

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Explanatory Memorandum for the “Draft Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Fifth Amendment) Regulations, 2015”

Explanatory Memorandum

1. INTRODUCTION

- 1.1. The Commission notified the CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 (hereinafter referred in as Principal REC Regulations) vide notification dated 14th January, 2010. As mentioned in the Statement of Reasons issued along with the Principal REC Regulations, the Commission had clarified that the REC mechanism is aimed at promoting additional investment in the renewable energy projects and to provide an alternative mode to the RE generators for recovery of their costs.
- 1.2. Subsequently, the Commission made three amendments in the Regulations (notifications dated 29.9.2010, 10.07.2013 and 30.12.2014) to provide clarity on applicability of the regulations to eligible entities and bring in certain checks and balances in the REC related process.
- 1.3. The REC trading on the power exchanges started during the month of March 2011. Ever since, the non-solar REC and solar REC trading sessions have been taking places regularly and which has successfully operationalized the REC mechanism in India.
- 1.4. The volume of the RECs available in the market has been increasing whereas the demand for RECs has remained low. This has resulted in REC trading at the floor price for the past few months and the RECs cleared have remained low. The same is shown in the figure 1 in the next page:

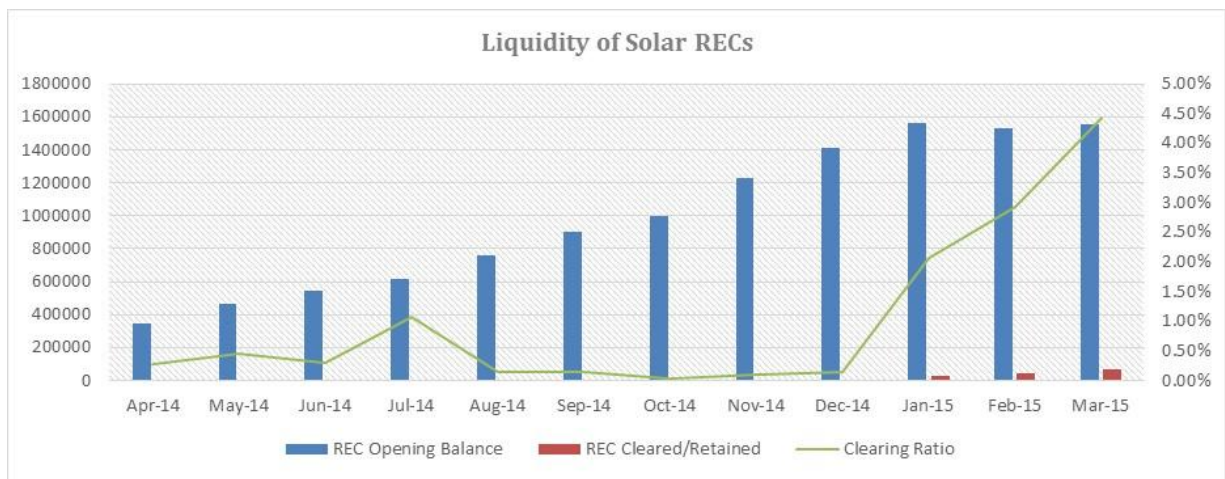
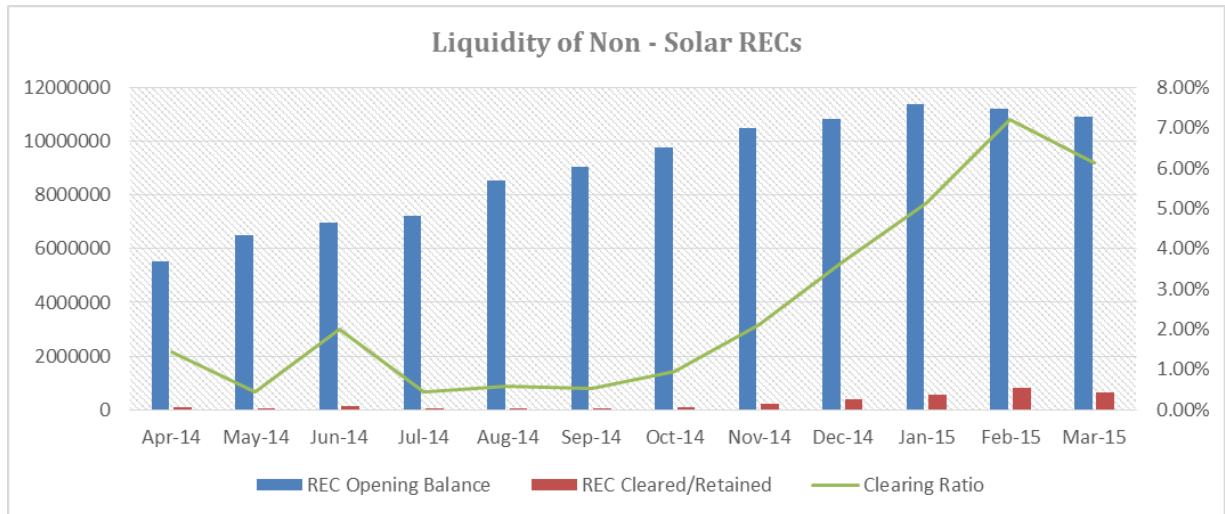


Figure 1: REC inventory status (Data Source: REC registry of India)

- 1.5. The figures above clearly indicate high level of unsold inventory of RECs in the market. Lack of RPO enforcement has been one of the major reasons for the high level of unsold REC inventory. However, it is also important to analyze the supply side aspects and understand whether the right beneficiaries (as was envisaged while introducing REC framework) are participating and able to compete in the REC market. It remains a fact that a major portion of the REC inventory is contributed by the CGPs. Also, developers under third party model are able to leverage the concessional benefits while participating under REC framework.
- 1.6. The Commission has, as part of the Statement of Reasons of Third Amendment REC Regulation 2014, directed the staff to examine the following issues :

- i. Review eligibility of issuance of Certificates to RE based Captive Generating Plant (CGP)
 - ii. Review eligibility of issuance of Certificates to the renewable energy generators selling electricity component to third party through open access
- 1.7. The above issues, along with the issue related to eligibility of cogeneration based RE projects are proposed to be addressed through the present amendment as per the details below :

2. Eligibility of issuance of Certificates to eligible RE based Captive Generating Plant (CGP)

- 2.1. The Commission, as part of the Statement of Reasons of Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Third Amendment) 2014, has observed the following in regard to eligibility of CGP under REC framework:

Para 5.2 “....Several stakeholders have commented on the proposal of the Commission to the concept of multiplier for REC projects based on captive consumption. The comments vary depending upon the interests the stakeholders represent. There are, however, prevailing views that the captive consumption from a CGP is already adequately compensated in terms of saving on the tariff because of less procurement of power from the distribution companies. Generally, the CGPs are either commercial or industrial consumers and as such, save equivalent to the applicable tariff for such consumer categories. When compared to the sale rate for electricity component at APPC, this compensation is already on the higher side. This makes a case for reviewing the provision relating to eligibility of CGP for REC.

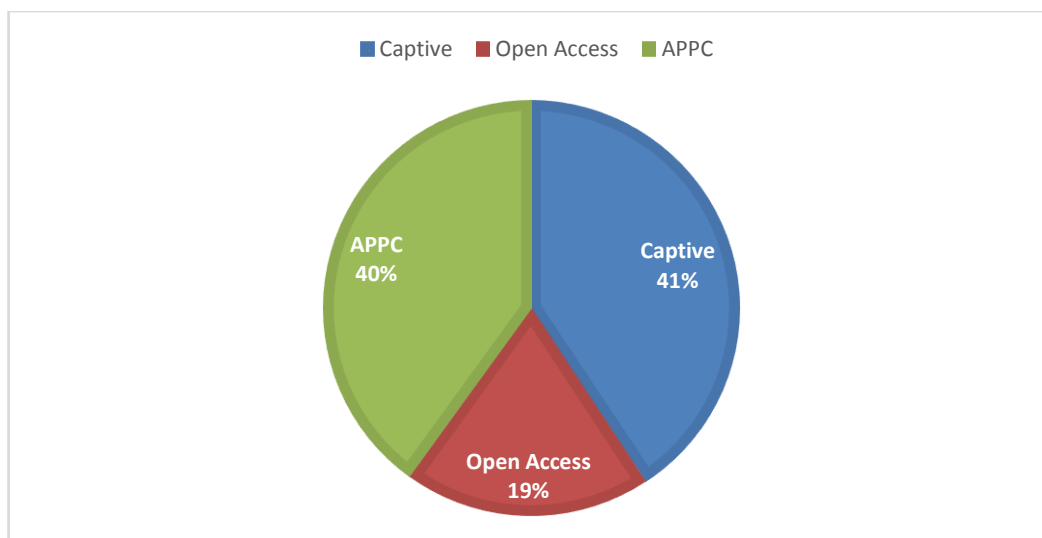
In fact, it was on this count that the concept of reduced multiplier was proposed by the Commission for CGP. However, given the various aspects brought out by the stakeholders and with due regard to the fact that the CGPs are already adequately compensated for the electricity component, the Commission is of the view that the CGPs be disallowed from participating in the REC Scheme.

It would be pertinent to mention that the CGPs were extended the benefit of REC at the initial stage of introduction of REC framework. The argument extended was that they are also substituting the conventional power. Another reason why the CGPs were brought under REC fold was to create liquidity in the REC market at its infancy. Even today, it remains a fact that a CGP based on renewable sources does substitute conventional power, but the Commission cannot ignore the fact that they are already being compensated for such substitution. The compensation becomes all the more remunerative with increasing tariff for consumer categories like commercial and industrial....”

- 2.2. The issue of higher realization by sale/consumption of electricity under CGP route has been raised by different stakeholders earlier also. For example, the Statement of Reasons for Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Second Amendment) Regulations, 2013 has detailed some of the concerns raised by stakeholders:

Para 16.10 “Regarding, CGP, the KERC submitted that such plants are set up by industrial and other large consumers including bagasse based sugar factories to meet their own need of electricity and sale of surplus power generated in their units. Self-consumption by such units being replacement of the consumption of power from distribution utilities at retail tariff applicable to them and cost of generation is usually lower than utility’s retail tariff applicable to them. It is therefore not justified that such units get the additional benefit of the value of RECs for the power consumed by them out of their own generation. It is further submitted that the proposed amendments relating to CGP if notified, will make it more difficult for Forum of Regulators (FOR) to take-up such a review in the near future. (KERC)”

- 2.3. As on 01May 2015, capacity of around 4,780 MW has been registered under the REC framework. Based on the inputs of state agencies and Central Agency, FOR has collated information from states aggregating to this capacities based on the type of contractual route (APPC/OA/CGP) adopted by RE generator.
- 2.4. The figure on the next page shows the breakup of projects registered (4,180 MW) under APPC route, open access and captive route.



Data Source: REC Registry of India

2.5. The CGP capacity accounts for the highest share amongst the total capacity registered under REC framework. The state wise break-up of capacity operating under different routes is detailed in the table below :

| Sr. No. | State | Total Capacity (MW) | APPC Capacity (MW) | CGP Capacity (MW) | OA Capacity (MW) |
|---------|----------------------------|---------------------|--------------------|-------------------|------------------|
| 1 | Andhra Pradesh | 166.27 | 124 | 7.79 | 34.48 |
| 2 | Bihar | 16 | 0 | 16 | - |
| 3 | Chhattisgarh | 73.1 | 3.1 | 70 | - |
| 4 | Delhi | 2.14 | 0 | 2.14 | - |
| 5 | Gujarat | 373.4 | 265.15 | 75.05 | 33.2 |
| 6 | Haryana | 10.06 | 0 | 10.06 | - |
| 7 | Himachal Pradesh | 88.01 | 84.51 | - | 3.5 |
| 8 | Jammu and Kashmir(JKSPDCL) | 42.5 | 15 | 7.5 | 20 |
| 9 | Karnataka | 131.45 | 111.45 | 20 | - |
| 10 | Kerala | 23.2 | - | 23.2 | - |
| 11 | Madhya Pradesh | 155.24 | 22.47 | 10.7 | 122.07 |
| 12 | Maharashtra | 792.48 | 109.82 | 242.54 | 440.12 |
| 13 | Nagaland | 24 | 24 | - | - |
| 14 | Odisha | 32.4 | - | 32.4 | - |
| 15 | Punjab | 49.78 | - | 39 | 10.78 |
| 16 | Rajasthan | 298.32 | 284.57 | - | 13.75 |
| 17 | Tamil Nadu | 1145.82 | 564.31 | 454.46 | 127.05 |
| 18 | Uttar Pradesh | 684.13 | 41 | 643.13 | - |
| 19 | Uttarakhand | 71.8 | 24 | 47.8 | - |

| Sr. No. | State | Total Capacity (MW) | APPC Capacity (MW) | CGP Capacity (MW) | OA Capacity (MW) |
|---------|-------|---------------------|--------------------|-------------------|------------------|
| | Total | 4180.1 | 1673.38 | 1701.77 | 804.95 |

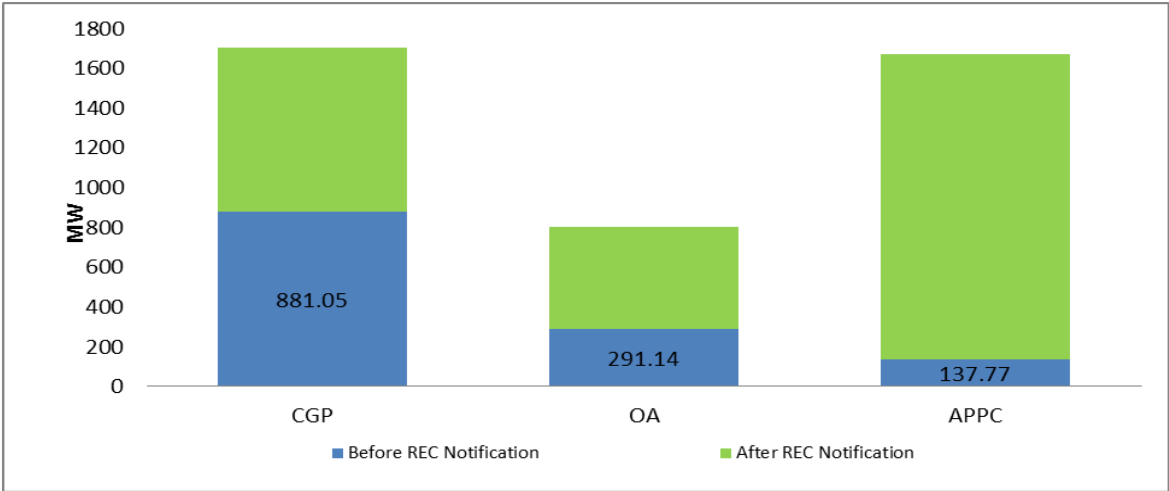
Data Source: REC Registry of India

- 2.6. The table above clearly indicates that states like Uttar Pradesh, Maharashtra, Uttarakhand, Punjab, Odisha, Kerala, Haryana, Chhattisgarh and Bihar have large capacity (in MW) under CGP route and maximum percentage of capacity registered under REC mechanism under CGP route.
- 2.7. One of the key reasons for the dominance of CGP route in the REC market can be attributed to the different pricing framework for electricity component under different routes – APPC, CGP and OA. Under APPC route, the RE generator is eligible only for APPC price determined by respective SERC which is expected to be much lower than the electricity reference price levels under CGP route.
- 2.8. The table below shows comparison of net electricity component under APPC and CGP, along with the RE tariff determined by the State Commission.

| State | APPC FY 2014 | APPC + non- solar REC* FY 2014 | CGP Net Electricity Component : [100% of Energy Charge - OA Charge] | | | State Tariff | | | |
|----------------|--------------------|---|---|----------|-----------------------------------|--------------|------|---------|-------|
| | | | Commercial | Industry | Average of Comm. & Industry | Wind | SHP | Biomass | Cogen |
| Andhra Pradesh | 3.28 | 4.78 | 7.76 | 4.36 | 6.06 | 4.7 | - | - | - |
| Gujarat | 2.94 | 4.44 | 3.30 | 3.15 | 3.23 | 4.15 | - | - | - |
| Haryana | 3.29 | 4.79 | 4.89 | 4.34 | 4.62 | - | - | 6.23 | 4.05 |
| HP | 2.17 | 3.67 | 3.33 | 3.33 | 3.33 | - | 3.26 | - | - |
| Karnataka | 3.14 | 4.64 | 5.72 | 3.72 | 4.72 | 4.2 | - | - | - |
| Maharashtra | 3.45 | 4.95 | 9.14 | 4.56 | 6.85 | 5.81 | - | - | - |
| MP | 2.53 | 4.03 | 4.39 | 3.79 | 4.09 | 5.92 | - | - | - |
| Punjab | 3.59 | 5.09 | 5.26 | 4.94 | 5.10 | - | 4.78 | 6.24 | 5.7 |
| Rajasthan | 3.13 | 4.63 | 5.16 | 3.81 | 4.49 | 5.73 | - | - | - |
| Tamil Nadu | 3.11 | 4.61 | 5.79 | 4.29 | 5.04 | 3.51 | - | - | - |

*Assuming REC Price at Rs. 1.50/kWh

- 2.9. The table on previous page clearly shows that the net electricity component realization (without REC) in some of the States like Andhra Pradesh, Maharashtra, Himachal Pradesh and Tamil Nadu for CGP route is higher than the tariff determined for major renewable energy resources in the State. It also indicates that the net electricity component for CGP(without REC benefit) is higher than APPC + REC in a number of States. Apart from this, the CGPs are also provided additional benefit in the form of Electricity Duty waiver. Besides, Electricity duty waiver, CGP used the power as input cost to its biomass product where, he makes additional benefit in the form of incremental profit.
- 2.10. Another reason for the dominance of CGP over the OA and APPC routes is the relatively lower risk borne by the CGP as compared to other routes. CGPs have no credit risk on the customer, no risk of early termination of PPA by the customer etc as the electricity generated is for self-consumption purpose. As per the accepted economic principle, the risk borne being lower by the CGP, the rewards should also be commensurate. This will ensure parity between APPC capacity and CGP capacity. The differential, if any between the two gets covered by the REC in case of APPC capacity.
- 2.11. Around 51% of the projects under the CGP route were commissioned before the first notification (14 January 2010) of the REC Regulation. These projects must have computed their financial viability without the REC benefit. The figure below shows the REC capacity based on year of commissioning before and after the REC notification under different routes.



Data Source: REC Registry of India

2.12. The main objective of introduction of REC framework was to encourage new investment in the RE sector. The current market already has high level of REC inventory and large portion of this inventory is contributed by CGPs. The table below provides details of the REC issued under CGP, APPC and OA routes :

| Type | No. of Projects | Capacity(MW) | No. of RECs Issued |
|--------------|------------------------|---------------------|---------------------------|
| CGP | 273 | 1702 | 8,269,494 |
| APPC | 358 | 1673 | 6,707,374 |
| OA | 268 | 805 | 3,279,793 |
| TOTAL | 899 | 4180 | 18,256,661 |

Data Source: REC Registry of India

2.13. The data presented clearly indicates that majority (~41%) of the projects registered under the REC framework belongs to CGP, and a large number (~ 51%) out of them are the CGPs set up prior to the introduction of the REC framework. Even in cases where CGPs have been set up after the introduction of REC Scheme, it is highly unlikely that such projects would have got financing based on the revenue from REC sales. Also, the higher level of revenue realization (at par with utility tariff) under CGPs necessitates the requirement to review the eligibility of CGPs for issuance of RECs.

2.14. Withdrawing the benefit of REC to the CGP would not amount to any reversal of policy or regulation as it will not impact on the investment made by the investors as it acts as input to the final product. The CGP projects are already being compensated for the substitution (at par with utility tariff) and this will increase further with the increase in utility tariff.

Proposal

2.15. Considering the above, it is proposed that A Captive Generating Plant (CGP) based on renewable energy sources and a renewable energy plant not fulfilling the conditions of CGP as prescribed in Electricity Rules, 2005 but having self consumption shall not be eligible for participating in the REC scheme for the energy generated from such plant to the extent of self-consumption.

2.16. Therefore the following amendment in the principal regulation is proposed:

Amendment to Regulation 5 of the Principal Regulations:

1. Second, third, fourth, fifth and sixth proviso including the explanation under sub-clause (c) of Clause (1) of Regulation 5 of the Principal Regulations shall be deleted.
2. A new clause shall be inserted after Clause (IA) as under:-

“(IB) A Captive Generating Plant (CGP) based on renewable energy sources and a renewable energy generating plant not fulfilling the conditions of CGP as prescribed in Electricity Rules, 2005 but having self consumption shall not be eligible for participating in the REC scheme for the energy generated from such plant to the extent of self-consumption.”

3. Eligibility of issuance of Certificates to the renewable energy generators selling electricity component to third party through open access

3.1. Another issue that needs to be reviewed is related to the eligibility of RE generators selling under third party arrangement for issuance of RECs. In this regard, the Commission, as part of Statement of Reasons of Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Third Amendment) 2014, has observed the following:

Para 5.2 “.....It has been argued that several projects selling electricity component through open access route have been set up after the introduction of REC framework. Such investment, especially those made in the solar segment have got financing based on the projected revenue stream on account of electricity sale as well as REC sale. Making changes to the present dispensation of 1 REC for 1 MWh would not only make such projects unviable but would also send a wrong signal for future investment.

Another aspect which has come to the fore is that reduction in the REC credit or for that matter withdrawal of REC benefit to such projects based on open access route would virtually leave only one choice for an investor, i.e., the option of selling electricity component only through APPC route. Some stakeholders have already expressed

apprehensions about “big brother” attitude of the distribution companies and their reluctance to pay for the electricity purchase to the RE generators. They have, therefore, argued that any attempt at restricting the choice of the investors in terms of investment would not only be violative of law but also be counter-productive to investment.

As regards the compensation to such projects selling electricity through open access route, it may vary depending upon the nature of RE technology and the consumer tariff prevailing in a particular State.

It is generally understood that any contract for sale of electricity component through open access route might not generally be on a long term basis and would also be subject to the market fluctuations and involve risks and returns of varying nature. This was one aspect which was noted by the Commission even at the time the REC framework was introduced.

The Commission believes that not many projects are likely to come up in the long term based on contract for sale of electricity component through open access route. Also, with due regard to the fact that the revenue/compensation by sale of electricity component might vary based on technology, consumer tariff prevailing in a state, it is felt that the existing provision relating to eligibility of such projects for REC be allowed to continue for the time being.....”

- 3.2. Open Access developers for their projects inherently take more risk than CGP projects. These projects take the risk of changes like increase in cross-subsidy charges, credit risk on the customer, risk of termination of PPA by the customer, risk of non- renewal of OA permission for extended periods of time etc.
- 3.3. APPC sale is a long term PPA as against OA sale, which may be short/medium term sale. Thus, in comparison to long term contract pricing vis-a-vis short term contract pricing, the risk premium of short term trade should not be less than that for the long term trade.

Issue of concessional charges for RE generator selling through OA

- 3.4. The RE generators selling electricity through Open Access and also availing concessional benefit are currently eligible for issuance of REC. The concessional benefits can be in the form of concessional wheeling or transmission charges, banking facility benefit or concessional cross subsidy surcharge.
- 3.5. REC framework is a market driven approach and emphasizes on encouraging competition without encouraging models benefitting from any concessional benefits, which have the potential to skew the market. The same approach was adopted while disallowing any form of concessional benefits for CGPs for participating in the REC framework.

Proposal

- 3.6. Accordingly, it is proposed that any renewable energy generating plant selling electricity through Open Access and availing the concessional benefits in the form of transmission or wheeling charges and/or the banking facility benefit or concessional cross subsidy charge shall be required to forego such benefits for the purpose of availing renewable energy certificate for energy generated.

Amendment to Regulation 5 of the Principal Regulations:

The following provisos shall be added after the first proviso under sub-clause (c) of Clause (1) of Regulation 5 of the Principal Regulations:

“Provided further that a renewable energy generator selling electricity component to third party through open access, shall be eligible for the entire energy generated from such plant for participating in the REC scheme subject to the condition that such generator has not availed or does not propose to avail any benefit in the form of concessional/promotional transmission or wheeling charges or banking facility benefit or concessional cross subsidy surcharge:

Provided also that if such a renewable energy generator forgoes on its own, the benefits of concessional/promotional transmission or wheeling charges or banking facility

benefit or concessional cross subsidy surcharge, it shall become eligible for participating in the REC scheme only after the date of forgoing such benefits:

Provided also that if any dispute arises as to whether a renewable energy generator has availed such concessional/promotional benefits, the same shall be referred to the Appropriate Commission for decision.

Explanation: For the purpose of this Regulation, the expression 'banking facility benefit' shall mean only such banking facility whereby any renewable energy generator gets the benefit of utilizing the banked energy at any time (including peak hours) even when it has injected into grid during off-peak hours."