

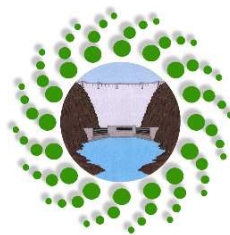
**BEFORE**  
**MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION,**  
**SHILLONG**

**PETITION**

**FOR**

**Approval of Capital Cost, AFC For**  
**FY 2021-22 to FY 2023-24 of Third MYT Control Period,**  
**And**  
**Tariff for FY 2021-22 for Lakroh Mini Hydro Electric**  
**Project**

**FILED BY**



**MePGCL**

Generating Clean And Green Energy

**MEGHALAYA POWER GENERATION CORPORATION LTD.**

**LumJingshai, Short Round Road, Shillong - 793 001**

**BEFORE THE HON'BLE MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION**

At its office at Lower Lachumiere, Shillong – 793001

FILE / PETITION NO.....

IN THE MATTER OF

APPROVAL OF CAPITAL COST, MYT OF LAKROH MINI HYDEL PROJECT FOR FY 2021-22 TO FY 2023-24 & DETERMINATION OF GENERATION TARIFF FOR FY 2021-22 UNDER THE MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION (MULTI YEAR TARIFF) REGULATIONS, 2014, MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION (TERMS AND CONDITIONS FOR DETERMINATION OF TARIFF FOR GENERATION FROM RENEWABLE ENERGY SOURCES) REGULATIONS, 2014) AND UNDER SECTIONS 62 & 64 READ WITH SECTION 86 OF THE ELECTRICITY ACT 2003.

AND IN THE MATTER OF

MEGHALAYA POWER GENERATION CORPORATION LIMITED, LUMJINGSHAI, SHILLONG – 793001, MEGHALAYA

**PETITIONER**

*The Petitioner respectfully submits as under:*

1. In exercising its powers conferred under sections 131 and 133 of the Electricity Act 2003, the State Government of Meghalaya notified “The Meghalaya Power Sector Reforms Transfer Scheme 2010” on 31st March 2010 leading to restructuring and unbundling of erstwhile Meghalaya State Electricity Board (MeSEB) into four entities namely:
  - a. **Meghalaya Energy Corporation Limited (MeECL):** the Holding Company;
  - b. **Meghalaya Power Distribution Corporation Limited (MePDCL):** the Distribution Utility;
  - c. **Meghalaya Power Generation Corporation Limited (MePGCL):** the Generation Utility;
  - d. **Meghalaya Power Transmission Corporation Limited (MePTCL):** the Transmission Utility.
2. However, the holding company – MeECL-carried out the functions of distribution, generation and transmission utilities from 1st April 2010 onwards, even after restructuring. Therefore, through notification dated 31st March 2012, the State Government notified an amendment to The Power Sector Reforms Transfer Scheme leading to effective unbundling of MeECL into MeECL (Holding Company), MePDCL (Distribution Utility), MePGCL (Generation utility) and MePTCL (Transmission Utility) from 1st April 2012.
3. On 23rd December 2013, the Government of Meghalaya issued the latest transfer scheme notification thereby notifying the Assets and Liabilities as on 1st April 2010 to be vested in MeECL. Subsequently, the Government of Meghalaya notified the 4<sup>th</sup> Amendment to the Notified Transfer Scheme dated 31st March 2010 on 29th April 2015, wherein the opening balances of all the four entities namely, MePGCL, MePTCL, MePDCL and MeECL as on 1st April 2012 have been notified.
4. MePGCL began segregated commercial operations as an independent entity from 1st April 2013.
5. The Lakroh Mini Hydel Project with an installed capacity of 1x1.5 MW achieved Commercial Operation Date (COD) on 1 March 2019. The generating plant would supply power to the Meghalaya Power Distribution Corporation Limited (MePDCL) for which the Power Purchase Agreement (PPA) has been executed. A copy of the PPA is enclosed as **Annexure A**

6. The Lakroh MHP's capital cost as on 31.03.2019 has already been audited. As such, in the present petition, MePGCL is filing the approval of Capital Cost, AFC for the Control Period FY 2021-22 to FY 2023-24 based on the audited capital cost as on 31.03.2019 and tariff for FY 2021-212 in accordance with The Meghalaya State Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2014 (hereinafter referred to as "MYT Regulations, 2014") and Meghalaya State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014.
7. The Board of Directors of MePGCL has accorded approval for filing of this petition and authorized the undersigned to file the petition accordingly. A copy of the Board's resolution is hereby enclosed as **Annexure-B**.
8. The applicant, therefore, humbly prays before the Hon'ble Commission to pass appropriate order on the following:
  - a) Approval of Capital Cost of Lakroh MHP
  - B) Approval of AFC for FY 2021-22, FY 2022-23 & FY 2023-24 as proposed in this Petition.
  - b) Approval of tariff for FY 2021-22 as proposed in this petition.
  - d) 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.
  - e) To condone any inadvertent omissions, errors & shortcomings and permit the applicant to add/change/modify/alter this filing and make further submissions as required.

(A Lyngdoh)  
Superintending Engineer (PM)

For and on behalf of  
Meghalaya Power Generation Corporation Ltd

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## **1 Capital Cost and General Details of Plant**

### **1.1. Introduction**

The Lakroh Mini Hydel project is a run-of-the river project developed on the Lakroh River near Muktapur village in West Jaintia Hills District of Meghalaya. The project site is located about 6km by road from the Muktapur village near Bangladesh border. Muktapur is approachable from Shillong by the 65km long road on NH-44 upto Jowai, and from there by the 52 km long Jowai –Muktapur road. Muktapur is also approachable from Shillong via Dawki on NH 40 for 86km and another 16 km on the Dawki – Muktapur road.

The project components comprise of a Diversion weir (composite structure, i.e. masonry covered with RCC) of about 40metres in length and 4.5 metres in height. The design discharge of the project is 1.15 cumecs fixed on 66% dependable flow. The water from the intake (developed on the body of the Weir) is led to the Forebay through an open channel of about 800 metres in length. The Overall storage capacity of the Forebay is about 450 cubic meters. The water from the Forebay is led through a penstock made of mild steel with diameter 600mm and thickness varying from 6mm at the top to 10 mm at the Power house. The Power house is equipped with one Horizontal Francis Turbine, EOT Crane and Panel Boards. The water from the Powerhouse is discharged back to the river through a tail race of about 150 metres in length. The Designed Annual Energy is 11.01 MU.

#### **1.1.1. Benefits of the Project:**

The detailed project report of Lakroh Mini Hydel Project was prepared by the then Me.S.E.B in 1996 keeping in view the importance of power for the various developmental programmes of the state. In and around Lakroh project site there are about 14 nos of villages located within a radius of 6km, where there is frequent disruption of electricity supply due to long transmission lines. The Lakroh Mini Hydel Project has improved the power supply of the surrounding villages to a great extent.

#### **1.1.2. Date of Commissioning:**

Inspite of many problems and issues faced during construction viz land issue, delay in receiving of NOC from Jaintia Hills Autonomous District Council, financial constrain and refurbishment and replacement of E&M Equipments the Project was finally Commissioned on 01<sup>st</sup> March 2019. The Commercial Operation Date of the Project has been declared as 1st March, 2019

#### **1.1.3. Date of Inauguration of the Project:**

The Project was formally inaugurated by the Local MLA and Hon'ble Minister of Education Govt. of Meghalaya, Mr Lahkmen Rymbui on 5<sup>th</sup> March, 2019.

#### **1.1.4. Features of the project**

The salient features of the Lakroh project are attached as **Annexure C**.

### **1.2. Provisional Capital Cost and Funding Pattern of Lakroh**

#### **1.2.1. Regulatory Provisions**

Regulation 52 of the MSERC MYT Regulations, 2014 provides for norms of determining the Capital Cost. The same is reproduced below for reference.

#### ***Regulation 52: Capital cost***

*“52.1 The actual capital expenditure on the date of commercial operation in the case of new investment shall be subject to prudence check by the commission.*

*52.2 Scrutiny of cost estimates by the Commission shall be limited to the reasonableness of the capital cost, financial plan, and interest during construction period, use of efficient technology, and such other matters for determination of tariff.*

.....

*52.8 In case the site of a hydro generating station is awarded to a developer (not being a state controlled or owned company), by a State Government by following a two stage transparent process of bidding, any expenditure incurred or committed to be incurred by the project developer for getting the project site allotted shall not be included in the capital cost.*

*Provided the capital cost in case of such hydro station shall include:*

*(a) Cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity of National R&R policy and (R&R) package as approved; and*

*(b) Cost of the developer's 10% contribution towards Rajiv Gandhi Grameen, Vidyutikaran Yojana (RGGVY) project in affected area."*

### **Regulation 29: Additional Capitalization**

Regulation 29 of the MSERC MYT Regulations, 2014 provides for additional capitalization. The same is reproduced hereunder:

#### **"29 Additional Capitalization**

*29.1 The following capital expenditure, actually incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to the prudence check:*

*a) Due to Un-discharged liabilities within the original scope of work;*

*b) On works within the original scope of work, deferred for execution;*

*c) To meet award of arbitration and compliance of final and unappealable order or decree of a court arising out of original scope of works;*

*d) On account of change in law;*

*e) On procurement of initial spares included in the original project costs subject to the ceiling norm specified;*

*f) Any additional works/services, which have become necessary for efficient and successful operation of a generating station or a transmission system or a distribution system but not included in the original capital cost"*

*29.2 Impact of additional capitalization on tariff, as the case may be, shall be considered during Truing Up of each financial year of the Control Period."*

The definition of **cut off** as per Clause 2 of the MSERC 2014 Regulations is given below for reference:

*19) "Cut-off Date" means 31<sup>st</sup> March of the year closing after two years of the year of commercial operation of the project, and in case the project is declared under commercial operation in the last quarter of a year, the cutoff date shall be 31<sup>st</sup> March of the year closing after three years of the year of commercial operation;*

### **1.2.2. Capital Cost of Lakroh**

The Lakroh Mini Hydel Project achieved its CoD on 01 March 2020. The audit of the capital cost as on CoD and as on 31.03.2020 for Lakroh MHP is complete and is provided in the table below. The capital cost of Lakroh as certified by statutory auditor is attached as **Annexure D**.

**Table 1: Capital Cost of Lakroh**

<b>Capital Cost</b>	<b>Amount (In INR Cr.)</b>
Audited Capital Cost as on 01 March 2019 (CoD)	22.33
Audited Capital Cost as on 31 March 2019	22.33

MePGCL submits before the Hon'ble Commission to kindly approve the capital cost of Lakroh as shown in the table above.

### **1.3. Additional Capitalization**

The regulation 29 of the MSERC Terms and Conditions for determination of Tariff) Regulations, 2011 provides additional capitalization. The same is reproduced hereunder:

#### ***“29 Additional Capitalization***

*29.1 The following capital expenditure, actually incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to the prudence check:*

- a) Due to Un-discharged liabilities within the original scope of work;*
- b) On works within the original scope of work, deferred for execution;*
- c) To meet award of arbitration and compliance of final and unappealable order or decree of a court arising out of original scope of works;*
- d) On account of change in law;*
- e) On procurement of initial spares included in the original project costs subject to the ceiling norm specified;*
- f) Any additional works/services, which have become necessary for efficient and successful operation of a generating station or a transmission system or a distribution system but not included in the original capital cost”*

*29.2 Impact of additional capitalization on tariff, as the case may be, shall be considered during Truing Up of each financial year of the Control Period.*

As per the regulation, the works which are within the original scope of works but deferred for execution and works due to un-discharged liabilities within the original scope of work, will form the part of additional capitalization. The additional capital expenditure after date of commissioning and within the cut-off date (**31<sup>st</sup> March 2021**) will be adjusted in true up of that year.

### **1.4. Operational norms and Design Energy**

#### **1.4.1. Norms of Operation**

Regulation 58 of the MSERC (Multi Year Tariff) Regulations, 2014 provides for norms of operation of Hydro Generating stations. The regulation is reproduced below for ready reference:

#### ***“58 Norms of Operation***

*The norms of operation shall be as under:*



*58.1 Normative annual plant availability factor (NAPAF)*

*(a) Storage and pondage type plants where plant availability is not affected by silt and*

*(i) with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of upto 8 % ..... 90 %*

*(ii) with head variation between FRL and MDDL of more than 8% = (Head at MDDL/Rated Head) x 0.5+0.2*

*(b) Pondage type plant where plant availability is significantly affected by silt.....85%*

*(c) Run –of- River type plants: NAPAF to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available /relevant.*

*Note:*

*(i) A further allowance may be made by the Commission under special circumstances, e.g. Abnormal silt problem or other operating conditions, and known plant limitations.*

*(ii) A further allowance of 5 % may be allowed for difficulties in the North East Region.*

*(iii) In case of new hydro electric project the developer shall have the option of approaching the Commission in advance for further above norms.*

*58.2 Auxiliary energy consumption:*

*(a) Surface hydro electric power generating stations with rotating exciters mounted on the generator shaft .....0.7% of energy generated.*

*(b) Surface hydro electric power generating stations with static excitation system.....1.0% of energy generated.*

*(c) Underground hydro electric power generating stations with rotating exciters mounted on the generator shaft ....0.9% of energy generated.*

*(d) Underground hydro electric power generating stations with static excitation system .....1.2% of energy generated.*

*58.3 Transformation losses*

*From generation voltage to transmission voltage .....0.5% of energy generated.”*

The features of the Lakroh in terms of type of plant, type of excitation, etc. are provided in the table below:

**Table 2: Features of Lakroh**

<b>Particulars</b>	<b>Lakroh</b>
<b>Type of Station</b>	ROR
Surface/ Underground	Surface
Purely ROR/ Pondage/ Storage	ROR
Peaking/ Non-Peaking	Non-Peaking
No. of hours Peaking	N.A
Overload Capacity	N.A
<b>Type of Excitation</b>	
Rotating exciters on Generator	-
Static excitation	Static excitation

#### 1.4.2. Design Energy

The plant is designed to generate 11 Million Units of electricity in a year.

#### 1.4.3. Capacity Utilization Factor (CUF)

Based on the Regulation 32 of the Meghalaya State Electricity Regulatory Commission (Terms and Conditions for determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014, CUF for Lakroh MHP is 85%. The computation of CUF is furnished as **Annexure - E**

#### 1.4.4. Auxiliary Consumption and Transformation Losses

The Lakroh MHP is a surface hydroelectric power generating station with static excitation system. Therefore, based on Regulation 58.2 (b) and 58.3 of the MSERC MYT Regulations, 2014 and Regulation 33 of Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources Regulations, 2014, the normative auxiliary consumption and transformation losses applicable for Lakroh are as shown below:

**Table 3: Auxiliary Consumption and Transformation Losses of Lakroh**

Particulars	Rate
Auxiliary consumption for surface hydroelectric power generating stations with static excitation system	1.0%
Transformation losses from generation voltage to transmission voltage	0.5%

#### 1.4.5. Gross and Net Generation for Lakroh

Net Generation for FY 2018-19 (Actual from February 2019 to March 2019), and FY 2019-20 is provided in the table below:

**Table 4: Actual Generation of Lakroh**

Year	Gross Generation (MU)	Normative Aux Cons @ 1% of Energy Generated (MU)	Normative Transformation Loss @ 0.50% of Energy Generated (MU)	Net Generation (MU)
FY 2018-19	0.05	0.00	0.00	0.049
FY 2019-20	2.11	0.01	0.02	2.08

## 2 Introduction

### 2.1 Provisions of Law for Multi Year Tariff

#### 2.1.1 MSERC (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014

2.1.1.1 As per Clause 4 (2) of the Regulations, the hydro plants with installed capacity less than or equal to 25 MW shall qualify to be covered under these regulations:

*“Small hydro Project – located at the sites approved by State Nodal Agency / State Government using new plant and machinery and installed power plant capacity to be lower than or equal to 25 MW at single location”.*

#### 2.1.2 MYT Multi Year Tariff Regulations, 2014

2.1.2.1 The Hon'ble Commission has notified the Meghalaya State Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2014 on 15th September 2014 which were published in the Meghalaya Gazette on 25<sup>th</sup> September, 2014. It is submitted that Meghalaya State Electricity Regulatory

Commission (Multi Year Tariff) Regulations, 2014 since amended vide notification dated 18 June 2020, states as under:

*“The applicability of these Regulations is hereby extended for a further period of 3 years with effect from 1.04.2021 to 31.03.2024 onwards”.*

- 2.1.2.2 As per Regulations 3, 4 & 7 of the MYT Regulations, 2014, the Hon'ble Commission will determine ARR & Tariff for the Generation Company under the Multi Year Tariff framework. The relevant regulations are reproduced below for reference.

### **“3 Scope of Regulation**

*3.1 The Commission shall determine tariff within the Multi-Year Tariff framework, for all matters for which the Commission has jurisdiction under the Act, including in the following cases:*

- i. *Supply of electricity by a Generating Company to a Distribution Licensee:*

*Provided that where the Commission believes that a shortage of supply of electricity exists, it may fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating Company and a Distribution Licensee or between distribution licensees, for a period not exceeding one year to ensure reasonable prices of electricity;*

- ii. *Intra-State transmission of electricity and SLDC charges;*  
iii. *Intra-State Wheeling of electricity;*  
iv. *Retail supply of electricity:*

*Provided that in case of distribution of electricity in the same area by two or more Distribution Licensees, the Commission may, for promoting competition among Distribution Licensees, fix only maximum ceiling of tariff for retail sale of electricity:*

### **4 Multi-Year Tariff framework**

*4.1 The Commission shall determine the tariff for matters covered under clauses (i), (ii), (iii) and (iv) of regulation 3 above under Multi- Year Tariff framework with effect from April 01, 2015.*

*Provided that the Commission may, either on suo-moto basis or upon application made to it by an applicant, exempt the determination of tariff of a Generating Company or Transmission Licensee or Distribution Licensee under the Multi-Year Tariff framework for such period as may be contained in the Order granting such an exemption.*

*4.2 The Multi-Year Tariff framework shall be based on the following elements, for determination of Aggregate Revenue Requirement and expected revenue from tariff and charges for Generating Company, Transmission Licensee, and Distribution Business:*

- a) *A detailed Business Plan based on the principles specified in these Regulations, for each year of the Control Period, shall be submitted by the applicant for the Commission's approval:*

.....

### **7 Applicability**

*7.1 The Multi-Year Tariff framework shall apply to applications made for determination of tariff for a Generating Company, Transmission Licensee, and Distribution Licensee for Distribution Business.”*

The Regulation 6 of the MYT Regulations, 2014, provides the guidelines for filing of Multi Year Tariff. The relevant sections are reproduced below:

***“6 Accounting statement and filing under MYT***

*6.1 The filing under MYT by the Generating Company, Transmission Licensee, and Distribution Licensee, shall be done on or before 30<sup>th</sup> November each year to the Commission and in compliance with the principles for determination of ARR as specified in these Regulations, in such formats and at such time as may be prescribed by the Commission from time to time. The filing of truing up of petitions prior to MYT period shall be done in the manner and at such time as may be decided by the Commission.*

*6.2 The filing of MYT Petition for the Control Period under these Regulations shall be as under:*

*a) MYT Petition shall comprise of:*

- i. Multi-year Aggregate Revenue Requirement for the entire Control Period with year-wise details;*
- ii. Revenue from the sale of power at existing tariffs and charges and projected revenue gap, for the first year of the Control Period under these Regulations.*
- iii. Application for determination of tariff for first year of the Control Period.*

*.....*

- 2.1.2.3 MePGCL is filing separate petitions for the new projects of MLHEP, NUHEP and Lakroh as per the applicable regulations MSERC MYT Tariff Regulations 2014 since separate audited capital cost for these projects are available. However, the Hon’ble Commission of late has been approving the consolidated ARR of MePGCL as a whole which is against the regulations of MSERC. As such, the Hon’ble Commission is requested to approve the ARR for each of the new projects separately to enable accurate determination of ARR and accountability in efficiency and operations also.

**2.2 Submissions before the Hon’ble Commission**

MePGCL hereby submits the petition under section 61, 62 (1) (a) of the Electricity Act, 2003, MSERC Terms (Multi Year Tariff) Regulations, 2014 and MSERC (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014 for MYT of Lakroh MHP for FY 2021-22 to FY 2023-24 & Tariff for FY 2021-22.

### **3 True Up of Generation Business for FY 2018-19**

On account of the lockdown imposed during Covid-19 pandemic, and thereby the restriction in movement, has led to delay in the start of audit process of MePGCL as well as MeECL business for FY 2018-19. The statutory audited accounts of MePGCL and MeECL for FY 2018-19 are completed. However, the C&AG audit for MePGCL and MeECL for FY 2018-19 is still in process.

Since the existing MSERC Regulations mandate the completion of both statutory and C&AG audit before filing of true up petition, the utility will undertake the truing up exercise for FY 2018-19 once the audit process is completed. The utility prays for leave of submission of true up petition for FY 2018-19 along with the MYT petition and allow it to file the petition separately for timely determination of MYT ARR and tariff of FY 21-22.

#### 4 ARR for 3rd Control Period of FY 2021-22 to FY 2023-24

##### 4.1 Approach

In accordance with the provisions of the MYT Regulations, 2014 and MSERC (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014 MePGCL hereby submits ARR for FY 2021-22 to FY 2023-24 for Lakroh MHP, based on actuals of FY 2018-19 and provisionals of FY 2019-20 & approved business plan for the control period.

The Hon'ble Commission approved the Business plan order for 3<sup>rd</sup> Control Period from FY 2021-22 to FY 2023-24 on 30 September 2020 which includes capital investment plan, financing plan, physical targets etc. for the next control period. MePGCL is using it as a base along with audited statement of accounts of FY 2018-19 and provisional statement of accounts FY 2019-20 for determination of ARR for future periods.

##### 4.2 Components of Tariff

The different elements of tariff have been calculated for the control period based on the provisions of the MSERC (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014.

##### 4.3 Approved Capital Expenditure and Capitalization for the Control Period

###### 4.3.1 Capital Expenditure

In the approved Business Plan Order (dated 30.09.2020), the Hon'ble Commission has approved the year wise capital expenditure for the control period for MePGCL. The approved capex of Lakroh MHP as part of the approved business case is presented below:

**Table 5: Capex Approved for Lakroh MHP for the Third Control Period (INR Cr.)**

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
Approved Capex as per the Business Plan Order	0.06	0.66	0.82	0.00	<b>1.54</b>

The Loan, Equity and Grant Portion of the capex for third control period is given below:

**Table 6: Break up of Capex Approved for Lakroh MHP for the Third Control Period (INR Cr.)**

Capital Expenditure Plan	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
Equity	0.054	0.591	0.735	0.00	<b>1.386</b>
Debt	0.006	0.066	0.082	0.00	<b>0.154</b>

The capex components has shown above have been used in the subsequent sections for calculation of different components of tariff.

###### 4.3.2 Capitalization

In the approved Business Plan Order, the Hon'ble Commission has approved the year wise capitalization for the control period for MePGCL. The approved capitalization schedule of Lakroh MHP as part of the approved business plan is given below:

**Table 7: Capitalization Approved for Lakroh MHP for the Third Control Period (INR Cr.)**

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
Total Capitalization Approved in the Business Plan Order dated 30.09.2020	0.06	0.66	0.82	0.00	<b>1.54</b>

The Loan, Equity and Grant Portion of the capitalization for the next control period is given below:

**Table 8: Break up of Capitalization Approved for Lakroh MHP for the Third Control Period (INR Cr.)**

Capitalization	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
Equity Portion of Capitalization	0.00	0.00	1.39	0.00	<b>1.39</b>
Loan Portion of Capitalization	0.00	0.00	0.15	0.00	<b>0.15</b>
Total	0.00	0.00	1.54	0.00	<b>1.54</b>

#### 4.3.3 Asset Base of Lakroh MHP

- 4.3.3.1 From FY 2018-19, MePGCL has implemented IND AS Accounting Standard in line with Ministry of Corporate Affairs (MCA) norms. The IND AS are basically standards that have been harmonised with the IFRS to make reporting by Indian companies more in line with the global standards.

##### Impact of Ind AS on Asset Value in Accounts:

Ind AS 101 permits a first-time adopter to elect to continue with the carrying value for all of its property, plant and equipment as recognised in the financial statement as at the date of transition to Ind AS, measured as per the previous GAAP and use that as its deemed cost as on the date of transition.

On transition to Ind AS, the company had elected during the Financial Year 2016-17 to continue with the carrying value of its property, plant and equipment recognized as on 1st of April, 2015 measured as per the previous GAAP and used that carrying value as the deemed cost of the property, plant and equipment for furtherance of recognition and presentation thereon. Thus, the asset value in Note 2 "PROPERTY, PLANT AND EQUIPMENT" for FY 2018-19 and FY 2019-20 accounts is the deemed asset value.

- 4.3.3.2 However, components like depreciation is calculated on the historical value of the asset which is the Gross Fixed Asset value i.e. GFA (as per MSERC MYT Regulations, 2014). **The historical asset value of asset is the asset base without IND AS adjustment** and the same is shown in **Note 2: PROPERTY, PLANT AND EQUIPMENT Without IND AS Adjustment portion** of the FY 2019-20 accounts.
- 4.3.3.3 Based on the capitalization schedule of Lakroh (used for addition of asset in the control period FY 2021-22 to FY 2023-24) and asset as in FY 2018-19 and FY 2019-20 accounts (non IND-AS adjusted) as well as the approved capital cost of Lakroh plant, the total asset base of Lakroh is given below.

**Table 9: Asset base of Lakroh MHP (INR Cr.)**

Particulars	FY 2018-19 (Actual)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Opening GFA	-	22.33	24.35	24.41	25.07	25.89
Additions during the year (Based on the capitalization schedule above)	22.33	2.02	0.06	0.66	0.82	-
Retirements during the year	-	-	-	-	-	-
<b>Closing GFA</b>	<b>22.33</b>	<b>24.35</b>	<b>24.41</b>	<b>25.07</b>	<b>25.89</b>	<b>25.89</b>

#### 4.4 Operation and Maintenance Expense

The O&M Cost of Lakroh MHP shall be calculated following the methodology as per Regulation 34 of the Meghalaya State Electricity Regulatory Commission (Terms and Conditions for determination of

Tariff for Generation from Renewable Energy Sources) Regulations, 2014. The excerpts of the regulations is reproduced:

**“34 Operation and Maintenance Expenses**

(1) The normative O&M expenses for small hydro projects for the first year control period shall be as given below:

<b>Size of project</b>	<b>O&amp;M Expenses (INR lakh / MW)</b>
Below 5 MW	23.47
5 MW to 25 MW	16.77

(2) Normative O&M expenses allowed under these regulations shall be escalated at the rate of 5.72 % per annum for the tariff period for the purpose of determination of levelled tariff.”

Since the installed capacity of Lakroh MHP is 1.5 MW, its O & M expenses have been calculated at the rate of INR 23.47 Lakh / MW and further escalated at 5.72% to arrive at O & M expenses till FY 2023-24.

**Table 10: O & M Expenditure of Lakroh MHP for the Third Control Period (INR Cr)**

<b>Particulars</b>	<b>Amount</b>
Installed Capacity of Lakroh MHP (MW)	1.5
O&M Expenses for FY 2018-19 (at the rate of INR 23.47 Lakh/ MW) (INR Cr.)	0.35
Apportioned for 1 month (INR Cr.) (For AFC calculation of Lakroh)	0.03
O&M Expenses for FY 2019-20 (5.72% escalation over previous Year) (INR Cr.) (O&M FY 2018-19 i.e 0.35 * 1.0572)	0.37
<b>O&amp;M Expenses for FY 2020-21 (5.72% escalation over previous Year and ROP Impact) **</b>	0.50
<b>O&amp;M Expenses for FY 2021-22 (5.72% escalation over previous Year) (INR Cr.)</b>	<b>0.53</b>
<b>O&amp;M Expenses for FY 2022-23 (5.72% escalation over previous Year) (INR Cr.)</b>	<b>0.56</b>
<b>O&amp;M Expenses for FY 2023-24 (5.72% escalation over previous Year) (INR Cr.)</b>	<b>0.59</b>

\*\* Since MePGCL has already implemented a revised pay scale of employees effective from January 2020, it is taking that into account as well to project O&M for FY 2020-21

Thus, FY 20-21 O&M = O&M 2019-20 \*1.0572\* ROP Impact (27% as stated in detail in employee expense head in Old Plants petition)

MePGCL submits before the Hon’ble Commission to kindly approve the O&M expenses as computed above on normative basis for Lakroh MHP for third control period i.e. FY 2021-22, to FY 2023-24.

**4.5 Return on Equity**

4.5.1 The relevant regulations for determination of debt-equity ratio are extracted from the Meghalaya State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014, and reproduced for reference as below:

**“17. Debt - Equity Ratio**

(1) For determination of generic tariff, the debt- equity ratio shall be 70: 30.

(2) For determination of project specific tariff, the following provisions shall apply: -



*If the equity actually deployed is more than 30% of the capital cost, the amount of equity for the purpose of tariff determination shall be limited to 30% and the balance equity in excess of 30% shall be treated as normative loan.*

*Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.*

*Provided further that the equity invested in foreign currency shall be denominated/ designated in Indian rupees on the date of each investment.*

*(3) The debt and equity amounts arrived in accordance with the above clauses shall be used for calculating interest on loan and return on equity.”*

4.5.2 The Regulation 20 of the Meghalaya State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014, provides for computation of Return on Equity (RoE). The extract is reproduced below:

**“20. Return on Equity**

*(1)The value base for the equity shall be 30% of the capital cost for generic tariff determination or actual equity (in case of project specific tariff determination) as determined under Regulation 17.*

*(2)The normative Return on Equity shall be: 16%*

*Provided that in case of projects commissioned after notification of these regulations an additional return of 1.0% shall be allowed if such projects are completed within the timeline approved in the sanctioned Detail Project Report and within the original sanctioned project cost without cost over run.”*

4.5.3 The petitioner has projected the Return on Equity for third control period based on the average asset base for Lakroh. This is similar to the approach followed by the Hon’ble Commission in its past few tariff and true up order. Based on the total asset base (Section 4.3.3 of the petition) and the Hon’ble Commission’s methodology, the return on equity for the control period is given below:

**Table 11: Return on Equity for Lakroh MHP for the Third Control Period**

Sl.	Particulars	FY 2018-19 (Actual)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
1	Opening GFA for the Year	0.00	22.33	24.35	24.41	25.07	25.89
2	Closing GFA for the Year	22.33	24.35	24.41	25.07	25.89	25.89
3	Average Assets Base for the Year	11.17	23.34	24.38	24.74	25.48	25.89
4	Debt component (70% of GFA)	7.82	16.34	17.07	17.32	17.84	18.12
5	Equity component (30% of GFA)	3.35	7.00	7.32	7.42	7.64	7.77
6	RoE (%)	16%	16%	16%	16%	16%	16%
7	<b>Return on Equity (in INR Cr.)</b>	<b>0.04*</b>	<b>1.12</b>	<b>1.17</b>	<b>1.19</b>	<b>1.22</b>	<b>1.24</b>

\*- The RoE for FY 2018-19 has been apportioned for 1 month, as Lakroh was commissioned on 01 March 2019 and thus was operational for just one month during FY 2018-19.

4.5.4 The petitioner would however like to submit that the issue of Return on Equity (methodology of MeECL & its subsidiaries vs methodology of MSERC: APTEL Case no 46 of 2016) is still subjudice.

Further, the petitioner has appealed against the methodology in the review petition of true up FY 2016-17 whose order is still due from the Hon'ble Commission. In case of favourable order to the petitioner with respect to methodology adopted for return on equity, the petitioner will reclaim/adjust the additional claim of return on equity in the subsequent tariff petitions. However, the petitioner has hereby claimed return based on the methodology adopted by the Hon'ble Commission in its past orders to avoid ambiguities in figures/calculation resulting in wrong calculation and lower amount of RoE being approved by the Commission.

4.5.5 MePGCL humbly prays before the Hon'ble Commission to kindly approve the RoE for Lakroh MHP as per the above computations.

#### 4.6 Depreciation

4.6.1 The Gross Fixed Asset (GFA) base for FY 2018-19 and FY 2019-20 as shown in Section 4.3.3 (without IND AS adjustment) represents the historical asset value of asset which has been used in the calculation of depreciation component. The additions in GFA for the control period have been considered based on the capitalization schedule as shown in Section 4.3.2 of the petition. The rates of depreciation for various categories of assets have been considered strictly as per the rates as stipulated in the MSERC MYT Regulations, 2014.

4.6.2 Based on the above, the actual depreciation in FY 2018-19, FY2019-20, estimated depreciation in FY 2020-21 and projections for FY 2021-22, FY 2022-23, FY 2023-24 are shown in the following tables. The detailed calculation is also shown in Format 6, **Annexure F** for reference.

**Table 12: Actual Depreciation Charges of Lakroh MHP for FY 2018-19**

Value of Assets and Depreciation: 2018-19 (Actual) (INR Cr)						
Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	-	0.00	-	0.00	-
2	Buildings	-	2.25	-	2.25	0.01
3	Hydraulic Works	-	9.35	-	9.35	0.04
4	Other Civil Works	-	1.73	-	1.73	0.00
5	Plant & Machinery	-	7.83	-	7.83	0.03
6	Lines & Cable Network	-	1.15	-	1.15	0.01
7	Vehicles	-	-	-	-	-
8	Furniture & Fixtures	-	0.01	-	0.01	0.00
9	Office Equipment	-	0.00	-	0.00	0.00
10	Assets not in use	-	-	-	-	-
	<b>Total</b>	-	<b>22.33</b>	-	<b>22.33</b>	<b>0.09</b>

**Table 13: Provisional Depreciation Charges of Lakroh MHP for FY 2019-20**

Value of Assets and Depreciation: 2019-20 (Provisional) (INR Cr)						
Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	0.00	-	-	0.00	-
2	Buildings	2.25	-	-	2.25	0.08
3	Hydraulic Works	9.35	-	-	9.35	0.49
4	Other Civil Works	1.73	0.07	-	1.80	0.06
5	Plant & Machinery	7.83	1.95	-	9.77	0.48
6	Lines & Cable Network	1.15	0.00	-	1.15	0.06
7	Vehicles	-	-	-	-	-
8	Furniture & Fixtures	0.01	-	-	0.01	0.00

9	Office Equipment	0.00	0.01	-	0.01	0.00
10	Assets not in use	-	-	-	-	-
	<b>Total</b>	<b>22.33</b>	<b>2.02</b>	<b>-</b>	<b>24.35</b>	<b>1.17</b>

**Table 14: Estimated Depreciation Charges of Lakroh MHP for FY 2020-21**

<b>Value of Assets and Depreciation: 2020-21 (Estimated) (INR Cr)</b>						
<b>Sl. No.</b>	<b>Particulars</b>	<b>Opening GFA</b>	<b>Addition</b>	<b>Withdrawn</b>	<b>Closing GFA</b>	<b>Depreciation</b>
1	Land & Land rights	0.00	0.00		0.00	-
2	Buildings	2.25	0.01		2.26	0.08
3	Hydraulic Works	9.35	0.02		9.38	0.54
4	Other Civil Works	1.80	0.00		1.81	0.11
5	Plant & Machinery	9.77	0.02		9.80	0.93
6	Lines & Cable Network	1.15	0.00		1.15	0.07
7	Vehicles	-	-		-	-
8	Furniture & Fixtures	0.01	0.00		0.01	-
9	Office Equipment	0.01	0.00		0.01	0.00
10	Assets not in use	-	-		-	-
	<b>Total</b>	<b>24.35</b>	<b>0.06</b>		<b>24.41</b>	<b>1.74</b>

**Table 15: Projected Depreciation Charges of Lakroh MHP for FY 2021-22**

<b>Value of Assets and Depreciation: 2021-22 (Projected) (INR Cr)</b>						
<b>Sl. No.</b>	<b>Particulars</b>	<b>Opening GFA</b>	<b>Addition</b>	<b>Withdrawn</b>	<b>Closing GFA</b>	<b>Depreciation</b>
1	Land & Land rights	0.00	0.00		0.00	-
2	Buildings	2.26	0.06		2.32	0.08
3	Hydraulic Works	9.38	0.25		9.63	0.55
4	Other Civil Works	1.81	0.05		1.85	0.12
5	Plant & Machinery	9.80	0.26		10.06	0.94
6	Lines & Cable Network	1.15	0.03		1.18	0.07
7	Vehicles	-	-		-	-
8	Furniture & Fixtures	0.01	0.00		0.01	-
9	Office Equipment	0.01	0.00		0.01	0.00
10	Assets not in use	-	-		-	-
	<b>Total</b>	<b>24.41</b>	<b>0.66</b>		<b>25.07</b>	<b>1.76</b>

**Table 16: Projected Depreciation Charges of Lakroh MHP for FY 2022-23**

<b>Value of Assets and Depreciation: 2022-23 (Projected) (INR Cr)</b>						
<b>Sl. No.</b>	<b>Particulars</b>	<b>Opening GFA</b>	<b>Addition</b>	<b>Withdrawn</b>	<b>Closing GFA</b>	<b>Depreciation</b>
1	Land & Land rights	0.00	0.00		0.00	-
2	Buildings	2.32	0.08		2.40	0.08
3	Hydraulic Works	9.63	0.31		9.94	0.57
4	Other Civil Works	1.85	0.06		1.91	0.12
5	Plant & Machinery	10.06	0.33		10.39	0.97
6	Lines & Cable Network	1.18	0.04		1.22	0.08
7	Vehicles	-	-		-	-

Value of Assets and Depreciation: 2022-23 (Projected) (INR Cr)						
Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
8	Furniture & Fixtures	0.01	0.00		0.01	-
9	Office Equipment	0.01	0.00		0.01	0.00
10	Assets not in use	-	-		-	-
	<b>Total</b>	<b>25.07</b>	<b>0.82</b>		<b>25.89</b>	<b>1.81</b>

**Table 17: Projected Depreciation Charges of Lakroh MHP for FY 2023-24**

Value of Assets and Depreciation: 2023-24 (Projected) (INR Cr)						
Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	0.00	-	-	0.00	-
2	Buildings	2.40	-	-	2.40	0.08
3	Hydraulic Works	9.94	-	-	9.94	0.58
4	Other Civil Works	1.91	-	-	1.91	0.12
5	Plant & Machinery	10.39	-	-	10.39	0.99
6	Lines & Cable Network	1.22	-	-	1.22	0.08
7	Vehicles	-	-	-	-	-
8	Furniture & Fixtures	0.01	-	-	0.01	-
9	Office Equipment	0.01	-	-	0.01	0.00
10	Assets not in use	-	-	-	-	-
	<b>Total</b>	<b>25.89</b>	<b>-</b>	<b>-</b>	<b>25.89</b>	<b>1.84</b>

MePGCL humbly prays before the Hon'ble Commission to kindly approve the depreciation charges for Lakroh MHP as computed above.

#### 4.7 Interest and Finance Charges

Interest and finance charges on loan capital shall be computed on the outstanding loans, duly taking into account the schedule of loan repayment, terms and conditions of loan agreements, bond or debenture and the prevailing lending rate of bank and financial institution. It is submitted that the Interest on Loan for the control period has been computed by considering Interest obligation for existing loans as well as for new loans projected to be taken based on the approved capital investment plan for the control period. The details of the loan statement for actuals FY 2018-19, FY 2019-20, estimated FY 2020-21 and projected FY 2021-22, FY 2022-23 and FY 2023-24 along with the interest accrued component for Lakroh MHP is given in Format 7, **Annexure F**.

Justifications for existing loan of Lakroh project is given below:

a) **Lakroh PFC Loan:** This loan shown for Lakroh in FY 2018-19 and FY 2019-20 pertains to the loan spent on the capex work (Format 7 of Annexure G). These loans have interest obligations in the next control period as shown in the statements.

b) **Additional loans due to Capex:** The loan portion of the capex (Section 4.3.1 of the petition) in the approved Business Plan has been used to arrive at additional loans due to capex head. The interest rate for the loans have been assumed at the average interest rates for Lakroh MHP with a loan tenure of 12 years including 1-year moratorium.

Details of Statement of loans for the capital expenditure has been given in format 7 of **Annexure F**. The summarized statement of Interest and Finance charges to be considered for the Control Period is shown

in the table below:

**Table 18: Interest and Finance Charges for Lakroh MHP for the third Control Period**

Particulars	FY 2018-19 (Actual)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Opening Balance	3.92	5.34	5.88	5.73	5.91	6.18
Addition During the Year	1.42	0.74	0.05	0.59	0.74	0.00
Repayment during the year	0.00	0.20	0.20	0.41	0.46	0.53
Closing Balance	5.34	5.88	5.73	5.91	6.18	5.66
Average Interest Rate	11.25%	11.25%	10.80%	10.75%	10.75%	10.75%
<b>Interest Accrued</b>	<b>0.04</b>	<b>0.63</b>	<b>0.63</b>	<b>0.63</b>	<b>0.65</b>	<b>0.64</b>

\*- The Interest Accrued for FY 2018-19 has been apportioned for 1 month, as Lakroh was commissioned in 01 March 2019, and thus, was operational for just one month during FY 2018-19.

MePGCL humbly prays before the Hon'ble Commission to kindly approve the Interest and Finance Charges for Lakroh MHP as computed above.

#### 4.8 Interest on Working Capital

As per Regulation 21 of MSERC (Terms and Conditions for Determination of Tariff for Generation from Renewable Energy Sources) Regulations, 2014, the components of working capital will be:

##### ***"21 Interest on Working Capital***

*(1) The Working Capital requirement in respect of wind energy projects, small hydro power, solar PV and Solar thermal power projects shall be computed as under:*

*a) Operation & Maintenance expenses for one month;*

*b) Receivables equivalent to 2 (Two) months of energy charges for sale of electricity calculated on the normative Capacity Utilisation Factor (CUF);"*

Based on the above, the Interest on Working Capital can be computed as follows:

**Table 19: Interest on Working Capital for Lakroh MHP for the third Control Period**

Particulars	FY 2018-19 (Actual)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
O&M for 1 Month	0.03	0.03	0.04	0.04	0.05	0.05
Maintenance Spares	0.05	0.06	0.07	0.08	0.08	0.09
Receivables for 2 Months (Net AFC in Section 4.9)/6	0.04	0.56	0.69	0.70	0.72	0.74
Total (INR Crore)	0.12	0.65	0.81	0.82	0.86	0.87
Interest Rate (%)	13.45%	13.20%	12.15%	12.15%	12.15%	12.15%
<b>Interest on Working Capital (INR Crore)</b>	<b>0.02</b>	<b>0.09</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.11</b>

MePGCL humbly prays before the Hon'ble Commission to kindly approve the Interest on Working Capital for Lakroh MHP as computed above and as per the norms stated above.

#### 4.9 Annual Revenue Requirement (ARR) for each year of the Control Period

Based on the above submissions, the ARR for each year of the Control Period would be as shown in the following table. MePGCL prays before the Hon'ble Commission to approve the AFC for the control period as claimed by it.

**Table 20: ARR Requirement for Lakroh MHP for the Third Control Period**

<b>Particulars</b>	<b>FY 2018-19 (Actual)</b>	<b>FY 2019-20 (Provisional)</b>	<b>FY 2020-21 (Estimated)</b>	<b>FY 2021-22 (Projected)</b>	<b>FY 2022-23 (Projected)</b>	<b>FY 2023-24 (Projected)</b>
Interest on Loan capital	0.04	0.63	0.63	0.63	0.65	0.64
Depreciation	0.09	1.17	1.74	1.76	1.81	1.84
O&M Expenses	0.03	0.37	0.50	0.53	0.56	0.59
Interest on working capital	0.02	0.09	0.10	0.10	0.10	0.11
Return on Equity	0.04	1.12	1.17	1.19	1.22	1.24
<b>Total Annual Fixed Cost</b>	<b>0.23</b>	<b>3.38</b>	<b>4.13</b>	<b>4.20</b>	<b>4.35</b>	<b>4.42</b>

## 5 Determination of Capacity Charge and Energy Charge for Lakroh MHP for FY 2021-22

### 5.1 Capacity Charge and Energy Charge of Lakroh MHP

Following the same approach followed in the previous tariff order (Tariff Order for FY 2020-21 dated 25.03.2020), MePGCL proposes to recover the annual fixed charges for Lakroh MHP through two part tariff as shown in the table below:

**Table 21: Computation of Tariff for Lakroh MHP for FY 2021-22**

<b>Particulars</b>	<b>FY 2021-22</b>
Net AFC for FY 2021-22 for Computation of Tariff	4.20
Gross Generation (MU) as approved in Business Plan order dated 30.09.2020	11.00
Less: Auxiliary Consumption @ 1%	0.11
Less: Transformation Loss @ 0.5%	0.06
Net Energy (MU)	10.84
Fixed Charge (Rs. Cr.)	2.10
Variable Charge (INR/kWh)	1.94

Based on all the above submissions, the petitioner humbly prays before the Hon'ble Commission to kindly approve the tariff for Lakroh MHP for FY 2021-22 as computed in the above table

### 5.2 Prayer before the Hon'ble Commission

MePGCL humbly prays before the Hon'ble Commission to kindly approve the proposed tariff rates for implementation from 01.04.201 based on the facts and circumstances submitted above.