

Nagaland Electricity Regulatory Commission (NERC)



TARIFF ORDER

5 MW Solar Power PV Plant Hovukhu, Niuland

Date: 28/ 02/2024

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ABBREVIATIONS

Abbreviation	Description
ARR	Aggregate Revenue Requirement
CERC	Central Electricity Regulatory Commission
Cr.	Crores
CWIP	Capital Work in Progress
DE	Debt Equity
ER	Eastern Region
FY	Financial Year
GFA	Gross Fixed Assets
KV	Kilovolt
KW	Kilo Watt
kWh	kilo Watt hour
MU	Million Units
MW	Mega Watt
MYT	Multi Year Tariff
NER	North Eastern Region
NERC	Nagaland Electricity Regulatory Commission
NTP	National Tariff Policy
O&M	Operation & Maintenance
PLF	Plant Load Factor
PLR	Prime Lending Rate
R&M	Repairs and Maintenance
RoR	Rate of Return
Rs.	Rupees
S/s	Sub Station
SBI	State Bank of India
SERC	State Electricity Regulatory Commission
YoY	Year on Year

Before the
Nagaland Electricity Regulatory Commission (NERC)
Nagaland, Kohima

Case No: 05/2022-23

In matter of determination of levelized Tariff for Renewable Energy Generation of 5MW Solar Power Plant in Hovukhu, Niuland, Nagaland for a period of 25 years on Petition filed by Department of New & Renewable Energy, Govt. of Nagaland.

Present: Shri. Khose Sale
 Chairman-cum-Member,
 NERC, Kohima.

Petitioner: Department of New & Renewable Energy, Govt. of Nagaland.

Date of Hearing : 21-08-2023

Date of Order : 28-02-2024

Order

1. Department of New & Renewable Energy, Govt. of Nagaland, (hereinafter referred to DNRE or The Petitioner) proposed to develop 5 MW Solar PV Power Plant at Hovukhu, under Niuland District.
2. The Petitioner vide letter No.DNRE-GEN-CORR/01/2021-22/328 dated 23rd January, 2024 stated that the fund for the project has been provided under Special Assistance to States for Capital Expenditure which is a soft loan to the State from the Ministry of Finance, Government of India.
3. The Petitioner submitted the Project cost as Rs. 2500 Lakh and proposed levelised tariff as Rs. 3.97/Unit upto 25 Years. The Petitioner proposed to complete the project in the quickest possible and proposed the date of commercial operation within 10 months from the date of approval.

4. Further, the Petitioner vide letter dated 05-07-2023 has revised its claim and accordingly proposed revised levellised tariff at Rs. 3.92/ Unit upto 25 Years.
5. The Nagaland Electricity Regulatory Commission (NERC), upon following the procedures and in exercise of powers vested by Section 62(1) and Section 64 3(a) of the Electricity Act, 2003 and in accordance with the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 and other enabling provisions in this behalf, has approved the Generation Tariff for 25 years as follows:

Sl. No.	Full Cost Levellised Tariff	Subsidised Tariff (O&M Expenses)
1.	Rs. 3.87/kWh	Rs. 0.47 / kWh

Terms and Conditions:

- (a) The Tariff will be reviewed based on the submission of capital expenditure actually incurred up to the date of commercial operation duly audited and certified by the statutory auditors.
- (b) Any escalation in the tariff shall not be allowed beyond the approved tariff.
- (c) Signing of Power Purchase Agreement (PPA) between the Project Petitioner and the State Government/Distribution Licensee.
- (d) The Execution and Commissioning is completed within the scheduled time prescribed in the DPR failing which the Petitioner shall apply for time extension specifying the reason of delay in execution of the project.

6. Power Evacuation (Grid Connectivity):

The evacuation of power from the said PV Solar Power Plant shall be at the level of 33 KV through the 66/33/11 KV Sub-Station at Nito Farm, Niuland District.

Place: Kohima, Nagaland.

Date: 28-02-2024

Sd/-

KHOSE SALE

Chairman-cum-Member,
NERC, Kohima.

1. INTRODUCTION

1.1. Nagaland Electricity Regulatory Commission

In exercise of the powers conferred by the Electricity Act, 2003, the State Government of Nagaland constituted an Electricity Regulatory Commission to be known as “Nagaland Electricity Regulatory Commission” for the State of Nagaland, as notified on 21st February, 2008.

The Commission is a one-member body designated to function as an autonomous authority responsible for regulation of the Power Sector in the State of Nagaland. The Powers and the Functions of the Commission are as prescribed in the Electricity Act, 2003. The head office of the Commission is presently located at Kohima, Nagaland.

The Nagaland Electricity Regulatory Commission for the State of Nagaland started to function with effect from 4th March, 2008 with the objectives and purposes for which the Commission has been established.

1.1.1. In accordance with the provisions of the Act, the Nagaland Commission discharges the following functions:

- (a) Determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State; Provided that where open access has been permitted to a category of consumers under Section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
- (b) Regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
- (c) Facilitate intra-State transmission and wheeling of electricity;
- (d) Issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
- (e) Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from

- such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;
- (f) Adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;
 - (g) Levy fee for the purposes of this Act;
 - (h) Specify State Grid Code consistent with the Grid Code specified under Clause (h) of subsection (1) of Section 79;
 - (i) Specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
 - (j) Fix the trading margin in the intra-State trading of electricity, if considered, necessary.
 - (k) Discharge such other functions as may be assigned to it under the Act.

1.1.2. Tariff Petition:

The Petitioner has filed a revised Petition before the Commission on 29/11/2023 for determination of levellised tariff of 05 MW Solar PV Power Plant at Hovukhu in Niuland. The Petitioner submitted the project cost as Rs. 2500 Lakhs. and estimated generation of energy as 8.76 MU/Annum and levellised Tariff as Rs. 3.97/kWh upto 25 Year.

Further, the Petitioner vide letter dated 05-07-2023 has revised its claim and submitted the revised levellised tariff at Rs. 3.92/ KWh upto 25 years.

1.2. Admission of Petition and Publication:

The Commission, after receiving requisite additional information and clarifications from the Petitioner, admitted the petition on 12-12-2022 vide case No. 05/2022-2023.

In accordance with section 64 of the Electricity Act, 2003 and to ensure public participation, the summary of the petition in the abridged form was published on 13-07-2023 in following local Newspapers inviting the stakeholders/public/consumers to submit their objections and suggestions, if any, in writing or in person, to the Secretary NERC on the petition on or before 26-07-2023.

Sl. No.	Name of the Newspaper	Language	Date of Publication
2	The Morung Express	English	13-07-2023
3	Eastern Mirror	English	13-07-2023

No objection/suggestion were received by the Commission on the petition till the last date of submission.

1.3. Notice for Public Hearing:

The Commission, through the above mentioned Public Notice was circulated vide letter dated 08-08-2023 invited the interested stakeholders to the public hearing scheduled to be held on 21-08-2023 at 11:00am in the Office of the NERC, Kohima on the said petition. The detail minutes of the Public Hearing is given in Chapter-3.

2. SUMMARY OF TARIFF PETITION

2.1. Project Cost & Annual Fixed Charges

The Petitioner in its petition has proposed the project cost of the 5 MW Solar PV Power Project at Hovukhu in Niuland district, Nagaland along with Annual Fixed Charges & levellised Tariff. The proposed project cost & Tariff are shown in Table below.

Table 1: Project & AFC projected by petitioner (Rs. in Lakhs)

Description	Claimed
Supply, Installation, Erection and Commissioning of Solar PV Modules	1,344.00
Module Mounting Structure and associated Civil Works	120.00
Supply, Installation, Erection & Commissioning of Inverters	120.00
Civil and General Works	210.00
Evacuation Cost up to Interconnection Point (Cables and Transformer)	166.00
Preliminary and Pre-Operative Expenses including IDC and Contingency, etc.	80.00
Power Evacuation cost: (33kV Transmission line for an approx. distance of 20Kms upto Power Department 66kV/33kV/11kV sub-Station at Nito Farm under Niuland District. Includes bay station, breakers, along with CT, PT setup, etc.)	465.00
Total	2,505.00
Levellised Tariff Rs./KWh upto 25 Years	3.97
Revised Levellised Tariff Rs./KWh upto 25 Years	3.925

2.2. Prayers of Petition:

The Petitioner has prayed in its petition for the following:

- To admit and approve the Petition for the 5 MW Solar PV Power Plant at Hovukhu, Niuland.
- To approve the tariff submitted by petitioner.
- Condone any inadvertent delay/omissions/errors/rounding off differences/shortcoming and Petitioner may please be permitted to add/change/modify/alter the petition.
- Permit petitioner to file additional data/information as may be necessary.
- Pass such orders as the Commission may deem fit and proper, keeping in view the facts and circumstances of the case.

3. PUBLIC HEARING

3.1. Public Hearing

As envisaged in the Electricity Act, 2003 and also to ensure transparency in the process of determination of tariff, Public Hearing was held as scheduled on 21-08-2023 in the Office of the NERC, Kohima from 11:00AM onwards.

3.2. Proceedings of Public Hearing

The Public Hearing was chaired by Shri. Khose Sale, Chairman, Nagaland Electricity Regulatory Commission (NERC). He welcomed all the Members present and expressed his wishes for a good interaction and a fruitful discussion. To begin with the public hearing, summary of the petition was briefed by the petitioner followed by queries and replies. During the hearing, participants were given adequate opportunity to raise queries & comments if any, on the Petition filed by the project developer. There were queries and replies on many points as under.

1. Query by the DPN with regard to the Aims & Objectives of the Proposed Plant:

Reply by NRE:

By relying on the revised DPR filed before the Commission, it was submitted that Nagaland faces energy deficit due to under utilised Renewable Energy Resources. Nagaland Power Sector primarily depends on Central Generating Stations (CGS) for meeting its energy requirement. Therefore, with an objective to reduce the state dependence on CGS the instant project is envisaged as a pioneer solar project for generating clean energy to the people as well as ensuring energy security. Further it was submitted that the Country has set a target of achieving 450 GW of Renewable Energy by 2030 to meet the country's climate commitment. The State of Nagaland in tandem with the country's aforesaid vision has proposed to come up with this ambitious solar project to be taken up in the state in order to achieve the targeted RPO set by the Commission for the DPN.

2. Query by the DPN with regard to the Site of the Plant:

Reply by NRE:

In regard to the proposed site for setting up the 5MW Solar project, NRE submitted that on 15/03/2022 a state level meeting was held in the office chamber of the Principal Secretary to the Chief Minister, Nagaland. After elaborate deliberation the members present after considering the importance of the project decided that the 50 Acres of Land required for setting up the project can be

allotted from the land situated at Niuland District belonging to IT&C Department, Nagaland.

3. Query by the DPN with regard to the proposed Levelized Tariff:

Reply by NRE:

The proposed tariff has been worked out based on the latest parameters and guidelines laid down by the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from renewable energy sources) Regulations dated 2021-22. Accordingly, the proposed levelized tariff was fixed at ₹.3.97/kWh initially however, the N&RE vide letter dated 05-07-2023 has revised its claim and accordingly proposed revised levelised Tariff at ₹.3.92/kWh upto 25 Years.

4. Query by the DPN with regard to the targeted Commissioning of the Plant:

Reply by NRE:

The Project is targeted to be commissioned by end of September, 2023 and the electricity generated will be evacuated through 33 KV bus at Niuland Grid Sub-Station.

5. Query by the DPN with regard to the Auxiliary Consumption:

Reply by NRE:

Auxiliary Consumption has been assumed to be 1% of CUF.

6. Query by the DPN with regard to the O&M expenses:

Reply by NRE:

No specific percentage for O&M is mentioned in the CERC RE Tariff Order, so as per requirement, the O&M has been taken as 1% of the capital cost. Further it was mentioned that the O&M considered in many of the Solar Projects is between 1.5% to 1.4%.

The participant who attended the Public Hearing is as listed here below:

1. Shri. Khose Sale, Chairman, NERC, Nagaland, Kohima.
2. Er. Kimaba, Director, N&RE Department, Nagaland, Kohima.
3. Er. Penrithung Yanthan, CE (T&G), Power Department, Nagaland, Kohima.
4. Er. Kasho Chishi, Addl.CE (T&G), Power Department, Nagaland, Kohima.
5. Er. James Khala, Addl. Director, N&RE Department, Nagaland, Kohima.
6. Er. Visakho Therie, Addl. CE(C), Power Department, Nagaland, Kohima.
7. Er. N. Myengthungo Ngullie, EE (G), Power Department, Nagaland, Kohima.
8. Er. Kahoshe Shohe, EE (Hydro), Power Department, Nagaland, Kohima.
9. Er. Hekavi N Ayemi, Deputy Director, NERC, Nagaland, Kohima.
10. Shri. Shivito Wotsa, A.O, NERC, Nagaland, Kohima.
11. Er. Kekhriezhalie Sorhie, Project Officer, N&RE Deptt, Nagaland, Kohima.
12. Er. Sentinungsang, JE, N&RE Department, Nagaland, Kohima.

4. PROJECT IMPLEMENTATION AND COST

4.1. Overview of the Project

The DNRE submitted that the project of 05 MW Solar PV Power Plant shall be located at Hovukhu Village under Niuland District, Nagaland. The Govt. of Nagaland had allotted 50 acres of land to DNRE for execution of the said project.

The Petitioner further submitted that the project at this site will be able to generate 1620 kWh/kw in the site with a 10% to 15% DC over AC capacity.

4.2. Grid Connectivity (Power Evacuation)

The Petitioner submitted that the power will be evacuated at the level of 33 KV voltage level from 66/33/11 KV Nito Farm Sub-Station which is 20 Km away from the site.

4.3. Capital Cost Petitioner's Submission:

4.3.1. The DNRE submitted that the 05 MW Solar PV Power Plant shall be implemented through a turnkey engineering, procurement and construction (EPC) contract.

4.3.2. Further, the DNRE submitted that it has considered a negligible land cost as it has been allocated the same by the Government of Nagaland, for development of the project. The total project cost as per Detailed Project Report (DPR) is as follows:

Table 2: Total Estimated Project Cost (Rs. in Lakhs)

Sl. No.	Description	Amount Claimed
1.	Supply, Installation, Erection and Commissioning of Solar PV Modules	1344
2.	Module Mounting Structure and associated Civil Works	120
3.	Supply, Installation, Erection & Commissioning of Inverters	120
4.	Civil and General Works	210
5.	Evacuation Cost up to Interconnection Point (Cables and Transformer)	166
6.	Preliminary and Pre-Operative Expenses including IDC and Contingency, etc.	80
7.	Power Evacuation cost: Rs. 465 lakhs (33kV Transmission	465

Sl. No.	Description	Amount Claimed
	line for an approx. distance of 20Kms upto Power Department 66kV/33kV/11kV sub-station at Nito Farm under Niuland District. Includes bay station, breakers, along with CT, PT setup, etc.)	
8.	Total Project Cost	2505

However, the DNRE has claimed Capital Cost of Rs. 2500 Lakh.

4.3.3.Means of Finance

The total estimated project cost is Rs. 2500 Lakhs. The project cost is expected to be funded through State & Central Government Grants, however, debt Equity Ratio of 70:30 has been proposed as per the CERC Regulations, 2020.

4.3.4.Project Components & Assumptions

The following are the items estimated towards other costs.

- (a) **Solar PV Modules:** The DNRE estimated expenses of Rs. 1344 Lakhs for solar PV module which is 53.65% of the total project cost and it has considered the Generic mono crystalline PV Technology solar module 400Wp for execution of the project.
- (b) **Civil & Mounting Structure:** The DNRE considered Galvanised Rafter and Purlins with column posts of H200DG 80 Micron, fixed Tilt-15deg-28MMS-150kmph-HDG fasteners 80 TPSAV set for mounting structure. Further, the DNRE submits that the material of the structure selected in such a way that it will serves at least for 25 years. The mounting structures has designed as per the soil and wind conditions at the site and the array structure has designed to withstand storm condition with wind speed up to maximum 160 Kmph to 170 kmph. The support structure has also designed to withstand wind speed applicable for the site conditions.
- (c) **Evacuation cost up to interconnection point (Cables & Transformers):** The DNRE submits that it has considered Power Department 66 kV/33 kV/11 kV sub-station at Nito Farm under Niuland District for evacuation of the power. For this purpose, it will construct 33 kV Transmission line for an approx. distance of 20 Km including bay station, breakers, along with CT, PT setup.

- (d) **Preliminary and Pre-Operative Expenses:** A provision of Rs. 80 Lakh of total project cost has been made as Preliminary & Pre-Operative Expenses including IDC and Contingency expenses.
- (e) **Land & Land Development Expenses:** The DNRE submitted that it has considered a negligible land cost as it has allocated the same by the Government of Nagaland for development of the project.

4.4. Commission's Analysis:

Regulation 46 of the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides that the Commission shall determine only project specific capital cost considering the prevailing market trends.

The Commission observed that the DNRE claimed Rs. 500 Lakhs/MW for execution of the project.

The CERC has determined the benchmark capital cost norm for Solar PV Power Projects at Rs. 605.85 Lakhs/MW for FY 2015-16 in its order dated 31st March, 2015 and further revised the benchmark capital cost at Rs. 530.02 Lakhs/MW for FY 2016-17 in its order dated 23rd March, 2016.

Further, Assam Electricity Regulatory Commission vide its Tariff Order dated 17.11.2016 has approved Capital Cost of Rs. 536.19 Lakhs/MW for Solar PV Project.

In the view of the above and further geographical conditions of the state, Commission feels it appropriate to allow the project cost of Rs. 500 Lakhs/MW for execution of the 05 MW Solar Power PV Plant. The petitioner is directed to submit audited actual capital cost to the Commission after commissioning of the project along with the impact of the same on the tariff.

4.5. Debt Equity Ratio:

Provisions relating to the Debt Equity ratio for calculation for interest on loan & return on equity, as given in Regulation 13 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 has been considered for determination of Debt-Equity. The Regulation provides as follows:

- (1) *For determination of generic tariff and project specific tariff, the debt equity ratio shall be considered as 70:30.*

Provided that, for project specific tariff, where the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

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

Provided also that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

Provided also that debt equity ratio shall be considered after deducting the amount of grant or capital subsidy received for the project for arriving at the amount of debt and equity.

Based on above, the Debt & Equity has been considered in the ratio of 70:30 for the purpose of calculating Normative Loan base and Normative Equity base. Details of the same is as follows:

Table 3: Approved Means of Finance

(Rs. in Lakhs)

Total Project Cost	Normative Debt	Normative Equity
2500 Lakhs	1750 Lakhs	750 Lakhs

Accordingly, the Commission considered Debt & Equity as above for calculation of RoE & Interest on Loan.

5. Annual Fixed Charges

5.1. Overview of Annual Fixed Charges:

The CERC Regulations provides for the components of AFC and various parameters as provided below:

- (a) Operation and Maintenance expenses;
- (b) Depreciation;
- (c) Interest on loan;
- (d) Interest on working capital;
- (e) Return on equity.

Each of the above components are analysed and discussed in the subsequent sections.

5.2. Operation and Maintenance Expenses:

The Petitioner has claimed O&M Expenses as Rs. 5 Lakhs/MW for 1st Year of the Project Life. Further, the O&M expenses for the subsequent years has been claimed by escalating 1st year O&M expenses at the rate 3.84% year over year.

Commission's Analysis:

Regulation 19 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides as follows:

- (1) *Operation and Maintenance expenses shall be determined for the Tariff Period of the project based on normative O&M expenses specified in these regulations for the first year of the Control Period.*
- (2) *Normative O&M expenses allowed during first year of the Control Period i.e. financial year 2020-21 under these regulations shall be escalated at the rate of 3.84% per annum for the Tariff Period.*

Further, Regulation 48 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides as follows:

“The Commission shall determine only project specific O&M expenses considering the prevailing market trends.”

It is observed by the Commission that the CERC Generic Tariff Order for FY 2016-17 provides the O&M Cost for first year of operation is Rs 7 Lakh/MW with an annual escalation of 5.72%.

Further, the APERC vide its Tariff Order dated 17.11.2016 has approved the O&M Expenses at Rs. 7 Lakhs/MW with an escalation factor of 5.72%.

The Commission vide its Tariff Order dated 27th August 2020 has approved the O&M Expenses of Rs. 4.20 Lakhs/MW for 20 MW Solar Power Plant at Jalukie, Nagaland.

Therefore, by considering the escalation of 3.84% as provided by the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 it comes to Rs. 4.53 Lakhs/MW.

However, keeping in view of the project requirement, the Commission deems it fit to approve Rs. 5 Lakhs/MW for the 1st Year of the Project with an escalation of 3.84% year over year to determine O&M expenses for subsequent years of the project life.

The details of claim and approve figures of O&M Expenses is provided as follows:

Table 4: O&M Expenses (Rs. in Lakhs)

Sl. No.	Particulars	Unit	Claimed	Approved
1	Total Installed Capacity	MW	5.00	5.00
2	Total Project Cost	Rs. Lakh	2,500.00	2,500.00
3	Annual O&M Expense	Lakh	25.00	25.00
4	Escalation Rate	%	3.84%	3.84%
5	Total Normative O&M Expenses (up to project life of 25 years)	Lakh	1,018.99	1,018.99

5.3. Depreciation:

Regulation 15 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides as follows:

- (1) *The value base for the purpose of depreciation shall be the capital cost of the project admitted by the Commission. The salvage value of the project shall be*

considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the project:

Provided that, no depreciation shall be allowed to the extent of grant or capital subsidy received for the project.

- (2) Depreciation rate of 4.67% per annum shall be considered for the first 15 years and remaining depreciation shall be evenly spread during remaining Useful Life of the project.
- (3) Depreciation shall be computed from the first year of commercial operation: Provided that, for determination of project specific tariff, in case of commercial operation of the project for part of the year, depreciation shall be computed on pro rata basis.

The above provisions as given in the CERC RE Regulations, 2020 has been considered for determining the depreciation in this order.

The details of depreciation as approve by the Commission is as follows:

Table 5: Depreciation (Rs. in Lakhs)

Name of the Project	Capital Cost (Rs. Lakh) (Approved)	Total useful Life (Years)	Depreciation per year upto 15 th Year	Depreciation per year after 15 th year onwards
5 MW Solar Power PV Plant, Hovukhu, Niuland, Nagaland	2,500.00	25	116.75	49.88

5.4. Interest on Loan Capital:

The petitioner has submitted the rate of interest as 9% p.a. and tenure of loan as 15 years.

Regulation 14 (1) of The Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides that,

“For determination of generic tariff and project specific tariff, loan tenure of 15 years shall be considered.”

Further, Regulation 14 (2) of the CERC (Renewable Energy) Regulation, 2020 provides that:

- (a) The loans arrived at in the manner indicated in Regulation 13 shall be considered as gross normative loan for calculation for interest on loan. For project specific tariff, the normative loan outstanding as on 1st of April of every year shall be worked out by deducting the cumulative repayment up to 31st March of previous year from the gross normative loan.
- (b) For the purpose of computation of tariff, normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months shall be considered.
- (c) Notwithstanding any moratorium period availed by project Petitioner, 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.

Based on above Regulations, the Commission has considered the State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) as applicable during FY 2022-23 for computation of Rate of Interest on Normative Loan. The details computation of Rate of Interest is as follows:

Table 6: Rate of Interest on Normative Loan (Rs. in Lakhs)

From Date	To Date	Base Rate	Period	Amount
01-10-2022	14-10-2022	7.70	14	107.80
15-10-2022	14-11-2022	7.95	31	246.45
15-11-2022	14-12-2022	8.05	30	241.50
15-12-2022	14-01-2023	8.30	31	257.30
15-01-2023	14-02-2023	8.40	31	260.40
15-02-2023	14-03-2023	8.50	28	238.00
15-03-2023	31-03-2023	8.50	17	144.50
			182	1,495.95
Interest Rate (as per norms)			8.22	
Add 200 Basis points = 2%			2.00	
Rate of Interest on Normative Loan			10.22%	

Accordingly, the Commission has considered the allowable rate of interest on loan as 10.22%.

Based on above and further approved Normative Loan base, the Commission has computed the Interest on Loan for determination of Tariff for 05 MW Solar PV Power Plant. The Details of the same with the claim of the Petitioner is as follows:

Table 7: Interest on Normative Loan

(Rs. in Lakhs)

Particulars	Unit	Claimed	Approved
Total Project Cost	Rs. Lakhs	2,500.00	2,500.00
Total Normative Loan Considered	%	70%	70%
Total Normative Loan Considered	Rs. Lakhs	1,750.00	1,750.00
Rate of Interest Considered	%	9.00%	10.22%
Total Interest on Normative Loan	Rs. Lakhs	1181.13	1,340.42

5.5. Interest on Working Capital:

It is observed that the Petitioner has claimed total Working Capital requirement of Rs. 1190.67 Lakhs and applicable Rate of Interest on IoWC at 10.50% for establishing of the project.

Further, the Petitioner vide additional data gap reply dated 05-07-2023 has submitted its revised claim of IoWC and accordingly it has claimed total working Capital Requirement of Rs. 1169.29 Lakhs with applicable Rate of Interest on IoWC at 10.50%.

Regulation 17 (2) of The Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides as follows:

“The Working Capital requirement in respect of biomass power projects with Rankine cycle technology, biogas power projects, biomass gasifier-based power projects, non-fossil fuel-based co-generation projects, municipal solid waste-based power projects and refuse derived fuel-based power projects shall be computed in accordance with the following:

- a) *Fuel costs for four months equivalent to normative Plant Load Factor;*
- b) *Operation and Maintenance expense for one month;*
- c) *Receivables equivalent to 45 days of tariff for sale of electricity calculated on the plant load factor; and*
- d) *Maintenance spares equivalent to 15% of Operation and Maintenance expenses.”*

Regulation 17 (4) of The Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources)

Regulations, 2020 provides for the rate to be considered for interest on working capital. The provisions are reproduced below:

“Interest on Working Capital shall be at interest rate equivalent to the normative interest rate of three hundred and fifty (350) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months.”

The above regulation provides that the normative interest rate shall be 3.5% above the State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months. The six months average of the State Bank of India MCLR (One Year Tenure) is 8.22%, accordingly, allowable rate of interest on working capital is 11.72% (8.22%+3.50%).

Based on above the details of approved Interest on Working Capital along with claimed figures is as follows:

Table 8: Interest on Working Capital (Rs. in Lakhs)

Particulars	Unit	Claimed	Revised Claim	Approved
Total Interest on Working Capital	Rs. Lakhs	1,190.67	1,169.29	1,146.24
Rate of Interest	%	10.50%	10.50%	11.72%
Interest on Working Capital	Rs. Lakhs	125.02	122.78	134.33

5.6. Return on Equity:

Regulation 16 of The Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides for the Return on Equity. The provisions are reproduced below:

“(1) The value base for equity shall be as determined under Regulation 13.

(2) The normative Return on Equity shall be 14%. The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternate Tax (MAT) rate for the first 20 years of the Tariff Period and by the latest available notified Corporate Tax rate for the remaining Tariff Period.”

It is observed that the Petitioner has claimed at 16.96% for the 1st 15 Years and at 21.52% for remaining years of the project life.

In reply to the additional queries, the Petitioner has revised its claim of RoE in line with the above Regulations.

Further, it is observed that the Petitioner has grossed up the Rate of RoE with MAT for the 1st 20 Years of the Project and with Corporate Tax Rate for remaining Year. However, being an Govt. Department, the Petitioner shall not have any tax liability.

Therefore, the Commission has approved the rate of return on Equity at 14% as provided by the Regulation.

The details of Return on Equity as approved by the Commission along with claimed figures is as follows:

Table 9: Return on Equity

(Rs. in Lakhs)

Sl. No	Particulars	Unit	Claimed	Revised Claim	Approved
1	Total Project Cost	Rs. Lakhs	2,500.00	2,500.00	2,500.00
2	Total Equity Considered	%	30%	30%	30%
3	Total Equity Considered	Rs. Lakhs	750.00	750.00	750.00
4	Rate of Return on Equity	%	RoE claimed at 16.96% for 1st 15 Yrs & at 21.52% for remaining Yrs	RoE claimed at 16.96% for 1st 20 Yrs & at 21.52% for remaining Yrs	14.00%
5	Rate of RoE Grossed up with MAT Rate	%			-
6	Rate of RoE grossed up with Corporate Tax Rate	%			-
7	Total RoE	Rs. Lakhs	3,522.00	3,351.00	2,625.00

6. Designed Energy

6.1. Calculation of CUF/PLF:

Regulation 18 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides as follows:

“The number of hours in a year for calculation of Capacity utilization factor and plant load factor, as the case may be, shall be considered as 8766.”

Further, Regulations 47 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides for the CUF. The provisions are reproduced below:

“The Commission shall only approve capacity utilization factor for project specific tariff:

Provides that the minimum capacity utilization factor for solar PV power projects shall be 21%”

The Petitioner has submitted CUF of the plant of 20%. However, in reply to the Commission’s query the DNRE revised its CUF to the extent of 21%.

The Commission has considered the CUF of 21% in accordance with the CERC Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020.

Further, the Petitioner has not provided any details of auxiliary consumption considered for arriving the net saleable energy. In reply to the additional query the Petitioner submitted the auxiliary consumption at 1%.

Regulation 49 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides for the Auxiliary Consumption. The provisions are reproduced below:

“The Commission shall only approve auxiliary consumption for project specific tariff:

Provides that the maximum auxiliary consumption for solar PV power projects shall be 0.75%.”

Therefore, the Commission considered the auxiliary consumption at 0.75% in line with the CERC Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 for computation of Net saleable Energy.

6.2. Useful Life of the Project:

Regulations 2(hh)(vi) of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides for the useful life of the generating station. The provisions are reproduced below:

“‘Useful Life’ in relation to project, including dedicated evacuation system, from the date of commercial operation of such project, shall mean the following: -

vi. Solar PV power project/floating solar project/

Solar thermal power project 25 years”

In view of the above, useful life of the plant for determination of Tariff has been considered as 25 years.

6.3. Tariff Design

Regulations 10 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 provides for the tariff on levelised basis for the Tariff period. The provisions are reproduced below:

(1) *The generic tariff shall be determined, on levelized basis, considering the year of commissioning of the project, for the tariff period of the project:*

Provided that for renewable energy projects having single part tariff with two components, fixed cost component shall be determined on levelized basis considering the year of commissioning of the project while fuel cost component shall be determined on year of operation basis in the Tariff Order to be issued by the Commission.

(2) *For the purpose of levelized tariff computation, discount factor equivalent to post-tax weighted average cost of capital shall be considered.*

(3) *The above principles shall also apply for project specific tariff.*

The above provisions have been considered for determining the levelled tariff for the useful life of the project. Further, the discount factor for the purpose of levelled tariff computation has been considered at post-tax weighted average cost of capital of 11.35%.

6.4. Annual Fixed Charges & Tariff:

A. Full Cost Levelled Tariff:

Based on the parameters approved above, the Annual Fixed Charges (AFC) & levelled Tariff for the 05 MW Solar PV Power Plant has been determined. The details of Annual Fixed Charges & levelled Tariff for the project life of 25 year is provided in the Tables below.

Table 10: Annual Fixed Charges (Rs. in Lakhs)

YEAR	Annual Fixed Charges (Rs. in Lakh)					
	O&M Expense	Return on Equity	Interest on Loan	Depreciation	Interest on Working Capital	Total
2023-24 (1st Year)	25.00	105.00	172.88	116.75	6.85	426.47
2nd Year	25.96	105.00	160.94	116.75	6.71	415.37
3rd Year	26.96	105.00	149.01	116.75	6.58	404.30
4th Year	27.99	105.00	137.08	116.75	6.45	393.27
5th Year	29.07	105.00	125.15	116.75	6.32	382.29
6th Year	30.18	105.00	113.22	116.75	6.19	371.34
7th Year	31.34	105.00	101.29	116.75	6.07	360.45
8th Year	32.55	105.00	89.36	116.75	5.94	349.59
9th Year	33.80	105.00	77.43	116.75	5.82	338.79
10th Year	35.09	105.00	65.49	116.75	5.70	328.04
11th Year	36.44	105.00	53.56	116.75	5.58	317.34
12th Year	37.84	105.00	41.63	116.75	5.47	306.69
13th Year	39.29	105.00	29.70	116.75	5.35	296.10
14th Year	40.80	105.00	17.77	116.75	5.24	285.56
15th Year	42.37	105.00	5.90	116.75	5.13	275.15
16th Year	44.00	105.00	-	49.88	4.14	203.01
17th Year	45.69	105.00	-	49.88	4.21	204.77
18th Year	47.44	105.00	-	49.88	4.28	206.60
19th Year	49.26	105.00	-	49.88	4.36	208.50
20th Year	51.15	105.00	-	49.88	4.44	210.47
21st Year	53.12	105.00	-	49.88	4.52	212.52
22nd Year	55.16	105.00	-	49.88	4.61	214.64
23rd Year	57.27	105.00	-	49.88	4.70	216.85
24th Year	59.47	105.00	-	49.88	4.79	219.14

YEAR	Annual Fixed Charges (Rs. in Lakh)					
	O&M Expense	Return on Equity	Interest on Loan	Depreciation	Interest on Working Capital	Total
25th Year	61.76	105.00	-	49.88	4.89	221.52

Based on the approved AFC and considering the net saleable energy the Commission approves the levellised Tariff for the project life of 25 year as below

Table 11: Calculation of Discounting Tariff (in Rs.)

Particulars	ARR (Rs. in Lakhs)	Net Generation (In Mus)	Tariff (Rs.)	Discounting Factor	Discounted Tariff (Rs.)
1st Year	426.47	9.14	4.67	1.00	4.67
2nd Year	415.37	9.14	4.55	0.89	4.03
3rd Year	404.30	9.14	4.43	0.79	3.48
4th Year	393.27	9.14	4.30	0.70	3.00
5th Year	382.29	9.14	4.18	0.62	2.58
6th Year	371.34	9.14	4.06	0.55	2.23
7th Year	360.45	9.14	3.95	0.49	1.91
8th Year	349.59	9.14	3.83	0.43	1.65
9th Year	338.79	9.14	3.71	0.38	1.41
10th Year	328.04	9.14	3.59	0.34	1.21
11th Year	317.34	9.14	3.47	0.30	1.04
12th Year	306.69	9.14	3.36	0.27	0.89
13th Year	296.10	9.14	3.24	0.24	0.76
14th Year	285.56	9.14	3.13	0.21	0.65
15th Year	275.15	9.14	3.01	0.19	0.56
16th Year	203.01	9.14	2.22	0.16	0.36
17th Year	204.77	9.14	2.24	0.15	0.33
18th Year	206.60	9.14	2.26	0.13	0.29
19th Year	208.50	9.14	2.28	0.11	0.26
20th Year	210.47	9.14	2.30	0.10	0.23
21st Year	212.52	9.14	2.33	0.09	0.21
22nd Year	214.64	9.14	2.35	0.08	0.19
23rd Year	216.85	9.14	2.37	0.07	0.17
24th Year	219.14	9.14	2.40	0.06	0.15
25th Year	221.52	9.14	2.42	0.06	0.13

Table 12: Approved Full Cost Levellised Tariff

(in Rs.)

Particulars	Claimed	Revised Claim	Approved Tariff
Total of Tariff	44.75	44.24	32.40
Total of Discounting Factor	11.27	11.27	8.37
Levellised tariff - 25 years - Rs./unit	3.97	3.925	3.87

Based on above, the Commission hereby approves the full cost levellised tariff for 05 MW Solar PV Power Plant at Niuland as Rs. 3.87/kWh for 25 Years of the Project Life.

B. Subsidised Tariff:

Considering the special assistance received on Capital Expenditure (Soft Loan) from the Ministry of Finance, Government of India for the said plant, the Annual Fixed Charges & Subsidised Tariff has been determined for 25 years as under:

Table 13: Annual Fixed Charges

YEAR	Annual Fixed Charges (Rs. in Lakh)					
	O&M Expense	Return on Equity	Interest on Loan	Depreciation	Interest on Working Capital	Total
2023-24 (1st Year)	25.00	-	-	-	1.06	26.06
2nd Year	25.96	-	-	-	1.10	27.06
3rd Year	26.96	-	-	-	1.14	28.10
4th Year	27.99	-	-	-	1.19	29.18
5th Year	29.07	-	-	-	1.23	30.30
6th Year	30.18	-	-	-	1.28	31.46
7th Year	31.34	-	-	-	1.33	32.67
8th Year	32.55	-	-	-	1.38	33.93
9th Year	33.80	-	-	-	1.43	35.23
10th Year	35.09	-	-	-	1.49	36.58
11th Year	36.44	-	-	-	1.55	37.99
12th Year	37.84	-	-	-	1.60	39.44
13th Year	39.29	-	-	-	1.67	40.96
14th Year	40.80	-	-	-	1.73	42.53
15th Year	42.37	-	-	-	1.80	44.17
16th Year	44.00	-	-	-	1.87	45.86

17th Year	45.69	-	-	-	1.94	47.62
18th Year	47.44	-	-	-	2.01	49.45
19th Year	49.26	-	-	-	2.09	51.35
20th Year	51.15	-	-	-	2.17	53.32
21st Year	53.12	-	-	-	2.25	55.37
22nd Year	55.16	-	-	-	2.34	57.50
23rd Year	57.27	-	-	-	2.43	59.70
24th Year	59.47	-	-	-	2.52	62.00
25th Year	61.76	-	-	-	2.62	64.38

Based on the approved AFC and considering the net saleable energy the Commission approves the levellised Tariff for the project life of 25 year as below

Table 14: Calculation of Discounted Tariff:

Particulars	ARR (Rs. in Lakhs)	Net Generation (In Mus)	Tariff (Rs.)	Discounted Tariff (Rs.)
1st Year	26.06	9.14	0.29	0.29
2nd Year	27.06	9.14	0.30	0.30
3rd Year	28.10	9.14	0.31	0.31
4th Year	29.18	9.14	0.32	0.32
5th Year	30.30	9.14	0.33	0.33
6th Year	31.46	9.14	0.34	0.34
7th Year	32.67	9.14	0.36	0.36
8th Year	33.93	9.14	0.37	0.37
9th Year	35.23	9.14	0.39	0.39
10th Year	36.58	9.14	0.40	0.40
11th Year	37.99	9.14	0.42	0.42
12th Year	39.44	9.14	0.43	0.43
13th Year	40.96	9.14	0.45	0.45
14th Year	42.53	9.14	0.47	0.47
15th Year	44.17	9.14	0.48	0.48
16th Year	45.86	9.14	0.50	0.50
17th Year	47.62	9.14	0.52	0.52
18th Year	49.45	9.14	0.54	0.54
19th Year	51.35	9.14	0.56	0.56
20th Year	53.32	9.14	0.58	0.58
21st Year	55.37	9.14	0.61	0.61
22nd Year	57.50	9.14	0.63	0.63
23rd Year	59.70	9.14	0.65	0.65
24th Year	62.00	9.14	0.68	0.68
25th Year	64.38	9.14	0.70	0.70

Table 15: Approved Subsidised Tariff (O&M Expenses)

Particulars	Claimed	Revised Claim	Approved Tariff
Total of Tariff	44.75	44.24	11.63
Total of Discounting Factor	11.27	11.27	25.00
Levellised tariff - 25 years - Rs./unit	3.97	3.925	0.47

Based on above, the Commission hereby approves the Subsidised Tariff for 05 MW Solar PV Power Plant at Niuland as Rs. 0.47/kWh for 25 Years of the Project Life.

By Order of the Commission.

Place: Kohima.

Dated: 28-02-2024

Sd/-
Er. HEKAVI N AYEMI
Deputy Director,
Nagaland Electricity Regulatory
Commission, Kohima

DIRECTIVES:

1. Actual Capital Expenditure:

The petitioner is directed to work out the Actual Capital Expenditure incurred up to the Date of Commercial Operation of the Generating Station.

2. Filing of Final Tariff Petition:

The Commission directs the petitioner to file the petition along with the Actual Capital Cost duly Audited and Certified by the Statutory Authority from the date of Commercial Operation as prescribed under MYT Regulation for determination of the Final Tariff.

3. Fixed Asset Register:

The Commission directs the petitioner to maintain Fixed Asset Register at their end and submit to the Commission on yearly basis from the date of Commercial Operation of the plant.

4. Status and Compliance Report:

The Project developer is directed to submit the Status and Compliance Report of the above Directives to the Commission every 3 months from the date of issue of this Order.

5. Penalty:

Penalty for non-compliance of the directives of the Commission shall be dealt with as per relevant Section of the Indian Electricity Act, 2003.

ANNEXURE - I

Calculation of Full Cost Levellised Tariff

Capital Cost

Sl. No.	Particulars	Unit	Claimed	Approved
1	Total Installed Capacity	MW	5	5
2	Capital Cost	Rs. Lakh/MW	500.00	500.00
3	Total Capital Cost	Rs. Lakh	2,500.00	2,500.00
4	Govt. Subsidy (If any)	Rs. Lakh	-	-
5	Net Capital Cost	Rs. Lakh	2,500.00	2,500.00

Depreciation

Name of the Project	Date of COD (assumed)	Capital Cost (Rs. Lakh) (Approved)	Total useful Life (Years)	Depreciation per year upto 15th Year	Depreciation per year after 15th year onwards
5 MW Solar Power PV Plant, Hovukhu, Niuland, Nagaland	10 Months from the date of sanction	2,500.00	25	116.75	49.88

Sl. No.	Particulars	Approved
1	Capital Cost (Rs. Lakh)	2,500.00
2	Rate of Depreciation (%)	4.67%
3	Depreciation per year upto 15 Years	116.75
4	Total Depreciation upto 15 Year	1,751.25
5	Depreciable Value (%)	90%
6	Net Depreciable Value (Rs. Lakh)	2,250.00
7	Remaining Amount for Depreciation	498.75
8	Total useful life	25
9	Remaining useful life	10
10	Depreciation per year after 15th year onwards	49.88

O&M Expenses

Sl. No.	Particulars	Unit	Claimed	Approved
1	Total Installed Capacity	MW	5.00	5.00
2	Total Project Cost	Rs. Lakh	2,500.00	2,500.00
3	Annual O&M Expense	Lakh	25.00	25.00
4	Escalation Rate	%	3.84%	3.84%
5	Total Normative O&M Expenses	Lakh	1,018.99	1,018.99

Normative O&M expenses allowed during first year of the Control Period i.e. financial year 2020-21 under these regulations shall be escalated at the rate of 3.84% per annum for the Tariff Period

Year	Claimed	Approved
1st Year	25.00	25.00
2nd Year	25.96	25.96
3rd Year	26.96	26.96
4th Year	27.99	27.99
5th Year	29.07	29.07
6th Year	30.18	30.18
7th Year	31.34	31.34
8th Year	32.55	32.55
9th Year	33.80	33.80
10th Year	35.09	35.09
11th Year	36.44	36.44
12th Year	37.84	37.84
13th Year	39.29	39.29

Year	Claimed	Approved
14th Year	40.80	40.80
15th Year	42.37	42.37
16th Year	44.00	44.00
17th Year	45.69	45.69
18th Year	47.44	47.44
19th Year	49.26	49.26
20th Year	51.15	51.15
21st Year	53.12	53.12
22nd Year	55.16	55.16
23rd Year	57.27	57.27
24th Year	59.47	59.47
25th Year	61.76	61.76

Return on Equity

Sl. No.	Particulars	Unit	Claimed	Revised Claim	Approved
1	Total Project Cost	Rs. Lakhs	2,500.00	2,500.00	2,500.00
2	Total Equity Considered	%	30%	30%	30%
3	Total Equity Considered	Rs. Lakhs	750.00	750.00	750.00
4	Rate of Return on Equity	%	RoE claimed at 16.96% for 1st 15 Yrs & at 21.52% for remaining Yrs	RoE claimed at 16.96% for 1st 20 Yrs & at 21.52% for remaining Yrs	14.00%
5	Rate of RoE Grossed up with MAT Rate	%			14.00%
6	Rate of RoE grossed up with Corporate Tax Rate	%			14.00%
7	Total RoE	Rs. Lakhs	3,522.00	3,351.00	2,625.00

RoE	MAT	CORPORATE RATE	Average RoE
Base rate	14%	14%	
Tax Rate	0.00%	0.00%	0.00%
Grossed up	14.00%	14.00%	14.00%

The normative Return on Equity shall be 14%. The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternate Tax (MAT) rate for the first 20 years of the Tariff Period and by the latest available notified Corporate Tax rate for the remaining Tariff Period.

Year	Claimed	Revised Claim	Approved
1st Year	127.20	127.20	105.00
2nd Year	127.20	127.20	105.00
3rd Year	127.20	127.20	105.00
4th Year	127.20	127.20	105.00
5th Year	127.20	127.20	105.00
6th Year	127.20	127.20	105.00
7th Year	127.20	127.20	105.00
8th Year	127.20	127.20	105.00
9th Year	127.20	127.20	105.00
10th Year	127.20	127.20	105.00
11th Year	127.20	127.20	105.00
12th Year	127.20	127.20	105.00
13th Year	127.20	127.20	105.00

Year	Claimed	Revised Claim	Approved
14th Year	127.20	127.20	105.00
15th Year	127.20	127.20	105.00
16th Year	161.40	127.20	105.00
17th Year	161.40	127.20	105.00
18th Year	161.40	127.20	105.00
19th Year	161.40	127.20	105.00
20th Year	161.40	127.20	105.00
21st Year	161.40	161.40	105.00
22nd Year	161.40	161.40	105.00
23rd Year	161.40	161.40	105.00
24th Year	161.40	161.40	105.00
25th Year	161.40	161.40	105.00

Interest on Loan

Particulars	Unit	Claimed	Approved
Total Project Cost	Rs. Lakhs	2,500.00	2,500.00
Total Normative Loan Considered	%	70%	70%
Total Normative Loan Considered	Rs. Lakhs	1,750.00	1,750.00
Rate of Interest Considered	%	9.00%	10.22%
Total Interest on Normative Loan	Rs. Lakhs	1181.13	1,340.42

(b) For the purpose of computation of tariff, normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months shall be considered.

Year	Opening balance	Repayment	Closing Balance	Average Loan	Rate of Interest	Interest
1st Year	1,750.00	116.75	1,633.25	1,691.63	10.22%	172.88
2nd Year	1633.25	116.75	1,516.50	1,574.88	10.22%	160.94
3rd Year	1516.50	116.75	1,399.75	1,458.13	10.22%	149.01
4th Year	1399.75	116.75	1,283.00	1,341.38	10.22%	137.08
5th Year	1283.00	116.75	1,166.25	1,224.63	10.22%	125.15
6th Year	1166.25	116.75	1,049.50	1,107.88	10.22%	113.22
7th Year	1049.50	116.75	932.75	991.13	10.22%	101.29
8th Year	932.75	116.75	816.00	874.38	10.22%	89.36
9th Year	816.00	116.75	699.25	757.63	10.22%	77.43
10th Year	699.25	116.75	582.50	640.88	10.22%	65.49
11th Year	582.50	116.75	465.75	524.13	10.22%	53.56
12th Year	465.75	116.75	349.00	407.38	10.22%	41.63
13th Year	349.00	116.75	232.25	290.63	10.22%	29.70
14th Year	232.25	116.75	115.50	173.88	10.22%	17.77
15th Year	115.50	115.50	-	57.75	10.22%	5.90
16th Year	-	-	-	-	10.22%	-
17th Year	-	-	-	-	10.22%	-
18th Year	-	-	-	-	10.22%	-
19th Year	-	-	-	-	10.22%	-
20th Year	-	-	-	-	10.22%	-
21st Year	-	-	-	-	10.22%	-
22nd Year	-	-	-	-	10.22%	-
23rd Year	-	-	-	-	10.22%	-
24th Year	-	-	-	-	10.22%	-
25th Year	-	-	-	-	10.22%	-

From Date	To Date	Base Rate	Period	Amount
01-10-2022	14-10-2022	7.70	14	107.80
15-10-2022	14-11-2022	7.95	31	246.45
15-11-2022	14-12-2022	8.05	30	241.50
15-12-2022	14-01-2023	8.30	31	257.30
15-01-2023	14-02-2023	8.40	31	260.40
15-02-2023	14-03-2023	8.50	28	238.00
15-03-2023	31-03-2023	8.50	17	144.50
			182	1,495.95
Interest Rate (as per norms)			8.22	
Add 200 Basis points = 2%			2.00	
Rate of Interest on Normative Loan			10.22%	

Interest on Working Capital

Particulars	Unit	Claimed	Revised Claim	Approved
Total Interest on Working Capital	Rs. Lakhs	1,190.67	1,169.29	1,146.24
Rate of Interest	%	10.50%	10.50%	11.72%
Interest on Working Capital	Rs. Lakhs	125.02	122.78	134.33

Year	Operation & Maintenance Exp.	Receivables	Maintenance Spares -	Total Working Capital Requirement	Rate of Interest	Interest on Working Capital
	1 Month	45 Days	15% of O&M Exp.			
1st Year	2.08	52.58	3.75	58.41	11.72%	6.85
2nd Year	2.16	51.21	3.89	57.27	11.72%	6.71
3rd Year	2.25	49.85	4.04	56.13	11.72%	6.58
4th Year	2.33	48.49	4.20	55.02	11.72%	6.45
5th Year	2.42	47.13	4.36	53.91	11.72%	6.32
6th Year	2.52	45.78	4.53	52.82	11.72%	6.19
7th Year	2.61	44.44	4.70	51.75	11.72%	6.07
8th Year	2.71	43.10	4.88	50.69	11.72%	5.94
9th Year	2.82	41.77	5.07	49.65	11.72%	5.82
10th Year	2.92	40.44	5.26	48.63	11.72%	5.70
11th Year	3.04	39.12	5.47	47.63	11.72%	5.58
12th Year	3.15	37.81	5.68	46.64	11.72%	5.47
13th Year	3.27	36.51	5.89	45.67	11.72%	5.35
14th Year	3.40	35.21	6.12	44.73	11.72%	5.24
15th Year	3.53	33.92	6.36	43.81	11.72%	5.13
16th Year	3.67	25.03	6.60	35.29	11.72%	4.14
17th Year	3.81	25.25	6.85	35.91	11.72%	4.21
18th Year	3.95	25.47	7.12	36.54	11.72%	4.28
19th Year	4.11	25.70	7.39	37.20	11.72%	4.36
20th Year	4.26	25.95	7.67	37.88	11.72%	4.44
21st Year	4.43	26.20	7.97	38.59	11.72%	4.52
22nd Year	4.60	26.46	8.27	39.33	11.72%	4.61
23rd Year	4.77	26.73	8.59	40.10	11.72%	4.70
24th Year	4.96	27.02	8.92	40.89	11.72%	4.79
25th Year	5.15	27.31	9.26	41.72	11.72%	4.89

From Date	To Date	Base Rate	Period	Amount
01-10-2022	14-10-2022	7.7	14	107.8
15-10-2022	14-11-2022	7.95	31	246.45
15-11-2022	14-12-2022	8.05	30	241.5
15-12-2022	14-01-2023	8.3	31	257.3
15-01-2023	14-02-2023	8.4	31	260.4
15-02-2023	14-03-2023	8.5	28	238
15-03-2023	31-03-2023	8.5	17	144.5
			182	1,495.95
Interest Rate (as per norms)			8.22	
Add 350 Basis points = 3.50%			3.50	
Rate of Interest on Normative Loan			11.72%	

Annual Fixed Charges

YEAR	Annual Fixed Charges (Rs. in Lakh)					
	O&M Expense	Return on Equity	Interest on Loan	Depreciation	Interest on Working Capital	Total
2023-24 (1st Year)	25.00	105.00	172.88	116.75	6.85	426.47
2nd Year	25.96	105.00	160.94	116.75	6.71	415.37
3rd Year	26.96	105.00	149.01	116.75	6.58	404.30
4th Year	27.99	105.00	137.08	116.75	6.45	393.27
5th Year	29.07	105.00	125.15	116.75	6.32	382.29
6th Year	30.18	105.00	113.22	116.75	6.19	371.34
7th Year	31.34	105.00	101.29	116.75	6.07	360.45
8th Year	32.55	105.00	89.36	116.75	5.94	349.59
9th Year	33.80	105.00	77.43	116.75	5.82	338.79
10th Year	35.09	105.00	65.49	116.75	5.70	328.04
11th Year	36.44	105.00	53.56	116.75	5.58	317.34
12th Year	37.84	105.00	41.63	116.75	5.47	306.69
13th Year	39.29	105.00	29.70	116.75	5.35	296.10
14th Year	40.80	105.00	17.77	116.75	5.24	285.56
15th Year	42.37	105.00	5.90	116.75	5.13	275.15
16th Year	44.00	105.00	-	49.88	4.14	203.01
17th Year	45.69	105.00	-	49.88	4.21	204.77
18th Year	47.44	105.00	-	49.88	4.28	206.60
19th Year	49.26	105.00	-	49.88	4.36	208.50
20th Year	51.15	105.00	-	49.88	4.44	210.47
21st Year	53.12	105.00	-	49.88	4.52	212.52
22nd Year	55.16	105.00	-	49.88	4.61	214.64
23rd Year	57.27	105.00	-	49.88	4.70	216.85
24th Year	59.47	105.00	-	49.88	4.79	219.14
25th Year	61.76	105.00	-	49.88	4.89	221.52

Net Generation

Year	Installed Capacity	Capacity Utilization Factor	Gross Generation	Auxiliary Consumption	Net Generation
	MW	%	Kwh	Kwh	MU
1st Year	5	21%	9.2043	0.75%	9.13526775
2nd Year	5	21%	9.2043	0.75%	9.13526775
3rd Year	5	21%	9.2043	0.75%	9.13526775
4th Year	5	21%	9.2043	0.75%	9.13526775
5th Year	5	21%	9.2043	0.75%	9.13526775
6th Year	5	21%	9.2043	0.75%	9.13526775
7th Year	5	21%	9.2043	0.75%	9.13526775
8th Year	5	21%	9.2043	0.75%	9.13526775
9th Year	5	21%	9.2043	0.75%	9.13526775
10th Year	5	21%	9.2043	0.75%	9.13526775
11th Year	5	21%	9.2043	0.75%	9.13526775
12th Year	5	21%	9.2043	0.75%	9.13526775
13th Year	5	21%	9.2043	0.75%	9.13526775
14th Year	5	21%	9.2043	0.75%	9.13526775
15th Year	5	21%	9.2043	0.75%	9.13526775
16th Year	5	21%	9.2043	0.75%	9.13526775
17th Year	5	21%	9.2043	0.75%	9.13526775
18th Year	5	21%	9.2043	0.75%	9.13526775
19th Year	5	21%	9.2043	0.75%	9.13526775
20th Year	5	21%	9.2043	0.75%	9.13526775
21st Year	5	21%	9.2043	0.75%	9.13526775
22nd Year	5	21%	9.2043	0.75%	9.13526775
23rd Year	5	21%	9.2043	0.75%	9.13526775
24th Year	5	21%	9.2043	0.75%	9.13526775
25th Year	5	21%	9.2043	0.75%	9.13526775

Tariff Calculation

Particulars	ARR (Rs. in Lakhs)	Net Generation (In Mus)	Tariff (Rs.)	Discoun ting Factor	Discounte d Tariff (Rs.)
1st Year	426.47	9.14	4.67	1.00	4.67
2nd Year	415.37	9.14	4.55	0.89	4.03
3rd Year	404.30	9.14	4.43	0.79	3.48
4th Year	393.27	9.14	4.30	0.70	3.00
5th Year	382.29	9.14	4.18	0.62	2.58
6th Year	371.34	9.14	4.06	0.55	2.23
7th Year	360.45	9.14	3.95	0.49	1.91
8th Year	349.59	9.14	3.83	0.43	1.65
9th Year	338.79	9.14	3.71	0.38	1.41
10th Year	328.04	9.14	3.59	0.34	1.21
11th Year	317.34	9.14	3.47	0.30	1.04
12th Year	306.69	9.14	3.36	0.27	0.89
13th Year	296.10	9.14	3.24	0.24	0.76
14th Year	285.56	9.14	3.13	0.21	0.65
15th Year	275.15	9.14	3.01	0.19	0.56
16th Year	203.01	9.14	2.22	0.16	0.36
17th Year	204.77	9.14	2.24	0.15	0.33
18th Year	206.60	9.14	2.26	0.13	0.29
19th Year	208.50	9.14	2.28	0.11	0.26
20th Year	210.47	9.14	2.30	0.10	0.23
21st Year	212.52	9.14	2.33	0.09	0.21
22nd Year	214.64	9.14	2.35	0.08	0.19
23rd Year	216.85	9.14	2.37	0.07	0.17
24th Year	219.14	9.14	2.40	0.06	0.15
25th Year	221.52	9.14	2.42	0.06	0.13

Particulars	Claimed	Revised Claim	Approved Tariff
Total of Tariff	44.75	44.24	32.40
Total of Discounting Factor	11.27	11.27	8.37
Levelling tariff - 25 years - Rs./unit	3.97	3.925	3.87

Total Revenue	8097.14	7926.11	7368.74
Total Generation	219	219	228.38
Average Tariff	3.70	3.62	3.23

Particulars	Amount/Rate	
Capital cost		2500.00
Debt	70%	1750.00
Equity	30%	750.00
Interest rate		10.22%
RoE		14.00%
Tax Rate		0.00%
Capital - Loan		7.15%
Capital Cost - Equity		4.20%
WACC		11.35%

ANNEXURE - II

Calculation of Subsidised Tariff (O&M Expenses)

Capital Cost with Financial Assistance

The DNRE vide letter No. DNRE-GEN-CORR/01/2021-22/328 dated 23rd January, 2024 has submitted that it has received entire amount towards Capital Expenditure from the Ministry of Finance, Government of India under Special Assistance to the States.

The Components of Fixed Charges such as Return on Equity, Interest on Loan & Depreciation is derived from Capital cost. The Capital cost of the project has been funded by Government of India under Special Assistance to the States as per the submission of DNRE. Hence, the Capital cost has been considered as grant and accordingly, Fixed Charges such as Return on Equity, Interest on Loan & Depreciation has not been allowed.

Therefore, the Commission approves only O&M Expenses and Interest on Working Capital as per the Regulations for arriving at the ARR & Tariff for project.

Sl. No.	Particulars	Unit	Claimed	Approved
1	Total Installed Capacity	MW	5	5
2	Capital Cost	Rs. Lakh/MW	500.00	500.00
3	Total Capital Cost	Rs. Lakh	2,500.00	2,500.00
4	Govt. Grant/ Financial Assistance	Rs. Lakh	-	2,500.00
5	Net Capital Cost	Rs. Lakh	2,500.00	-

Depreciation

Name of the Project	Date of COD (assumed)	Capital Cost (Rs. Lakh) (Approved)	Total useful Life (Years)	Depreciation per year upto 15th Year	Depreciation per year after 15th year onwards
5 MW Solar Power PV Plant, Hovukhu, Niuland, Nagaland	10 Months from the date of sanction	-	25	-	-

Sl. No.	Particulars	Approved
1	Capital Cost (Rs. Lakh)	-
2	Rate of Depreciation (%)	4.67%
3	Depreciation per year upto 15 Years	-
4	Total Depreciation upto 15 Year	-
5	Depreciable Value (%)	90%
6	Net Depreciable Value (Rs. Lakh)	-
7	Remaining Amount for Depreciation	-
8	Total useful life	25
9	Remaining useful life	10
10	Depreciation per year after 15th year onwards	-

O&M Expenses

Sl. No.	Particulars	Unit	Claimed	Approved
1	Total Installed Capacity	MW	5.00	5.00
2	Total Project Cost	Rs. Lakh	2,500.00	-
3	Annual O&M Expense	Lakh	25.00	25.00
4	Escalation Rate	%	3.84%	3.84%
5	Total Normative O&M Expenses	Lakh	1,018.99	1,018.99

Normative O&M expenses allowed during first year of the Control Period i.e. financial year 2020-21 under these regulations shall be escalated at the rate of 3.84% per annum for the Tariff Period.

Year	Claimed	Approved
1st Year	25.00	25.00
2nd Year	25.96	25.96
3rd Year	26.96	26.96
4th Year	27.99	27.99
5th Year	29.07	29.07
6th Year	30.18	30.18
7th Year	31.34	31.34
8th Year	32.55	32.55
9th Year	33.80	33.80
10th Year	35.09	35.09
11th Year	36.44	36.44
12th Year	37.84	37.84
13th Year	39.29	39.29
14th Year	40.80	40.80
15th Year	42.37	42.37
16th Year	44.00	44.00
17th Year	45.69	45.69
18th Year	47.44	47.44
19th Year	49.26	49.26
20th Year	51.15	51.15
21st Year	53.12	53.12
22nd Year	55.16	55.16
23rd Year	57.27	57.27
24th Year	59.47	59.47
25th Year	61.76	61.76

Return on Equity

Sl. No.	Particulars	Unit	Claimed	Revised Claim	Approved
1	Total Project Cost	Rs. Lakhs	2,500.00	2,500.00	-
2	Total Equity Considered	%	30%	30%	30%
3	Total Equity Considered	Rs. Lakhs	750.00	750.00	-
4	Rate of Return on Equity	%	RoE claimed at 16.96% for 1st 15 Yrs & at 21.52% for remaining Yrs	RoE claimed at 16.96% for 1st 20 Yrs & at 21.52% for remaining Yrs	14.00%
5	Rate of RoE Grossed up with MAT Rate	%			14.00%
6	Rate of RoE grossed up with Corporate Tax Rate	%			14.00%
7	Total RoE	Rs. Lakhs	3,522.00	3,351.00	-

The normative Return on Equity shall be 14%. The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternate Tax (MAT) rate for the first 20 years of the Tariff Period and by the latest available notified Corporate Tax rate for the remaining Tariff Period.

RoE	MAT	CORPORATE RATE	Average RoE
Base rate	14%	14%	
Tax Rate	0.00%	0.00%	0.00%
Grossed up	14.00%	14.00%	14.00%

	Claimed	Revised Claim	Approved
1st Year	127.20	127.20	-
2nd Year	127.20	127.20	-
3rd Year	127.20	127.20	-
4th Year	127.20	127.20	-
5th Year	127.20	127.20	-
6th Year	127.20	127.20	-
7th Year	127.20	127.20	-
8th Year	127.20	127.20	-
9th Year	127.20	127.20	-
10th Year	127.20	127.20	-
11th Year	127.20	127.20	-
12th Year	127.20	127.20	-
13th Year	127.20	127.20	-
14th Year	127.20	127.20	-
15th Year	127.20	127.20	-
16th Year	161.40	127.20	-
17th Year	161.40	127.20	-
18th Year	161.40	127.20	-
19th Year	161.40	127.20	-
20th Year	161.40	127.20	-
21st Year	161.40	161.40	-
22nd Year	161.40	161.40	-
23rd Year	161.40	161.40	-
24th Year	161.40	161.40	-
25th Year	161.40	161.40	-

Interest on Loan

Particulars	Unit	Claimed	Approved
Total Project Cost	Rs. Lakhs	2,500.00	-
Total Normative Loan Considered	%	70%	70%
Total Normative Loan Considered	Rs. Lakhs	1,750.00	-
Rate of Interest Considered	%	9.00%	10.22%
Total Interest on Normative Loan	Rs. Lakhs	1181.13	-

(b) For the purpose of computation of tariff, normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months shall be considered.

Year	Opening balance	Repayment	Closing Balance	Average Loan	Rate of Interest	Interest
1st Year	-	-	-	-	10.22%	-
2nd Year	0.00	-	-	-	10.22%	-
3rd Year	0.00	-	-	-	10.22%	-
4th Year	0.00	-	-	-	10.22%	-
5th Year	0.00	-	-	-	10.22%	-
6th Year	0.00	-	-	-	10.22%	-
7th Year	0.00	-	-	-	10.22%	-
8th Year	0.00	-	-	-	10.22%	-
9th Year	0.00	-	-	-	10.22%	-
10th Year	0.00	-	-	-	10.22%	-
11th Year	0.00	-	-	-	10.22%	-
12th Year	0.00	-	-	-	10.22%	-
13th Year	0.00	-	-	-	10.22%	-
14th Year	0.00	-	-	-	10.22%	-
15th Year	0.00	-	-	-	10.22%	-
16th Year	-	-	-	-	10.22%	-
17th Year	-	-	-	-	10.22%	-
18th Year	-	-	-	-	10.22%	-
19th Year	-	-	-	-	10.22%	-
20th Year	-	-	-	-	10.22%	-
21st Year	-	-	-	-	10.22%	-
22nd Year	-	-	-	-	10.22%	-
23rd Year	-	-	-	-	10.22%	-
24th Year	-	-	-	-	10.22%	-
25th Year	-	-	-	-	10.22%	-

From Date	To Date	Base Rate	Period	Amount
01-10-2022	14-10-2022	7.70	14	107.80
15-10-2022	14-11-2022	7.95	31	246.45
15-11-2022	14-12-2022	8.05	30	241.50
15-12-2022	14-01-2023	8.30	31	257.30
15-01-2023	14-02-2023	8.40	31	260.40
15-02-2023	14-03-2023	8.50	28	238.00
15-03-2023	31-03-2023	8.50	17	144.50
			182	1,495.95
Interest Rate (as per norms)			8.22	
Add 200 Basis points = 2%			2.00	
Rate of Interest on Normative Loan			10.22%	

Interest on Working Capital

Particulars	Unit	Claimed	Revised Claim	Approved
Total Interest on Working Capital	Rs. Lakhs	1,190.67	1,169.29	368.72
Rate of Interest	%	10.50%	10.50%	11.72%
Interest on Working Capital	Rs. Lakhs	125.02	122.78	43.21

Year	Operation & Maintenance Exp.	Receivables	Maintenance Spares -	Total Working Capital Requirement	Rate of Interest	Interest on Working Capital
	1 Month	45 Days	15% of O&M Exp.			
1st Year	2.08	3.21	3.75	9.05	11.72%	1.06
2nd Year	2.16	3.34	3.89	9.39	11.72%	1.10
3rd Year	2.25	3.46	4.04	9.75	11.72%	1.14
4th Year	2.33	3.60	4.20	10.13	11.72%	1.19
5th Year	2.42	3.74	4.36	10.52	11.72%	1.23
6th Year	2.52	3.88	4.53	10.92	11.72%	1.28
7th Year	2.61	4.03	4.70	11.34	11.72%	1.33
8th Year	2.71	4.18	4.88	11.78	11.72%	1.38
9th Year	2.82	4.34	5.07	12.23	11.72%	1.43
10th Year	2.92	4.51	5.26	12.70	11.72%	1.49
11th Year	3.04	4.68	5.47	13.19	11.72%	1.55
12th Year	3.15	4.86	5.68	13.69	11.72%	1.60
13th Year	3.27	5.05	5.89	14.22	11.72%	1.67
14th Year	3.40	5.24	6.12	14.76	11.72%	1.73
15th Year	3.53	5.45	6.36	15.33	11.72%	1.80
16th Year	3.67	5.65	6.60	15.92	11.72%	1.87
17th Year	3.81	5.87	6.85	16.53	11.72%	1.94
18th Year	3.95	6.10	7.12	17.17	11.72%	2.01
19th Year	4.11	6.33	7.39	17.83	11.72%	2.09
20th Year	4.26	6.57	7.67	18.51	11.72%	2.17
21st Year	4.43	6.83	7.97	19.22	11.72%	2.25
22nd Year	4.60	7.09	8.27	19.96	11.72%	2.34
23rd Year	4.77	7.36	8.59	20.72	11.72%	2.43
24th Year	4.96	7.64	8.92	21.52	11.72%	2.52
25th Year	5.15	7.94	9.26	22.35	11.72%	2.62

From Date	To Date	Base Rate	Period	Amount
01-10-2022	14-10-2022	7.7	14	107.8
15-10-2022	14-11-2022	7.95	31	246.45
15-11-2022	14-12-2022	8.05	30	241.5
15-12-2022	14-01-2023	8.3	31	257.3
15-01-2023	14-02-2023	8.4	31	260.4
15-02-2023	14-03-2023	8.5	28	238
15-03-2023	31-03-2023	8.5	17	144.5
			182	1,495.95
Interest Rate (as per norms)			8.22	
Add 350 Basis points = 3.50%			3.50	
Rate of Interest on Normative Loan			11.72%	

YEAR	Annual Fixed Charges (Rs. in Lakh)					
	O&M Expense	Return on Equity	Interest on Loan	Depreciation	Interest on Working Capital	Total
2023-24 (1st Year)	25.00	-	-	-	1.06	26.06
2nd Year	25.96	-	-	-	1.10	27.06
3rd Year	26.96	-	-	-	1.14	28.10
4th Year	27.99	-	-	-	1.19	29.18
5th Year	29.07	-	-	-	1.23	30.30
6th Year	30.18	-	-	-	1.28	31.46
7th Year	31.34	-	-	-	1.33	32.67
8th Year	32.55	-	-	-	1.38	33.93
9th Year	33.80	-	-	-	1.43	35.23
10th Year	35.09	-	-	-	1.49	36.58
11th Year	36.44	-	-	-	1.55	37.99
12th Year	37.84	-	-	-	1.60	39.44
13th Year	39.29	-	-	-	1.67	40.96
14th Year	40.80	-	-	-	1.73	42.53
15th Year	42.37	-	-	-	1.80	44.17
16th Year	44.00	-	-	-	1.87	45.86
17th Year	45.69	-	-	-	1.94	47.62
18th Year	47.44	-	-	-	2.01	49.45
19th Year	49.26	-	-	-	2.09	51.35
20th Year	51.15	-	-	-	2.17	53.32
21st Year	53.12	-	-	-	2.25	55.37
22nd Year	55.16	-	-	-	2.34	57.50
23rd Year	57.27	-	-	-	2.43	59.70
24th Year	59.47	-	-	-	2.52	62.00
25th Year	61.76	-	-	-	2.62	64.38

Net Generation

Year	Installed Capacity	Capacity Utilization Factor	Gross Generation	Auxiliary Consumption	Net Generation
	MW	%	Kwh	Kwh	MU
1st Year	5	21%	9.2043	0.75%	9.13526775
2nd Year	5	21%	9.2043	0.75%	9.13526775
3rd Year	5	21%	9.2043	0.75%	9.13526775
4th Year	5	21%	9.2043	0.75%	9.13526775
5th Year	5	21%	9.2043	0.75%	9.13526775
6th Year	5	21%	9.2043	0.75%	9.13526775
7th Year	5	21%	9.2043	0.75%	9.13526775
8th Year	5	21%	9.2043	0.75%	9.13526775
9th Year	5	21%	9.2043	0.75%	9.13526775
10th Year	5	21%	9.2043	0.75%	9.13526775
11th Year	5	21%	9.2043	0.75%	9.13526775
12th Year	5	21%	9.2043	0.75%	9.13526775
13th Year	5	21%	9.2043	0.75%	9.13526775
14th Year	5	21%	9.2043	0.75%	9.13526775
15th Year	5	21%	9.2043	0.75%	9.13526775
16th Year	5	21%	9.2043	0.75%	9.13526775
17th Year	5	21%	9.2043	0.75%	9.13526775
18th Year	5	21%	9.2043	0.75%	9.13526775
19th Year	5	21%	9.2043	0.75%	9.13526775
20th Year	5	21%	9.2043	0.75%	9.13526775
21st Year	5	21%	9.2043	0.75%	9.13526775
22nd Year	5	21%	9.2043	0.75%	9.13526775
23rd Year	5	21%	9.2043	0.75%	9.13526775
24th Year	5	21%	9.2043	0.75%	9.13526775
25th Year	5	21%	9.2043	0.75%	9.13526775

Tariff Calculation

Particulars	ARR (Rs. in Lakhs)	Net Generation (In Mus)	Tariff (Rs.)	Discounted Tariff (Rs.)
1st Year	26.06	9.14	0.29	0.29
2nd Year	27.06	9.14	0.30	0.30
3rd Year	28.10	9.14	0.31	0.31
4th Year	29.18	9.14	0.32	0.32
5th Year	30.30	9.14	0.33	0.33
6th Year	31.46	9.14	0.34	0.34
7th Year	32.67	9.14	0.36	0.36
8th Year	33.93	9.14	0.37	0.37
9th Year	35.23	9.14	0.39	0.39
10th Year	36.58	9.14	0.40	0.40
11th Year	37.99	9.14	0.42	0.42
12th Year	39.44	9.14	0.43	0.43
13th Year	40.96	9.14	0.45	0.45
14th Year	42.53	9.14	0.47	0.47
15th Year	44.17	9.14	0.48	0.48
16th Year	45.86	9.14	0.50	0.50
17th Year	47.62	9.14	0.52	0.52
18th Year	49.45	9.14	0.54	0.54
19th Year	51.35	9.14	0.56	0.56
20th Year	53.32	9.14	0.58	0.58
21st Year	55.37	9.14	0.61	0.61
22nd Year	57.50	9.14	0.63	0.63
23rd Year	59.70	9.14	0.65	0.65
24th Year	62.00	9.14	0.68	0.68
25th Year	64.38	9.14	0.70	0.70

Particulars	Claimed	Revised Claim	Approved Tariff
Total of Tariff	44.75	44.24	11.63
Total of Discounting Factor	11.27	11.27	25.00
Levelling tariff - 25 years - Rs./unit	3.97	3.925	0.47

Total Revenue	8097.14	7926.11	1062.21
Total Generation	219	219	228.38
Average Tariff	3.70	3.62	0.47