

PUNJAB STATE ELECTRICITY REGULATORY COMMISSION

Determination of the tariff for requisition of green energy under the Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2022

Explanatory Memorandum

1. Background:

In exercise of the powers conferred by sub-section (1) read with clause (z) of sub-section (2) of section 176 of the Electricity Act, 2003 (Act 36 of 2003), the Central Government has notified the Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2022 vide Notification dated 6th June, 2022. Subsequently, an amendment, namely the Electricity (Promoting Renewable Energy through Green Energy Open Access) Amendment Rules, 2023 has been also notified vide notification dated 27th January, 2023; substituting the word “Any entity” in Rule 4(2) (C) (a) with “Any consumer”. Rule 4(2) (C) now reads as under:

“4(2) (C) By requisition from distribution licensee:-

- (a) Any consumer may elect to purchase green energy either upto a certain percentage of the consumption or its entire consumption and they may place a requisition for this with their distribution licensee, which shall procure such quantity of green energy and supply it and the consumer shall have the flexibility to give separate requisition for solar and non-solar;*
- (b) The consumer may purchase on a voluntary basis, more renewable energy, than he is obligated to do and for ease of implementation, this may be in steps of Twenty five per cent and going upto Hundred per cent;*
- (c) The tariff for the green energy shall be determined separately by the Appropriate Commission, which shall comprise of the average pooled power purchase cost of the renewable energy, cross-subsidy charges if any, and service charges covering the prudent cost of the distribution licensee for providing the green energy;*
- (d) Any requisition for green energy from a distribution licensee shall be for a minimum period of one year;*
- (e) The quantum of green energy shall be pre-specified for at least one year;*

- (f) *The green energy purchased from distribution licensee or from Renewable Energy sources other than distribution licensee in excess of Renewable Purchase Obligation of obligated entity shall be counted towards Renewable Purchase Obligation compliance of the distribution licensee;*
- (g) *The Accounting of renewable energy supplied at distribution licensee level shall be on a monthly basis;”*

In view of above, in addition to the normal retail tariff, the Commission is also required to determine the tariff for supply of green energy (in place of normal mix energy) to the consumers opting for same under said Rules.

2. Methodology for determination of the green power tariff:

In order to formulate the methodology for determination of green power tariff, the Commission directed the State distribution licensee PSPCL to submit its proposal for consideration of the Commission. In compliance to thereof, PSPCL has submitted its proposal **(Annexure-A)** vide Memo. No. 390/ARR/Dy.CAO/265 dated 24.03.2023. A suggestion regarding the same was also made by one of the member in the State Advisory Committee (SAC) Meeting held on 16.02.2023. In the meantime, staff of the Commission also examined the methodologies being followed by the other State Commissions. The same are discussed below:

a) PSPCL's Proposal:

PSPCL has submitted/proposed as under.

“As per Clause 4(2)(C)(c) of the Rules, the component for green tariff shall include average pooled power purchase cost of renewable energy, cross-subsidy charges and service charges covering prudent cost of distribution licensee for providing green energy.

Since, PSPCL will be providing such green energy to its consumer from the tied up sources, its RPO obligation to that extent will get reduced. To cover up the shortfall in its RPO obligation, PSPCL will have to resort to purchase of Renewable Energy Certificates (REC).

It is submitted that the market price of RECs (solar and non-solar) discovered from December 2022 till February 2023 is Rs. 1/unit + applicable taxes.

Thus, the premium of Rs 1.15 per unit may be recovered from the consumers who opt for Green Energy. In addition to this, the administrative cost at the rate of 10 percent of the premium may be charged for procuring, billing and accounting of such power.

In view of above, it is proposed that “green energy tariff” may be charged from the consumers who opt for green energy at the rate of Rs. 1.27/unit for Solar as well as non-Solar energy, over and above the normal tariff applicable for the respective consumer category to which such consumer belongs.”

b) Suggestion made in the State Advisory Committee (SAC) Meeting:

Dr. Harish Anand, member of the SAC, has suggested as under:

- (i) It is clear that such green tariff could not be less than the average tariff applicable to that class of consumers seeking green tariff and consumer has to pay a premium for the same. It is also clear from the formula given in the PSERC Regulations that there is scope for the Commission to dovetail the premium by factoring reasonable cross subsidy, if any, and the prudent distribution system charges. However, the same is already inbuilt in the average tariff fixed for that class of consumer in the Tariff order.
- (ii) That, all consumers may not require the REC as having no Renewable Power Obligation and no intent to have carbon trading benefits. Their requirement is only certificate from the Discom that power supplied to them is green power. Thus, with supply of RE power, the Discom will also save on RPO and related REC cost if same are not claimed by the consumer, which should be built into while fixing the premium. The present market cost of the REC translates to about Rs. One /unit of electricity (Rs 1000/REC of 1000 Kwh). Therefore, two premium amounts be worked out; one for those who do not need REC and second for those who need REC. The price of 2nd be higher than the first one.
- (iii) Based on the average RE power cost, it is suggested that a reserve premium of 10-20 paisa may be fixed for making available the renewable power to those seeking green power certificate without REC benefits on auction basis.

c) Methodology followed by the other State Commissions:

Some of the other State Commissions i.e MERC, MPERC, UPERC and Telangana are already determining the Green energy Tariff for some category of consumers, even before the notification of said Rules, based mainly on the following methodology;

- i) The amount of energy consumed by consumer remains the same and only source of such energy is being changed to 100% RE sources, thus quantum of energy flow remains unchanged. However, since the Distribution Licensees would have to incur additional expenses for arranging RE for such consumers, the same need to be recovered from them without burdening other consumers.
- ii) As such, consumers who opt for Green Energy should bear the additional power purchase cost of Renewable Energy sources over and above the normal tariff approved for such consumers. However, no administrative cost is considered as power procurement and billing to consumer is normal activity of any Distribution Licensee which it has to undertake irrespective of consumer opting for 100% of RE power or otherwise.
- iii) Accordingly, the Green Power Tariff is worked out as the difference between pooled power purchase cost of non-conventional and conventional sources of energy (only variable cost) in the State.
- iv) Also, as the distribution licensee would be able to use such power consumed by consumers towards fulfilment of its RPO target, certain benefit of the same needs to be passed on to concerned consumers. Hence, the levy shall be only 50% of charge determined as Green Power Tariff.

Based on above methodology and considering the power purchase cost projected by PSPCL for FY 2023-24 in its ARR petition, the proposed Green Energy tariff for FY 2023-24, for consumers opting for same under the Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2022, works out as under:

Sr. No.	Particulars	Rs./Kwh		
		Solar (without Storage)	Non-Solar	Composite
I	II	III	IV	V
1	Pooled power purchase cost of RE Power at State periphery	4.19	4.73	4.39
2	Variable Cost of Coal/Gas plants	3.48		
3	Green Energy Tariff/Additional cost for supply of exclusive RE power at State periphery (1-2)	0.71	1.25	0.91
4	Green Energy Tariff applicable to consumers opting for transfer of the green attributes to the Distribution Licensee. (50% of 3)	0.36	0.63	0.46

Note:

This Green Energy Tariff shall be payable in addition to the regular retail Tariff approved by the Commission. Further:

- (i) *Since, it has been worked out on the basis of power procurement cost at the State periphery, levy of same at the consumer end shall be computed by grossing up with applicable voltage wise T&D losses, specified in the Tariff Order for intra-State open access consumers, depending upon the supply voltage of the respective consumer.*
- (ii) *Further, as solar power (without additional cost of battery storage) is available during the day time only, considering the trend of recently discovered tariffs (i.e. Rs. 9/kWh for with storage vis-à-vis Rs 3/kwh for without storage), an additional levy of Rs. 6/kWh shall also be applicable, to account for storage cost, in case solar power is requisitioned on RTC basis.*