Discussion paper on redesigning the Renewable Energy Certificate (REC) Mechanism

The energy mix in India is rapidly changing from fossil fuel dominance to increasing non-fossil fuel share. At the time of inception of REC Mechanism, Renewable Energy (RE) technologies viz. solar, wind, etc. faced limitations namely, high cost, absence of National Level Renewable Energy market, absence of expertise in the forecasting and scheduling, and issues related to large scale grid integration of Renewable. With an impetus on promoting RE, Pan-India market-based REC Mechanism was introduced to enable the buyers to meet their Renewable purchase obligations (RPO).

2. The scenario has changed over the years. The cost of solar power has reduced to around Rs 2 per unit, wind power is around Rs 3.50 per unit. The prices are even less than the variable charge of most of the coal based stations. Further, declining trend of the prices of solar and wind energy is to continue. Renewable Energy Management centres (REMCs) have been commissioned for better forecasting and scheduling. Power exchanges are in place for an alternate mechanism to sell and buy RE power through various products viz Day Ahed Market (DAM), Term Ahead Market (TAM), Green Term Ahead Market (GTAM), Real Time Market (RTM) etc., in addition to REC mechanism. The GDAM is also being developed. A number of new technologies are also emerging in the Renewable Space. These are Off-shore wind, Pumped Hydro power stations, Hydrogen etc, whose initial cost of generation is going to be high. Accordingly, a discussion paper on the requirement of redesigning the REC Mechanism has been prepared in order to align it with the emerging changed power scenario and to promote new renewable technology.

3. Key objectives:

(i) Contribution towards the green planet: Increasing the non-fossil fuel share in the electricity energy basket in order to meet the international commitment. Thus, there is a requirement to integrate more renewable energy in the electricity grid. Target: 175 GW by 2022 and 450 GW by 2030.

(ii) Be a leader in new technology to maintain the future energy security. Hence promote the new technology like offshore wind, Hydrogen, Pumped storage hydro plant (PSP) etc.

4. RE Sector: Evolution from promotion stage to growth stage

During the inception stage of promoting RE, the impetus was to compensate for the high cost of RE Technologies. However, in the present context, the thrust is to support the growth of the RE Generation. Further, it was mentioned that promotion of RE Power is pivotal for India to achieve its NDCs. In present scenario, maturity of technologies like solar PV etc., due to technology advancement, economies of scale and market competitiveness has been witnessed. On the other hand, to increase the penetration of the less mature and high cost RE technologies like Off-shore wind, Pumped Storage Hydro power Station, Hydrogen, etc., it may require larger support depending upon their relative maturity, development cost and associated risk. It is also observed that cost of power from conventional sources is on the rise due to increasing cost of fuel and the railway freight etc., whereas the cost of power from RE sources like Solar PV etc., is witnessing down trend.

5. Based on the above scenario, the following aspects for redesign of REC Mechanism are proposed to be considered:

5.1 Validity period of RECs; Floor & Forbearance Price

At present the validity period of RECs is of 1095 days (approx. 3 years) from the date of issuance though depending on situation, the validity period, from time to time, has been extended by CERC to avoid expiry of any REC(s).

CERC determines the floor and forbearance price for control period(s) specifying the effective period which, till date, has been revised 4 to 5 times for non-solar and solar RECs respectively. It is pertinent to mention that, on request, of the RE Generators, longer time period for the floor and forbearance price was provided in the second control period (1st April 2012 to 31st March 2017). However, due to drastic downward trend in tariff of solar power, the solar REC(s) prices were revised as they were becoming a deterrent for their off-take. Revised solar RECs, notified by CERC, were effective from 1st January 2015 to 31st March 2017 and a vintage multiplier of 2.66 was provided to solar projects which were registered under REC Mechanism prior to the former date (a copy of the floor and forbearance prices of the non-solar and solar prices notified by CERC is attached for reference).

The latest order of CERC notifying the floor and forbearance price, effective from 1st July 2020, is sub-judice and no trading session of RECs has been held from July 2020 onwards.

Following is proposed

(i) The REC validity period may be removed. Thus, the validity of REC would be perpetual ie till it is sold.

(ii) As RECs are perpetually valid then the floor and forbearance prices are not required to be specified as RECs holders would have the complete freedom to decide the timings to sell.

(iii) CERC will be required to have monitoring and the surveillance mechanism to ensure that there is no hording of the RECs and creation of artificial price rise in the REC market. CERC may intervene if such case of malpractices is observed in the REC trading.

5.2 Period for which the RECs are to be issued to RE generators:

The RE generator who are eligible for REC, will be eligible for issuance of RECs for 15 years from the date of commissioning of the projects. The existing RE project that are eligible for REC would continue to get RECs for 25 years.

5.3 Promotion of new and high cost technologies in RE and the provision of multiplier for issuance of RECs

(i) The concept of multiplier can be introduced, under which less mature RE technologies can be promoted over other matured renewable technologies.

(ii) The concept of negative list and sunset clause may also be considered for various technologies depending upon their maturity level.

(iii) Any RE technologies which need to be promoted may be identified say 2 years in advance. For such RE projects at least 10 years policy visibility would be provided to attract investments and promotion of such technologies in the renewable energy.

(iv) Multiplier

A technology multiplier can be introduced for promotion of new and high priced RE technologies, which can be allocated in various baskets specific to technologies depending on maturity. The multiplier would also take care of vintage depending on the date of commissioning of the project. Depending on the type of technology to be encouraged or technology which have already achieved maturity, the number of RECs to be given in the manner as indicated below:

Technology-A	Technology-B	Technology-C
Multiplier-3X*	Multiplier-2X	Multiplier-1X

Less mature Technologies to Mature technologies

*X denotes one MWh

For example, Technology-A which is at a nascent stage can be issued 3 RECs for every 1 MWh energy sale, which is subjecting to 3X multiplier. (Considering the prevalent costs). As the adoption of the technology progresses along the maturity path, the same can gradually be reduced. Also, subject to the policy thrust to be given to specific RE technology, the multiplier can also be varied for specific RE Technology.

Further, the existing RE technologies which are reaching maturity stage can be given a relative evaluation of a multiplier or can be included in the negative list or be provided with sunset clause. However, these conditions would be applicable only to the new RE projects. The RE projects which have already been commissioned shall not be subjected to these conditions.

5.4 Incentivising Obligated Entities for procurement of RE Power beyond RPO

DISCOMs are preferring to move away from PPAs with RE developers and are meeting their balance RPO compliance partly through purchase from Green Term Ahead market and REC purchase. Following opinions are under consideration:

1) Option 1: Only DISCOMs to be issued RECs for quantum beyond RPO compliance, as per the prevalent practice, because:

   - DISCOMs do not self-consume electricity and buy electricity including RE power for distributing to the consumers. Thus taking the risk of accomplishing the balancing role and also bearing the socialised cost of transmission charges.

- Discoms takes the entire risk of purchase of RE power. It may or may not be 100 % consumed as consumption depends upon the demand of the consumers. In such cases, Discoms have to pay the liability as per PPA and also pay compensation in case of curtailment etc.
- Open access consumers and the CPP self-consume electricity and the choice to buy such Renewable electricity is for their own consumption. Such consumers buy RE power beyond the RPO if it is cost effective to them as compared to the other sources of energy. Thus, they donot bear any risk. Hence the additional benefit of REC need not be given.

Or,

2) Option 2: RECs can be issued to the obligated entities which purchase RE Power beyond their RPO compliance, similar to the provisions for the existing DISCOMs. This will incentivise the Obligated Entities to not only achieve RPO but also go beyond the RPO level. This would facilitate and promote REC market as well.
3) Stakeholders views are solicited on the above options

5.5 No REC to be issued to the beneficiary of the concessional charges or waiver of any other charges

As a general principle, One who gets any concession i.e. waiver of transmission charges or preferential banking charges etc should not be given the REC.

Any waiver or any preferential or concessional charges, if it is being availed by the seller, then REC should not be given. The FOR may define concessional charges for denying the RECs

5.6 The role of trader can be enhanced in the REC trading which will bring in two key advantages i.e. it will give long-term visibility to the buyers of the REC and they can easily fulfil the RPO. Further, the small buyers can bank on the traders for buying REC as an ease of purchase. This will ensure even the small buyers who finds difficulty in trading in REC market will be able to fulfil his RPO.

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Trend of Floor and Forbearance Price of Solar & Non-Solar RECs under REC Mechanism

Non-solar REC

Period	01.06.2010 – 31.03.2012	01.04.2012 – 31.03.2017	01.04.2017 – 30.06.2020	w.e.f. 01.07.2020 (sub judice)
Forbearance Price (₹/MWh)	3,900	3,300	3,000	1,000
Floor Price (₹/MWh)	1,500	1,500	1,000	0

Solar RECs

Period	01.06.2010 – 31.03.2012	01.04.2012 – 31.12.2014	01.01.2015 – 31.03.2017	01.04.2017 – 30.06.2020	w.e.f. 01.07.2020 (sub judice)
Forbearance Price (₹/MWh)	17,000	13,400	5,800	2,400	1,000
Floor Price (₹/MWh)	12,000	9,300	3,500	1,000	0

*Vintage multiplier factor of 2.66 for Solar Generators which were registered prior to January 1, 2015