Frequently Asked Questions About Renewable Energy Credits for Community Solar Program Design

How is a REC defined?

Renewable energy certificates (RECs), also known as renewable energy credits, green certificates, green tags, or tradable renewable certificates, represent the renewable attributes of the power produced from renewable energy projects and may be sold separately from the electricity.[1] Solar renewable energy certificates (SRECs) are RECs specifically created from the electricity generated by solar energy. One REC is created for each megawatt-hour (MWh) of renewable electricity generated and delivered to the grid. (For reference, an average U.S. residential customer uses about 800 kWh per month.) The REC system allows for the separation of renewable electricity into the 1) electrical energy produced by a renewable generator and 2) renewable attributes of that generation. RECs were initially developed to sell renewable electricity nationally.

How are REC products bundled?

The electrical energy associated with a REC may be kept bundled with the REC or sold separately. If the electricity is kept bundled with the REC then it is called renewable electricity or "green" electricity. If the electricity is split from the REC, it is no longer considered "renewable" and cannot be counted as renewable or zero-emissions by whoever buys it.[2]

What REC markets exist in the United States?

In North America, there are two primary REC markets:
Compliance Market: State Renewable Portfolio Standards (RPS) require electricity service providers to incorporate a minimum level of renewable energy into their electricity supply. Electricity service providers meet these requirements by building renewable generating facilities, purchasing renewable electricity, or purchasing unbundled RECs.
Voluntary Market: In response to customer preferences for green electricity, the voluntary REC market has developed. Residential, commercial or industrial energy consumers can support the deployment of renewable electricity projects through the purchase of RECs. Those who typically participate in voluntary programs want to green their own electricity beyond their utility's commitment. Assuming the RECs are retired and there is no double counting, voluntary REC purchases provide renewable benefits above and beyond what's mandated by RPS.

What is the lifecycle of a REC?

Quasi-governmental entities have the responsibility to issue and track RECs in their local jurisdictions. Each REC has a unique identification number and can change hands a number of times

[1] Department of Energy, Green Power Markets, Renewable Energy Certificates (RECs), http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=0
[2] Environmental Tracking Network of North America, REC Questions and Answers, http://www.etnna.org/images/PDFs/ETNNA-REC-QandA.pdf

until a claim is made for that REC, which results in retirement. Retirement signifies the REC is off the market, as each REC can only be retired once by one customer. Purchasing RECs from entities that participate in third-party sponsored programs like Green-e[3] is important to ensure the credibility of the REC. Under Green-e standards, electricity generated from the following sources qualifies for REC certification: solar electric, wind, biomass, low-impact hydropower, biomass, fuel cells using renewable fuels and geothermal.

How are RECs Priced?

RECs are priced based on supply and demand. Most state RPS requirements require RECs to come from projects in state or in neighboring states. Some states even have solar renewable energy credit (SREC) markets.[4] SRECs value is constantly fluctuating and currently ranges from $10-$500/SREC, depending on the state market. The voluntary REC market is a national market, so prices are more stable. The revenue stream resulting from REC sales provides additional incentive for the construction of more renewable energy projects.

What is the Difference Between a REC and a Greenhouse Gas Offset?

A greenhouse gas (GHG) offset, sometimes referred to as a carbon offset, is a tradable commodity representing a unit of GHG emissions reduction or avoidance. According to the U.S. DOE Green Power Network, it is more broadly defined than a REC, but it may be sourced from renewable energy. Typically, a GHG offset represents a reduction or avoidance of one metric ton of carbon dioxide equivalent (CO2e). GHG offsets may be purchased by consumers and businesses to "offset" their own emissions, such as those associated with electricity consumption, product manufacturing processes, automobile use, and air travel. Examples of GHG reduction projects include renewable electricity generation, energy efficiency measures, methane capture at landfill sites, soil carbon sequestration, and reforestation projects. Developers of these project types can sell GHG offsets to consumers or businesses on voluntary markets to help finance their projects. Unlike RECs, these credits are not commonly used to add value to community solar programs, though a few utilities promote community solar as a way to reduce a personal or business "carbon footprint." Some of the same organizations that certify RECs have programs to certify GHG offsets.

[3] Green-e, http://www.green-e.org/about.shtml
[4] SREC Trade, SREC Markets, http://www.srectrade.com/srec_markets/