

Understanding Renewable Energy Credits

Renewable energy generation facilities, like a community-owned solar array, create two distinct products: electricity and renewable energy credits (RECs). This brief report provides an overview of RECs and REC markets, including: what they are, how they are generated and traded, and why they are important to community solar ownership.

What Are RECs?

In Vermont, renewable energy credits are defined as “all of the environmental attributes associated with a single unit of energy generated by a renewable source”¹. Once an electricity generation facility transmits power to the grid, that power becomes indistinguishable from the general grid mix. RECs act as a tool to differentiate renewable generation from traditional generation like coal-fired power plants and “allow buyers to make specific environmental claims about how their electricity is produced”².

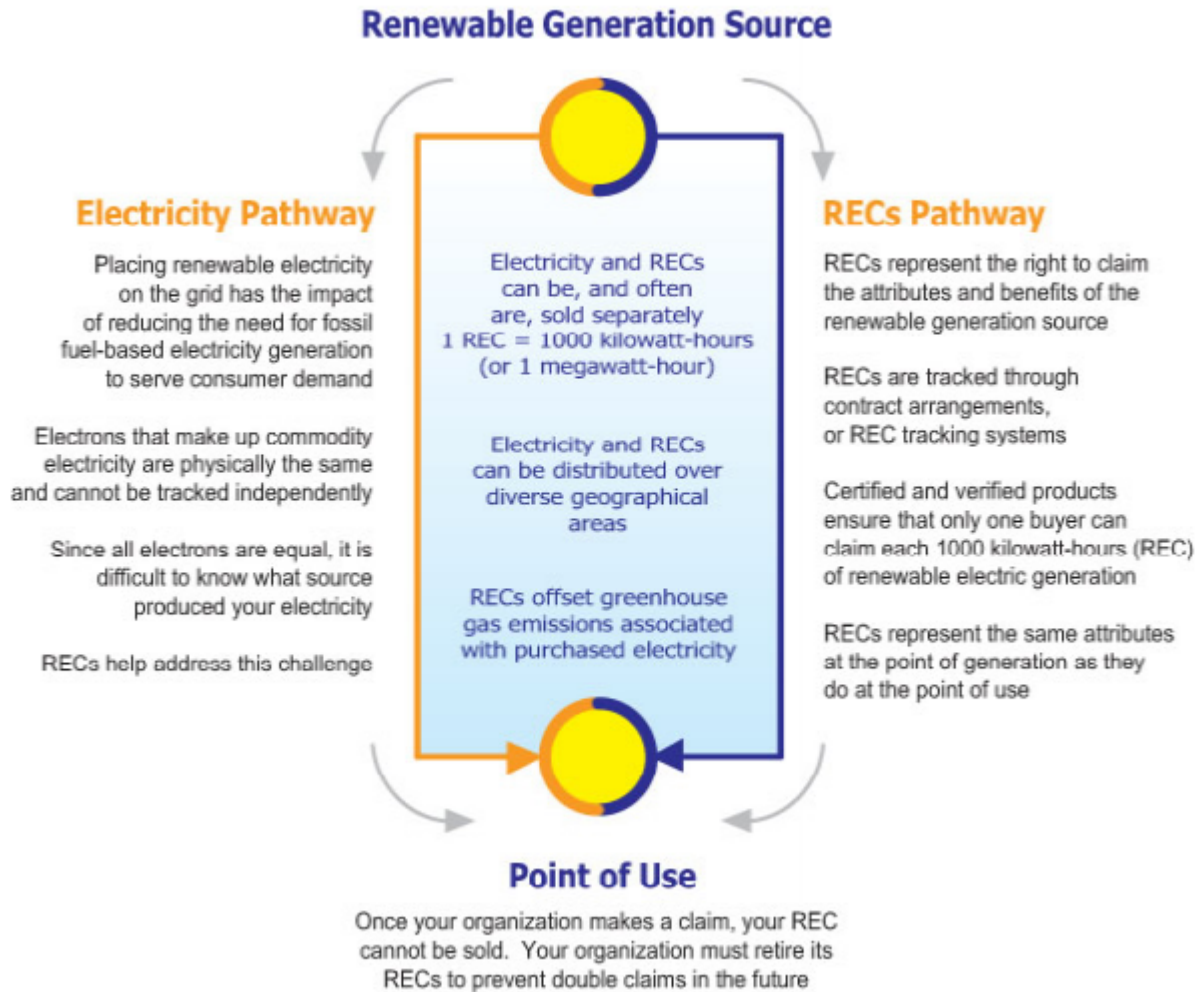
One megawatt-hour of renewable energy creates one REC. That REC is then valued based on where and when it was generated, and what renewable source produced the electricity. Each of these attributes affects the value of the REC on regional REC markets. A tradeable REC then acts as a currency. The purchaser of the REC can claim the environmental attributes associated with the electricity created by a renewable generation facility.

¹ 30 V.S.A. § 8002(26)

² *EPA Green Power Partnership*. Environmental Protection Agency, July 2008. Web. 19 Jan. 2015. <http://www.epa.gov/greenpower/documents/gpp_basics-recs.pdf>.

Figure 1 illustrates the parallel lifecycle of the electricity and RECs generated by a renewable facility.

Figure 1³:



³ Renewable Generation Figure. Digital image. EPA Green Power Partnership. Environmental Protection Agency, July 2008. Web. 19 Jan. 2015. <http://www.epa.gov/greenpower/documents/gpp_basics-recs.pdf>.

What is a Regional REC Market?

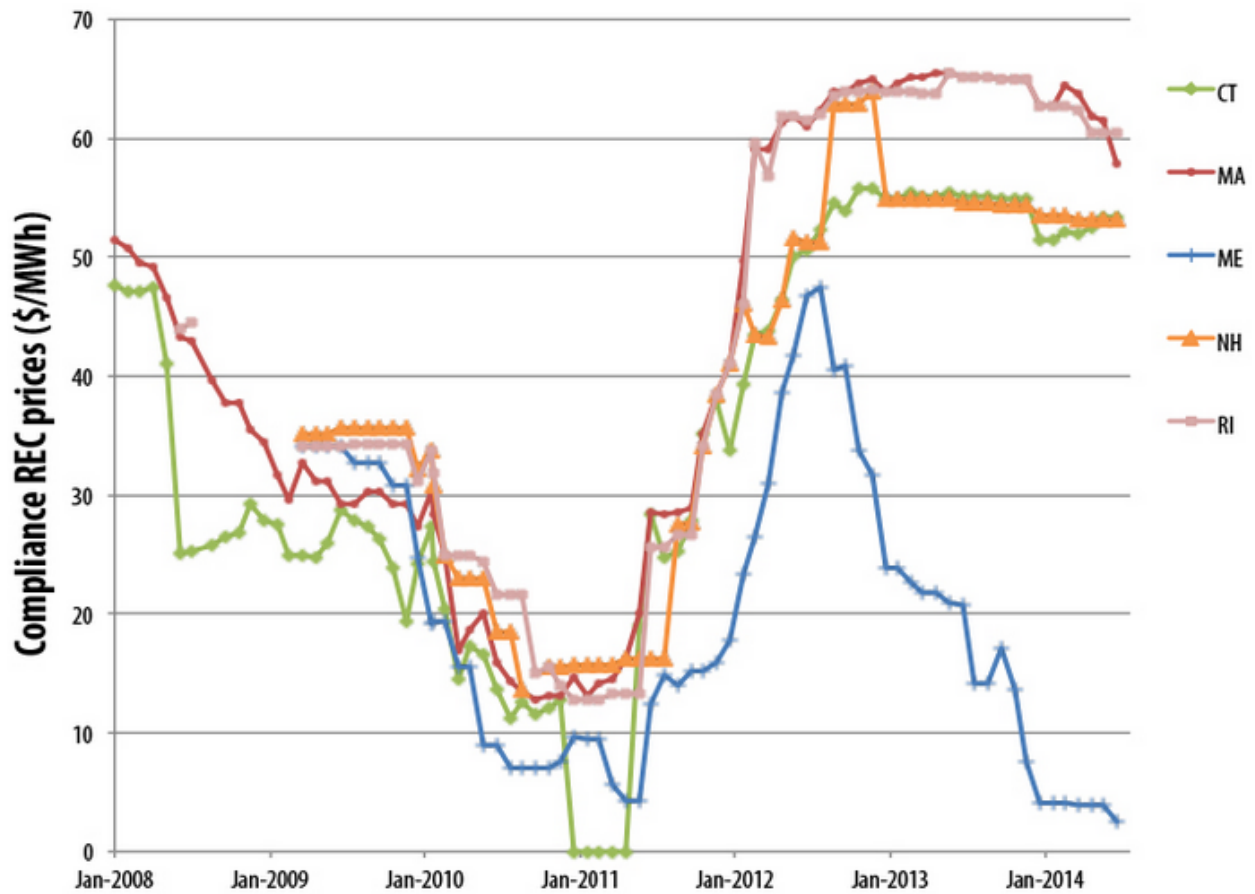
The New England Power Pool (NEPOOL) administers the REC tracking system for New England, known as the Generation Information System (GIS). The NEPOOL GIS currently tracks every MWh of generation in New England. The GIS is an electronic registry where RECs are created and tracked. The GIS is meant to be an accounting system not a market or trading system. Transactions between bilateral parties happen outside the system and then are reported to GIS for tracking. .. Most RECs from Vermont solar projects are sold on the compliance market. Compliance markets allow utilities to purchase RECs in order to comply with their state's renewable portfolio standard⁴ (RPS). Vermont does not currently have a RPS, so utilities like Green Mountain Power can decouple the RECs from the electricity and sell them to utilities in other NEPOOL states.

Figure 2 shows the historic REC prices on the NEPOOL compliance market. As you can see, Vermont developers and utilities can generate a significant amount of revenue by decoupling and selling the RECs. However, the renewable energy facility owners who choose to do so *“are no longer using green power and cannot be making a claim to be doing so”*⁵.

⁴ A Renewables Portfolio Standard is a regulatory minimum standard that would require investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to a designated percentage of the entire state's total energy consumption.

⁵ *EPA Green Power Partnership*. Environmental Protection Agency, July 2008. Web. 19 Jan. 2015. <http://www.epa.gov/greenpower/documents/gpp_basics-recs.pdf>.

Figure 2⁶:



⁶ "Renewable Energy Certificates (RECs)." *Green Power Network: REC Prices*. U.S. Department of Energy, 2014. Web. 22 Jan. 2015. <<http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5>>.

Why Are RECs Important To Community Solar Ownership?

Vermont residents interested in investing in a community-owned solar array must understand that they will not buy and consume the actual power generated by the solar array. When a group net metering system transmits power to the grid, it becomes impossible to differentiate the power generated by a solar array from the power generated by a coal-fired power plant. Virtual net metering agreements makes up for this by allowing customers who invest in renewable energy to be credited for an amount of power on the grid equal to what their system produces.

Many developers seek ownership of the environmental attributes (RECs) generated by a renewable energy facility in order to sell them on the NEPOOL REC markets. In exchange for monetizing the RECs, developers promise net metering participants zero-upfront cost arrangements. Although this may seem like a favorable deal, when the environmental attributes are stripped and sold, participants can no longer truly claim that they are purchasing and consuming renewable energy. According to the EPA, “[i]f the onsite system owner wants to make an environmental claim about the use of renewable electricity from the onsite system, they should ensure that they have and retain ownership of the RECs produced by the onsite renewable electricity system.”⁷

True community solar ownership includes the rights to the RECs generated by the projects. Decoupling the RECs from the electricity removes any claim to the environmental benefits of the renewable facility.

⁷ *EPA Green Power Partnership*. Environmental Protection Agency, July 2008. Web. 19 Jan. 2015. <http://www.epa.gov/greenpower/documents/gpp_basics-recs.pdf>.