

# RENEWABLE CAPACITY ADDITION THROUGH SALE OF GREEN ATTRIBUTES – THE VIRTUAL PPA MECHANISM

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## Background

The corporates are increasingly striving to buy power from renewable energy sources to meet the Environmental Social and Governance (ESG) obligations, which are considered necessary for attracting institutional investments and creating sustainable business model for the future. However, it is challenging for a corporate body to directly buy power from a renewable energy generator, given the load constraints, contractual and scheduling issues and the intermittency associated with renewable energy power. Therefore, while the corporates may be interested in investing in RE projects, they may find it unsuitable to absorb the renewable energy in their demand pattern. For example, corporate offices, data centres, continuous process industries like aluminium, smelters, etc. may not be able to absorb the intermittent RE power. In this backdrop, it is essential to evolve suitable business model, which can serve green attribute requirement of these corporates and at the same time, promote renewable energy capacity addition.

## The Model

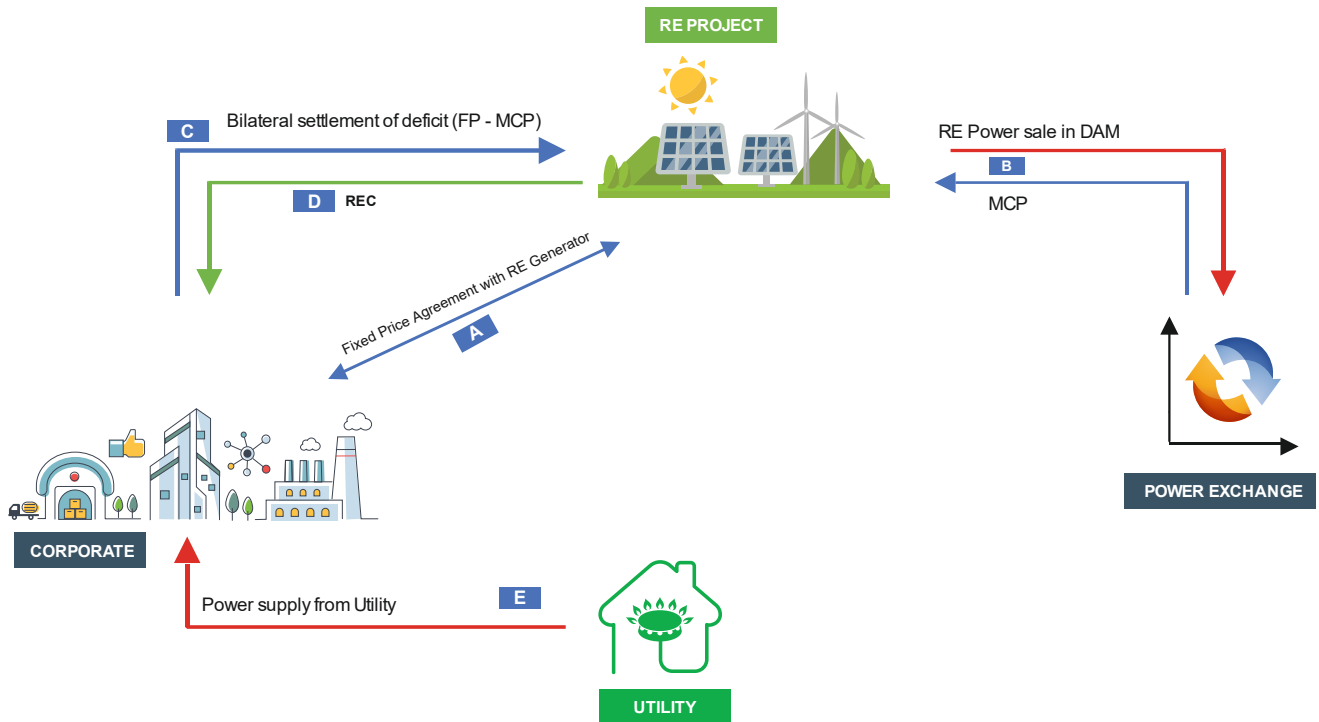
In the scenario as described above, a corporate may want to buy only green attributes of RE Generator and fulfil its ESG commitments. A corporate can enter into a commercial agreement with Renewable Energy (RE) generator under which the corporate would commit to pay for the renewable energy at the rate agreed in the PPA. However, for sale of power, the RE generator will be selling it as conventional power in Day-Ahead Market (DAM) or Real Time Market (RTM) at the Power Exchanges. For the sale of power through the Power Exchange, the generator will get paid as per the Market Clearing Price (MCP) of the Exchange. Further, as the RE generator sells power in the conventional DAM and RTM market, the RE seller will get the RECs for the energy sold by them based on the certification of the Power Exchange.

Any variation between the MCP and rate agreed in the PPA, will be on the account of the corporate who has signed the PPA i.e., if  $MCP < PPA$  price then the corporate will pay the difference to the Generator and vice versa. The RECs issued to the generator shall be transferred in the name of the corporate who has signed the PPA. This model is often referred to as the 'Virtual Power Purchase Agreement (VPPA)'<sup>1</sup> and is already being implemented at various states in US and other countries. This mechanism ensures that the cash flows for the RE generator as per the PPA to ensure the financial viability and at the same time, promotes RE capacity addition in India. The certainty of cash flows will enable the RE developer to raise finances for the project. This will also bring to the fore the latent demand for green attributes eventually promoting the RE power in the country. The corporate will be able to get the green attribute at competitive rates to meet the requirement of ESG company without going through the hassles of scheduling green power having large intermittency. As a result, this will attract investment and help in deepening the market.

<sup>1</sup><https://www.enelx.com/n-a/en/stories/energy-efficiency-management/practical-guide-renewable-energy-terms-what-are-ppas-virtual-ppas-and-recs>, [www.rmi.org/insight/choosing-offsite-renewable-ppas](http://www.rmi.org/insight/choosing-offsite-renewable-ppas)

## How Will the Model Work?

A schematic diagram depicting the flows in the suggested model is as below.



- The corporate will enter a fixed price (FP) long-term agreement with the renewable energy developer.
- The renewable energy developer will sell the power on the exchange (DAM or RTM) and realise a price i.e., MCP for the power sold. It will also get the Renewable Energy Certificate (REC) as it is selling power in the conventional market.
- In accordance with the agreement between the corporate and the renewable energy developer, any deficit in the cost recovery of the developer is made through the bilateral settlement. Any excess realisation from the market will be passed on to the corporate.
- The corporate will get the REC benefit of the RE power sold on the exchange. With these REC benefits, the corporate will be able to meet its green power commitment.
- The corporate will continue to meet its power requirement through distribution utilities.

## Regulatory Enablers Required to Implement the Model

In the proposed model the generator is selling power through Power Exchanges as conventional power without availing any concessions, hence generator is eligible for RECs under the current REC Regulations of CERC. However, transfer of RECs to third party is not possible in the existing REC framework. Thus, the following minor changes will be required in the regulatory framework and procedure to enable such transactions.

## Issuance of RECs to Third Party/Corporate for Retention

- In the proposed model, the RECs are required to be transferred to a corporate by the generator with whom the generator has signed the PPA.
- In the present regulatory framework, the transfer of RECs is possible either through trading at the Power Exchange or self-retention, therefore a framework is required to enable such third-party transfer of RECs. The RECs will be transferred from renewable generator to corporate entity on monthly basis and to enable such transfer of RECs to the third-party, a suitable provision needs to be incorporated in the CERC REC Regulations and REC issuance procedures with a rider that such issuance is subject to sale of power by eligible entity at DAM or RTM of Power Exchange and such RECs are to be considered as deemed to be extinguished and can-not be sold at Power Exchanges. Since these corporates are buying green attributes on voluntary basis, we may differentiate this from the existing REC mechanism, where RECs are generally purchased for compliance purpose and price is discovered through auctions, we may call them as Voluntary REC (vREC).

## Conclusion

The proposed mechanism for the issuance of vREC will accelerate investments in renewable energy capacities. The PPAs with corporates and other voluntary buyers like data centres, etc., will ensure payment security to the renewable energy generator. This will help grow another big segment of voluntary buyers of green power. The export-oriented manufacturing plants like steel, aluminium will also prefer meeting their sustainability goals and produce greener products, which have higher acceptability in developed, climate sensitive markets. European Union is considering applying carbon tax at European boundary on import of products with higher carbon emission inputs. Such manufacturing industries will favour buying green attributes through vREC.

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