

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 13/SM/2020 (Suo-Motu)

**Coram: 1. Shri P.K. Pujari, Chairperson
2. Shri I.S. Jha, Member
3. Shri Arun Goyal, Member**

Date of Order: July 21st, 2020

IN THE MATTER OF

Determination of levellised generic tariff for FY 2020-21 under Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020.

ORDER

1. The Commission issued the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020, on 24.06.2020 (hereinafter referred to as "the RE Tariff Regulations"), which provide for terms and conditions and the procedure for determination of tariff of the following categories of Renewable Energy (RE) generating stations:

- a. Small Hydro Projects;
- b. Biomass Power Projects with Rankine Cycle technology;
- c. Non-fossil fuel-based co-generation Project;
- d. Biomass Gasifier based Power Projects;
- e. Biogas based Power Projects

2. As per Regulation 7 of the RE Tariff Regulations, the Commission shall determine project specific tariff for the following RE technologies:

- a. Solar PV power projects, floating solar projects and solar thermal power projects;
- b. Wind power projects (both on-shore and off-shore);

- c. Biomass gasifier-based power projects and biogas based power projects – if a project developer opts for project specific tariff;
- d. Municipal solid waste-based power projects and refuse derived fuel based power projects;
- e. Renewable hybrid energy projects;
- f. Renewable energy with storage projects; and
- g. Any other project based on new renewable energy sources or technologies approved by MNRE.

3. Further, Regulation 8(1) of the RE Tariff Regulations provides as under:

“8. Petition and proceedings for determination of tariff

1) In case of renewable energy projects for which generic tariff has to be determined as per these regulations, the Commission shall determine such generic tariff through a Generic Tariff Order at least one month before the commencement of year for each year of the Control Period:

Provided that for first year of Control Period i.e., from 1.7.2020 to 31.3.2021, the Generic Tariff Order shall be determined upon issuance of these regulations.”

4. The Commission, in due discharge of the mandate under Regulation 8(1) of the RE Tariff Regulations, is required to determine the generic tariff of the RE projects for the first year of control period (i.e. FY 2020-21) .

5. For this purpose, the Commission issued a Public Notice on June 28, 2020 along with a proposal for “Determination of levellised generic tariff for FY 2020-21 under Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020, dated June 28, 2020 and invited comments/suggestions from the stakeholders. The last date for submission of comments/suggestions as July 12, 2020.

6. In response this public notice, written comments/suggestions were received from the following stakeholders:

- a) Venika Hydro Projects Pvt. Ltd.
- b) Shree Bhavani Power Projects Pvt. Ltd.

c) Gujarat Biomass Energy Developers Association (GBEDA)

7. The Commission has considered the views/comments/suggestions of the stakeholders and the analysis/decisions of the Commission thereon is presented as under:

COMMENTS /SUGGESTION RECEIVED AND COMMISSION'S DECISION THERON

8. Applicability of Tariff

Commission's Proposal

As regards the applicability of Tariff, Regulation 8 of RE Tariff Regulations specified as under:

"8. Petition and proceedings for determination of tariff

1) In case of renewable energy projects for which generic tariff has to be determined as per these regulations, the Commission shall determine such generic tariff through a Generic Tariff Order at least one month before the commencement of year for each year of the Control Period:

Provided that for first year of Control Period i.e., from 1.7.2020 to 31.3.2021, the Generic Tariff Order shall be determined upon issuance of these regulations."

Comments Received

8.1 GBEDA submitted that, in order to encourage sustained development of the RE projects and mitigate uncertainty and safe guard the development of the RE project, it is suggested that applicability of the tariff should sustain for the RE Generating plants, who have attained financial closure for the project, have signed Power Purchase agreement with the utility, and have commenced construction work of the RE Project during the Tariff Period rather than linking it with the commissioning of the project.

Analysis and Decision

8.2 As per present RE Tariff Regulations, the applicability of tariff is linked to commissioning of the project, not with financial closure and commencement of construction of the project. Any change in the applicability of tariff will tantamount to amendment in the RE Tariff Regulations and is therefore outside the scope of the present exercise of determination of levellised generic tariff for FY 2020-21.

In view of the above, the Commission continues with the existing approach of linking the applicability of tariff with commissioning of the project in line with the RE Tariff Regulations.

9. **Debt Equity ratio**

Commission's Proposal

As regards Debt Equity Ratio, Regulation 13 (1) of the RE Tariff Regulations, as stipulated below, specifies debt-equity ratio of 70:30 for determination of generic tariff

Comments Received

9.1 GBEDA submitted that, in case the ratio of equity is increased more than 30% for RE Project, the RE Project Developer shall be entitled for higher tariff and the RE Project Developer shall have liberty to approach the Commission for determination of tariff.

Analysis and Decision

9.2 The Commission has approved normative debt equity ratio of 70:30 in line with approach adopted in Tariff Regulations for conventional generators. Further, the generic tariff is determined on normative parameters. The actual equity or debt is relevant only for project specific tariff, As such, the suggestion made is beyond the scope of the present dispensation of generic tariff determination.

10. **Return on Equity**

Commission's Proposal

As regards Rate of Return on Equity, Regulation 16 (2) of the RE Tariff Regulations specifies as under:

"16. Return on Equity

... ..(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."

For computation of Rate of Return on Equity, MAT Rate of 17.47% and Corporate Tax Rate of 34.94% has been considered. Accordingly, Rate of Return has been computed as 16.96% for first 20 years and 21.52% after 20 years of useful life.

Comments Received

10.1 Venika Hydro Projects Pvt. Ltd. has suggested to consider the Return on Equity of 16% to be grossed up by Minimum Alternate Tax (MAT) Rate.

Analysis and Decision

10.2 The Return on Equity considered for generic tariff determination is as per the RE Tariff Regulations. Any change in the Return of Equity, is outside the scope of the present exercise of determination of levellised generic tariff. In view of the above, the Commission has continued with the rate of return on equity as per provisions of RE Tariff Regulations.

11. Interest on Loan Capital

Commission's Proposal

Regulation 14(1) of the RE Regulations specifies the rate of interest as equivalent to SBI MCLR (one-year tenor) prevalent during the last available six months plus 200 basis points, for the purpose of determination of generic and project specific tariff for RE projects. The relevant extract of RE Tariff Regulations is reproduced as under:

- “(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.....*
(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 developer, 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.”

Accordingly, the Commission has considered the rate of interest of 9.67% for determination generic tariff for RE projects for FY 2020-21.

Comments Received

11.1 Venika Hydro Projects Pvt. Ltd. and Shree Bhavani Power Projects Pvt Ltd. has suggested to consider the rate of interest as per interest rates stipulated by Indian Renewable Energy Development Agency (IREDA).

Analysis and Decision

11.2 The Rate of Interest considered for generic tariff determination is as per the RE Tariff Regulations. Any change in the Rate of Interest, is outside the scope of the present exercise of determination of levellised generic tariff. In view of the above, the Commission has continued with the rate of interest as per provisions of RE Tariff Regulations.

12. Interest on Working Capital

Commission's Proposal

Regulation 17 of the RE Tariff Regulations specifies for the working capital requirements of the RE projects as under:

“(1)The Working Capital requirement in respect of wind power projects, small hydro projects, solar PV power projects, floating solar projects, solar thermal power projects, and renewable energy with storage projects shall be computed in accordance with the following:

- (a) Operation & Maintenance expenses for one month*
- (b) Receivables equivalent to 45 days of tariff for sale of electricity calculated on normative Capacity Utilisation Factor or Plant Load Factor, as the case may be and*
- (c) Maintenance spares equivalent to 15% of Operation and Maintenance expenses.*

(2) 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.*

(3) In case of renewable hybrid energy projects, the Working Capital requirement shall be sum of the Working Capital requirement determined as per norms applicable for renewable energy sources, in proportion to their rated capacity in the project

(4) 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.”

Receivables equivalent to forty-five (45) days of tariff for sale of electricity calculated on the plant load factor and four months of fuel cost, (as applicable

for biomass power, non-fossil fuel-based co-generation, biomass gasifier and biogas power) have been considered.

Interest rate has been computed as average of State Bank of India MCLR (One Year Tenor) prevalent during the last available six months plus 350 basis points (equivalent to interest rate of 11.17%).

The parameters considered for computation of the interest on working capital are stipulated in following table:

Details	Small Hydro	Biomass Based (Rankine Cycle), Non-Fossil Fuel Generation, Biomass Gasifier and Biogas.
<i>For Fixed Charge</i>		
O&M Expenses (Month)	1 month	1 month
Maintenance Spares (%) of O&M Expenses	15%	15%
Receivables (Days)	45 Days	45 Days
<i>For Variable Charge</i>		
Biomass/Bagasse Stock (Months)	-	4 months
Rate of Interest (%)	11.17%	11.17%

Comments Received

12.1 Venika Hydro Projects Pvt. Ltd. has suggested to consider the interest rate as per Indian Renewable Energy Development Agency (IREDA) norms.

Analysis and Decision

12.2 The Interest on Working Capital considered for generic tariff determination is as per the RE Tariff Regulations. Any change in the Interest Rate, is outside the scope of the present exercise of determination of levellised generic tariff. In view of the above, the Commission has continued with the rate of interest on working capital as per provisions of RE Tariff Regulations.

13. Operation and Maintenance (O&M) Expenses

Commission's Proposal

Regulation 19 of the RE Tariff Regulations specifies for O&M expenses in respect of RE projects as following

"19. Operation and Maintenance Expenses

(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 over the Tariff Period."*

The normative O&M expenses for various RE technologies specified under the relevant provisions of the RE Tariff Regulations are as under:

(a) **Small Hydro:** Regulation 30 of RE Regulations provide for the normative O&M expenses for small hydro projects for the first year of the Control Period (FY 2020-21), which shall be escalated at the rate of 3.84% per annum over the tariff period for determination of the levellised tariff. Accordingly, the table below represents the O&M cost for SHP as specified by the Commission for FY 2020-21:

Region	Project Size	O&M Expenses FY 2020-21 (Rs Lakh/ MW)
Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States	Below 5 MW	41.78
	5 MW to 25 MW	31.34
Other States	Below 5 MW	33.66
	5 MW to 25 MW	24.37

(b) **Biomass Based:** Regulation 35 of RE Tariff Regulations provides that the normative O& M expenses for Biomass-based projects for first year of the Control Period (FY 2020-21) shall be Rs. 46.42 Lakh per MW

(c) **Non-Fossil Fuel Cogeneration:** As per Regulation 45 of RE Tariff Regulations, the normative O&M expenses for non-fossil fuel co-generation projects for the first year of the Control Period (FY 2020-21) shall be Rs. 24.52 Lakh per MW.

(d) **Biomass Gasifier:** As per Regulation 54 of the RE Tariff Regulations, normative O&M expenses for Biomass Gasifier power projects shall be Rs. 61.31 lakh/MW for the first year of Control Period (FY 2020-21).

(e) **Biogas:** As per Regulation 59 of the RE Tariff Regulations, normative

O&M expenses for biogas shall be Rs. 61.31 Lakh/MW for the first year of Control Period (FY2020-21).

The Commission has considered the normative O&M Expenses as specified in RE Tariff Regulations for different RE technologies as stated above.

Comments Received

13.1 Venika Hydro Projects Pvt. Ltd. has suggested to consider O&M Charges for Other States (5MW – 25MW) as Rs. 35 Lakh/MW at 5% escalation rate as increase in the prices for goods such as Diesel, Cement, Steel, labour etc. due to COVID -19.

Shree Bhavani Power Projects Pvt Ltd. has suggested to analyse inflation data of the past 15 years for determination of escalation rate as consideration of past 5 years data for projection for next 25 years will lead to correlation variation. Further, due to COVID-19, cost of labour will increase. Therefore, it has been suggested to increase the escalation rate or else continue the same escalation rate of 5.72% as in the previous regulations.

Analysis and Decision

13.2 The O&M expenses and the escalation rate for O&M expenses considered for generic tariff determination are as per the RE Tariff Regulations. Any change in this regard is outside the scope of the present exercise of determination of levellised generic tariff. Accordingly, the Commission decides to apply the normative O&M Expenses and escalation rate for O&M expenses as specified in RE Tariff Regulations for different RE technologies.

14. Gross Calorific Value and Station Heat Rate for Biomass based (rankine cycle) RE Projects

Commission's Proposal

Regulation 37 of RE Tariff Regulations specifies the calorific value for biomass fuel used as 3100 kcal/kg.

Also, Regulation 34 of RE Tariff Regulations specifies Station Heat Rate of 4200 kcal/kwh for projects using travelling grate boilers and 4125 kcal/kwh for projects with AFBC boilers.

Comments Received

14.1 GBEDA submitted that the value of the calorific value and Station Heat Rate for biomass based plants should be at par with those in individual states. It has been suggested to clearly state that the calorific value and Station Heat Rate determined will be applicable for all the states in the country, specifically for the state of Gujarat as well.

Analysis and Decision

14.2 While determining the generic tariff for the Biomass projects covered within the jurisdiction of the Commission, the Commission has considered the same calorific value and station heat rate for all States as per Regulation 37 and 34 of RE Tariff Regulations.

15. Other comments received on issues of Open Access Charges, Waiver of contract demand and Deviation settlement mechanism are beyond the scope of this Tariff Order. Hence, these suggestions have not been considered by the commission in the present exercise of determination of levellised generic tariff for FY 2020-21.

16. No other comment on any other parameter has been received. Hence, the Commission determines the levellised generic tariff for RE based generating stations for FY 2020-21 as enclosed in Annexure – I to this Order.

Sd/-
[Arun Goyal]
MEMBER

Sd/-
[Indu Shekhar Jha]
MEMBER

Sd/-
[P.K. Pujari]
CHARIPERSON

New Delhi, 21st July 2020