



Meghalaya State Electricity Regulatory Commission

**Approval of Final Capital Cost for
Lakroh Mini HEP Project (1x1.5MW)**

And

**ARR for 2nd MYT Control period for FY 2018-19 to
FY 2020-21 and ARR for 3rd MYT Control Period
FY 2021-22 to FY 2023-24**

For

Meghalaya Power Generation Corporation Limited

MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION

1ST Floor (Front Block Left Wing), New Administrative Building
Lower Lachumiere, **Shillong-793001**
East Khasi Hills District, Meghalaya

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ABBREVIATIONS

A&G	Administration & General
ARR	Aggregate Revenue Requirement
APTEL	Appellate Tribunal For Electricity
CoD	Commercial Operation Date
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Stations
CoS	Cost of Supply
CWIP	Capital Work In Progress
DE	Debt Equity
EHT	Extra High Tension
FY	Financial Year
GOM	Government of Meghalaya
GFA	Gross Fixed Assets
HT	High Tension
KV	Kilo Volt
KVA	Kilo Volt Amps
KVAh	Kilo Volt Ampere hour
KW	Kilo Watt
kWh	kilo Watt hour
LT	Low Tension
MVA	Million Volt Amps
MU	Million Unit
MW	Mega Watt
MYT	Multi Year Tariff
MeECL	Meghalaya Energy Corporation Limited
MePGCL	Meghalaya Power Generation Corporation Limited
MePDCL	Meghalaya Power Distribution Corporation Limited
MePTCL	Meghalaya Power Transmission Corporation Limited
MSERC	Meghalaya State Electricity Regulatory Commission
ROE	Return on Equity
SLDC	State Load Despatch Centre

MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION

1ST Floor (Front Block Left Wing), New Administrative Building

Lower Lachumiere, Shillong-793001

East Khasi Hills District, Meghalaya

CASE NO. 09/2021

In the matter of

Approval of Final Capital Cost for 1x1.5 MW Lakroh Mini Hydro Electric Project and Provisional ARR for FY 2019-20 and FY 2020-21 and ARR for 3rd MYT Control Period FY 2021-22 to FY 2023-24.

AND

Meghalaya Power Generation Corporation Limited.....the Petitioner

(here in after referred to as MePGCL)

Coram

Shri P W Ingty, IAS (Retd)

Chairman

Shri R. keishing

Member

ORDER

(Date:25.03.2021)

- 1) Meghalaya Power Generation Corporation Limited (herein after referred to as MePGCL) (herein after referred to as Act), engaged in the business of Generation of electricity in the state of Meghalaya.
- 2) The Meghalaya Power Generation Corporation Limited (MePGCL) has been entrusted with the development of 1x1.5 MW Lakroh Mini Hydro Electric Power Project in West Jaintia Hills district of Meghalaya. The Lakroh Mini Hydro Electric Power Project was built alongside 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.

3) 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 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.

4) Date of Commissioning:

In spite 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 Equipment the Project was finally Commissioned on 01st March 2019. The Commercial Operation Date of the Project has been declared as 1st March, 2019

5) Salient features of the project

The project components comprise of a Diversion weir (composite structure, i.e. masonry covered with RCC) of about 40metres in length and 4.5 meters 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 600 mm 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.

The Lakroh Mini HEP envisages the following features as filed by the petitioner in Annexure C:

SALIENT FEATURES

(Annexure-C)

1) LOCATION

(i)	State	MEGHALAYA
(ii)	District	JAINTIA HILLS
(iii)	Taluka	
(iv)	Village	LAKROH
(v)	ACCESS-Road & Foot Track	ROAD
(vi)	Geographical Foot Track Coordinates	
	Latitude	28°8' N
	Longitude	92°14' E

2) RIVER CATCHMENT

i)	Catchment	LAKROH
ii)	River	LAKROH

3) HYDROLOGY

(i)	Catchment area of the stream/ nallah	30 Sq. KM
(ii)	Catchment area of the diversion site	30 Sq. KM
	Gross	
	Intercepted in the upstream if any	NIL
	Free Catchment	Yes

iii)	Annual		Monsoon (June-Oct)
	Average rainfall	8388 mm	6347 mm
	Maximum Rainfall	12040.80 mm	9644 mm
	Minimum Rainfall	4711.00 mm	4419 mm
	Snow Fall	NIL	NIL

iv) Dependable Yield (Where applicable)

Percent	Annual (Cumec)	Monsson (June-October) (Cumec)
50%	2.82	15.20
66%	1.15	9.60
75%	0.77	6.40
90%	0.56	3.20

DD 0.09 CUMEC MINIMUM DISCHARGE DRAWN FOR IRRIGATION PURPOSE

V) Climate Data

Particulars	Normal	Minimum	Maximum
Atmospheric Temperature (°C)	20°C	36°C	08°C

Humidity (percent)	Not Recorded
Wind (Km/hour)	Not Recorded

Vi) Floods

Historical Location &	Weir Site
Elevation	185.00 m
Maximum Water Level	185.00 (Flood Mark)
Maximum discharge Estimated (cumecs)	117 Cumecs
Maximum Water Level	185.00 m
Maximum Discharge Estimated (cumecs)	300 Cumecs
Date of occurrence	Not recorderd
Standard Projected flood (cumecs)	600 Cumecs
Maximum probable flood (cumecs)	1039 Cumecs
Design Flood	300 Cumecs

DIVERSION SITE

Maximum Designed flood (cumecs)	300 Cumecs
Stream/nallah flows (Maximum Observed)	82.09 Cumecs
Water level	1850.00 m
Discharge	(Minimum)
Cumecs	0.37 Cumecs
Months of 'NIL' flow	Nil
H F L after construction of water	186.70 m

4) MEDIUM/HIGH HEAD PROJECTS

A) DIVERSION STRUCTURE (Head Works)

i)	Type of structure Weir/barrage	Weir
	Concrete/Masonry	Masonry
ii)	Length	16.50 M
	Over-flow section (Wherever applicable)	Over Flow Section Only
	Non Over flow section	NIL
	Weir Crest (ELM)	184.00 m

B) INTAKE

i)	Size	2.00m X 4.00m
ii)	Type	Side Intake R.C.C
iii)	Invert Level at entrance	182.80 m
iv)	Top level of structure	187.00 m
v)	Trash Rack Size	2.00 m x 2.50 m
	Trash Rack Bars	25 mm x 5 mm
vi)	Sluice gate opening	1.40 m x 0.90 m

C) WATER CONDUCTOR SYSTEM : Power Channel Open & Closed

		TOTAL	OPEN	CLOSED
i)	Length	560.00m	500.00 M	60.00 M
ii)	Shape	(Rectangular)		
iii)	Size (inside)		(1.40mx0.90)	(1.4x1.2)
iv)	Full- Supply depth	0.7m		
v)	Thickness of lining (mm)	Foundation P.C.C 0.10m Side Wall Masonry .20m with plaster		
vi)	Design Discharge	1.15 Cumecs For (3x500 KW)		
vii)	Free flow/under pressure (m)	Free Flow		
viii)	Invert level of power channel at Gate-point/ Take off	182.80 m		

D) FOREBAY

i)	Size of fore-bay (m)	60m x 8m x 2.875 m (Storage Depth)
ii)	Minimum level of forebay required	179.535 m
iii)	Fore bay F.S.L	182.41 m
iv)	Maximum fore-bay level	182.41 m
	- Size (m)	60m x 8m x 2.875m (Storage Depth)
	- invert level at penstock point	178.135m
	- Storage Capacity	1380 m ³
v)	Maximum discharging capacity	1.15 Cumecs
vi)	Gate/Value	Sluice Gate
vii)	Flushing pipe (with low Head Sluice Value)	0.30m
viii)	Surplussing Splillway	6.0 m x 0.30 m
ix)	Escape Channel	1.00 m x 1.20 m

E) PENSTOCK

i)	Number of Penstock	1 No.
ii)	Diameter (m) & Thickness (mm)	0.75 M, 6mm-10mm
iii)	Length (m)	333 M
iv)	Gate/Value	Sluice Gate & B. Valve
v)	Bifurcation if any at lower end	No
vi)	Level of centre line of Penstock Striking the Runner	25.00 m
vii)	Design discharge	1.15 Cumecs

5) POWER HOUSE

i)	Type	Surface
ii)	Head (m)	
	- Maximum	157.41 M
	- Minimum	154.54 M
	- Average	155.97 M
	- Design	155.73 M
iii)	Size of Power House	
	a) Length (m)	17.00 M
	b) Width (m)	7.00 M
	c) Height (m)	4.50 M
	d) Installed Capacity (KW)	1x1500 KW
iv)	Machine Hall floor level (ELM)	24.50 M
v)	Turbine	
	- Type	Horizontal Francis
	- Number	1 No
	- Capacity	1x1500 KW
vi)	Type of Generator	
	a) Excitation System	Excitation System
	b) Regulation System	N.A
vii)	Power House Crane/Lifting tackle capacity	EOT Crane 15 Tonnes Capacity

6) TRIAL RACE

i)	Shape	Rectangular
ii)	Size	1.40m x 0.90m
iii)	Length	7.00 M
iv)	Water Level (ELM)	
	-Maximum	24.10 M
	-Minimum	23.60 M

7) POWER

i)	Installed Capacity	1 x 1500 KW
ii)	Firm Power	727 KW
	Load Factor	70%
iii)	Seasonal (max) Power (KW)	273 KW
iv)	Annual Energy (KWH)	
	With 1x1500 KW installation	
	Firm (90% dependability)	6.37 MU
	Seasonal (75%)	1.79 MU
	(66%)	2.85 MU
	Total	11.01 MU

8) SWITCH YARD

i)	Voltage level/Basic instruction level	11/33
ii)	No. of bays	Two
iii)	Size : (a) Length	7M
iv)	(b) Width	7 M

9) ESTIMATES OF COSTS

i)	Civil Works	Rs.496.00 Lakhs
ii)	Electrical Works	Rs.680.00 Lakhs
	Total Project Cost	Rs.1176 Lakhs
iii)	Cost of generation per KWh	Rs.1.05
iv)	Benefit cost ratio	5.299 at Sale of Rs.1.95/Kwh

6) Environmental Clearance

The NOC from JHADC Jowai has been obtained in December 2007.

7) Administrative Approval

Approval from MNRE for setting up of Lakroh mini hydel project was given vide no. 6/26/99-SHP(CS) dated 31.03.2001.

8) Filing of the Petition

MePGCL has filed Petition for approval of the Capital Cost and final tariff for 1.5 MW Lakroh Mini HEP on 04.12.2020 as per the Regulation 41.6 of MSERC MYT Regulations 2014.

9) **Hearing on the Application**

The Commission directed the Petitioner to publish the petition in an abridged form in accordance with Tariff Regulations detailing the salient features of the ARR and tariff petition for FY 2021-22 inviting objections/suggestions by stake holders and public at large.

Accordingly the MePGCL has published the notice in the Shillong Times on 17th December, 2020 and sought for the objections/suggestions from stakeholders and general public within 30 days from the date of publication.

The petitioner was also directed to place the petition on its website and its Headquarters website / other offices for inspection and to obtain relevant extracts by the stakeholders and public.

The Commission, to ensure transparency in the process of Tariff determination and for providing proper opportunity to all the stake holders and general public for making suggestions/objections on the Tariff petition and for convenience of the consumers and general public across the state, decided to hold a public hearing at the headquarters of the state. Accordingly the Commission held public hearing at Shillong on 17.03.2021

The Proposal of MePGCL was also placed before the state advisory committee in its meeting held on 22.03.2021 and various aspects of the Petition were discussed by the committee. The Commission took the advice of the State advisory committee on the ARR and Tariff Petition of MePGCL for FY 2021-22 during the meeting of the Committee.

- 10) Earlier, Commission had approved provisional Tariff in terms of Regulation 41.5 of MYT Regulations 2014 in the Tariff Order for FY 2013-14 on 30.03.2013.
- 11) Commission after Prudent check of the petition with reference to the cost estimate, auditor's certification as on 01.03.2019, taking into consideration the objections of the Stake holders in the public hearing process, as per MSERC MYT Regulations 2014, issues this order for approval of **Capital cost for 1.5 MW Lakroh Mini HEP.**

- 12)** Commission also approves provisional ARR for FY 2019-20 and FY 2020-21 and also ARR for 3rd MYT control period FY 2021-22 to FY 2023-24.

Sd/-

Member
MSERC

Sd/-

Chairman
MSERC

1. Summary of the Petition

1.1 Introduction

MePGCL has filed Petition for approval of Capital cost and final tariff for 1x1.5 MW Lakroh Mini HEP together with ARR for 2nd MYT Control period FY 2018-19 to FY 2020-21 and determination of ARR for 3rd MYT Control period for FY 2021-22 to FY 2023-24 and Generation Tariff for FY 2021-22.

1.2 Capital Cost

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 un appealable 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 **cutoff** date as per Clause 2 of the MSERC 2014 Regulations is given below for reference:

19) “Cut-off Date” means 31st 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 31st March of the year closing after three years of the year of commercial operation;

1.2.2. Capital Cost of Lakroh MHEP

The Lakroh Mini Hydel Project achieved its CoD on 01 March 2019. The audit of the capital cost as on CoD and as on 31.03.2019 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**.

The total Capital Cost in lakroh Mini Hydel Project (1x1.5MW) (Small Hydro) as on 31.03.2019 is as given below

Particulars	Total Project Cost capitalized as on COD - 01.03.2019
Land	
Building	2,25,47,885.37
Hydraulic Works	9,35,39,408.13
Civil Works	1,73,40,005.00
Plant & Equipment	7,82,59,928.00
Lines & Cables	1,14,76,724.00
Vehicles	
Furniture & Fixtures	115684
Office Equipment	33,739.00
Total	22,33,13,373.50

The Gross fixed assets as on 01.03.2019 and as on 31.03.2019 after adjusting the Depreciation are as given below:

Particulars	Gross Fixed Assets as on - 31.03.2019	Depreciation	NET Asset Value as on 31.03.2019
Land	-	-	-
Buildings	2,25,47,885.37	62,758.29	2,24,85,127.08
Hydraulic Works	9,35,39,408.13	4,11,573.39	9,31,27,834.74
Civil Works	1,73,40,005.00	46,23.01	1,72,91,741.99
Plant & Equipment	7,82,59,928.00	3,44,343.68	7,79,15,584.32
Lines & Cables	1,14,76,724.00	50,497.59	1,14,26,226.41
Vehicles			
Furniture & Fixtures	115684	610.23	1,15,073.77
Office Equipment	33,739.00	177.97	33,561.03
Total	22,33,13,373.50	9,18,224.16	22,23,95,149.34

Note:

1. The above fixed assets have been commissioned as on 1st March, 2019 as per Letter MePGCL/D/GEN/W-61/2003/Pt-II/23 dated 12th March, 2019 from The Director (Generation) to The Director (Transmission]
2. The above value of the assets is as per the certification of the Executive Engineer (Civil) Small Hydro Division, MePGCL and as reflected in the audited book of accounts as on 31st March 2019 on the basis of which this certificate has been prepared.
3. These assets have not been physically verified by me. This is not an audit of the fixed assets.

Table 1.1: Capital Cost of Lakroh

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

MePGCL requested the Commission to kindly approve the capital cost of Lakroh as shown in the table above.

1.3 Operational norms and Design Energy

1.3.1. 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 up to 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 shaft0.7% 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 shaft0.9% of energy generated.*
- (d) Underground hydro electric power generating stations with static excitation system1.2% of energy generated.*

58.3 Transformation losses

From generation voltage to transmission voltage0.5% of energy generated.”

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

Table 1.2: Features of Lakroh

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

1.3.2. Design Energy

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

1.3.3. 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

1.3.4. 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 1.3: 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%

1.3.5. 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 1.4: Actual Generation of Lakroh

(MU)

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

1.4 Provisions of Law for Multi Year Tariff

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

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”.

MYT Multi Year Tariff Regulations, 2014

The 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 25th 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”.

As per Regulations 3, 4 & 7 of the MYT Regulations, 2014, the 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:

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;

Intra-State transmission of electricity and SLDC charges;

Intra-State Wheeling of electricity;

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 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 30th 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:
MYT Petition shall comprise of:*

Multi-year Aggregate Revenue Requirement for the entire Control Period with year-wise details;

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.

Application for determination of tariff for first year of the Control Period.

.....

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 Commission of late has been approving the consolidated ARR of MePGCL as a whole which is against the regulations of MSERC. As such, the 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.

Submissions before the 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.

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.

2. Public Hearing Process

2.0 Public Hearing Process

2.1 Objections / Suggestions of Stakeholders

Byrnihat Industries Association (BIA)

1. In pursuance of the admission order and the public notice issued pursuant thereto inviting objections and representations from the stake-holders in the State of Meghalaya, the Objector/ Respondent herein, M/s Byrnihat Industries Association (“BIA”) is filing the present objections to the petition filed by the Meghalaya Power Generation Corporation Limited (hereinafter referred to as ‘MePGCL’) seeking approval of Capital Cost, AFC For FY 2021- 22 to FY 2023-24 of Third MYT Control Period and determination of tariff for FY 2021-22 for Lakroh Mini Hydro Electric Project (LMHEP) under the MSERC (Multi Year Tariff) Regulations, 2014 read with MSERC (Terms and Conditions for determination of tariff for generation from renewable energy sources) Regulations, 2014 and Sections 62 and 64 read with Section 86 of Electricity Act, 2003.

MePGCL Reply

Matter of Record

Commission’s view

Commission noted the suggestion.

4. LMHEP is a small hydro plant with an installed capacity of 1x1.5 MW which achieved COD on 01.03.2019. It supplies power to MePDCL by way of a Power Purchase Agreement.

MePGCL Reply

Matter of Record

Commission’s view

Commission noted the suggestion.

5. At the outset it is submitted that MePGCL has not made public the certified copy of the instant petition and its annexures and forms. Even CAG audited accounts for FY 2018-19 have not been filed by MePGCL. It is pertinent to mention that MePGCL is a habitual

offender which has in the past also never filed the CAG audited accounts on time. In the tariff petition filed last year for FY 2020-21, MePGCL had not filed CAG audited accounts from FY 2015-16 till FY 2017-18 and audited/unaudited accounts for FY 2018-19.

MePGCL's Reply

The MYT Petition of Lakroh MHP was made public in the website of MeECL alongwith its annexures. It is not clear how BIA could prepare their para-wise objections if the MYT Petition has not been made public by MePGCL. The objection of BIA is, therefore, incorrect and misleading.

The Statement of Accounts (SoA) of MePGCL for FY 2018-19 was audited by the statutory auditor appointed by the CAG and the audited SOA was submitted to the CAG for his comments. The comments of the CAG on the audited accounts of MePGCL for FY 2015-16 till FY 2017-18 were submitted earlier vide letter nos. MePGCL/D/GEN/Misc-43/ 2008/Pt-X/67 dt. 29.03.2018, MePGCL/D/GEN/Misc-43/2008/Pt-XII/52 dt. 30.05.2019 and MePGCL/D/GEN/Misc-43/2008/Pt-XIV/18 dated 30.06.2020 respectively. It is pertinent to mention that MePGCL had also filed True up petitions for FY 2015-16 to FY 2017-18 alongwith the audited SOA's and comments of the CAG. Orders on these true up petitions were also passed by the Hon'ble Commission for these financial years.

Therefore, the claim of BIA that CAG audited accounts from FY 2015-16 till FY 2017-18 were not submitted is incorrect.

Commission's View

Commission noted the Response.

6. MePGCL in the past had also filed Case No. 21 of 2018 seeking determination of generation tariff for FY 2019-20 for Myntdu Leshka Power Station and Old Stations including Sonpani. The Commission in its Order dated 14.12.2018 directed MePGCL as under:

“MePGCL has filed petition for determination of Generation Tariff for MyntduLeshka Power Station & Old Stations Including Sonapani (MePGCL) for FY 2019-20. The licensee is required to file the petition in the format B meant for Hydel Generation as per MSERC

(MYT) Regulations 2014 duly filled in for Commission's scrutiny and processing for revision of tariff for FY 2019-20. The licensee shall also submit audited statement of Accounts for 2016-17, 2017-18 & the actual expenses for first half of 2018-19." (Emphasis supplied)

Thus, it is prayed that MePGCL be directed to make CAG accounts available for all the preceding years. It is also important to mention that this Hon'ble Commission by Order dated 25.03.2020, passed in Case No. 02/2020, also directed MePGCL to file petition for LMHEP with full data and information required as per the applicable tariff Regulations. Relevant extract of the order is as under:

"The Petition for final Tariff of Lakroh HEP is not filed so far. The Licensee has stated that the COD of Lakroh HEP has been declared as March 2019.

MePGCL shall expedite the petition along with full data and information required as per the Regulations."

MePGCL Reply

Format-B for Hydel Generation (Pages-97 to 102 of MSERC MYT Regulations 2014) consists of Formats HG-1, HG-2, HG-3, HG-4 and HG-5. The first four formats relate to technical details of the Power Station while Format HG-5 relates to ARR. MePGCL had always filed the technical formats (HG-1 to HG-4) with every tariff petition right from its first tariff filing in FY 2013-14 till date.

However, the above formats are irrelevant in case of Small Hydro Projects which are governed by separate regulations. As submitted at para 5 above, the audited Statements of Accounts with CAG's comments for FY 2016-17, 2017-18 were submitted to the Hon'ble Commission vide letter nos. MePGCL/D/GEN/Misc-43/2008/Pt-XII/52 dated 30.05.2019 and MePGCL / D / GEN / Misc-43/ 2008 / Pt-XIV / 18 dated 30.06.2020 respectively. The expenditure for the first half of 2018-19 were submitted to the Hon'ble Commission vide letter no. MePGCL/D/GEN/Misc-43/2008/Pt-XII/44, dt. 03.04.2019. Therefore, the claim of BIA that the audited accounts for FY 2016-17, FY 2017-18 and actual expenditure for 1st half of 2018-19 were not submitted, is incorrect.

Commission's Views

Commission noted the Response.

7. The objector is an Association of industrial consumers in the Byrnihat area in the State of Meghalaya. The Industrial consumers are few in number but at the same time contribute a substantial part of the revenue requirements of the electricity utilities in the state. It is submitted that the industries have been set up in the State of Meghalaya based on the representations made on the sustained supply of electricity at competitive prices. The cost of electricity has however increased substantially over the years which have made the operation of industries in the State more and more unviable. In order to submit a comprehensive and detailed analysis of the instant Petition, the Objector has worked with expert consultant, Mercados. A copy of the report prepared by the expert consultant, Mercados, is annexed as Annexure A.

MePGCL Reply

Matter of Record

Commission's Views

Commission noted the Response

8. For ease of reference the Objector is making submissions under the following sub-headings:
- a. True-up for FY 2018-19;
 - b. Gross Fixed Asset (GFA) and Capex
 - c. Interest and Finance Charges on Loan Capital
 - d. Depreciation
 - e. Return on Equity
 - f. O&M expenses
 - g. Interest on Working Capital
 - h. Annual Fixed Cost for FY 2021-22 to FY 2023-24 and Generation Tariff for FY 2021-22
 - i. Lack of Transparency

MePGCL Reply

Regarding sub-heading (i) lack of transparency, MePGCL submits that its petition has been made public along with the audited Statement of Accounts for FY 2018-19 and

Asset base of Lakroh MHP. Therefore, the claim that there is lack of transparency in the filing of the petition is misleading.

Commission's View

Commission noted the Response

A. True-up for FY 2018-19

9. In its tariff petition, MePGCL has submitted that on account of lockdown there was a delay in start of process of audit for FY 2018-19. Thus, even though the statutory audits for FY 2018-19 are complete the CAG audit is still pending. In light of existing provisions of tariff regulations, MePGCL has submitted that it will file a separate petition seeking true up for FY 2018-19 once audit is completed. Thus, it is prayed that MePGCL be directed to make CAG accounts available at the earliest.

MePGCL Reply

The audited Statement of Accounts along with the Statutory Auditor's report were submitted to the CAG for comments, which are still awaited. The true up petition will be filed once the CAG's comments are available.

Commission's View

Commission noted the Response

B. Gross Fixed Asset and Capex

10. MePGCL has claimed capital cost of INR 22.33 Crore towards development of LMHEP. It is however, important to note that under Regulation 31 of the MYT Regulation, SHPs having capacity of less than 5 MW are allowed normative capital cost of INR 770 Lakh/MW. LMHEP being a 1.5 MW is entitled to capital cost of INR 11.55 Crore.

MePGCL's Reply

The capital cost of Small Hydel Projects will vary from project to project depending on the remoteness of the project area, accessibility of the locations of the various components of the project and various factors which are site specific. It may be mentioned that except for the power house, all other components of Lakroh MHP are not accessible by road and construction involved head load where cement, stones, steel,

etc., have to be carried manually and this resulted in increase in the cost as well as the time of construction. Also the normative cost of Rs. 770 lakh/MW is much less than Rs. 1000 lakh/MW for SHP's in NE region as per CERC's tariff order dated 19.03.2019 for renewable energy for FY 2019-20. It is pertinent to mention that the normative cost is applicable only for Generic Tariff, while for project specific tariff, the actual project cost is to be considered as per Regulation 12(1) of the Renewable Energy Tariff Regulations, 2014.

Therefore, the project cost derived by the objector on the basis of normative cost may kindly be rejected since the instant petition is for determination of project specific tariff.

Commission's View

Commission noted the Response.

11. Further, while MePGCL is claiming capital cost of INR 22.33 Crore which is 193% of normative capital cost it has not provided any documents to justify the same. It is submitted that in light of no documents/information justifying such high capital cost the Hon'ble Commission may allow only the normative capital cost as per the MYT Regulations.

MePGCL's Reply

The certified capital cost of Lakroh MHP was attached as Annexure-D in the instant tariff petition. In view of the remote location of the project which is located in the border area with Bangladesh and difficult location of various structures resulting in manual carriage of huge quantity of construction materials, the cost of construction as well as the time of completion have increase significantly and the project cost has gone up. The Hon'ble Commission is requested to take into consideration these factors while approving the capital cost of Lakroh MHP.

Commission's View

Commission noted the Response

12. MePGCL has also claimed additional GFA of INR 2.02 Crore for FY 2019-20 on the basis of provisional accounts. It is submitted that since no document/information has been provided, by MePGCL, to substantiate its claim the same should be disallowed by this Hon'ble Commission.

MePGCL Reply

The additional GFA of Rs. 2.02 crore during the FY 2019-20 is on account of additional capitalization expected during FY 2019-20, which is within the cut-off date for capitalization of the project.

Commission's View

Commission noted the Response.

13. MePGCL has also claimed capital expenditure of INR 1.54 Crore based on this Hon'ble Commission's Order dated 30.09.2020 by which MePGCL's Business Plan was approved. It is however pertinent to mention that the said Business Plan was for FY 2021-22 to 2023-24 and not for FY 2020-21 to 2023-24 as being indicated by MePGCL. Further, in the said Order this Commission directed MePGCL to submit approved DPRs along with copies of sanctioned working estimates. The relevant extract of the Order is as under:
- "MePGCL shall submit the approved DPRs along with copies of sanctioned of working estimates from competent authority and funding arrangements etc., while projecting the year-wise Capex and capitalization in the ARR Petition for the control period FY 2021-22 to FY 2023-24."

Thus, in absence of full information it is prayed that MePGCL's claim of INR 1.54 Crore be disallowed by this Hon'ble Commission. Accordingly, the Hon'ble Commission is requested to allow the Capital Cost and GFA for 2021- 24 as under:

GFA ALLOWABLE FOR THE PERIOD FY 2021-24 (Rs.Cr)

Particulars	As Claimed by MePGCL			As per Objector's Assessment		
	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Opening GFA	24.41	25.07	25.89	11.55	11.55	11.55
Addition during the Year	0.66	0.82	-	-	-	-
Retirement during the Year	-	-	-	-	-	-
Closing GFA	25.07	25.89	25.89	11.55	11.55	11.55

MePGCL Reply

The capital expenditure of Rs. 1.54 crore is as approved in the Business Plan for the Control Period FY 2021-22 to FY 2023-24. The expenditure is for augmentation of generator transformer from the existing 11 KV to 33 KV and provision of Communication

system which is mandatory for a power station. The works are expected to be taken up during the control period.

The GFA of Lakroh MHP presented by BIA is not realistic, since it is based on normative cost which differs widely from the actual cost on account of various factors as explained at para-10&11 above. It is, therefore, prayed that the project cost submitted by MePGCL in the instant petition may kindly be accepted by the Hon'ble Commission.

Commission's View

Commission noted the Response.

C. Interest and Finance Charges

14. MePGCL, in table 18 of petition, has claimed INR 1.92 Crore towards interest and finance charges for FY 2021-24 based on average interest rate of 10.75%. It is pertinent to mention that in the said table it has shown an opening balance of INR 3.92 Crore for FY 2018-19 even though the plant was commissioned in March, 2019. It is prayed that MePGCL be directed to provide necessary documents to show how LMHEP accrued loan even before achieving COD.

MePGCL Reply

The Lakroh MHP achieved its COD on 1st March, 2019. Therefore, during FY 2018-19, it became commercially operational for 1 (one) month, i.e., during the month of March. The interest of Rs. 0.04 crore during FY 2018-19 claimed in the MYT Petition is the interest accrued for 1 (one) month only, i.e., during March, 2019. The claim of BIA that Lakroh MHP accrued interest during FY 2018-19 which is even before achieving COD is incorrect since the project achieved its COD during FY 2018-19.

Commission's View

Commission noted the Response.

15. Regulation 18 of the MSERC RE Tariff Regulations, 2014 provides for interest and finance charges on loan capital. Relevant extract of Regulation 18 reads as under:
"18. Interest and Finance Charges on Loan Capital
(2) Interest Rate

- b) For the purpose of computation of tariff, the normative interest rate shall be considered as average State Bank of India Base Rate prevalent during the first six months of the previous year plus 150 basis points.
 - c) Notwithstanding any moratorium period availed by the generating company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.”
16. Evidently, as per the regulation the repayment of loan has to be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed to the Project. Further, the rate of interest has to be average State Bank of India Base Rate prevalent during the first six months of the previous year plus 150 basis points. Accordingly, the rate of interest applicable in instant case should be 9.19%. [Calculation of same is provided in Table 2 of Annexure A]. Accordingly, allowable interest charge comes out to be INR 1.56 Crore as opposed to INR 1.92 Crore claimed by MePGCL.
17. Further, in accordance with Regulation 17 the Objector has considered the normative depreciation allowable for FY 2021-24 towards normative repayment.

MePGCL Reply

The first year of commercial operation of Lakroh Mini Hydel Project was FY 2018-19, since Lakroh MHP achieved COD on 1st March, 2019. Therefore, as per regulations the repayment of loan and interest has to be considered from the 1st year of operation, i.e., from FY 2018-19, even though payment is for 1 (one) month only.

Therefore, it is prayed that interest for 1 (one) month as claimed by MePGCL for FY 2018-19 may kindly be considered by the Hon’ble Commission since FY 2018-19 is the first year of Commercial Operation of the project.

It may be pointed out that Regulation 19(3) of the MSERC Renewable Energy Sources Regulations, 2014 also allow depreciation on pro rata basis in case of commercial operation of the asset for part of the year.

Commission’s View

Commission noted the Response.

18. MePGCL has also failed to provide the actual debt equity ratio and has also not given any information qua contribution from grants, if any. This Hon'ble Commission is requested to direct MePGCL to submit actual debt equity ratio infused in the project. Regulation 17 of the MSERC RE Tariff Regulations, 2014 provide as under:

"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."

In absence of any information, with respect to actual debt equity ratio, the Objector has considered debt equity ratio of 70:30 as per Regulation 17(1) MSERC RE Tariff Regulations, 2014 for computing the interest on loan capital. Accordingly, the interest on loan allowable for the period of FY 2021-24 is as under:

INTEREST ON LOAN ALLOWABLE FOR THE PERIOD FY 2021-24

Particulars	As Claimed by MePGCL			As per Objector's Assessment		
	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Opening balance	5.73	5.91	6.18	6.57	5.96	5.36
Addition during the Year	0.59	0.74	-	-	-	-
Repayment during the Year	0.41	0.46	0.53	0.61	0.61	0.61
Closing balance	5.91	6.18	5.66	5.96	5.36	4.75
Average Loan	5.82	6.05	5.92	6.27	5.66	5.05
Interest Rate (%)	10.75%	10.75%	10.75%	9.19%	9.19%	9.19%
Interest on Loan	0.63	0.65	0.64	0.58	0.52	0.46
G.Total	1.91			1.56		

MePGCL Reply

The debt-equity ratio of Lakroh MHP was submitted to the Hon'ble Commission vide letter No. MePGCL/D/GEN/Misc-43/2008/Pt-XVI/24 dated 22.02.2021. Since the equity deployed in the project is more than 30%, the balance equity in excess of 30% was treated as normative loan as per regulation 17(2).

MePGCL prays before the Hon'ble Commission to consider the debt-equity ratio as submitted by MePGCL and consider the interest on loan accordingly.

Commission's View

Commission noted the Response.

D. Depreciation

19. MePGCL has claimed depreciation of INR 5.41 Crore for FY 2021-24.

Regulation 19 of the MSERC RE Tariff Regulations, 2014 provide for depreciation. Regulation 19 clearly states that the depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13th year onwards. Relevant extract of Regulation 19 reads as under:

"19. Depreciation

For the purpose of tariff determination, depreciation shall be computed in the following manner:

....

(2) Annual Depreciation shall be based on "Differential Depreciation Approach' using 'Straight Line Method' over two distinct periods comprising loan tenure and period beyond loan tenure over useful life. The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13th year onwards."

MePGCL Reply

Matter of Record

Commission's Views

Commission noted the Response.

20. It is submitted that MePGCL has applied rates as per MSERC MYT Regulations, 2014 as opposed to MSERC RE Tariff Regulations, 2014. Upon application of correct provision, the allowable depreciation comes out to be INR 1.82 Crore as opposed to INR 5.41 Crore claimed by MePGCL. Accordingly, the allowable depreciation is as under:

DEPRECIATION ALLOWABLE FOR THE PERIOD FY 2021-24 (Rs.Cr)

Particulars	As Claimed by MePGCL			As per Objector's Assessment		
	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Opening GFA	24.41	25.07	25.89	11.55	11.55	11.55
Less: Land	-	-	-	-	-	-
Addition during the Year	0.66	0.82	-	-	-	-
Retirement during the Year	-	-	-	-	-	-
Closing GFA	25.07	25.89	25.89	11.55	11.55	11.55
Average GFA	24.74	25.48	25.89	11.55	11.55	11.55
Rate of depreciation	-	-	-	5.83%	5.83%	5.83%
Depreciation	1.76	1.81	1.84	0.61	0.61	0.61
Grand Total	5.41			1.82		

MePGCL Reply

The objector has calculated depreciation on the normative capital cost which is applicable only in the case of generic tariff, as per Regulation 11 of the MSERC Tariff Regulations for Generation from Renewable Energy Sources, 2014. For generic tariff, no true up is admissible and any shortfall or gain is to be borne / retained by the generating station. Since the instant tariff petition filed by MePGCL is for project specific tariff, the actual capital cost is to be taken into consideration as per Regulation 12 (1). As explained in paras – 10 & 11 above, the actual project cost is higher than the normative cost on account of various factors explained therein.

Therefore, the calculation of depreciation presented by BIA which is based on normative capital cost may kindly be rejected since it is not in accordance with the regulations.

Commission's Views

Depreciation shall be considered as admissible as per the MSERC MYT Regulations 2014.

E. Return on Equity

21. MePGCL is claiming INR 3.65 Crore towards Return on Equity for the period of FY 2021-24 upon considering return on equity at 16%. As submitted above MePGCL has failed to provide the actual debt equity ratio. In light of the same, the Objector has considered debt equity ratio of 70:30 for calculating the normative opening equity balance. The Objector has considered opening balance as per the Capital Cost for the FY 2018-19 and the subsequent Equity additions during the period FY 2018-19 to FY 2020-21 as shown in “GFA and CAPEX” section. The allowable return on equity, thus, come out to be:

RETURN ON EQUITY ALLOWABLE FOR THE PERIOD FY 2021-24 (Rs.Cr)

Particulars	As Claimed by MePGCL			As per Objector's Assessment		
	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Opening Equity	7.32	7.52	7.77	3.47	3.47	3.47
Addition during the Year	0.20	0.25	-	-	-	-
Retirement during the Year	-	-	-	-	-	-
Closing Equity	7.52	7.77	7.77	3.47	3.47	3.47
Average Equity	7.422	7.644	7.767	3.465	3.465	3.465
RoE (%)	16%	16%	16%	16%	16%	16%
Return on Equity (in Rs. Crore)	1.19	1.22	1.24	0.55	0.55	0.55
G.Total	3.65			1.66		

MePGCL Reply

The debt-equity ratio was submitted in Form 1.1 to the Hon’ble Commission vide letter No. MePGCL/D/GEN/M-43/2008/Pt-XVI/24 dated 22.02.2021. The equity shown by the objector is based on 30 % of the normative capital cost, which is applicable only in the case of generic tariff application. Since the instant tariff petition is for project specific tariff, the actual capital cost incurred is applicable as per regulations.

Therefore, it is prayed that the capital cost for calculation of Return on Equity as submitted by MePGCL in the instant petition may kindly be considered by the Hon’ble Commission.

Commission's Views

The Return on Equity shall be considered as admissible as per the MSERC MYT Regulations 2014.

F. O&M Expenses

22. MePGCL has claimed additional depreciation of INR 1.48 Crore for FY 2021-24. MePGCL has also escalated the normative O&M expenses for FY 2019-20 by 27% and has considered escalated O&M norms for FY 2021-24. It is pertinent to mention MePGCL has included impact of Revision of Pay for FY 2020-21 while calculating the O&M expenses.
23. It is submitted that MePGCL's submissions of 27% escalation is not supported by Regulation 34 of MSERC RE Tariff Regulations, 2014 which provides for calculation of O&M expenses. As per the said regulation normative O&M expenses allowed for SHP for the first-year control period is INR 23.47 Lakh/MW for plants below 5 MW. It further provides escalation of 5.72% per annum. Accordingly, the escalation sought by MePGCL merits to be disallowed. Further, computation of RoP impact has been done MePGCL level and the same cannot be passed on to individual stations such as LMHEP. Accordingly, the allowable O&M expenses for FY 2021-24 is as under:

O&M EXPENSES ALLOWABLE FOR THE PERIOD FY 2021-24 (Rs.Cr)

Particulars	As Claimed by MePGCL			As per Objector's Assessment		
	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
O&M (23.47 Lakh/MW)	0.53	0.56	0.59	0.42	0.44	0.46
Total	0.53	0.56	0.59	0.42	0.44	0.46
Grand Total	1.68			1.32		

MePGCL Reply

MePGCL has not claimed additional depreciation of Rs. 1.48 crore for FY 2021-24 along with O&M expenses as alleged by the objector. MePGCL has considered 27% impact of Revision of Pay while calculating the O&M expenses since Employee Cost forms part of O&M costs and the annual increase of 5.72% is meant to take care of normal annual

escalation only and not pay revision. The O&M costs have to be passed on to individual stations since these form part of ARR and are to be recovered from tariff.

The claim of BIA, therefore, has no merits and may kindly be rejected and the O&M expenses submitted in the instant petition by MePGCL may kindly be considered.

Commission's Views

Commission considers O&M expenses shall be allowed as per the Regulations.

G. Interest on Working Capital

24. MePGCL has claimed INR 0.31 Crore towards interest on working capital for FY 2021-24 after considering interest rate of 12.15%. It is pertinent to mention that under Regulation 21 (3) of the MSERC RE Tariff Regulations, 2014 the interest on working capital shall be at interest rate equivalent to average State Bank of India Base Rate prevalent during the first six months of previous year plus 100 basis points. Accordingly, the applicable rate of interest is 8.69%. [Calculation of the same is provided at Table 7 of Annexure A]. Regulation 20

(3) of the MSERC RE Tariff Regulations, 2014 is as under:

“(3) Rate of Interest on Working Capital shall be at interest rate equivalent to average State Bank of India Base Rate prevalent during the first six months of previous year plus 100 basis points.”

Accordingly, the allowable interest on working capital for FY 2021-24 is as under:

INTEREST ON WORKING CAPITAL ALLOWABLE FOR THE PERIOD FY 2021-24 (Rs.Cr)

Particulars	As Claimed by MePGCL			As per Objector's Assessment		
	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
O&M for 1 Month	0.04	0.05	0.05	0.03	0.04	0.04
Maintenance Spare	0.08	0.08	0.09	0.06	0.07	0.07
Receivable for 2 Month	0.70	0.72	0.74	0.37	0.36	0.36
Total	0.82	0.85	0.87	0.46	0.46	0.46
Interest Rate (%)	12.15%	12.15%	12.15%	8.69%	8.69%	8.69%
Interest on Working Capital	0.10	0.10	0.11	0.04	0.04	0.04
G.Total	0.31			0.12		

MePGCL Reply

The IWC calculated by the objector is based on the O&M expenses and other components of ARR which were arrived at by assuming normative cost, which is applicable only in the case of generic tariff as per Regulation 11 (2). Since the petition filed by MePGCL is for determination of project specific tariff, the components arrived at based on actual cost are to be taken into consideration as per Regulation 12 (1) of the renewable energy tariff regulations.

The IWC derived by MePGCL in its tariff petition may, therefore, kindly be considered by the Hon'ble Commission.

Commission's Views

Commission considers Interest on Working Capital as per the MSERC MYT Regulations 2014.

H. Annual Fixed Charges for FY 2021-22 to FY 2023-24 and Generation Tariff for FY 2021-22

- 25. In light of the submissions made above the Annual Fixed Charges for LMHEP are as under:**

ANNUAL FIXED CHARGES ALLOWABLE FOR THE PERIOD FY 2021-24 (Rs.Cr)

Particulars	As Claimed by MePGCL			As per Objector's Assessment		
	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)
Interest on Loan capital	0.63	0.65	0.64	0.58	0.52	0.46
Depreciation	1.76	1.81	1.84	0.61	0.61	0.61
O&M Expenses	0.53	0.56	0.59	0.42	0.44	0.46
Interest on working capital	0.10	0.10	0.11	0.04	0.04	0.04
Return on Equity	1.19	1.22	1.24	0.55	0.55	0.55
Total Annual Fixed Cost	4.20	4.35	4.42	2.19	2.16	2.13
G.Total	12.96			6.48		

26. Accordingly, the generation tariff for FY 2021-22 is as under:

GENERATION TARIFF ALLOWABLE FOR THE PERIOD FY 2021-24 (Rs.Cr)

Particulars	As Claimed by MePGCL	As per Objector's Assessment
Net AFC for FY 2021-22 for Computation of Tariff	4.20	2.19
Gross Generation (MU) as approved in Business	11.00	11.17
Business plan order dated 30.09.2020		
Less: Auxiliary Consumption @ 1% (MU)	0.11	0.11
Less: Transformation Loss @ 0.5% (MU)	0.06	0.06
Net Energy (MU)	10.84	11.00
Fixed Charge (Rs.Cr)	2.10	1.10
Variable charge (INR/Kwh)	1.94	1.00

MePGCL Reply

The AFC derived by the objector and the consequent generation tariff for FY 2021-22 are meant for generic tariff determination and not for project specific tariff, as explained in the previous paragraphs.

The petitioner sticks to the methodology adopted to derive the MYT for Lakroh MHP for FY 2021-24 as depicted in the petition and submits that it is in line with the Renewable Energy Tariff Regulations, 2014.

The average tariff proposed by the objector is Rs. 2.00/kWh, which is a little over Rs. 1.50/kWh, the value obtained by selling 1 (one) kWh of Renewable Energy Certificate. Therefore, the energy component is only Re.0.50/kWh (i.e., Rs. 2.00-Rs. 1.50) if the tariff proposed by the objector is accepted. Such a tariff is grossly inadequate to sustain the generating station and will greatly discourage the development of clean renewable energy projects. This will run counter to the National Electricity Policy.

Hence, it is prayed that the AFC and tariff derived by MePGCL in the instant tariff petition may kindly be considered by the Hon'ble Commission.

Commission's Views

Commission noted the Response.

The List of Participants in the Public hearing on Generation Petition filed by MePGCL held on 17.03.2021 is attached as Annexure I.

3. Commission's Approach and Analysis

3.0 Background

The Meghalaya Power Generation Corporation Limited (MePGCL) has been entrusted with the development of 1x1.5 MW Lakroh Mini Hydro Electric Power Project in West Jaintia Hills district of Meghalaya. The Lakroh Mini Hydro Electric Power Project was built alongside 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.

3.1 Filing of Petition

MePGCL has filed petition for approval of the Capital cost of 1.5 MW Lakroh MHP on 04.12.2020

The Commission has examined the petition in terms of the MSERC MYT Regulations 2014.

The Petitioner has been asked to file the additional information calling for the Environmental clearance and date wise details of disbursement of the Govt. Grant and contributions received, Cost of E&M equipment purchased in 2006, Cost estimate and also specific approval from competent authority for the cost and time overrun for execution of the project .

MePGCL has submitted reply to the commission's query on 22.01.2021 and 05.02.2021.

According to the petitioner's submission, the following explanations are noted.

1) MePGCL has stated that Environmental clearance is not required for Renewable energy projects as per the notification of MOEF dated 14th September 2006. Accordingly MePGCL obtained NOC from JHADC Jowai in December 2007.

2) Cost of E&M Equipment

The cost of damaged E&M equipment order placed on M/S GEN MACHINES GUWAHATI dated 16.05.2003 indicated at Rs.2,18,32,869/-. The licensee has also

allowed a price variation amounted to Rs.33,35,030/-

- 3) The petitioner has filed approval of the Board of Directors for revised cost estimates amounting to Rs.2153.04 Lakhs (2019). It is stated that the revised cost is approved inclusive of cost of E&M equipment which got rusted and cost overrun due to delay in execution of the project.
- 4) The Petitioner has submitted dates of receipt of the Govt. Grants and contributions for **Rs.1174.98** Lakhs for execution of the lakroh project.

MNRE		
Particulars	Letter No. & date	Amount (in lakhs)
1 st Installment	Letter No.06/26/99-SHP (C.S) Dated. 31.03.2001	Rs.14.00
	Letter No.06/26/99-SHP (C.S) Dated. 17.05.2001	Rs.53.50
2 nd Installment	Letter No.06/26/99-SHP (C.S) Dated. 17.12.2004	Rs.135.00
3 rd Installment	Letter No.06/26/1999-SHP (C.S) Dated. 24.12.2009	Rs.135.00
4 th Installment	Letter No.06/26/1999-SHP (C.S) Dated. 29.09.2011	Rs.135.00
5 th Installment	Letter No.06/26/1999-SHP (C.S) Dated. 28.08.2012	Rs.135.00
6 th Installment	Letter No.2864/4/2018-SHP 27.12.2019	Rs.67.50
	Total	Rs.675.00 Lakhs

NEC		
Particulars	Letter No. & date	Amount (in lakhs)
1 st Installment	Letter No. NEC/POW/RRE/015/2008-09/2183 Dated.25.03.2008	Rs.187.00
2 nd Installment	Letter No. NEC/RRE/015/2008-09/2423 Dated.18.03.2010	Rs.130.00
3 rd Installment	Letter No. NEC/RRE/015/2008-09/2639 Dated.27.09.2011	Rs.80.00
4 th Installment	Letter No. NEC/RRE/015/2008-09/6078 Dated.18.09.2018	Rs.53.00
	Total	Rs.450.00 Lakhs

Government of Meghalaya		
Sl.No	Letter No. & date	Amount (in lakhs)
1	Letter No. PE.82/2005/Pt-I/54 dated 31.03.2011	Rs.20.78
2		Rs.14.44
3	Letter No. PE.82/2005/Pt-I/324 dated 22.02.2019	Rs.8.88
4	Letter No. POWER.82/2005/Pt-I/324 dated 22.02.2019	Rs.5.88
	Total	Rs.49.98 Lakhs

According to the Board of Directors approval 2019, the project cost indicating escalation over a period of time as filed for the revised estimates detailed below.

- I. As per DPR, the project cost approved in 2001 at Rs.1176 Lakhs.
- II. As per the modified location Revised in 2008 at Rs.1147 Lakhs
- III. The Revised cost in 2016 approved for Rs.1751 Lakhs
The increase in the project cost was due to price variation and purchase of new TG Sets.
- IV. The final cost approved in 2017 for Rs.2153 Lakhs which includes Rs.125 lakhs IDC.

3.2 Approval of the Project Cost

Petitioner's Submission

Petitioner has submitted Capital cost of the Project as on 01.03.2019 (CoD) Rs.22.33 Crore vide table no.1 of the petition and Audited capital cost as on 31.03.2019 at Rs.22.33 Crore and requested to approve the Capital Cost.

M/S V S V G & Co Chartered Accountants have certified project cost capitalized as on 01.03.2019 for Rs.22.33 Crore audit certificate filed vide Annexure D to the petition.

The asset wise break up is certified as on 31.03.2019 as detailed below.

Particulars	Gross Fixed Assets as on 31.03.2019
Land	-
Building	2,25,47,885.37
Hydraulic Works	9,35,39,408.13
CivilWorks	1,73,40,005.00
Plant & Equipment	7,82,59,928.00
Lines & Cables	1,14,76,724.00
Vehicles	-
Furniture & Fixtures	115684
Office Equipment	33,739.00
Total	22,33,13,373.50

Commission's Analysis

As per Regulation 52.2 and 52.3 of MSERC Regulations 2014

"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."

“In case of any abnormal delay in execution of the project causing cost and time overruns attributable due to the failure of the utility, the Commission may not approve the full capitalization of interest and overhead expenses.”

The Project Complete cost claimed at Rs.22.33 Crore was not approved by the Board of Directors. The Board has approved only Rs.21.53 Crores which includes Rs.1.25 Crore towards Interest during Construction (IDC) on 16.05.2019.

Details of the Project Cost Approved- Civil works	13.07 Cr
E&M Works	7.21 Cr
IDC	<u>1.25 Cr</u>
Total	21.53 Cr

The Licensee has submitted chronological activity of project execution in the additional information/data filed vide their letter dated 05.02.2021 as detailed below.

- a) **March 2001**- Administrative approval from MNRE was given on 31.03.2001 and a sum of Rs.14.00 lakhs released as first installment and again Rs.53.50 Lakhs released as second installment in May 2001.
- b) **January 2003**- A small hydro division was created for execution of the project.
Order for supply of E&M equipment by M/S GEN MACHINES GUWAHATI.
Survey works for the project started in October 2003.
- c) **Decemeber 2003 to December 2007**- NOC from JHADC obtained.
Febrauary 2004 to June 2004- Project commencement delayed due to the demise of land owner.
- d) **January 2006**- E&M equipment supplied by M/S GEN MACHINES placed in Stock yard.
- e) **March 2008**- Grant of Rs.500 lakhs received from NEC as viability gap funding for the project.
- f) **July 2008**- Work order for construction of Bridge no.1&2 issued for which fund provided by Govt. of Meghalaya (BADD).
- g) **February 2009**- Board of Directors approval for shifting of the project from Right bank to left bank of the river at a cost of Rs.1147 lakhs for construction of 1x1500 KW instead of 2x750 KW.
- h) **September 2009**- Work order for Power channel and Pen Stock issued.
- i) **Nov & Dec 2009**- Work Order for Power House, Weir and Forebay issued.

- j) **November 2010**- Inspection of E&M equipment supplied by M/S GEN MACHINES for shifting it to project site which is found to be not useful.
- k) **January 2011**- M/S GEN MACHINES has submitted offer for refurbishment of the damaged material.
- l) **March 2011**- Negotiations on the rate submitted by the firm.
- m) **June 2011**- Work order issued to M/S GEN MACHINES for refurbishment.
- n) **February 2012**- Transportation of E&M equipment to project site near the power house.
- o) **April 2012**- Material for refurbishment supplied.
- p) **December 2012**- E&M equipment shifted to Power House
- q) **July 2013**- Erection of E&M works completed.
- r) **August 2013**- Joint inspection by C.E Generation and Engineers of M/S Boving Fouress Bangalore for generator and panel boards.
The Joint inspection reveal the material supplied by M/S GEN MACHINES need to replaced.
- s) **January 2014**- Order for Additional works, supply of panel boards etc., issued to M/s Boving Fouress Bangalore but materials are yet to be supplied due to non-payment of advance payment against corporate bank guarantee due to fund constraint.

Physical progress of works till date-96% Completed.

E.E Projects further explained before the Board that the construction works for this project was started in September 2009 at an approved cost of Rs.11.47 crores with funding from MNRE Rs.6.75 Crore and NEC Rs.4.50 Crore and State Govt. at Rs.0.50 Crore. However, due to various reasons like increase in the length of the weir, higher quoted rates compared to estimate approved rate, the extra expenditure for procurement of damaged OPU and Panel Board etc, the cost of the project increased and is required to be revised. The updated cost now stands at Rs.17.51 crores.

The details of the Project cost escalation are further analyzed below

Sl.No	Particulars	Amount
(i)	Increase of length of weir from 39 meters to 47.33 meters	Rs.39.16 Lakhs
(ii)	Increase in Retaining walls for Power channel	Rs.102.02 Lakhs
(iii)	Increase in cost of power house	Rs.58.27 Lakhs
(iv)	Increase in the establishment cost.	Rs.58.34 Lakhs
(v)	Shifting of Machines from parking yard to power house site	Rs.22.54 Lakhs
(vi)	Cost Escalation quoted by the contractor for Penstock	Rs.48.47 Lakhs
(vii)	Procurement of OPU and Panel Boards (rusted and damaged) for E&M works	Rs.134.81 Lakhs
(viii)	Laying of road excess over the fund provided by BADD	Rs.74.18 Lakhs
	Total	Rs.537.79 Lakhs

Original project cost approved in February 2009 Rs.11.47 Crore

Additional commitment as detailed above Rs.5.38 Crore

Total Project cost Rs.16.85 crore

Board of Directors approved revised cost estimate for Rs.17.83 Crore on 23.02.2015 and approval included for availing a loan of Rs.6.08 Crore from PFC Green Energy Limited.

Subsequently Board approved on 03.05.2017 revised project cost at Rs.20.48 Crore.

Whereas the licensee has claimed capital cost of the project at Rs.22.33 Crore. There is a difference of Rs.0.80 Crore between the approved project cost on 16.05.2019 for Rs.21.53 Crore and capital cost claimed by the licensee (Rs.22.33Cr – Rs.21.53 Cr= Rs 0.80 Crore).

Commission considers that project execution has been abnormally delayed due to the failure of the licensee in selection of the agency for supply and execution of the project, use of efficient technology and as a result the project commencement taken place in 2009, has been completed in 2019 (Ten Years). It is also to be mentioned that administrative approval from MNRE was accorded in March 2001 and released part of the grant in May 2001, the NOC was obtained in December 2007 which contributed to delay in commencement of project execution in February 2009. Though 96% work has

been completed by January 2014, the completion of the project took five years ie., in March 2019, reasoning the delay due to fund constraint, is not considerable.

Whereas funding of the project cost for Rs.10.40 Crore has been received from MNRE, NEC and State Govt. up to August 2012, (Rs.1.35 Crore received in 2019) as Grant and contributions. It is stated that 96% of the project work completed in 2014, the duration of another five years delay for completion of 4% of the project work up to March 2019 shall also be attributable as failure of the licensee as observed by the commission.

After Prudence check of the petition with reference to the additional information/data filed on 22nd January 2021, 5th February 2021 and 22nd February 2021, Commission considers the following Regulatory stipulations before approval of the capital cost of 1.5 MW lakroh Project.

3.3 Pricing of Infirm Power Generated during the Trial run

As per Regulation 44.1 of MSERC Regulations 2014.

“Any revenue other than the recovery of fuel cost earned by the generating company from sale of infirm power shall be taken as reduction in capital cost and shall not be treated as revenue.”

The Licensee has reported in the Additional information/data dated 22nd January 2021 that during the trial run power generated (SLDC data indicated) during 05.02.2019 to 31.03.2019 exported is of the order 0.04 MU in February and 0.5 MU in March 2019.

MePDCL has reported in the SOA for FY 2018-19 that the surplus energy of 298.29 MU has been surrendered to exchange and the Revenue received is at Rs.48.00 Crore. (unit Rate @ Rs.1.61/kwh)

Considering the above exchange rate, Commission considers the Revenue for 0.09 MU generated during Trial run exported from Lakroh project shall be valued at Rs.1.45 lakh at (Rs.1.61 Ps/kwh) and shall be deducted from the capital cost of the lakroh project as per the Regulation.

3.4 Cost of damaged E&M Equipment with PVC Claim.

In accordance with the Regulations, Commission considers deduction of the cost of the damaged equipment at Rs.2.18 Crore and also resulted in payment of price variation for Rs.33,35,030/-.

The Lakroh project scheduled to be completed within five years from the date of commencement (2009). Whereas completion of project execution has been delayed and achieved COD on 01.03.2019. Thus more than 10 years delay has been caused for execution of the project.

3.5 Project Completion and Interest during Construction (IDC)

Considered the period of completion 5 years from 2009, project should have been completed by 2014. But due to the failure of the utility in planning and use of efficient technology and also selection of the agency for execution of the project, completion of the project has been delayed for more than 10 years.

Thus commission considers the interest cost claimed at Rs.125 Lakhs shall be limited to 50% of the commitment for determination of Tariff which works out to Rs.62.50 lakhs (125 lakhs-62.50 lakhs = 62.50 lakhs to be deducted from the capital cost).

Commission after taking into consideration of the petition and further submissions in the Additional information/data and also views of the stake holders, approves the project cost for 1.5 MW Lakroh MHP as per the MSERC MYT Regulations 2014.

Approved Project cost for 1.5 MW Lakroh MHP :

Particulars	Rs.in crore	
Project cost claimed by the Petitioner		22.33
Less: Cost of Infirm Power Generated during the Trial run exported as per SLDC data for 0.09 MU@Rs.1.61/Kwh	0.15 Cr	3.30
Less: Cost of Equipment damaged due to rust and also price Variation allowed (Rs.2,18,32,869 + Rs.33,35,030)	2.52 Cr	
Less: Interest during Construction	0.63 Cr	
Approved Capital Cost (22.33Cr – 3.30Cr)		19.03

Commission approves Project cost at Rs.19.03 Crore for determination of the ARR and Tariff.

As per Regulation 52.6 of MSERC Regulations 2014-

“The project cost already admitted by the Commission for purpose of tariff determination shall be considered as the original project cost.”

Asset wise Breakup of Project cost for Consideration of ARR Provisions:

(in Cr)

Particulars	Gross Fixed Assets as on 31.03.2019	breakup after deduction of TG sets with price variation	Breakup after deduction of Cost of infirm power and IDC
Land	-	-	
Building	2.26	2.26	2.18
Hydraulic Works	9.35	9.35	8.98
Civil Works	1.73	1.73	1.66
Plant & Equipment	7.83	5.31	5.10
Lines & Cables Net work	1.15	1.15	1.10
Vehicles	-	-	
Furniture & Fixtures	0.01	0.01	0.009
Office Equipment	0.003	0.003	0.002
Total	22.33	19.81	19.03

Commission considers Project cost at Rs.19.03 Crore for computation of ARR as per the Regulations.

3.6 Approach for Determination of ARR

Petitioner's Submission

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 actual of FY 2018-19 and provisional of FY 2019-20 & approved business plan for the control period.

The Commission approved the Business plan order for 3rd 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.

Commission's Analysis

The Licensee has filed petition for Approval of the capital cost for 1.5 MW lakhro MHP as per MSERC MYT Regulations 2014 and Terms and conditions for determination of Tariff for Generation from Renewable energy sources Regulations 2014.

The Project execution has been commenced in March 2009 prior to the issue of the MSERC (Terms and conditions for determination of Tariff for Generation from Renewable Energy Sources) Regulations 2014

Accordingly Commission considers approval of the capital cost and Provisional ARR for FY 2018-19 to FY 2020-21 under MSERC MYT Regulations 2014.

ARR for 2nd MYT Control Period for FY 2018-19 to FY 2020-21 and ARR for 3rd MYT Control period FY 2021-22 to FY 2023-24

3.7 Components of Tariff

Petitioner's Submission

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.

Commission's Analysis

The tariff for sale of energy from small hydro projects shall be Two-part tariff as fixed cost components detailed below and variable energy charges for actual generation;

- a) Interest on loan capital
- b) Depreciation
- c) Return on equity
- d) Interest on working capital
- e) Operation and maintenance expenses

3.8 Approved Capital Expenditure and Capitalization for the Control Period

Capital Expenditure

Petitioner's Submission

In the approved Business Plan Order (dated 30.09.2020), the 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 3. 1: Asset base of Lakroh MHP

(Rs. 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	-	-	-	-	-	-
Closing GFA	22.33	24.35	24.41	25.07	25.89	25.89

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

Commission's Analysis

Commission has approved capital cost for 1.5 MW lakroh MHP project at Rs.19.03 Crore. Earlier, Commission had approved business plan for 2nd MYT Control period for FY 2018-19 to FY 2020-21 wherein capitalization of Rs.20.48 Crore was considered against lakroh mini Hydel project. The Capital addition for FY 2019-20 projected at Rs.2.02 Crore is not considered, since the investment was not approved in the business plan.

Similarly commission approved business plan for 3rd MYT Control period for FY 2021-22 to FY 2023-24 with the capex of Rs.1.54 Crore against lakroh project.

Accordingly commission considers asset base for lakroh MHP as detailed in the table below

Table 3. 2: Approved GFA and Capitalization for the control period

(Rs.Cr)

Particulars	FY 2018-19 (Actual)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Estimated)	FY 2022-23 (Estimated)	FY 2023-24 (Estimated)
Opening GFA	-	19.03	19.03	19.09	19.75	20.57
Additions during the year (Based on the capitalization schedule above)	19.03	0.00	0.06	0.66	0.82	-
Retirements during the year	-	-	-	-	-	-
Closing GFA	19.03	19.03	19.09	19.75	20.57	20.57

Commission considers GFA and Capitalization as above for the control period.

3.9 Operation and Maintenance Expense

Petitioner's Submission

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:

Size of project	O&M Expenses (INR lakh / MW)
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 levellised 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 3. 3: O & M Expenditure of Lakroh MHP for the Third Control Period

	(Rs. Cr)
Particulars	Amount
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
O&M Expenses for FY 2020-21 (5.72% escalation over previous Year and ROP Impact) **	0.50
O&M Expenses for FY 2021-22 (5.72% escalation over previous Year) (INR Cr.)	0.53
O&M Expenses for FY 2022-23 (5.72% escalation over previous Year) (INR Cr.)	0.56
O&M Expenses for FY 2023-24 (5.72% escalation over previous Year) (INR Cr.)	0.59

** 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 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.

Commission’s Analysis

Commission has considered capital cost of the Project as per the MSERC MYT Regulations 2014. The O&M expenses shall be computed as per Regulation 56.7 read with Regulation 52.6 of MSERC MYT Regulations 2014 at 2% of the Original project cost.

Accordingly for 1.5MW Lakroh MHP **project cost approved at Rs.19.03 Crore** shall be considered for computation of O&M expenses at 2% of project cost which works out to Rs.0.38 Crore for FY 2018-19. Thus O&M expenses for FY 2018-19 (date of CoD 01.03.2019) shall be Rs.0.03 Crore (ie., Rs.0.38 Cr/12) for one month.

The Increase due to ROP is computed at 27% provisionally for FY 2020-21 and O&M expenses has been escalated at 5.72% for subsequent years as computed below.

Table 3. 4: Computation of O&M expenses for Control Period

Particulars	Amount in Cr
O&M expenses for FY 2018-19 considered at Rs..0.38 Crore Project CoD achieved on 01.03.2019 (Rs..0.38 Cr/12)	0.03
O&M expenses escalated for FY 2019-20 at 5.72%	0.40
O&M expenses escalated for FY 2020-21 at 5.72% incl. ROP @27%	0.54
O&M expenses escalated for FY 2021-22 at 5.72%	0.57
O&M expenses escalated for FY 2022-23 at 5.72%	0.60
O&M expenses escalated for FY 2023-24 at 5.72%	0.63

Commission considers O&M expenses as computed above at Rs.0.57 Crore, Rs.0.60 crore and Rs.0.63 crore provisionally for the Control period FY 2021-22, FY 2022-23 and FY 2023-24.

3.10 Return on Equity

Petitioner's Submission

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.”

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 overrun.”

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 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 Commission’s methodology, the return on equity for the control period is given below:

Table 3. 5: Return on Equity Projected for Lakroh MHP for the Control Period

(Rs.Cr)

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	Return on Equity	0.04*	1.12	1.17	1.19	1.22	1.24

*- 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.

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 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 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.

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

Commission's Analysis

Commission considers project cost under MSERC MYT Regulations 2014, the return on equity shall be computed as per the Regulation 31 read with Regulation 27 of MSERC Regulations 2014.

“Return on equity shall be computed on the equity base determined in accordance with regulation 27 and shall not exceed 14%.

Provided that in case of generation & transmission projects commissioned after notification of these regulations, an additional return of 0.5 % shall be allowed if such projects are completed within the time line as specified in CERC Tariff Regulations.

Provided that in case of generation & transmission projects commissioned after the notification of these regulations an additional return of 1.5 % shall be allowed if such projects are completed within the original sanctioned project cost without any time and cost overrun whatsoever.

Provided that equity invested in a foreign currency may be allowed a return up to the prescribed limit in the same currency and the payment on this account shall be made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

- *The premium received while issuing share capital shall be treated as a part of equity provided the same is utilized for meeting capital expenditure.*
- *Internal resources created out of free reserves and utilized for meeting capital expenditure shall also be treated as a part of equity.*

For a project declared under commercial operation on or after 1.4.2015, if the equity actually deployed is more than 30% of the capital cost, 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 equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

Provided any grant obtained for execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.

Accordingly the Return on Equity is computed as depicted in the Table below:

Table 3. 6: Return on Equity for Lakroh MHP for the Control Period

(RS.Cr)

Sl.	Particulars	FY 2018-19 (Provisional)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Estimated))	FY 2022-23 (Estimated))	FY 2023-24 (Estimated)
1	Opening GFA for the Year	0.00	19.03	19.03	19.09	19.75	20.57
2	Additions during the Year	19.03	0.00	0.06	0.66	0.82	0.00
3	Closing GFA for the Year	19.03	19.03	19.09	19.75	20.57	20.57
4	Average Assets Base for the Year	9.52	19.03	19.05	19.42	20.16	20.57
5	Less: Grants and Contributions Received	11.07	11.75	11.75	11.75	11.75	11.75
6	Net GFA	-1.55	7.28	7.30	7.67	8.41	8.82
7	Debt component (70% of GFA)	-1.09	5.09	5.11	5.37	5.89	6.17
8	Equity component (30% of GFA)	-0.46	2.19	2.19	2.30	2.52	2.65
9	RoE (%)	14%	14%	14%	14%	14%	14%
10	Return on Equity	NIL	0.31	0.31	0.32	0.35	0.37

Commission considers Return on Equity at Rs.0.32 Cr, Rs.0.35 Cr and Rs.0.37 Crore for Control period FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

3.11 Depreciation

Petitioner's Submission

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.

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 3. 7 : Actual Depreciation Charges of Lakroh MHP for FY 2018-19

(Rs. 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	-	-	-	-	-
	Total	-	22.33	-	22.33	0.09

Table 3. 8 : Provisional Depreciation Charges of Lakroh MHP for FY 2019-20

(Rs. 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	-	-	-	-	-
	Total	22.33	2.02	-	24.35	1.17

Table 3. 9: Estimated Depreciation Charges of Lakroh MHP for FY 2020-21

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
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	-	-		-	-
	Total	24.35	0.06		24.41	1.74

Table 3. 10: Projected Depreciation Charges of Lakroh MHP for FY 2021-22

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
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	-	-		-	-
	Total	24.41	0.66		25.07	1.76

Table 3. 11: Projected Depreciation Charges of Lakroh MHP for FY 2022-23

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
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	-	-		-	-
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	-	-		-	-
	Total	25.07	0.82		25.89	1.81

Table 3. 12 : Projected Depreciation Charges of Lakroh MHP for FY 2023-24

(Rs. 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	-	-	-	-	-
	Total	25.89	-	-	25.89	1.84

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

Commission's Analysis

According to Regulation 33.1 of MSERC MYT Regulations 2014

"For the purpose of tariff determination, depreciation shall be computed in the following manner:

- a) *The asset value for the purpose of depreciation shall be the historical cost of the assets as approved by the Commission where:*

The opening asset's value recorded in the Balance Sheet as per the Transfer Scheme Notification shall be deemed to have been approved, subject to such modifications as may be found necessary upon audit of the accounts, if such a Balance Sheet is not audited. Consumer contribution or capital subsidy/ grant etc shall be excluded from the asset value for the purpose of depreciation.

- b) *For new assets, the approved/accepted cost for the asset value shall include foreign currency funding converted to equivalent rupee at the exchange rate prevalent on the date of foreign currency actually availed but not later than the date of commercial operation.*

- c) *The salvage value of the assets shall be considered at 10% and depreciation shall be allowed upto maximum of 90 % of the capital cost of the asset.*

- d) *Depreciation shall be calculated annually as per straight-line method at the rates specified in CERC (Terms and Conditions of Tariff) Regulations, 2009 as may be amended from time to time.*

Provided that land is not a depreciable asset and its cost shall be excluded from the capital cost while computing the historical cost of the asset.

- e) *Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro-rata basis.*

- f) *The remaining depreciable value as on 31st March of the year closing after a period of 12 years from the date of commercial operation shall be spread over the balance useful life of the asset."*

Accordingly the Depreciation is computed as depicted in the tables below.

Table 3. 13: Actual Depreciation Charges of Lakroh MHP for FY 2018-19

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	With drawn	Closing GFA	Depreciation
1	Land & Land rights	-		-	0.00	-
2	Buildings	-	2.18	-	2.18	0.00
3	Hydraulic Works	-	8.98	-	8.98	0.04
4	Other Civil Works	-	1.66	-	1.66	0.00
5	Plant & Machinery	-	5.10	-	5.10	0.02
6	Lines & Cable Network	-	1.10	-	1.10	0.00
7	Vehicles	-		-		
8	Furniture & Fixtures	-	0.009	-	0.009	0.00
9	Office Equipment	-	0.002	-	0.002	0.00
10	Assets not in use	-	-	-	-	
	Total	-	19.03	-	19.03	0.06
	Dep for 1 month for FY 18-19					
	Grants Available				11.07	
	Dep on Grants at 0.32%					0.04
	Net Depreciation					0.02

Table 3. 14: Provisional Depreciation Charges of Lakroh MHP for FY 2019-20

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	0.00	-	-	0.00	-
2	Buildings	2.18	-	-	2.18	0.06
3	Hydraulic Works	8.98	-	-	8.98	0.43
4	Other Civil Works	1.66		-	1.66	0.05
5	Plant & Machinery	5.10		-	5.10	0.24
6	Lines & Cable Network	1.10		-	1.10	0.05
7	Vehicles			-		
8	Furniture & Fixtures	0.009		-	0.009	0.00
9	Office Equipment	0.002		-	0.002	0.00
10	Assets not in use	-		-	-	
	Total	19.03		-	19.03	0.83
	Grants Available				11.75	
	Dep on Grants at 4.36%					0.51
	Net Depreciation					0.32

Table 3. 15: Estimated Depreciation Charges of Lakroh MHP for FY 2020-21

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	0.00	0.00		0.00	-
2	Buildings	2.18	0.01		2.19	0.06
3	Hydraulic Works	8.98	0.02		9.00	0.43
4	Other Civil Works	1.66	0.00		1.66	0.05
5	Plant & Machinery	5.10	0.03		5.13	0.24
6	Lines & Cable Network	1.10	0.00		1.10	0.05
7	Vehicles		-			
8	Furniture & Fixtures	0.009	0.00		0.009	0.00
9	Office Equipment	0.002	0.00		0.002	0.00
10	Assets not in use	-	-			
	Total	19.03	0.06	-	19.09	0.83
	Grants Available				11.75	
	Dep on Grants at 4.35%					0.51
	Net Depreciation					0.32

Table 3. 16: Depreciation Charges Estimated of Lakroh MHP for FY 2021-22

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	0.00	0.00		0.00	
2	Buildings	2.19	0.06		2.25	0.06
3	Hydraulic Works	9.00	0.25		9.25	0.43
4	Other Civil Works	1.66	0.06		1.72	0.05
5	Plant & Machinery	5.13	0.26		5.39	0.25
6	Lines & Cable Network	1.10	0.03		1.13	0.05
7	Vehicles		0.00		0.00	0.00
8	Furniture & Fixtures	0.009	0.00		0.009	0.00
9	Office Equipment	0.002	0.00		0.002	0.00
10	Assets not in use		-			
	Total	19.09	0.66		19.75	0.84
	Grants Available				11.75	
	Dep on Grants at 4.33%					0.51
	Net Depreciation					0.33

Table 3. 17: Depreciation Charges Estimated of Lakroh MHP for FY 2022-23

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	0.00	0.00		0.00	
2	Buildings	2.25	0.08		2.33	0.07
3	Hydraulic Works	9.25	0.31		9.56	0.45
4	Other Civil Works	1.72	0.06		1.78	0.05
5	Plant & Machinery	5.39	0.33		5.72	0.26
6	Lines & Cable Network	1.13	0.04		1.17	0.05
7	Vehicles	0.00	-			
8	Furniture & Fixtures	0.009	0.00		0.009	0.00
9	Office Equipment	0.002	0.00		0.002	0.00
10	Assets not in use		-			
	Total	19.75	0.82		20.57	0.88
	Grants Available				11.75	
	Dep on Grants at 4.36%					0.51
	Net Depreciation					0.37

Table 3.18 : Depreciation Charges Estimated of Lakroh MHP for FY 2023-24

(Rs. Cr)

Sl. No.	Particulars	Opening GFA	Addition	Withdrawn	Closing GFA	Depreciation
1	Land & Land rights	0.00	-	-	0.00	
2	Buildings	2.33	-	-	2.33	0.07
3	Hydraulic Works	9.56	-	-	9.56	0.45
4	Other Civil Works	1.78	-	-	1.78	0.05
5	Plant & Machinery	5.72	-	-	5.72	0.27
6	Lines & Cable Network	1.17	-	-	1.17	0.05
7	Vehicles		-	-		
8	Furniture & Fixtures	0.009	-	-	0.009	0.00
9	Office Equipment	0.002	-	-	0.002	0.00
10	Assets not in use		-	-		
	Total	20.57	-	-	20.57	0.89
	Grants Available				11.75	
	Dep on Grants at 4.33%					0.51
	Net Depreciation					0.38

Commission considers Depreciation at Rs.0.33 Crore, Rs.0.37 Crore and Rs.0.38 Crore for Control period FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

3.12 Interest and Finance Charges

Petitioner's Submission

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 3.19 : Interest and Finance Charges for Lakroh MHP for the Control Period
(Rs.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 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%
Interest Accrued	0.04	0.63	0.63	0.63	0.65	0.64

*- 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 Commission to kindly approve the Interest and Finance Charges for Lakroh MHP as computed above.

Commission's Analysis

According to Regulation 32.1 of MSERC Regulation 2014

"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 lending rate specified therein. Provided that the outstanding loan capital shall be adjusted to make it consistent with the loan amount determined in accordance with regulation 27.

The interest and finance charges attributable to capital work in progress shall be excluded.

Provided that neither penal interest nor overdue interest shall be allowed for computation of tariff."

The project commencement has been considered as 2009. The details of source wise opening balance of loans is not filed in the petition. The Licensee shall file the details of source wise opening balance of loans for True up of FY 2018-19 to FY 2020-21.

In the absence of data, the Interest and Finance charges are considered provisionally based on the projections filed by the licensee for 3rd MYT control period.

Table 3.20 : Approved Interest and Finance Charges for Lakroh MHP for the Control Period

(Rs.Cr)

Particulars	FY 2018-19 (Actual)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Estimated)	FY 2022-23 (Estimated)	FY 2023-24 (Estimated)
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%
Interest Accrued	0.04	0.63	0.63	0.63	0.65	0.64

Commission considers Interest and Finance Charges at Rs.0.63 Crore, Rs.0.65 Crore and Rs.0.64 Crore for Control period FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

3.13 Interest on Working Capital

Petitioner's Submission

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 3.21 : Interest on Working Capital Projected for Lakroh MHP for the Control Period

(Rs. 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)
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%
Interest on Working Capital	0.02	0.09	0.10	0.10	0.10	0.11

Order for Approval of Final Capital Cost for Lakroh Mini HEP and ARR for FY 2021-22 to FY 2023-24

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

Commission's Analysis

Commission has considered the Approval of Capital cost and ARR for 3rd MYT control period as per the MSERC MYT Regulations 2014.

According to Regulation 34.1(iii) of MSERC MYT Regulations 2014

"In case of hydro power generating stations, working capital shall cover:

- *Operation and maintenance expenses for one (1) month;*
- *Maintenance spares at the rate of 15% of O & M expenses escalated at 6% from the date of commercial operation; and*
- *Receivables equivalent to two (2) month of fixed cost:*

Provided that in case of own generating stations, no amount shall be allowed towards receivables, to the extent of supply of power by the Generation Business to the Retail Supply Business, in the computation of working capital in accordance with these Regulations.

Interest on working capital shall be allowed at a rate equal to the State Bank Advance Rate (SBAR) as on 1st April of the financial year in which the Petition is filed."

Table 3.22 : Interest on Working Capital for Lakroh MHP for the Control Period

(Rs. Cr)

Particulars	FY 2018-19 (Actual)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Estimated)	FY 2022-23 (Estimated)	FY 2023-24 (Estimated)
O&M Expenses	0.38	0.40	0.54	0.57	0.60	0.63
O&M for 1 Month	0.03	0.03	0.05	0.05	0.05	0.05
Maintenance Spares @15% escalated to 6%	0.00	0.06	0.09	0.09	0.09	0.10
Receivables for 2 Months of AFC	0.00	0.28	0.30	0.31	0.33	0.34
Total (INR Crore)	0.03	0.37	0.44	0.45	0.47	0.49
Interest Rate (%)	13.45%	13.20%	12.15%	12.15%	12.15%	12.15%
Interest on Working Capital	0.00	0.05	0.05	0.05	0.06	0.06

Commission considers Interest on Working Capital at Rs.0.05 Crore, Rs.0.06 Crore and Rs.0.06 Crore for Control period FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

3.14 Annual Revenue Requirement (ARR) for each year of the control period

Petitioner's Submission

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 Commission to approve the AFC for the control period as claimed by it.

Table 3.23 : ARR for Lakroh MHP for the Control Period

(Rs. 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)
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
Total Annual Fixed Cost	0.23	3.38	4.13	4.20	4.35	4.42

MePGCL has requested to approve the ARR as submitted.

Commission's Analysis

The licensee has filed petition for approval of the capital cost for Lakroh project and approval of Provisional ARR for FY 2018-19 to FY 2020-21 and for 3rd MYT Control period FY 2021-22 to FY 2023-24.

Commission considering the Additional information/data filed on 22nd January, 5th February 2021 has approved capital cost and provisional ARR for 2nd MYT Control period and 3rd MYT control period as depicted in the table below.

Table 3.24 : Approved ARR for 2nd and 3rd MYT Control period

(Rs.Cr)

Particulars	FY 2018-19 (Provisional)	FY 2019-20 (Provisional)	FY 2020-21 (Estimated)	FY 2021-22 (Estimated)	FY 2022-23 (Estimated)	FY 2023-24 (Estimated)
Interest on Loan capital	0.04	0.63	0.63	0.63	0.65	0.64
Depreciation	0.02	0.32	0.32	0.33	0.37	0.38
O&M Expenses	0.03	0.40	0.54	0.57	0.60	0.63
Interest on working capital	0.00	0.05	0.05	0.05	0.06	0.06
Return on Equity	0.00	0.31	0.31	0.32	0.35	0.37
Total Annual Fixed Cost	0.09	1.71	1.85	1.90	2.03	2.08

Commission Approves ARR at Rs.1.90 Crore, Rs.2.03 Crore and Rs.2.08 Crore for Control Period FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

The licensee has filed belated petition for approval of the capital cost from 01.03.2019. The ARR for FY 2018-19 to FY 2020-21 shall be a provisional approval, and the computation of Capacity charge and Energy charge approved in this order shall be included in the petition for True up of business from FY 2018-19 to FY 2020-21 at actual for approval of the commission.

Computation of AFC for FY 2018-19 to FY 2020-21 & Generation Tariff for 1.5 MW Lakroh MHP

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Net AFC for Computation of Tariff (Cr)	0.00*	1.71	1.85
Gross Generation (MU) as approved in Business Plan order dated 30.09.2020	-	11	11
Less: Auxiliary Consumption @ 1% (MU)	-	0.11	0.11
Less: Transformation Loss @ 0.5% (MU)	-	0.06	0.06
Net Energy (MU)	-	10.84	10.84
Fixed Charge (Rs. Cr.)	-	0.86**	0.93**
Variable Charge (INR/kWh)	-	1.57***	1.71***

* *Adjusted in capital cost as per Regulation 44.1*

***50% of Annual fixed charges shall be claimed in 12 monthly installments*

*** *Variable charges shall be billed for actual generation at 50% of the Tariff determined.*

4. Determination of Capacity and Energy Charges

4.1 Capacity Charge and Energy Charge of Lakroh MHP

Petitioner's Submission

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 4. 1 : Computation of Tariff for Lakroh MHP for FY 2021-22

Particulars	FY 2021-22
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 Commission to kindly approve the tariff for Lakroh MHP for FY 2021-22 as computed in the above table.

Commission's Analysis

The ARR for 3rd MYT Control period for FY 2021-22 to FY 2023-24 approved at Table no.3.24 shall be included in the ARR for MePGCL as a whole for determination of Annual fixed charges and variable charges for FY 2021-22.

Table 4. 2 : Approved AFC for Lakroh MHP and Feneration Tariff for FY 2021-22

Particulars	Filed by MePGCL	Approved by Commission
	FY 2021-22	FY 2021-22
Net AFC for FY 2021-22 for Computation of Tariff	4.20	1.90
Gross Generation (MU) as approved in Business Plan order dated 30.09.2020	11.00	11.00
Less: Auxiliary Consumption @ 1%	0.11	0.11
Less: Transformation Loss @ 0.5%	0.06	0.06
Net Energy (MU)	10.84	10.84
Fixed Charge (Rs. Cr.)	2.10	0.95
Variable Charge (INR/kWh)	1.94	1.73

The Approved Annual Fixed Charges for Lakroh Project has been consolidated in the Generation Tariff for MYT control Period.

Sd/-
Secretary
MSERC

Annexure-I

**List of Participants in the Public Hearing on Generation Petition for FY 2021-22 filed by
MePGCL**

Date: 17.03.2021 | Venue: MSERC Conference Hall | Time: 14:30 Hours

Present :

1. Mr. P. W, Ingty, IAS (Retd), Chairman, MSERC.
2. Mr. R. Keishing, Member(Law) MSERC.
3. 3. Mr. E. Slong, Secretary, MSERC.

MeECL/MePGCL

1. Shri. M. Rymbai, Chief Engineer (HP&HC)
2. Shri. R. Syiem, Chief Engineer (Generation)
3. Shri A. Lyngdoh, Superintending Engineer (PM)
4. Shri.Sunny Kr. Singh, Techno-Commercial Assistant
5. Shri. A. Battacharjee, Assistant techno legal
6. Shri. G.A. Dkhar, Law Officer, MeECL
7. Shri. R. Laloo, Senior Accountant Officer, MePGCL
8. Smti. L .Kharpran, AAO, MePGCL

Byrnihat Industries Association (BIA)

1. Shri.Shyam Sunder Agarwal, Secretary BIA
2. Shri. S. Asati, Consultant BIA
3. Smti. Meera Agarwal, Director Pioneer Carbide
4. Shri.AbhijeetSrivastav, Executive R.A
5. Shri. MohitGoyal, BIA
6. Shri. Kaustar Paul

Others

1. Shri. P. K. Shullet, President JAC, MEA
2. Shri. A Dkhar, Secretary Dorbar Shnong Lumawbah
3. Shri. C. W. Pariat, Member MEA
4. Shri. P. Marwein, Member MEA
5. Shri. E. Lyngdoh, Pensioners Association
6. Shri. O. L. Warjri, Pensioners Association
7. Shri. A. M. Kyndiah, Pensioners Association
8. Shri. Sanjeev Chanda, Advocate