



Vermont's Renewable Energy Standard Fact Sheet

Overview

Renewable Portfolio Standards (RPS) are policies that mandate that a minimum share of a state's electricity supply must be generated using renewable resources such as wind, hydro and solar. Currently, 31 states have an RPS. Vermont's RPS is called the Renewable Energy Standard (RES). It was passed in 2015 and set requirements of 75% renewable energy by 2032 with 10% coming from in-state sources.

When the RES was passed, these goals seemed like the limits of what might be both economically achievable and sustainable for Vermont's power grid. However, the accelerating climate crisis and continued advances in renewable energy technology – and a commensurate drop in the cost of deploying and integrating renewable energy – have made increasing these requirements both necessary and practical.

What are RECs?

Under Vermont's RES, renewable energy generation creates two distinct products: electricity and renewable energy credits (RECs). Once renewable electricity is sent to grid, that power is indistinguishable from electricity generated from other sources. RECs are a market-based mechanism to differentiate between renewable energy and energy from other sources that allow utilities or consumers to certify that they are providing or using renewable energy.

Each REC is the equivalent of 1 MWh of renewable energy generation and can be retired or traded on the New England REC market. A REC only counts toward RES compliance or to claims to be using renewable energy when it is retired. Utilities (legally) purchase RECs in order to both meet their RES requirements and to make the claim they are offering their customers renewable power. Vermont utilities can sell the RECs generated from certain in-state sources to utilities in other states, but that same REC cannot then be used to satisfy a utility's Tier I or Tier II requirements.

Each New England state's RPS includes a definition of the power generating facilities that qualify to generate RECs. Two of the largest generation sources used to meet Vermont's Tier I requirement, Hydro Quebec and other out of state hydro generators only qualify as renewable in Vermont among all the New England states. Thus, these RECs are available to Vermont utilities at a low cost because these other states do not count them as qualifying resources.

For example, according to the Department of Public Service (DPS), in 2018 a REC generated by Kingdom Community Wind could be sold on the out of state REC market for \$27 while a REC from Hydro Quebec that cost \$1 could then be used to satisfy a Tier I requirement.

While these low-cost RECs have allowed Vermont utilities to keep the cost of compliance with the RES down (and thus keep rates lower), this has also stifled new renewable energy resources in Vermont and New England.

What is in Vermont's RES?

The RES has three categories or tiers for reducing greenhouse gas emissions from Vermont's electric sector:

Tier I Total Renewable Energy: Each utility's total renewable energy requirement increases by 4% every year until reaching 75% of annual retail sales in 2032. A utility must meet this requirement by retiring Renewable Energy Credits (RECs) from a renewable plant that can deliver power to New England. Energy from Tier II projects also counts toward the Tier I requirements. Vermont is unique among New England states in counting large, pre-existing sources of hydropower, such as Hydro Quebec, as renewable.

Tier II In-State Renewable Energy: An in-state renewable energy requirement that increases to 10% of a utility's annual retail sales in 2032. A utility must meet this requirement by retiring RECs from any plant in Vermont that is 5 MW or smaller, came into service after June 30, 2015, and is directly connected to the Vermont grid.

Utilities can buy power and RECs from renewable energy projects located anywhere in Vermont to satisfy Tier II requirements.

According to DPS, all Vermont utilities are on track to meet the 10% Tier II requirement for in-state renewable energy generation. An analysis done for the Vermont Climate Action Plan found that the current RES is also sufficient to meet the greenhouse gas reduction goals of the Global Warming Solutions Act for both 2025 and 2030.

Tier III Energy Transformation: Tier III sets a requirement for “energy transformation” projects at 12% of the utility’s annual retail sales by 2032. A utility may meet this requirement through additional distributed renewable generation or energy through projects that result in a net reduction in fossil fuel consumption by a utility’s customers. Examples of energy transformation projects include weatherizing buildings, switching industrial processes from fossil fuel to electric, and deploying electric vehicles. Over 50% of the energy savings from Tier III projects to date are from the installation of cold climate heat pumps.

DPS states the total compliance cost for all RES tiers was \$19.7m, \$12.6m of which is for Tier 3 projects. Spread out among the approximately 376,000 utility customers in Vermont, this comes to \$52 annually per customer.

Among New England states, Rhode Island (100% by 2030), Massachusetts, and Maine (both 80% by 2030) all have more aggressive renewable energy requirements in their RES than Vermont. Only Connecticut (48% by 2030) and New Hampshire (25% by 2025) have lower requirements than Vermont.

Increasing the Tier I Requirement to 100%

Vermont has 14 utilities, three of which – Burlington Electric, Swanton, and Washington Electric Co-Op – are already compliant with a 100% Tier I standard. Vermont Electric Co-Op and GMP have committed to achieving 100% renewable power by 2030. Together, these four utilities supply about 93% of Vermont’s power. The Vermont Climate Action Plan recommends moving to a 100% carbon-free or 100% renewable electric portfolio by no later than 2030.

Increasing the Tier II Requirement Above the Current 10%

In 2020 and 2021 Vermont deployed 31MW and 38.5MW, respectively, of Tier II eligible renewable energy capacity through a mix of net-metering, Standard Offer, and utility-owned/contracted projects. Using DPS’ load growth assumptions, REV estimates that Vermont will need approximately 160MW of new solar capacity to meet its existing Tier II requirement for 2030. Increasing the Tier II mandate to 20% by 2030 would require approximately 550 MW of additional solar above the existing Tier II requirements.

One model created by REV using the DPS load growth forecast shows that to achieve 20% Tier II in 2030 requires about 2,300 acres of new solar beyond the estimated acreage to comply with existing law. REV finds that meeting the existing Tier II requirement of 8.8% for 2030 will require approximately 700 acres and increasing to 20% Tier II would require about 2,300 additional acres for solar. As context, Vermont is losing on the order of 1,500 acres of forest a year mostly because of "suburban and rural residential sprawl" per a 2017 UVM study.

Cost of Renewable Energy in Vermont

While there are many possible ways to increase the amount of renewable energy generated in Vermont, one of the most cost effective are the larger solar plants up to 2.2MW in size that currently qualify for the Standard Offer program. The chart below shows the cost competitiveness of these projects compared to energy from natural gas.



