



# Efficiency Vermont

## Vermont

### Policy Description

In 2000, the Vermont Public Utility Commission (PUC) (then the Vermont Public Service Board) established Efficiency Vermont, an energy efficiency utility authorized and regulated by the Vermont PUC. Efficiency Vermont provides technical assistance and financial incentives for energy-efficient building and process design, construction, renovation, equipment, lighting, and appliances, including a small subset of combined heat and power (CHP) projects. The program's primary priorities are to reduce future power purchases required across the state, reduce greenhouse gas emissions, limit the need to upgrade the state's transmission and distribution infrastructure, and minimize electricity costs. In 2009, Efficiency Vermont began offering thermal efficiency services, which are funded by revenue from the Regional Greenhouse Gas Initiative (RGGI) and the Independent System Operator New England (ISO-NE) Forward Capacity Market.

Efficiency Vermont was established in response to Vermont legislation (June 1999) authorizing the Vermont Public Service Board to establish a volumetric energy efficiency charge on all electric customers' bills to support energy efficiency programs. The volumetric charge is a statewide charge for customers of all utility territories in Vermont outside of Burlington (Burlington Electric Department has its own efficiency charge).

Additional details on Efficiency Vermont's scope of work and regulatory requirements can be found in its Order of Appointment issued by the Vermont PUC.<sup>1</sup> Section IV provides details on Efficiency Vermont's guidelines for customer-sited generation projects, including CHP.

### Policy Implementation

Efficiency Vermont focuses on technical assistance and collaboration across market partners and customers, leveraging available technical expertise, supply chain resources, and financial assistance on behalf of customers. The efficiency utility helps large commercial and industrial customers to identify, prioritize, and implement efficiency improvements. Often, the efficiency opportunities reflect customized recommendations for customers.

Over the years, Efficiency Vermont has identified various projects with potential for CHP, and assisted numerous customers with evaluating and implementing CHP projects.<sup>2</sup> Good candidates for potential CHP implementation include those with large building or process thermal loads, such as large industrial customers, hospitals, and hotels with swimming pools. Customers with access to a free fuel source, such as waste methane gas from anaerobic digesters at wastewater treatment facilities, agricultural sites, or food processors, may find that implementing CHP is economically beneficial.

### Policy Outcomes

Efficiency Vermont collaborated with Green Mountain Power on the installation of two CHP systems at the Essex Junction Wastewater Treatment Facility (WWTF). In 2003, Efficiency Vermont financially supported the first WWTF CHP installation, consisting of two 30 kW dual-fueled microturbines. In 2016, Efficiency Vermont provided \$65,000 toward the second project, which had a total project cost of \$745,000. This second system consists of a single 150 kW reciprocating

<sup>1</sup> Vermont Public Utility Commission, "Order of Appointment for Vermont Energy Investment Corporation," accessed April 15, 2021, <https://puc.vermont.gov/energy-efficiency-utility-program/eeu-orders-appointment-and-process-administration-document>.

<sup>2</sup> Efficiency Vermont, "Annual Plans & Reports," accessed September 25, 2020, [www.encyciencyvermont.com/about/annual-plans-reports](http://www.encyciencyvermont.com/about/annual-plans-reports).

engine and accounts for roughly 40% of the facility's electric load.<sup>3</sup> The heat from this engine supplies 100% of the thermal energy required for the anaerobic digestion process. Excess heat is dumped in the summer and routed to the surrounding buildings for temperature control during the winter.

In 2003, Efficiency Vermont and the Essex Junction WWTF were honored with the Vermont Governor's Award for Environmental Excellence and Pollution Prevention for installing the region's first methane CHP operation in a small treatment facility. They earned the same award in 2018 after the installation of the second system. They also received the 2016 American Council of Engineering Companies Grand Award for Engineering Excellence for Aldrich & Elliot, as well as the 2017 Energy Management Achievement Award from the New England Water Environment Association.



**Anaerobic digester (left) with the new CHP system (right)**

PHOTO COURTESY OF JIM JUTRAS

## Additional Policy Examples

The state of Maine also has an energy efficiency entity, Efficiency Maine. Much like Efficiency Vermont, Efficiency Maine receives its funding from a multitude of sources, primarily a combination of electric and natural gas system benefit charges, ISO-NE's Forward Capacity Market proceeds, and RGGI revenues. Efficiency Maine's goals are to improve the efficiency of energy use within the state and reduce greenhouse gases across Maine.

Efficiency Maine has its own separate program for distributed generation: the Commercial & Industrial (C&I) Custom Program. Between 2010 and 2019, Efficiency Maine incentivized 20 CHP projects, including natural gas reciprocating engines, biomass-based steam turbine generators, and anaerobic digesters. End users included hospitals, assisted living facilities, hotels, sawmills, and wastewater treatment plants.

### Further Reading

- **Efficiency Maine Distributed Generation Website:** <https://www.efficiencymaine.com/custom-distributed-generation-projects/>
- **Efficiency Maine Distributed Generation Policy Profile:** <https://chptap.ornl.gov/profile/278/EfficiencyMaineDistributedGenerationProgram-Profile.pdf>

## For More Information

**U.S. DOE NEW ENGLAND CHP  
TECHNICAL ASSISTANCE PARTNERSHIP (CHP TAP)**  
[www.nechptap.org](http://www.nechptap.org)

Efficiency Vermont Website:  
[www.efficiencyvermont.com](http://www.efficiencyvermont.com)

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<sup>3</sup> New England CHP TAP, "Essex Junction Project Profile," accessed April 15, 2021, [https://chptap.ornl.gov/profile/354/EssexJunction-Project\\_Profile.pdf](https://chptap.ornl.gov/profile/354/EssexJunction-Project_Profile.pdf).