

## **Rajasthan Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020**

RERC notified Draft for Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 which will be applicable from 1<sup>st</sup> April, 2020 – 31<sup>st</sup> March, 2023. Highlights of the proposed regulations are as follows:

- ❖ Different norms and eligibility criteria to be specified for Non-fossil fuel based Co-generation project, MSW, RDF based power project and Small Hydro project.
- ❖ Parameters for new RE technologies such as Floating Solar Project, Renewable Hybrid Energy Project and RE Project with Storage to be specified in line with the CERC RE Tariff Regulations, 2020.
- ❖ Wind, Solar, Wind-Solar Hybrid plants and MSW based plants to be treated as ‘must-run’ power plants.
- ❖ Biomass, Biogas and Biomass Gasifier based power plants with installed capacity of 2 MW and above, that is commissioned after notification of these Regulations, to be subjected to ‘Merit Order Despatch’ principles, and plants commissioned before notification of these Regulations, will be treated as ‘must-run’ power plants.
- ❖ Increase of loan tenure to 15 years from the present 13 years for all the RE Projects.
- ❖ Depreciation rate from 5.28% for 13 years to be changed to 4.67% for 15 years and remaining depreciation to be spread during remaining useful life of the RE projects considering the salvage value of the project as 10% of project cost.
- ❖ Normative O&M expenses to be allowed during the first year of the control period at an escalation rate of 3.84% per annum.
- ❖ For payment made within five working days of presentation of bill, a rebate of 1.5% is proposed.
- ❖ Payment of bills of RE tariff is delayed beyond a period of 45 days from the date of presentation of bills, in such case LPS equivalent to Base Rate as on 1st April of the respective year plus 400 bp p.a. on daily basis will be levied by the GENCO.
- ❖ Use of Fossil Fuel or Solar Power: For new biomass power projects based on Rankine cycle technology installed after notification of these regulations, use of fossil fuels or solar power will not be allowed. For existing plants, use of fossil fuels to the extent of 15% in terms of gross calorific value on annual basis or solar power within the limit of 15% on annual basis, will be allowed for the Useful Life of the project from the date of commercial operation.

The regulation can be accessed [here](#).

### **CER Opinion –**

#### **CER Despatch principle for Treatment of Biomass, Biogas and Biomass Gasifier based power plant (Clause - 14.4):**

Removal of Biomass, Biogas and Biomass Gasifier based power plants from ‘MUST RUN’ status and subjecting these to Merit Order Despatch principle would reduce their PLF in comparison to the one used for the calculation of tariff. Further, as tariff for such plants is of a single-part nature, these plants would face viability issue. Such plants would have to compete

with conventional plants, particularly coal-based power plants, which have two-part tariff, and thus comparatively lower variable part of tariff.

Unless Biomass, Biogas and Biomass Gasifier based power plant also have a two-part tariff structure, these plants should continue to have must-run status. Regulatory approach should be to tighten some of the efficiency benchmarks especially those related to heat rate, auxiliary consumption and O & M costs.

**CER Determination of Capital Cost on the basis of prevailing market trends:**

It may be difficult to ascertain market trend for a number of technologies, which are not widely traded and there is limited information in public domain. Further, the limited information is available only through the technology suppliers, thus leaving a moral hazard situation amidst the information asymmetry. Capital cost should be ascertained on the basis of competitively bid capital procurements across the country.

**CER Re-powering of Wind Power Project (Clause - 28):**

Re-powering should also include converting the plants into wind based **hybrid** renewable energy project. Further, a number of such sites should be identified for competitive bidding of power generated through such repowered wind/hybrid energy plants.

“(28.1 (b)) *In case of power being procured by Distribution Licensee through existing PPA, the energy generated corresponding to average of last three year’s generation prior to re-powering would continue to be procured on the terms of PPA in-force and remaining additional generation may be purchased by Distribution Licensee at a tariff discovered through competitive bidding **for wind/wind-based hybrid energy plants** in the State at the time of commissioning of the re-powering project.*” (Additional text identified by bold and underlined)

**CER Increase of CUF for Solar PV Power Projects (Clause - 30.1):**

The proposed normative CUF of 20% should be increased as Rajasthan is a solar rich state and it should better benchmarks for the sector. Further, improvement in technology and cost reduction should improve CUF of new solar plants. CERC (Terms and Conditions for Tariff determination from RE Sources) Regulation, 2020, which is applicable nationally considers min CUF of 21% for solar PV Power Projects.

**CER Auxiliary consumption for Solar PV Power Projects (Clause - 32.1):**

Auxiliary consumption should be less than 0.75% and it should not count the conversion losses of the inverter. It should only account the amount of energy used for running the auxiliary equipment where the energy produced is actually being consumed.

**CER Determination of PLF:**

The following text in the identified clauses (in parentheses) should be modified by replacing “**fixed charges**” with “**fixed components of single part tariff**”.

“The Plant Load Factor (PLF) for determining the **fixed charges** shall be 90%”( **Clause - 48.1**). “The Plant Load Factor (PLF) for determining the **fixed charges** shall be 85%”. (**Clause - 55.1**). “The Plant Load Factor (PLF) for determining the **fixed charges** shall be 53%” (**Clause - 66.1**).

**CER Use of Solar Power in existing biomass power projects based on Rankine cycle technology (Clause - 44.2):**

Provision for rooftop solar power up to 15% of the rated capacity of the biomass plant may be permitted, as this would replace use of fossil fuel in such plants. This would also help attract investment for development of capacity for solar energy generation.

**CER CUF for Renewable Hybrid Energy Projects (Clause - 80.1):**

Draft regulation (80.1) provides for min CUF of 30% at the inter-connection point. It is not clear if this stipulation is for the purpose of qualifying the renewable hybrid projects or for the calculation of tariff, or both.

In case of hybrid plants based on Biomass, Biogas and Biomass Gasifier based power plants, which have comparatively much higher CUF, a higher level of min CUF should be specified separately for technical qualification for such hybrid energy plants as well as for calculation of tariff thereof.

**CER Definition of Renewable Hybrid Energy Project (Clause - 4(g)):**

The present definition of hybrid plants specifying “capacity share of one technology with respect to the other technology” should be replaced with “capacity share of one technology with respect to total capacity of the hybrid energy plant”

**CER Determination of O & M for Renewable Energy with Hybrid Energy Project (Clause - 79.1):**

Basis of market trends for O & M is should be clearly defined. It should be the rated average of constituent’s renewable energy technologies with appropriate reduction to account for efficiency gains due to the presence of multiple technologies due to some of the cost energy in O&M across the renewable technologies being used.

**CER Treatment of Levellized Tariff (Clause - 82.1):**

Levellised tariff represent a discounted present value of average tariff for each year of the contract in future. It should be clarified if the applicable levellized tariff will remain fixed or to be allowed to be escalated. In that case escalation factor to be used should also be identified.

**CER Determination of O & M for Renewable Energy with Storage Project (Clause - 86.1):**

It would be difficult to determine O & M on basis of ‘prevailing market trends’ due to the information asymmetry with respect to the O & M costs. This information is not available in the public domain and is generally shared between the owner of the plant and O & M operator. An alternate approach to benchmark such costs may be considered.

**CER Storage of Energy:** It should be clarified if such projects can only store energy produced from the renewable energy project itself or can arbitrage on value of energy across different times of the day(s). Further, storage of energy should be technology agnostic. Further, framework for monitoring of energy stored and utilisation thereof should be defined. Adoption of storage technology should be on the basis of value it brings to the stable operation of the grid.

- CER** **Rated Capacity of Energy Storage System (ESS) (Clause - 84.1):** In case the capacity of storage technology is more than half of the energy produced by the RE project, would the investor be allowed to harness the additional capacity at its own cost but to its own benefit? Since, part of the capacity now can be used for the unregulated business, cost apportionment (taking into account economies of scale) amongst regulated and unregulated business need to be considered to avoid cross subsidisation across the two kinds of businesses. Again, framework for monitoring of energy stored and utilisation thereof becomes important, and should be defined.
- CER** **Reduction of Banking Charge (Clause - 93.1):** DISCOMs' concern for the value of banked and drawn power has been addressed adequately by implementing ToD based drawl against banking of energy. Given the reduction in risk exposure of DISCOMs, banking charges may be reduced from the current levels. Despatchable RE (excluding solar and wind) may be subjected to the deviation mechanism applicable to conventional plants once such banking charges are lowered.