



## **Rajasthan Electricity Regulatory Commission**

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### **PUBLIC NOTICE**

In exercise of powers conferred under Section 86(1)(e) read with Section 181 of the Electricity Act, 2003, and all other provisions enabling it in this behalf, the Rajasthan Electricity Regulatory Commission having framed the Draft Regulations, "RERC (Terms and Conditions for Determination of Tariff for Renewable Energy Sources – Wind and Solar Energy) (First Amendment) Regulations, 2014" alongwith Explanatory Memorandum, invites suggestions/comments from the interested person before finalizing it.

Persons desirous of offering suggestions or comments in the matter may do so in five copies, so as to reach this office by **15.12.2014** with copies of supporting details. The suggestions/comments may also be sent to the Commission through email at [rercjpr@yahoo.co.in](mailto:rercjpr@yahoo.co.in). The draft regulations along with explanatory memorandum are available with the Receiving Officer of the Commission and can be obtained on payment of Rs. 50/- . The draft documents are also available on the Commission's website [www.rerc.rajasthan.gov.in](http://www.rerc.rajasthan.gov.in).

(G.K. Sharma)  
Secretary

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(Not to be published)

(G.K. Sharma)  
Secretary



# राजस्थान विद्युत विनियामक आयोग

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## सार्वजनिक सूचना

विद्युत अधिनियम, 2003 की धारा 86(1)(ई) सहपठित धारा 181 एवं अन्य सभी प्रावधान जो इस संदर्भ में इसे सामर्थ्य प्रदान करते हैं, के अंतर्गत राजस्थान विद्युत विनियामक आयोग द्वारा व्याख्यात्मक ज्ञापन के साथ बनाए गए रा.वि.वि.आ. (अक्षय ऊर्जा स्ट्रोतों – पवन तथा सौर ऊर्जा के लिए टैरिफ विनिर्धारण हेतु निबन्धन व शर्तें) (प्रथम संशोधन) विनियम, 2014, प्रारूप विनियमों को अंतिम रूप देने से पूर्व आयोग द्वारा सभी संबंधितों से सुझाव/ टिप्पणियां आमंत्रित की जाती है।

यदि कोई महानुभाव उक्त प्रारूप विनियमों के प्रावधानों पर सुझाव एवं टिप्पणी देना चाहे तो वे अपने सुझाव/ टिप्पणियां आयोग को पांच प्रतियों में दिनांक 15 दिसम्बर, 2014 तक सहायक दस्तावेजों की कॉपी सहित भेज सकते हैं। सुझाव एवं टिप्पणियां आयोग के ई-मेल [rercjpr@yahoo.co.in](mailto:rercjpr@yahoo.co.in) पर भी प्रेषित किये जा सकते हैं। प्रारूप विनियमों की प्रति व्याख्यात्मक ज्ञापन सहित आयोग के प्राप्तकर्ता अधिकारी के पास अवलोकनार्थ उपलब्ध है जो कि पचास रुपये मात्र के भुगतान पर प्राप्त की जा सकती है। प्रारूप दस्तावेज आयोग की बेबसाइट [www.rerc.rajasthan.gov.in](http://www.rerc.rajasthan.gov.in) पर भी उपलब्ध है।

(जी.के. शर्मा)  
सचिव

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# **RAJASTHAN ELECTRICITY REGULATORY COMMISSION**

## **DRAFT NOTIFICATION**

**JAIPUR, .... November, 2014**

No.RERC/Secy./Regulation - .....

In exercise of the powers conferred under Section 86(1)(e) read with Section 181 of the Electricity Act, 2003 and all provisions enabling it in this behalf, the Rajasthan Electricity Regulatory Commission proposes to make the following Regulations to amend Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Renewable Energy Sources-Wind and Solar Energy) Regulations, 2014, namely:

### **1. Short title and commencement**

- (1) These Regulations shall be called the "Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Renewable Energy Sources-Wind and Solar Energy) (First Amendment) Regulations, 2014."
- (2) These Regulations shall come into force from date of publication of the final Regulations in the Official Gazette.

### **2. Amendment in the regulation 9:**

The sub-regulation (2) of regulation 9 shall be substituted as under:

- "(2) For the purpose of levellised tariff computation, the discount factor equivalent to post tax weighted average cost of capital shall be considered."
3. Persons desirous of making suggestions/comments/objection on the proposed amendment may do so by 15.12.2014.

By Order of the Commission

Secretary

# **RAJASTHAN ELECTRICITY REGULATORY COMMISSION**

## **JAIPUR**

### **Explanatory Memorandum for the “Draft Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Renewable Energy Sources-Wind and Solar Energy) (First Amendment) Regulations, 2014.”**

#### **Explanatory Memorandum**

1. The Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Renewable Energy Sources-Wind and Solar Energy)Regulations,2014 (hereinafter referred to as “the RERC RE Tariff Regulations,2014”) provide for terms and conditions for determination of tariff for solar and wind power plants getting commissioned during the control period FY 2014-2019.
  
2. The regulation 9 of the RERC RE Tariff Regulations,2014 reads as under:

#### **“9. Tariff Design**

- (1) *The generic tariff shall be determined on levelised basis for the Tariff Period.*
  - (2) *For the purpose of levelised tariff computation, the latest available discount factor notified by CERC for the purpose of bid evaluation and payment at the time of issuance of the tariff order for the relevant year shall be considered.*
  - (3) *Levelisation shall be carried out for the Tariff Period of the Wind and Solar energy plants. “*
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3. In the generic tariff determination for wind and solar power plants for FY 2014-15, Commission has considered the discount rate notified by CERC for the purpose of bid evaluation and payment. However, CERC, vide its Order (in Petition No.002/SM/2014) dated 21.2.2014, has discontinued notification of discount rate for evaluation of the bids applicable for the six months commencing 1.4.2014 and onwards. During the proceedings for determination of generic tariff for wind, solar and Biomass, stakeholders also raised the same issue where Commission has decided to consider the matter separately.

4. The existing RERC RE Tariff Regulations, 2014 provide for determination of generic tariff on levelised basis. The process of levelisation involves the discounting of the yearly cash flows during the life cycle of the RE project using the discount rate. Therefore, the choice of discount rate is very critical in levelisation of the cash flows arising from cost of generation of each year of operation of the RE project.
  
5. In general, for a company, the discount rate can have two considerations. If a company sources its funds from external resources, the discount rate is regarded as the cost of capital. It is broadly the percentage rate of return that company must generate to compensate those outside investors. On the other hand, if a company uses internal funds, the discount rate is regarded as an opportunity cost. This opportunity cost, therefore, is the rate of return the company could earn in the best use of its money.
  
6. In general, Weighted Average Cost of Capital (WACC) measures the company's cost of capital as it is regarded as a logical discount rate (required rate of return) to use. It is also an accepted regulatory practice in the power sector to consider WACC as cost of capital.
  
7. As per the prevailing regulatory practice, broadly a company is financed by two main sources - equity and debt. WACC is the average of cost of these sources of financing, each of which is weighted by its respective use in the given situation. Therefore, WACC is calculated by multiplying the cost of each capital component by its proportional weight and then summing:

$$\begin{aligned}
 \text{WACC} &= \text{Cost of debt} + \text{cost of equity} \\
 &= D \times w_d + E \times w_e
 \end{aligned}$$

Where, D = Cost of debt

E = Cost of equity,

$w_d$ = Ratio of debt in the capital structure normally 70%

$w_e$  = Ratio of equity infusion in the capital structure normally,30%

8. WACC can be arrived in different ways. One way could be considering post tax cost of debt and equity. The cost of debt could be taken as equivalent to weighted average interest rate multiplied by the tax shield and cost of equity can be taken post tax rate of return on equity. Another way could be by considering pre-tax cost of debt and equity where cost of debt (weighted average interest rate) and rate of return on equity is considered on pre-tax basis. Thirdly, WACC may also be market determined. In this approach, the cost of debt could be arrived by providing suitable spread over the prevailing benchmark base rate. The cost of equity can be arrived by using capital asset pricing model (CAPM) model. CERC used this methodology to work out the discount rate for evaluation of bids for payment purpose. In this method:

The expected return= riskless return + beta x (expected market risk premium)

$$R = R_f + \beta \times (R_m - R_f)$$

The risk free return,  $R_f$  is considered as equivalent average of the returns of 10 year Gol securities over the past ten years. The market risk premium,  $(R_m - R_f)$  is arrived by subtracting risk free rate,  $R_f$  from the average rate of return on market portfolio,  $R_m$  over the past ten years. The beta value  $\beta$ , is computed based on the variance of rate of return data of Bombay Stock Exchange (BSE) indices for power sector from the returns of Sensex for the year.

9. CERC in their Statement of Objects and Reasons issued along with RE Tariff Regulations 2012 (6.02.2012) has observed that while taking the

investment decisions, the developer considers post tax WACC as the discount rate to post tax incremental cash flows to arrive at NPV of the project. Considering the same, CERC decided to retain the discount factor equivalent to post tax weighted average cost of capital (WACC).

10. The practice followed by different Electricity Regulatory Commissions (ERCs) across the country are as follows:

**Table 1: Discount rate considered by CERC/SERCs**

S.No.	ERC	Ref. of the Regulation/ Order	Discount rate	Remarks
1	CERC	15.05.2014	Post tax WACC	Cost of equity and debt on post tax basis
2	MERC	7.06.2014	Pre-tax WACC	Cost of equity and debt on pre tax basis
3	KERC	10.10.2013	Hybrid WACC	Cost of equity on post tax basis and cost of debt on pre tax basis
4	DERC	8.01.2013	Post Tax WACC	Cost of equity and debt on post tax basis
5	BERC	Consultative paper 30.09.2014	Post Tax WACC	Cost of equity and debt on post tax basis
6	J&K ERC	18.07.2014	Post Tax WACC	Cost of equity and debt on post tax basis

11. Commission in the recent past has been using the discount factor notified by CERC by applying the market related methodology for determination of discount factor for evaluation of bids for tariff under the competitive bidding guidelines of Govt. of India. As mentioned earlier, CERC has now discontinued the notification of discount factor for evaluation of bids for tariff under the competitive bidding guidelines. Further, it is also noted that market based methodology involves handling of huge data component. CERC and most of SERCs have also adopted methodology of considering discount rate equivalent to WACC based on cost of equity and debt equivalent to their respective benchmark rates in determination of levellised tariff.

12. It is observed that most of SERCs have also adopted the discount rate equivalent to post tax weighted average cost of capital and a developer considers this rate as the discount rate to post tax incremental cash flows to arrive at NPV of the project. In view of this, Commission considers it appropriate to adopt the methodology of CERC of considering discount rate equivalent to post tax weighted average cost of capital (WACC). Accordingly, the amendment in sub-regulation (2) of regulation 9 of the RERC RE Tariff Regulations,2014 is proposed as under:

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

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