
Additional Special Plan Assistance (ASPA)	5.79			5.79	
NEC	5.70			5.70	
Total	**1113.61**		**1.04**	**964.94**	**147.63**

Fund Requirement

MePDCL has submitted that the objective of the schemes is to revitalize the power sector to achieve sustainable development in 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 Garo Hills districts. The added capacity is also required for catering to growing demand throughout the state. Given below is the capital expenditure proposed for third control period under the various schemes mentioned above:

Table 3.37: Fund Requirement for the Control Period

Sl. No.	Category	Current Year 2020-21	Control Period			Total
			2021-22	2022-23	2023-24	
1	IPDS	6.27	14.86	14.86	14.86	50.86
2	Saubhagya	173.00				173.00
3	MePSIP under ADB Funding		378	377	387	1142.00

Sl. No.	Category	Current Year 2020-21	Control Period			Total
			2021-22	2022-23	2023-24	
4	State Government Funded		28.89	49.77	27.74	106.40
5	DDUGJY	63.29				63.29
6	Indo Bangla Border Flood Lighting	59.20				59.20
7	NEC	2.64				2.64
8	Rooftop Solar Program	0.82				0.82
9	Additional Special Plan Assistance (ASPA)	2.90	2.90			5.79
Total Fund Requirement (Distribution)		**308.11**	**424.65**	**441.64**	**429.60**	**1603.99**

Capitalization

MePDCL has submitted that some of the schemes under implementation are scheduled to complete in the remaining control period. On the closure of the project, the asset can be put to use. The details of expected capitalization for the third control period is given below:

Table 3.38: Expected Capitalization for the Control Period

Sl. No.	Category	Current Year 2020-21	Control Period			Total
			2021-22	2022-23	2023-24	
1	IPDS	20.89			44.59	65.48
2	Saubhagya	657.06				657.06
3	MePDSIP under ADB Funding				1143.00	1143.00
4	State Government Funded & ASPA			52.23	45.14	97.37
5	DDUGJY	276.54				276.54
6	Indo Bangla Border Flood Lighting		147.63			147.63
7	NEC	5.70				5.70
8	Rooftop Solar Programme	1.63				1.63
9	Additional Special Plan Assistance (ASPA)		5.79			5.79
Total Asset Addition (Distribution)		**961.82**	**153.42**	**52.23**	**1232.73**	**2400.20**

Commission's analysis:

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

MePDCL has proposed capex of Rs.1113.60 crores against ongoing schemes and Rs.1309.17 crore towards new capex for the control period from FY 2021-22 to FY 2023-24, thus totaling to Rs.2420.78 crore.

MePDCL has stated that Capital Investment Plan (CIP) includes schemes envisaged to be implemented in future, 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, Approval by concerned authority/ financial institution and commencement of execution. Similarly, certain project attributes such as construction period, actual project cost, completion dates etc. for ongoing projects also expected to change in future due to uncontrollable externalities. Therefore, the project particulars are expected to modify in future and shall be updated during subsequent filings of Mid-Term Review.

The Commission provisionally approves the capital investment/expenditure plan as proposed by MePDCL, keeping in view the requirement of strengthening of distribution system network and to meet the year on year demand growth in the State and also the schemes envisaged for system improvement and operational efficiency.

MePDCL has submitted that to finance the capital expenditure, it 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 Asian Development Bank etc.

The Commission, approves the projects cost and funding pattern as detailed in the Table below:

Table 3 39: Approved project/scheme cost and funding of capex

Schemes	Project Cost (Rs. Cr)	Funding Pattern (Rs. Cr)			
		Equity	Loan	Grant	Consumer Contribution
1) New Schemes*					
IPDS Phase II: IT & ERP Implementation	44.59		2.23	42.36	
MePSIP under ADB Funding	1143.00			1143.00	
State Government Funded Schemes	119.95			119.95	
Rooftop Solar Programme	1.63		0.65	0.98	
Total	**1309.17**		**2.88**	**1306.29**	
*includes scheme starting in FY 2020-21 (2nd half) also					

Schemes	Project Cost (Rs. Cr)	Funding Pattern (Rs. Cr)			
		Equity	Loan	Grant	Consumer Contribution
2) Ongoing Schemes					
Saubhagya	657.06			657.06	
Deendayal Upadhyaya Gram Jyoti Yojna	276.54			276.54	
Indo Bangla Border Flood Lighting	147.63				147.63
IPDS Phase I	20.89		1.04	19.85	
Additional Special Plan Assistance (ASPA)	5.79			5.79	
NEC	5.70			5.70	
Total	**1113.61**		**1.04**	**964.94**	**147.63**

Based on the information made available in Annexure-A of the petition by MePDCL i.e. details of commencement and completion of each project, Commission approves the Capex and Capitalization.

The scheme-wise capex and capitalisation approved for FY 2020-21 and MYT control period from FY 2021-22 to FY 2023-24 in respect of ongoing scheme/projects and new schemes/projects is furnished in the Table below:

Table 3.40: Capital investment plan for FY 2020-21 and for the MYT control period FY 2021-22 to FY 2023-24

(Rs. crore)

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	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	18= (8+10+12+14+16)	19= (9+11+13+15+17)
A	**Ongoing Schemes**															
1	Saubhagya works	657.06	657.06			657.06	173.00	657.06							173.00	657.06
2	IPDS Phase-I (Pkg-Vi & VII)	20.89	19.85		1.04	20.89	6.27	20.89							6.27	20.89
	Additional Special Plan Assistance (ASPA)															
3	Construction of 33/11 kV SS, Rongjeng	3.50	3.50			3.50	1.75		1.75	3.50					3.50	3.50
4	Construction of 33/11 kV SS, Praharinagar with 33/11 kV lines	2.29	2.29			2.29	1.15		1.15	2.29					2.29	2.29
	NEC															
5	33 kV SC line from Rongkhon to Dadengre	5.70	5.70			5.70	2.64	5.70							2.64	5.70
	DDUGJY- I Village Electrification															
6	i. Electrification of Un-electrified village by Grid solution = 261 Nos.															
7	ii. Electrification of Un-electrified village by Off- Grid solution = 52 Nos.															
8	iii. Electrification of Grid PE/UED = 200 Nos.	116.65	116.65			116.65	26.75	116.65							26.75	116.65

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
	DDUGJY-II Village Electrification															
9	i. Intensification of partially electrified villages = 558 Nos.	89.85	89.85			89.85	14.25	89.85							14.25	89.85
	DDUGJY-II Systems Strengthening															
10	i. Installation and commissioning of 9 Nos. 33/11KV ,2.5 MVA Sub-stations with a total capacity of 22.5 MVA.															
11	ii. Augmentation of 2Nos. 33/11KV Substations with a total capacity of 3.4 MVA.	54.80	54.80			54.80	15.55	54.80							15.55	54.80
	DDUGJY-II Systems Metering															
12	i. Installation of 1020 Nos. of DT Metering															
13	ii. Installation of 45 Nos. 33 KV Feeder Metering.															
14	iii. Installation of 162 Nos. 11KV Feeder Metering.	15.24	15.24			15.24	6.74	15.24							6.74	15.24
	IBBFL Deposit Works															
15	i. Installation of 33/0.4 KV and 11/0.4 KV Sub-station =105 Nos.															
16	ii. Installation of 33 KV line = 300 Ckt km.															
17	iii. Installation of 11 KV line = 520 Ckt km.	147.63	147.63			147.63	59.20			147.63					59.20	147.63

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
18	iv. Installation of 33/11 KV Substation = 11Nos.with total capacity of 13800 KVA.															
	Sub-total -A	**1113.61**	**1112.57**	**0**	**1.04**	**1113.61**	**307.30**	**960.19**	**2.90**	**153.42**	**0**	**0**	**0**	**0**	**310.19**	**1113.61**
B	**Upcoming / New Schemes**															
	ADB funded schemes															
	33/11 KV Sub-Stations															
19	i. Construction of 24 nos. new 33/11 KV sub-stations to provide capacity infeed to meet existing and future demand requirements- 11nos in Central Circle, 4 nos. in West Garo, 9 nos. in East Garo Circle.															
20	ii. Capacity Augmentation of existing 33/11 KV Substations - 15 nos.															
21	iii. Renovation and modernization of 6 nos. of 33/11 substations to provide improved reliability, safety and better life cycle management.															
22	iv. Replacement of drop-out fuses with auto re-closers at 66 nos. 33KV and 11KV feeders terminations in substations without control room, for safety of utility personnel, reliability and operational flexibility.	145.00	145.00			145.00			49.00		48.00		48.00	145.00	145.00	145.00

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
23	v. 33 KV Bay Extension															
	33KV Transmission lines															
24	i. Replacement of overhead lines in thick vegetation areas with 57 Ckms of covered conductors															
25	ii. New 33KV Lines on mini tower structure with wolf conductor to suit difficult rural terrain, thick vegetation areas and high load industrial areas- approximately 295 Ckms.															
26	iii. Construction of 33KV new lines approx. 400 Ckms to connect proposed 33/11 KV new sub-stations (NERPSIP and projects identified in this proposal).															
27	iv. Re-conductoring of existing 33KV lines approx. 225 Ckms to connect proposed new 33/11 KV Sub-stations (NERPSIP and projects identified in this proposal)	252.00	252.00			252.00			81.00		81.00		90.00	252.00	252.00	252.00
	11KV & LT Distribution Lines															
28	i. Construction of 674 Ckms of 11KV new lines to establish new feeders from proposed 33/11LV Substations and to connect with	318.00	318.00			318.00			106.00		106.00		106.00	318.00	318.00	318.00

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
	the proposed 11/0.4 substations.(NERPSIP and projects identified in this proposal)															
29	ii.Re-conductoring of 11 KV existing lines approx. 278 Ckms to connect the proposed new substations (NERPSIP and projects identified in this proposal)															
30	iii. Replacement of rusted/damaged 11KV GI & PSC poles in identified sites.															
31	iv. Construction of new 181 Ckms of 3-PH, 4-WIRE LT lines on WEASEL conductor.															
32	v. Augmentation of 135 Ckms 1ph-2 wire to 3 Ph-4 wire lines on Weasel & Squirrel CONDUCTOR															
33	vi. Conversion of 1050 Ckms of LT overhead lines to ABC using 3cx95,3cx70,1cx50 sqmm to prevent theft & leakages															
34	vii. Replacement of street lights with solar lamps, LED lamps etc. in selected locations															
	Distribution Transformer	211.00	211.00			211.00			70.00		70.00		70.00	211.00	210.00	211.00

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
35	i. Installation of 301 Nos. of new Transformers to cater to demand developments															
36	ii. Capacity augmentation of 94 Nos. Distribution Transformers (DTs)															
37	iii. R&M of DTs (Improvement of the earthing, fencing of all un-fenced DTs, replacement of fuse cut-outs by Single-pole MCB, providing Lighting Arrestors in all DTs in West Garo & East Garo circles, Augmentation by Completely Self Protected Transformer and metering of DTs.															
38	iv. Renovation & modernization of 1 no. of Transformer Repair Workshop.															
	Metering															
39	i. Replacement of Post paid meters by Prepaid Meters															
40	ii. Replacement of LTCT meters by Thread-through Meters															
41	iii. R&M of Test bench for Meter Testing Laboratory and procurement of on-site meter testing equipment															
42	iv. Technical Survey and Study	123.00	123.00			123.00			41.00		41.00		41.00	123.00	123.00	123.00

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
	for Energy Audit															
	IT Enablement in MBC and Customer Service															
43	i. Centralized data Centre including IT module for Spot Billing & Collection, Consumer indexing															
44	ii. Customer Care Centre across all 34 Sub-Divisions															
45	iii. Procurement of Software for Network Simulation studies, GIS Mapping and associated infrastructure															
46	iv. IT Hardware for Billing & Collection Centres															
47	v. Preparation of Distribution Master Plan till 2040	94.00	94.00			94.00			31.00		31.00		32.00	94.00	94.00	94.00
	IPDS															
48	i. 33/11KV GIS Sub-station 1No. 2x10 MVA and 1 No.2x5 MVA															
49	ii. 33 KV Line 4.63 km and 11KV Line 2.8 km															
50	iii. ERP Implementation	44.59	42.36		2.23	44.59			14.86		14.86		14.87	44.59	44.59	44.59
	Rooftop Solar Programme															
51	i. Base Installation capacity 6KWP															
52	ii. Total installed as on March 2020 = 198 KWP	1.63	0.98		0.65	1.63	0.82	1.63							0.82	1.63

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
	State Government Funded Schemes															
53	Construction of 33 KV line from Umsong to Patharkhmah,and 33/11KV 1x 2.5 MVASub-Station at Patharkhmah along with 11KV Connected feeders	4.91	4.91			4.91			1.96		2.95	4.91			4.91	4.91
54	Data Center for MePDCL	11.72	11.72			11.72			4.69		7.03	11.72			11.72	11.72
55	Construction of 33 KV line from Nongpoh to Umden, and 33/11KV 1x 2.5 MVASub-Station at Umden along with 11KV Connected feeders.	6.15	6.15			6.15			2.46		3.69	6.15			6.15	6.15
56	Conversion of 33/11 kV,2.5 MVA DO controlled Substation at Syndai into a manned 33/11 kV,5.0 MVA Substation including re-engineering of the 11KV line from Lakroh HEP 1.5 MW to Syndai	3.55	3.55			3.55			1.42		2.13	3.55			3.55	3.55
57	Renovation & Modernisation with Control Room 33/11 kV, 5.0 MVA Substation at Shangpung, along with associated 11 kV line	2.90	2.90			2.90			1.16		1.74	2.90			2.90	2.90

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
58	33/11 kV System integration with SLDC System in Meghalaya for monitoring the power supply scenario including scheduling and dispatch in cognizance with Indian electricity Code and related CERC Regulations with respect to Real Time availability of power to avoid grid failure across all 132/33 and 33/11 kV Substations in the State.	3.00	3.00			3.00			1.20		1.80	3.00			3.00	3.00
59	Construction of 33 KV line from Umden to Umlaper, and 33/11KV 1x 2.5 MVA Sub-Station at Umlaper along with 11KV Connected feeders.	6.17	6.17			6.17					2.47		3.70	6.17	6.17	6.17
60	Conversion of 33/11 kV,2.5 MVA DO controlled Substation at Kuliang into a manned 33/11 kV,5 MVA Substation along with 33 KV line to IBFL	2.80	2.80			2.80							1.12		1.12	0.00
61	Construction of 33 KV line from Bhoirymbong to Mawlasnai and 33/11KV 1x 2.5 MVA Sub-Station at Mawlasnai along with 11KV Connected feeders.	6.33	6.33			6.33							2.53		2.53	0.00
62	Renvation, Modernisation for Rajabagan 33/11 KV,1x10.0 MVA Substation, Byrnihat	4.45	4.45			4.45							1.78		1.78	0.00

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
63	Re-Routing and Renovation of 11 KV Nongspung Feeder, Byrnihat Distribution Division, Ri-Bhoi District.	1.17	1.17			1.17					0.47		0.70	1.17	1.17	1.17
64	Construction of 33/11 KV, 2.5 MVA Sub-Station at Nonglang under Mawshynrut Civil Sub-Division, West Khasi Hills.	9.00	9.00			9.00							3.60		3.60	0.00
65	Construction of 33 KV line from Praharinagar to Doldegre 1x5 MVA manned Sub-Station at Doldegre alongwith 11 KV connected feeders	6.30	6.30			6.30					3.00		3.30	6.30	6.30	6.30
66	Augmentation / R&M and phasing out of the old power transformers at Hawakhana(2nos.), Dakopgre(1 no.), Dobasipara(1no.), Dalu(2nos.), Williamnagar(1no.) etc	5.00	5.00			5.00			2.50		2.50	5.00			5.00	5.00
67	Renovation/Upgradation of 33 KV Lines on covered conductor	5.00	5.00			5.00			2.50		2.50	5.00			5.00	5.00
68	Replacement of 33 kV poles by Tower Structures, i.e. all thick vegetation areas.	5.00	5.00			5.00					2.50		2.50	5.00	5.00	5.00
69	Augmentation / R&M of DT's	5.00	5.00			5.00			2.50		2.50	5.00			5.00	5.00
70	Replacement of 11 KV conductor with covered conductor	5.00	5.00			5.00			2.50		2.50	5.00			5.00	5.00

Sl. No.	Name of the Scheme	Approved outlay	Source of funding				FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		Total	
			Grant	Equity	Loan	Total	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation	Capex	Capitalisation
71	Replacement of of LT from weasel/ Raaccoon with ABC Conductor (250)KM	18.00	18.00			18.00			6.00		7.00		5.00	18.00	18.00	18.00
72	Replacement of all 7.5 mtr poles to 8 .0 mtr and 8.0 mtr poles to 9.5 mtr poles (8.0mt-1300 nos./ 9.5 mt-2450 nos)	8.50	8.50			8.50					5.00		3.50	8.50	8.50	8.50
	Sub-total – B	**1309.17**	**1306.29**	**0**	**2.88**	**1309.17**	**0.82**	**1.63**	**421.75**	**0**	**441.64**	**52.23**	**429.60**	**1232.73**	**1293.81**	**1286.59**
	Grand Total	**2422.78**	**2418.86**	**0.00**	**3.92**	**2422.78**	**308.11**	**961.82**	**424.65**	**153.42**	**441.64**	**52.23**	**429.60**	**1232.73**	**1604.00**	**2400.20**

Annexure A:

a): Details of Ongoing Works for MePDCL spilling into FY 2020-21 (2nd Half) or control period FY 2021-24

Project Details				Total capital expenditure approved by MSERC/ Govt/ DPR/ FI (INR Cr)	Project outlay in FY 2020-21 (INR Cr)	Project outlay in FY 2021-22 (INR Cr)	Project outlay in FY 2022-23 (INR Cr)	Project outlay in FY 2023-24 (INR Cr)	SOURCE OF FINANCING FOR SCHEME				
										Debt Component		Capital Subsidies/ grants component	Consumer Contribution component
Sl. No.	Name of Scheme	Project Start Date (DD-MM-YY)	Project Completion date (DD-MM-YY)						Equity component	Loan amount (INR Cr)	Loan source		
										Loan - 1	Loan -1		
1	**Saubhagya Works**	Dec-18	Dec-20	657.06	173							657.06	
a)	**Eastern Zone** Over all Villages (1807 No's 11 Kv Line(445 Ckm) DTR(25 KVA=296 No's 63 KVA= 193 No's 100 KVA= 102 No's 250 KVA= 6 No's) LT Line (2432. Ckm)												
b)	**Western Zone** Over all Villages (3013 Nos.) 11 Kv Line(664.94 Ckm) DTR(25 KVA=486 Nos. 63 KVA= 232 Nos. 100 KVA= 37 Nos. 250 KVA=4 Nos.) LT Line (2844.74 Ckm)												
2	**Integrated Power Development Scheme Phase 1 (Package-VI & VII)**	Jan-18	Dec-20	20.9	6.3					1.04		19.85	
	Western Zone a.33/11kV sub-station (new) (2Nos.) b. 33/11kV sub-station (capacity addition) (1No.) c. R&M of 33/11kV sub-station (1No.) d. 33 kV new feeder (12.2ckm) e. 11 kV line: New/Reconductoring (33ckm) f. New LT sub-station (13 Nos.) g. LT line: New/ Reconductoring (21.13ckm) h. Solar Roof top panels (48kWp) i. Pre-paid meters (2260No.)												
3	**Additional Special Plan Assistance (ASPA)**												
a)	Construction of 33/11kV sub-station with	2020-21	2021-22	2.3	1.145	1.145						2.29	

Project Details				Total capital expenditure approved by MSERC/ Govt/ DPR/ FI (INR Cr)	Project outlay in FY 2020-21 (INR Cr)	Project outlay in FY 2021-22 (INR Cr)	Project outlay in FY 2022-23 (INR Cr)	Project outlay in FY 2023-24 (INR Cr)	SOURCE OF FINANCING FOR SCHEME				
										Debt Component			
Sl. No.	Name of Scheme	Project Start Date (DD-MM-YY)	Project Completion date (DD-MM-YY)						Equity component	Loan amount (INR Cr)	Loan source	Capital Subsidies/ grants component	Consumer Contribution component
										Loan -1	Loan -1		
	33kV & 11kV lines at Praharinagar												
b)	Construction of 33/11kV sub-station at Rongjeng	2020-21	2021-22	3.5	1.75	1.75						3.50	
4	**NEC**												
a)	Construction of new 33 kV S/C line from Rongkhon to Dadengre	2016-17	Dec-20	5.7	2.64							5.70	
5	**DDUGJY- I Village Electrification** i. Electrification of Un-electrified village by Grid solution = 261 Nos. ii. Electrification of Un-electrified village by Off- Grid solution = 52 Nos. iii. Electrification of Grid PE/UED = 200 Nos.	01.04.2016	30.09.2020	116.65	26.75							116.65	
6	**DDUGJY-II Village Electrification** i. Intensification of partially electrified villages = 558 Nos.	01.04.2018	31.12.2020	89.85	14.25							89.85	
7	**DDUGJY-II Systems Strengthening** i. Installation and commissioning of 9 Nos. 33/11KV ,2.5 MVA Sub-stations with a total capacit of 22.5 MVA. ii. Augumentation of 2Nos. 33/11KV Substations with a total capacity of 3.4 MVA.	01.04.2018	31.12.2020	54.80	15.55							54.80	
8	**DDUGJY-II Systems Metering** i. Installation of 1020 Nos. of DT Metering ii. Installation of 45 Nos. 33 KV Feeder Metering. iii. Installation of 162 Nos. 11KV Feeder Metering.	01.04.2019	31.12.2020	15.24	6.74							15.24	
9	**IBBFL Deposit Works** i. Installation of 33/0.4 KV and 11/0.4 KV Sub-station =105 Nos. ii. Installation of 33 KV line = 300 Ckt km. iii. Installation of 11 KV line = 520 Ckt km. iv. Installation of 33/11 KV Substation = 11Nos.with total capacity of 13800 KVA.	01.04.2018	31.03.2021	147.63	59.2								147.63

b): Details of proposed schemes for MePDCL spilling in FY 2020-21 (2nd Half) or control period FY 2021-24

Project Details				Total capital expenditure projected	Project outlay in FY 2020-21 (Projected) in Cr)	Project outlay in FY 2021-22 (Projected) in Cr	Project outlay in FY 2022-23 (Projected) in Cr	Project outlay in FY 2023-24 (Projected) in Cr	SOURCE OF FINANCING FOR SCHEME			
										Debt Component		Capital Subsidies/ grants component
Sl. No.	Name of Scheme	Project Start Date (DD-MM-YY)	Project Completion date (DD-MM-YY)						Equity component	Loan amount (INR Cr) Loan -1	Loan source Loan - 1	
1	**Distribution Works Under ADB Funding**											
a	**33/11 KV Sub-Stations (ADB)** i. Construction of 24 nos. new 33/11 KV sub-stations to provide capacity infeed to meet existing and future demand requirements- 11nos in Central Circle, 4 nos. in West Garo, 9 nos. in East Garo Circle. ii. Capacity Augmentation of existing 33/11 KV Substations -15 nos. iii. Renovation and modernization of 6 nos. of 33/11 substations to provide improved reliability,safety and better life cycle management. iv. Replacement of drop-out fuses with auto re-closers at 66 nos. 33KV and 11KV feeders terminations in substations without control room, for safety of utility personnel, reliability and operational flexibility. v. 33 KV Bay Extension	01.09.2020	30.09.2023	145		49	48	48				145.00
b	**33KV Transmission lines (ADB)** i. Replacement of overhead lines in thick vegetation areas with 57 Ckms of covered conductors ii. New 33KV Lines on mini tower structure with wolf conductor to suit difficult rural terrain, thick vegetation areas and high load industrial areas- approximately 295 Ckms. iii. Construction of 33KV new lines approx. 400 Ckms to connect proposed 33/11 KV new sub-stations (NERPSIP and projects identified in this proposal). iv. Re-conductoring of existing 33KV lines approx. 225 Ckms to connect proposed new 33/11 KV Sub-stations (NERPSIP and projects identified in this proposal)	01.09.2020	30.09.2023	252		81	81	90				252.00
c	**11KV & LT Distribution Lines (ADB)**	01.09.2020	30.09.2023	318		106	106	106				318.00

Project Details				Total capital expenditure projected	Project outlay in FY 2020-21 (Projected) in Cr)	Project outlay in FY 2021-22 (Projected) in Cr	Project outlay in FY 2022-23 (Projected) in Cr	Project outlay in FY 2023-24 (Projected) in Cr	SOURCE OF FINANCING FOR SCHEME			
										Debt Component		Capital Subsidies/ grants component
Sl. No.	Name of Scheme	Project Start Date (DD-MM-YY)	Project Completion date (DD-MM-YY)						Equity component	Loan amount (INR Cr) Loan -1	Loan source Loan - 1	
	i. Construction of 674 Ckms of 11KV new lines to establish new feeders from proposed 33/11LV Substations and to connect with the proposed 11/0.4 substations.(NERPSIP and projects identified in this proposal)											
	ii.Re-conductoring of 11 KV existing lines approx. 278 Ckms to connect the proposed new substations (NERPSIP and projects identified in this proposal)											
	iii.Replacement of rusted/damaged 11KV GI & PSC poles in identified sites.											
	iv. Construction of new 181 Ckms of 3-PH, 4-WIRE LT lines on WEASEL conductor.											
	v. Augmentation of 135 Ckms 1ph-2 wire to 3 Ph-4 wire lines on Weasel & Squirrel CONDUCTOR											
	vi. Conversion of 1050 Ckms of LT overhead lines to ABC using 3cx95,3cx70,1cx50 sqmm to prevent theft & leakages											
	vii. Replacement of street lights with solar lamps, LED lamps etc. in selected locations											
d	**Distribution Transformer (ADB)**	01.09.2020	30.09.2023	211		70	70	70				211.00
	i. Installation of 301 Nos. of new Transformers to cater to demand developments											
	ii. Capacity augmentation of 94 Nos. Distribution Transformers (DTs)											
	iii. R&M of DTs (Improvement of the earthing, fencing of all un-fenced DTs, replacement of fuse cut-outs by Single-pole MCB, providing Lighting Arrestors in all DTs in West Garo & East Garo circles, Augmentation by Completely Self Protected Transformer and metering of DTs.											
	iv.Renovation & modernization of 1 no. of Transformer Repair Workshop.											
e	**Metering (ADB)**	01.09.2020	30.09.2023	123		41	41	41				123.00
	i. Replacement of Post paid meters by Prepaid Meters											
	ii. Replacement of LTCT meters by Thread-through Meters											
	iii. R&M of Test bench for Meter Testing Laboratory											

Project Details				Total capital expenditure projected	Project outlay in FY 2020-21 (Projected) in Cr)	Project outlay in FY 2021-22 (Projected) in Cr	Project outlay in FY 2022-23 (Projected) in Cr	Project outlay in FY 2023-24 (Projected) in Cr	SOURCE OF FINANCING FOR SCHEME			
										Debt Component		Capital Subsidies/ grants component
Sl. No.	Name of Scheme	Project Start Date (DD-MM-YY)	Project Completion date (DD-MM-YY)						Equity component	Loan amount (INR Cr) Loan -1	Loan source Loan - 1	
	and procurement of on-site meter testing equipment											
	iv. Technical Survey and Study for Energy Audit											
f	**IT Enablement in MBC and Customer Service (ADB)** i. Centralized data Centre including IT module for Spot Billing & Collection, Consumer indexing ii. Customer Care Centre across all 34 Sub-Divisions iii. Procurement of Software for Network Simulation studies, GIS Mapping and associated infrastructure iv. IT Hardware for Billing & Collection Centres v. Preparation of Distribution Master Plan till 2040	01.09.2020	30.09.2023	94		31	31	32				94.00
2	**IPDS** i. 33/11KV GIS Sub-station 1No. 2x10 MVA and 1 No.2x5 MVA ii. 33 KV Line 4.63 km and 11KV Line 2.8 km iii. ERP Implementation	01.10.2020	31.10.2023	44.59		14.86	14.86	14.86		2.23		42.36
3	**Rooftop Solar Programme** i. Base Installation capacity 6KWP ii. Total installed as on March 2020 = 198 KWP	01.03.2019	31.03.2021	1.63	0.815					0.652		0.98
4	**State Government Funded Schemes**											
a	Construction of 33 KV line from Umsong to Patharkhmah,and 33/11KV 1x 2.5 MVASub-Station at Patharkhmah along with 11KV Connected feeders	2021-22	2022-23	4.91		1.96	2.95					4.91
b	Data Center for MePDCL	2021-22	2022-23	11.72		4.69	7.03					11.72
c	Construction of 33 KV line from Nongpoh to Umden, and 33/11KV 1x 2.5 MVASub-Station at Umden along with 11KV Connected feeders.	2021-22	2022-23	6.15		2.46	3.69					6.15
d	Conversion of 33/11 kV,2.5 MVA DO controlled Substation at Syndai into a manned 33/11 kV,5.0 MVA Substation including re-engineering of the 11KV line from Lakroh HEP 1.5 MW to Syndai	2021-22	2022-23	3.55		1.42	2.13					3.55
e	Renovation & Modernisation with Control Room 33/11 kV, 5.0 MVA Substation at Shangpung, along with associated 11 kV line	2021-22	2022-23	2.90		1.16	1.74					2.90
f	33/11 kV System integration with SLDC System in Meghalaya for montoring the power supply sceneraio including scheduling and dispatch in cognizane with Indian electricity Code and related CERC Regulations with respect to Real Time	2021-22	2022-23	3.00		1.20	1.80					3.00

Project Details				Total capital expenditure projected	Project outlay in FY 2020-21 (Projected) in Cr)	Project outlay in FY 2021-22 (Projected) in Cr	Project outlay in FY 2022-23 (Projected) in Cr	Project outlay in FY 2023-24 (Projected) in Cr	SOURCE OF FINANCING FOR SCHEME			
										Debt Component		Capital Subsidies/ grants component
Sl. No.	Name of Scheme	Project Start Date (DD-MM-YY)	Project Completion date (DD-MM-YY)						Equity component	Loan amount (INR Cr) Loan -1	Loan source Loan - 1	
	availability of power to avoid grid failure across all 132/33 and 33/11 kV Substations in the State.											
g	Construction of 33 KV line from Umden to Umlaper, and 33/11KV 1x 2.5 MVA Sub-Station at Umlaper along with 11KV Connected feeders.	2022-23	2023-24	6.17			2.47	3.70				6.17
h	Conversion of 33/11 kV,2.5 MVA DO controlled Substation at Kuliang into a manned 33/11 kV,5 MVA Substation along with 33 KV line to IBFL	2023-24	2024-25	2.80				1.12				2.80
i	Construction of 33 KV line from Bhoirymbong to Mawlasnai and 33/11KV 1x 2.5 MVA Sub-Station at Mawlasnai along with 11KV Connected feeders.	2023-24	2024-25	6.33				2.53				6.33
j	Renvation, Modernisation for Rajabagan 33/11 KV,1x10.0 MVA Substation, Byrnihat	2023-24	2024-25	4.45				1.78				4.45
k	Re-Routing and Renovation of 11 KV Nongspung Feeder, Byrnihat Distribution Division, Ri-Bhoi District.	2022-23	2023-24	1.17			0.47	0.70				1.17
l	Construction of 33/11 KV, 2.5 MVA Sub-Station at Nonglang under Mawshynrut Civil Sub-Division, West Khasi Hills.	2023-24	2024-25	9.00				3.60				9.00
m	Construction of 33 KV line from Praharinagar to Doldegre 1x5 MVA manned Sub-Station at Doldegre alongwith 11 KV connected feeders	2022-23	2023-24	6.30			3.00	3.30				6.30
n	Augmentation / R&M and phasing out of the old power transformers at Hawakhana(2nos.), Dakopgre(1 no.), Dobasipara(1no.), Dalu(2nos.), Williamnagar(1no.) etc	2021-22	2022-23	5.00		2.50	2.50					5.00
o	Renovation/Upgradation of 33 KV Lines on covered conductor	2021-22	2022-23	5.00		2.50	2.50					5.00
o	Replacement of 33 kV poles by Tower Structures, i.e. all thick vegetation areas.	2022-23	2023-24	5.00			2.50	2.50				5.00
p	Augmentation / R&M of DT's	2021-22	2022-23	5.00		2.50	2.50					5.00
q	Replacement of 11 KV conductor with covered conductor	2021-22	2022-23	5.00		2.50	2.50					5.00
r	Replacement of of LT from weasel/ Raaccoon with ABC Conductor (250)KM	2021-22	2023-24	18.00		6.00	7.00	5.00				18.00
s	Replacement of all 7.5 mtr poles to 8 .0 mtr and 8.0 mtr poles to 9.5 mtr poles (8.0mt- 1300 nos./ 9.5 mt-2450 nos)	2022-23	2023-24	8.50			5.00	3.50				8.50

Annexure - B

Table 3.41:Training Details for FY 2019-20

Sl. No	Name of Institute	Field of Training (Thermal/ Hydro /Transmission/ Distribution/ Management)	Total training (Days/ Man)
1	Training programme on **"Technician Development Programme**", organized by Power Grid Corporation of India Ltd. (PGCIL), Lapalang, Shillong under Capacity Building & Institutional Strengthening (CBIS) of NERPSIP, with effect from 16.04.2019 to 10.05.2019 at Powergrid, Misa Substation, Nowgaon, Assam. **Total Personnel-25 (twenty five) [Technical]. Linemen-25.**	**Transmission**	**20 x 25= 500**
	Workshop on **"National eVidhan Application (NeVA)**", organized by Meghalaya Legislative Assembly, held on the 24th & 25th April, 2019 at the Annexe Hall, Assembly Building, Rilbong, at 10:30 A.M. **Total Personnel-2 (two) [Technical]. AEE-1, JE-1.**	**Management**	**2 x 2= 4**
2	Training programme on **"*Finance & Accounts Practices*", ** organized by Power Grid Corporation of India Limited (PGCIL) from 22nd to 24th April, 2019 at 10:00 A.M in the ICSSR Hall, NEHU, Shillong.. **Total Personnel-26 (twenty six) [Technical]. CE-1, ACE-4, SE-8, EE-8, RE-5**	**Management**	**2 x 26 = 52**
3	Training Programme, organised by the Central Project Management Unit (CPMU) of Dam Rehabilitation and Improvement Project, CWC, New Delhi in association with the IIT, Roorkee and Motilal Nehru National Institute of Technology, Allahabad on **"Conventional and Advanced Hydrometric Technique for Discharge Estimation"** held on The 10th – 12th June, 2019 at Indian Institute of Technology, Roorkee, Uttarakhand. **Total Personnel-2(two) [Technical], AEE(C)-2.**	**Hydro**	**2 x 3 = 6**
4	Training Programme respectively under IPDS conducted by PFC Ltd, held on the 8th & 9th May, 2019 at 10.00 A.M in the Hotel Polo Towers, Shillong. **Total Personnel-83(eighty three) [Technical], AEE (Elect)-23, JE-24, ES-1, Linemen-II- 11, Electrician-3, C/Electrician-2, Jugali-19.**	**Distribution**	**2 X 83 = 166**
5	Training Programme, organised by the Central Project Management Unit (CPMU) of Dam Rehabilitation and Improvement Project, CWC, New Delhi in association with the IIT, Roorkee and Motilal Nehru National Institute of Technology, Allahabad on **"Hydrological and Hydraulic Methods of Flood Routing**" held on the 13th -14th June, 2019 at Indian Institute of Technology, Roorkee, Uttarakhand. **Total Personnel-2(two) [Technical],AEE(C)-2.**	**Management**	**2 X 2 = 4**

Sl. No	Name of Institute	Field of Training (Thermal/ Hydro /Transmission/ Distribution/ Management)	Total training (Days/ Man)
6	Programme on "**Power System Logistics Conclave**" organized by North Eastern Regional Load Dispatch Centre (NERLDC), POSOCO, Lower Nongrah, Lapalang, Shillong to be held on 6th & 7th June, 2019 at NERLDC Conference Hall, Shillong. **TotalPersonnel-2(two) [Technical], SE(Elect)-1, EE(Elect)-1.**	**Transmission**	**2 X 2 = 4**
7	Training Programme, organised by the Central Project Management Unit (CPMU) of Dam Rehabilitation and Improvement Project, CWC, New Delhi in association with the IIT, Roorkee and Motilal Nehru National Institute of Technology, Allahabad on **"Geotechnical and Seismic consideration in Dams"** held on the 17th - 18th June, 2019 at Indian Institute of Technology, Roorkee, Uttarakhand. **Total Personnel-2(two) [Technical],AEE (C)-2.**	**Management**	**2 X 2 = 4**
8	Training Programme, organised by the Central Project Management Unit (CPMU) of Dam Rehabilitation and Improvement Project, CWC, New Delhi in association with the IIT, Roorkee and Motilal Nehru National Institute of Technology, Allahabad on **"Geotechnical and Seismic consideration in Dams"** held on the 19th - 21st June, 2019 at Indian Institute of Technology, Roorkee, Uttarakhand. **Total Personnel-2(two) [Technical], AEE(C)-2.**	**Management**	**2 X 3 = 6**
9	Workshop on **"Latest Trends in Inspection & Investigations of Dam"**, organised by AF Academy under the aegis of Central Water Commission and in association with Central Board of Irrigation & Power (CBIP), ICID-CIID and World Bank on 30th & 31st May, 2019 at New Delhi. **Total Personnel-2(two) [Technical], CE(C)-1, SE(C)-1**	**Management**	**2 X 3 = 6**
10	Training programme on "Emerging Trends in Power Sector –NER" for senior management, organized by POWERGRID from 17th to 19th June, 2019 at POWERGRID Academy of Leadership (PAL), Manesar, Gurugram, Haryana. **Total Personnel-4(four) [Technical], SE(Elect)-2, EE(Elect)-2**	**Management**	**4 X 3 = 12**
11	Training on "***Capacity Development Proramme***", organized by Asian Development Bank held on 8th - 10th July, 2019 at ASCI, Hyderabad. **Total Personnel-1(one) [Technical], SE(Elect)-1.**	**Distribution**	**1 X 3 = 3**
12	Training programme on **"Project Planning Implementation, Monitoring & Evaluation"** organized by Department of Public Enterprises (DPE),	**Hydro**	**1 X 5 = 5**

Sl. No	Name of Institute	Field of Training (Thermal/ Hydro /Transmission/ Distribution/ Management)	Total training (Days/ Man)
	Government of India held on 15th -19th July, 2019 at IIT Kharagpur. **Total Personnel-1(one) [Technical], AEE(C)-1**		
13	Training Programme on "**Website Quality Certification**" at Electronics Test & Development Centre, STQC Directorate, Ministry of Electronics & Information Technology, Government of India, 1st & 2nd Floor, Central Block, HOUSEED Complex, Beltola-Basistha Road, Dispur, Guwahati – 781006 from 10:00 A.M to 5:00 P.M on the 15th – 16th July, 2019. **Total Personnel-1(one) [Technical], AEE(Comp. Engr)-1.**	**Management**	**1 X 2= 2**
14	The 22nd National Conference on e-Governance (NCeG) 2019 to be held on the 8th and 9th August, 2019 at State Convention Centre, Shillong. **Total Personnel-1(one) [Technical], SE(Elect)-1, EE(Elect)-1**	**Management**	**2 X 2= 4**
15	Training programme on **"*Finance & Accounts Practices*"** (INDAS), to be organized by Power Grid Corporation of India Limited (PGCIL) under Capacity Building & Institution Strengthening (CBIS) of NERPSIP on 2nd & 3rd September, 2019 from 9.30 A.M in the ICSSR Hall, NEHU, Shillong. **Total Personnel-26 (twenty six) [Accounts], DAO/SO -26.**	**Management**	**2 X 26= 52**
16	Training programme on **"Online Right To Information Portal"** organized by Meghalaya Administrative Training Institute", Shillong held on 4.10.2019 at IT Training Hall, IT & C Department at 11.00 A.M. **Total Personnel-6(six) [Administration], CE-4, ACE(C)-1, Under Secretary-1**	**Management**	**1 X 6= 6**
17	Training programme on **"Project Planning Implementation, Monitoring & Evaluation"** organized by Department of Public Enterprises (DPE), Government of India to be held on 15th -19th July, 2019 at IIT Kharagpur. **Total Personnel-1(one) [Technical], AEE(C)-1.**	**Hydro**	**5 X 1 = 5**
18	Training programme on **"Smartgrid"** organised by Power Grid Corporation of India Limited, at Smart Grid Knowledge Centre, Manesar, Haryana with effect from 9th – 11th September, 2019. **Total Personnel-1(one) [Technical], AEE (Elect)-1.**	**Distribution**	**3 X 1 = 3**
19	Training programmme on **"Urban Planning & Management"**conducted by Meghalaya Administrative Training Institute (MATI), Shillong held on 24.10.2019 from 9.30 A.M at MATI, Shillong. **Total Personnel-3(three) [Technical], AEE (Elect)-2, AEE (C)-1.**	**Management**	**1 X 3 =3**
20	Training programmme on **"ADB Procurement, bid**	**Management**	**2 X 32 =64**

Sl. No	Name of Institute	Field of Training (Thermal/ Hydro /Transmission/ Distribution/ Management)	Total training (Days/ Man)
	Evaluation (Technical & Financial etc)" conducted by ADB on the 20th & 21st November, 2019 in the Conference Hall, Lumjingshai, MeECL, Shillong from 10.00 A.M onwards. **Total Personnel-32(thirty two) [Technical], CE(Elect)-2, Comp Secretary-1, ACE-4, SE-8, Dy. CAO-1,Sr. AO-1, EE-8, AAO-3,AEE-3,DAO-1**		
21	Workshop on **"Breakdown Analysis and Remedies of Electrical Equipment"** conducted by NTPC, Bhubaneswar to be held on26.11.2019from 10.00 A.M to 4.00 PM in the HRD Centre Hall Umiam. **Total Personnel-40(forty) [Technical], SE-2, EE(Elect)-12, EE (C)-6, AEE/RE-20**	**Distribution**	**1X 40 = 40**
22	Workshop on **"a cloud based modular HR Management system under CBIS Programme of NERPSIP Project"** organized by the Power Grid Corporation of India Ltd., to be held on the 28th February, 2020 in the Conference Hall, Lumjingshai, Shillong from 11.00 A.M onwards. **Total Personnel-21(twenty one) [Technical], Directors= 3, CEs=7, Comp. Secretary=1, CAO(I/C)=1, ACEs/Dy. Director (HRDC)= 9**	**Management**	**1X 21 = 21**
23	Seminar on "Implementation of Smart Metering System" organized by Genus Power Infrastructures Limited, New Delhi held on 27th February, 2020 in the Conference Hall, Lumjingshai, Shillong from 1:00 P.M onwards. **Total Personnel-20(twenty) [Technical], Director= 1, CEs=3, ACEs =6, SE=4, EEs =6**	**Distribution**	**1X 20 = 20**
24	Workshop to demonstrate **"a cloud based modular HR Management system under CBIS Programme of NERPSIP Project"** organized by the Power Grid Corporation of India Ltd., held on the 28th February, 2020 in the Conference Hall, Lumjingshai, Shillong from 9.30 A.M onwards. **Total Personnel-28(twenty Eight) [Technical], Directors= 3, CS=1,CEs=7, CFO= 1, CAO(I/C)=1, Jt. Secretary=1, Dy. Director(HRDC)=1, ACEs =11, Dy. CAO=1, , EE =1**	**Management**	**1X 28 = 28**

Table 3.42: Training Details for FY 2020-21 (As on August):

Sl. No	Name of Institute	Field of Training (Thermal/ Hydro /Transmission/ Distribution/ Management)	Total training (Days/ Man)
1	Training on **"E-learning Course on Project management through live Webinars under CBIS Programme of NERPSIP for Executives"** organized by Power Grid held on 12th June, 2020 from 3:00 P.M onwards. **Total Personnel-29 (twenty nine) [Technical]. CE-1, ACE-1, EE-8, AEE/RE-19.**	**MANAGEMENT**	**1 x 29 = 29**
2	Training on **"Webinar on Contract Management, Project Management & Risk Assessment"** organized by Power Grid Corporation of India Ltd.(PGCIL), held on 15th & 16th May, 2020 from 3:00 P.M onwards. **Total Personnel-10 (ten) [Technical]. CE-1, ACE/Dy Dir-1(HRDC)-2, SE-1, EE-5, AEE-1.**	**MANAGEMENT**	**2 x 10 = 20**
2	E-learning course under CBIS –NERPSIP on "**Prevention of Sexual Harassment for Internal Committee"** organized by the PGCIL held from 7th July, 2020 to 10th July, 2020 from 11.A.M to 1.P.M. **Total Personnel-4 (four) [Technical/Administration]. SE-1, Under Secy-1,AEE-1,AE-1**	**MANAGEMENT**	**4 x 4 = 16**
3	Training programme on the subject "**Accounting Finance (Basic)"** (Capacity Building plan 2020-22) under CBIS –NERPSIP, organized by the PGCIL through Administrative Staff College of India (ASCI) Hyderabad, held from 20th July, 2020 to 24th July, 2020. **Total Personnel-25 (twenty five) [ACCOUNTS].CFO-1,SrAO-1,DAO-23**	**MANAGEMENT**	**5 x 25 = 125**
4	Online training programme on the topic **"CEA Contractual Standards for Distribution Works"** organized and sponsored by TATA Power DDL, New Delhi through Chief Program Manager, REC Ltd, RO, Shillong held on 5th August, 2020 from 11:00 A.M to 12:30 P.M. **Total Personnel-30 (thirty) [TECHNICAL]. EE-13, AEE-17.**	**DISTRIBUTION**	**1 x 30 = 30**