

Renewable Energy Certificates

A REC (Renewable Energy Certificate) is a type of Energy Attribute Certificate (EAC) that represents the environmental attributes of the generation of a one-megawatt hour (MWh) of energy produced by renewable sources.

Globally, for the countries outside of Europe and North America, International Renewable Energy Certificates (I-RECs) allow companies to credibly document renewable energy consumption. This global standard is a recognised tool to report greenhouse gas emissions reduction in a growing number of countries in Asia, Africa, and Latin America.

I-REC allows a company to-

- Document consumption of renewables and reliably claim GHG emissions reductions.
- Trace the origin of electricity and choose between technologies, such as solar, wind, hydro, geothermal or bioenergy.
- Source renewable electricity outside of Europe and North America.
- Comply with corporate environmental standards, such as the Greenhouse Gas Protocol.
- Follow national regulations on renewable energy and improve your sustainability rating.
- Contribute towards the UN Sustainable Development Goals (SDGs).

In Indian context, pan-India market-based Renewable Energy Certificate (REC) Mechanism was introduced in the year 2010 under the Electricity Act, 2003 and the National Tariff Policy, 2006 to address the mismatch between the availability of resources and the requirement of the obligated entities to fulfil their Renewable Purchase Obligation (RPO).

As of 2022, the Central Electricity Regulatory Commission (CERC) has implemented regulations for the REC mechanism. These regulations supersede the CERC (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2010, which earlier governed the pan-India market-based Renewable Energy Certificates mechanism in India.

As per REC Regulation 2022, technology multiplier assigned to RE projects which are commissioned after 05.12.2022 are as under:

Renewable Energy Technologies	Certificate Multiplier
On-shore wind and solar	1
Hydro	1.5
Municipal Solid Waste (MSW) and non-fossil fuel-based cogeneration	2
Biomass and Biofuel	2.5

The eligible entity whose RE source technology is not mentioned in the above table will get 1 REC for 1MWh of electricity generated.

The following entities are eligible for RECs-

- Renewable energy generating stations,
- Captive generating stations based on renewable energy sources,
- Distribution licensees, and
- Open access consumers.

Revenue for a RE generator under REC scheme includes revenue from sale of electricity component of RE generation and the revenue from the sale of environmental attributes in the form of RECs.

RECs are issued to eligible RE generators, distribution licensee, open access consumer & CGP based on RE. The REC issued shall remain valid until they are redeemed.

(For more such information relating to RECs in India, please refer the Frequently Asked Questions provided by Renewable Energy Certificate Registry of India at: <https://www.recregistryindia.nic.in/index.php/publics/faqs>)

Having discussed about the onset of RECs in India, assignment of technology multiplier to RE projects and other aspects, it is of paramount significance to know about the power exchanges dealing in RECs, its forms, participants, procedure to participate, trading mechanism and recent developments in trading scenario of RECs in India.

a) Power Exchanges dealing in RECs: The two power exchanges in India dealing with RECs are as under:

- Indian Energy Exchange (IEX):** It is India's premier energy marketplace, providing a nationwide automated trading platform for the physical delivery of electricity, renewables, and certificates. More recently, IEX has pioneered cross border electricity trade expanding its power market beyond India in an endeavour to create an integrated South Asian Power Market. IEX is approved and regulated by the Central Electricity Regulatory Commission and has been operating since 27 June 2008 and is a publicly listed company with NSE and BSE since October 2017.
- Power Exchange India Limited (PXIL):** It is India's first institutionally promoted power exchange, has been providing innovative and credible solutions since 2008, and has revolutionized the way Indian power markets operate. PXIL's unique combination of local insights and global perspectives has helped its members make better informed business and investment decisions, and has improved the overall efficiency of power markets in India by accurately and seamlessly connecting buyers and sellers.

b) Forms of RECs: There are two forms of RECs- Solar certificates for generation through solar and Non-solar certificates for generation through all renewable sources other than solar.

- c) **Participants of RECs:** The participants of RECs are as under:
- Eligible Entity-** Those who generate power from renewable sources approved by Ministry of New and Renewable Energy (MNRE). (For more details, please refer to http://www.ixindia.com/products/rec/sell_rec.aspx)
 - Obligated Entity:** Those who have obligation to purchase some percentage of their consumption as mentioned in their respective state REC regulations either from renewable power or the renewable energy certificate. The CERC – REC Regulations, recognise the obligated entities as: distribution utility, open access consumer and captive power consumer. (For more details, please refer to http://www.ixindia.com/products/rec/buy_rec.aspx)
 - Voluntary Entity-** Those who purchase RECs voluntarily to offset the carbon footprints of their business activities or for CSR activities. (For details, please refer to <http://www.recregistryindia.in/>)
- d) **Procedure to participate:** The Central Electricity Regulatory Commission (CERC) approved the procedures to participate in REC Mechanism in its regulation dated 14th January, 2010. The procedure approved and notified by the regulator broadly involves four parts: procedure for accreditation through State Nodal Agency; Procedure for Registration through Central Agency NLDC; Procedure for Issuance through Central Agency (NLDC) and procedure for trading and redemption through power exchanges.
- e) **Trading mechanism:** The price of RECs is determined by market demand and contained between the ‘floor price’ (minimum price) and ‘forbearance price’ (maximum price) specified by the Central Electricity Regulatory Commission (CERC).

REC trading is done through a closed double-sided auction between 13:00 Hrs to 15:00 Hrs on last Wednesday of every month. (For complete trade cycle visit: http://www.ixindia.com/products/rec/rec_timeline.aspx)

- f) **Recent Developments in REC Trading:** Recently, the Central Electricity Regulatory Commission (CERC) has granted permission to modify renewable energy certificate (REC) agreements, resulting in alterations to the trading dynamics at both the Indian Energy Exchange and Power Exchange India Limited. This adjustment is intended to align REC contracts with the updated regulations for renewable energy certificates established in 2022.

The commission has instructed the Grid Controller of India to arrange two renewable energy certificate trading sessions every month, specifically on the second and last Wednesday of each month, for the next six months, commencing from October 2023.

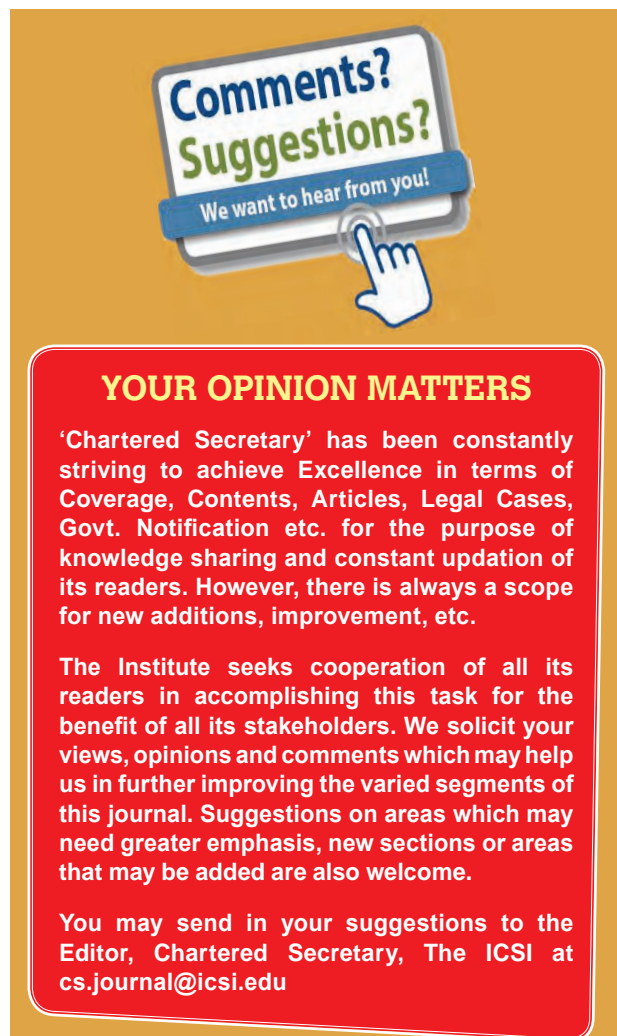
The Commission has clarified that energy generated from renewable sources and sold by entities registered under the REC system in traditional power exchange contracts

is eligible for REC issuance. While, power sold in the clean energy market segment at power exchanges will not qualify for REC issuance. Furthermore, the Commission opted to retain the existing pricing mechanism, the double-sided uniform price auction, for RECs in the market.

Additionally, the Commission has also approved REC fungibility, permitting obligated entities to meet their renewable purchase obligations by interchangeably utilising RECs from different renewable energy technologies.

REFERENCES:

- <https://www.irecstandard.org/what-are-recs/>
- <https://shorturl.at/yABRY>
- <https://shorturl.at/oDGLP>
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