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Case No. 1/SM/2022

In the matter of

Generic Renewable Energy Tariff for FY 2022-23 under MERC (Renewable Energy Tariff) Regulations, 2019

DRAFT ORDER (SUO-MOTU)

Dated: 30 March 2022

Background:

1. The Commission notified the MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019, ('RE Tariff Regulations, 2019') on 30 December 2019 after following due process. These Regulations have become applicable from 1 April 2020 for determination of tariff for RE Technologies. The first Review Period under these Regulations is of five (5) financial years (FY), from FY 2020-21 up to the end of FY 2024-25.
2. As per Regulation 7.1 of RE Tariff Regulations, 2019, Tariff for following types of RE Projects shall invariably be determined through a transparent process of competitive bidding under Section 63 of the Act:
 - a. Wind Energy Power Projects;
 - b. Solar PV Power Projects;
 - c. Non-Fossil Fuel-based Co-Generation;
 - d. Biomass based Projects;
 - e. Hybrid RE Power Projects.

Thus, for all the above RE Technologies, the Commission is not determining the Generic Tariff and only adopts the tariff discovered through transparent competitive bidding process as has been specified in the RE Tariff Regulations, 2019.

3. Scope of determination of Generic Tariff under RE Tariff Regulations, 2019 is limited to notification of the generic tariff for Solar Roof-top PV and determination of variable charge for Biomass and non-fossil fuel-based Co-generation Projects. Relevant Regulations is

reproduced below:

“8. Generic Tariff

The Commission shall notify the generic tariff for Solar Roof-top PV Power Projects and determine the Variable Charges for Biomass and Non-fossil fuel-based Co-generation Projects, in accordance with the norms specified in these Regulations:

Provided that the above Generic Tariff determination of Variable Charges shall not apply for Biomass and Non-fossil fuel-based Co-generation Projects, whose tariff has been determined through the competitive bidding process and adopted by the Commission.”

4. As regards generic tariff for Solar Roof-top PV power project, Regulation 64 of the RE Tariff Regulations, 2019 states that it shall be notified in accordance with the approach specified in Regulation 7.3. Said Regulation 7.3 of RE Tariff Regulations, 2019 is reproduced below:

“7.3 The tariff for RE Power Projects below threshold limit of eligibility for participating in Competitive Bidding shall be considered equal to the following cases, in order of priority:

- a) Latest Tariff discovered through Competitive Bidding by concerned Distribution Licensee for similar RE project and adopted by the appropriate Commission;*
- b) The Tariff discovered through Competitive Bidding for similar RE project by Other Distribution Licensee(s) in the State and adopted by the appropriate Commission;*
- c) The Tariff discovered through Competitive Bidding for similar RE project in the Country and adopted by the appropriate Commission.”*

Thus, the above Regulations specify that the process of tariff determination for Roof-top PV is not envisaged in the RE Tariff Regulations, 2019. It only envisages notification of tariff as per the Regulation 7.1 of the RE Tariff Regulations, 2019.

5. As regards determination of variable charges for Biomass and Non-fossil fuel-based Co-generation Projects, the Regulations envisage such determination only for existing projects whose Energy Procurement Agreements (EPAs) are signed based on Generic Tariff determined by this Commission in the past. For the existing Projects which are covered under competitive bidding and all future projects, which shall be through competitive bidding only or EPAs whose tariff are pegged to competitively discovered tariff, such Commission determined variable charges would not be applicable.
6. The Commission vide its Orders dated 2 April 2020 (Case No. 77 of 2020) and dated 1 April 2021 (Case No. 29 of 2021) have notified the Generic tariff for Rooftop PV and provisional

variable charges for Biomass and Non-fossil fuel-based Co-generation projects for FY 2020-21 and FY 2021-22.

7. Through this Suo-motu Order, the Commission is notifying Generic Tariff rates for Rooftop PV projects for FY 2022-23 and undertaking process of determining variable charges for Biomass and Non-fossil fuel-based Co- generation Projects for FY 2020-21 to FY 2022-23.

Notification of Generic Tariff for Rooftop PV:

8. The Regulation 64 of RE Tariff Regulations, 2019 specifies the provision for Technology-specific parameters for Utility-Scale Solar PV Power Projects and Solar Roof-top Project as under

“64. Technological Aspects:

The norms specified under these Regulations shall be applicable for determination of project-specific tariff for Utility-Scale Solar PV Power Projects, using sunlight for direct conversion into electricity through Photo Voltaic technology as approved by MNRE:

Provided that for Solar Rooftop PV Power projects, the Generic Tariff shall be notified in accordance with the approach specified in Regulation 7.3.

9. The Regulation 7.3 is reproduced under para 4 above which specifies three options for considering the latest tariff in order of priority. The Commission notes that none of the Distribution Licensee in the State has discovered tariff for procurement of energy from Rooftop PV projects through competitive bidding. Further, rates discovered in other States may have subsidy component or any other tariff benefits which are not available in Maharashtra.
10. The Commission notes that presently Distribution Licensees are procuring surplus power under Net-Metering arrangement or all power generated by Rooftop PV under Net-billing arrangement as prescribed under MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019. In this Regulation, it is stipulated that Distribution Licensee shall procure surplus power at the end of year under Net-metering arrangement at Generic Tariff approved by the Commission for that year. Whereas under Net-billing arrangement, Distribution Licensee has to enter into EPA at Average Power Procurement Cost (APPC) which would be constant for entire period of EPA. Thus, the Commission has to notify Generic Tariff for Rooftop PV which would be used for procurement of surplus energy at the end of financial year. APPC rate for entering into EPA under Net-billing arrangement would be based on power procurement approved in Tariff Order of respective Distribution Licensee.
11. As stated earlier, none of the Distribution Licensees in the State has discovered tariff for procurement of energy from Rooftop PV through competitive bidding. The Commission notes that under Net-metering arrangement it is expected that consumer will install Rooftop

PV for self-consumption only and would not have a planned surplus except for only a negligible unintended quantum, more due to climatic/weather factors. Provision of annual banking allowed under Net-metering arrangement would further reduce such surplus available at the end of financial year. Such surplus power procured by Distribution Licensee is used for meeting its Solar RPO. Distribution Licensees have option of meeting their Solar RPO by procuring energy from grid scale solar PV projects and Licensees in the State have already been exercising such option. Hence, the Commission deems it fit to use latest tariff rate discovered for Grid Scale Solar project as a Generic Tariff for procurement of surplus energy from Rooftop PV projects. The Commission notes that in its Order dated 3 December 2021 in Case No. 141 of 2021 has adopted tariffs quoted in the range of Rs. 3.00/kWh to Rs.3.05/kWh under ‘Mukhyamantri Saur Krishi Vahini Yojana’ from 2 to 10 MW capacity projects. Accordingly, the Commission hereby notifies Rs. 3.00/kWh as a Generic Tariff rate for procurement of surplus power at the end of Financial year from Rooftop-PV projects for FY 2022-23. It is mandatory for Distribution Licensees to procure such surplus power at the end of financial year which would in any case be counted towards meeting their Solar RPO.

12. Although, it is not required to notify APPC rate under RE Tariff Regulations and it can be computed based on Tariff Order of respective Distribution Licensee, for ease of understanding of various stakeholders, the Commission is representing the same in this Order. The Commission notes that RE Tariff Regulations, 2019 provide the definition of Average Power Purchase Cost (APPC) as under:

“2.1 (c) Average Power Purchase Cost” or “APPC” means the weighted average price at which the Distribution Licensee has purchased or is expected to purchase electricity (excluding procurement from RE sources and liquid fuel sources), including the cost of self-generation, if any, as approved by the Commission in the relevant Tariff Order or any other general or specific Order;

13. Thus, while determining APPC, procurement from renewable energy sources and liquid fuel sources needs to be excluded. Accordingly, Distribution Licensee wise APPC for FY 2022-23 is given below:

Distribution Licensee	Tariff Order dated 30 March 2020	APPC excluding RE & Liquid Fuel Source for FY 2022-23 (Rs/kWh)
	Case No	
MSEDCL	322 of 2019	4.05
BEST Undertaking	324 of 2019	4.70
AEML-D	325 of 2019	4.25
TPC-D	326 of 2019	4.43
MBPPL	328 of 2019	4.07
KRCIPL	329 of 2019	3.92
GEPL	330 of 2019	3.95

APPC rate mentioned in last column of the above table shall be used by Distribution Licensee for entering into an EPA with Rooftop PV under Net-billing arrangement for project commissioned in FY 2022-23. Further such rate will be constant for entire period of EPA.

Variable charges of Biomass and Non-fossil fuel-based Co-generation Projects:

14. For determination of variable charge/fuel cost, RE Tariff Regulations 2019, stipulates following:

For Biomass-based Power Project:

“46 The biomass fuel price for the first year of the Project shall be determined based on the prevailing prices of the fuel mix for each Project and based on an independent study by the Commission, and shall thereafter be linked to the indexation mechanism specified in Regulation 47:

For Non-fossil Fuel-based Co-Generation Project:

“ 56 The price of bagasse for the first year of the Project shall be determined based on the prevailing price of bagasse as assessed through an independent study by the Commission, and shall thereafter be linked to the indexation mechanism specified in Regulation 57:

15. In accordance with the above stipulations of RE Tariff Regulations, 2019, an independent study was to be initiated by the Commission to evaluate the Biomass and Bagasse fuel availability and their Prices in the State of Maharashtra. As the said study was not initiated at the time of issuance of first Generic Tariff Order under RE Tariff Regulations 2019, the Commission in its Order in Case No. 77 of 2020 dated 2 April 2020 ruled as follows:

“

7. In accordance with the above stipulations of RE Tariff Regulations, 2019 an independent study was to be initiated by the Commission with assistance from reputed Firms/Institutions /Agency to evaluate the district-wise Biomass and Bagasse fuel availability and their Prices including transportation cost, loading/unloading cost, escalation factor for fuel price, losses in storage, opportunity cost in terms of alternative use etc in the State of Maharashtra. As this study involves actual field survey and collection of realistic data, the same cannot be initiated in the prevailing circumstances of COVID-19. Therefore, in the interim, the Commission deems it fit to continue with the existing variable charges for Biomass and Non-fossil fuel based Co-generation Projects as determined under RE Tariff Order dated 30 April 2019 in Case No. 52 of 2019 on provisional basis until the Commission duly determines the variable cost for these projects based on fuel cost arrived through independent study which is to be commissioned. Any variation in variable cost so determined shall be applicable as a

variable charge for 2020-21 and shall be adjusted in subsequent bills.

8. Since fresh determination of variable charges is not being undertaken at present for Biomass and Non-fossil fuel-based Co-generation Projects, there is no necessity of Public Consultation Process.

9. The Public Consultation Process will be carried out and participation opportunity will be given to all the stake holder when the Commission receives the report of the proposed independent study.”

16. Subsequently, the Commission has initiated the study through ‘The Energy and Resource Institute (TERI)’ to determine the Biomass and Bagasse fuel availability and their Prices in the State of Maharashtra. The Study commenced in July 2020 with the expected time period of 8 months for completion. However, with the travel and other restrictions imposed due to COVID-19, TERI has not been able to complete the study within the stipulated time period and hence additional time has been allowed for the same. The Commission also notes that some of the selected bagasse-based co-generation projects have also not cooperated and provided necessary details to TERI, which has also delayed study process. Now, TERI has finalized its report based on available data and submitted the same.

17. The Commission in its Order in Case No. 29 of 2021 dated 1 April 2020 dispensed following as an interim arrangement:

“
*9. Therefore, in the interim, the Commission will continue with variable charges for Biomass and Non-fossil fuel- based Co-generation Projects as determined under RE Tariff Order dated 30 April 2019 in Case No. 52 of 2019 on provisional basis. **Post completion of the study by TERI, the Commission will initiate the Public Consultation Process providing participation opportunity to all the stakeholders to finalize the Prices of Biomass and Bagasse fuel in the State of Maharashtra. Any variation in variable cost so determined shall be applicable as a variable charge for FY 2020-21 and FY 2021-22, and shall be adjusted in subsequent bills.**” (Emphasis added)*

18. As report on fuel cost has now been received, same is annexed herewith and indicative variable charge for Biomass and non-fossil fuel based co-generation projects has been computed in subsequent paragraphs by using the fuel cost recommended by TERI in its Report and the performance parameters as stipulated in RE Tariff Regulations, 2019. It is clarified that the Commission is yet to apply its mind on the fuel cost recommended by TERI. After considering all the suggestions and objections received in the matter, the Commission will finally decide on the fuel cost to be used for computation of variable charge and other allied issues.

19. MERC RE Tariff Regulations 2019 stipulated following formula for determination of variable charge for biomass-based power project:

“47.1 In the case of both existing and new Biomass-based Power Projects, the following indexing mechanism for adjustment of fuel prices for each year of operation will be applicable for determination of the variable charge component of tariff:

The Variable Charge for the nth year shall be computed as under:

$$VC_n = VC_1 \times (P_n / P_1)$$

where,

VC1 represents the Variable Charge based on Biomass Price P1 for first year as specified under Regulation 46, and which shall be determined as under:

$$VC_1 = \frac{\text{Station Heat Rate (SHR)}}{\text{Gross Calorific Value (GCV)}} \times \frac{1}{(1 - \text{Auxiliary Consumption Factor})} \times P_1 / 1000$$

Pn = Price per tonne of biomass for the nth year to be considered for tariff determination;

Pn-1 = Price per tonne of biomass for the (n-1)th year to be considered for tariff determination;

P1 shall be the Biomass price for FY 2020-21 as specified under Regulation 46;

47.2 The Biomass fuel price shall be revised by the Commission taking into consideration the Biomass fuel price determined by the Central Commission, or a normative escalation factor based on an independent study by the Commission, or 5% per annum, as the Commission may consider appropriate.”

Similar formula has been stipulated in Regulation 57 of RE Tariff Regulations 2019 for computing variable charge for non-fossil fuel based co-generation project.

20. Following parameters have been used in above stipulated formula for computation of variable charge:

Parameter	Source	Biomass Project	Non-fossil fuel based co-generation project
Station Heat Rate (SHR)	Regulation	4200 kcal/kWh	3600 kcal/kWh
Gross Calorific Value (GCV)	Regulation	3611 kcal/kg	2250 kcal/kg
Auxiliary Consumption Factor	Regulation	10%	8.50%
Fuel Price	TERI Report	Rs 3238 / MT	Rs. 1836 / MT

21. By using above parameters in the formula stipulated in the Regulations, Variable Charges are computed as below:

Year	Biomass Project	Non-fossil fuel based co-generation project
FY 2020-21	Rs. 4.18/kWh	Rs. 3.21/kWh
FY 2021-22	Rs. 4.39/kWh	Rs. 3.37/kWh
FY 2022-23	Rs. 4.61/kWh	Rs. 3.54/kWh

In view of above computed variable charges and stipulated provisions in earlier generic tariff orders for FY 2020-21 and FY 2021-22, Biomass based project and non-fossil fuel based co-generation project has to refund difference between provisional tariff and above determined tariff. Accordingly, Distribution Licensee shall adjust the same through upcoming bills in six equal installments.

22. Further, variable charges determined for FY 2022-23 in above table shall be applicable with effect from 1 April 2022.

This Draft Order (Suo-motu) is issued to invite objections, comments and suggestions from all stakeholders including RE Developers, Distribution Licensees, Maharashtra Energy Development Agency (MEDA), consumers, etc. All stakeholders may submit their objections, comments and suggestions on the same. The Commission shall finalize the Order after taking a view on the submissions received from the stakeholders on the draft Order