

Research and Development

The federal government has an extensive program of funding energy research and development (R&D) activities aimed at a variety of goals, such as increasing U.S. energy supplies or improving the efficiency of various energy consumption, production, transformation, and end-use technologies. R&D programs generally do not directly affect current energy consumption, production, and prices, but if successful, they could affect future consumption, production, and prices. Research is a distant source of subsidy, leading to difficulty in ensuring this report included all money subsidizing Vermont renewables. Therefore, federal research grants were excluded as subsidies in this report.

Loans and loan guarantees

The federal government provides financial support for certain energy technologies either by guaranteeing the repayment of loans obtained in the private debt market or by lending money directly to energy market participants. The Department of Energy (DOE) is authorized to provide financial support for innovative clean energy technologies that are typically unable to obtain conventional private financing due to their high technology risks. In addition, eligible technologies must avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases. The authority to enter into loan guarantees under the Energy Policy Act of 2005 expired on September 30, 2011. The federal government also supports portions of the electricity industry through loans and loan guarantees made by the U.S. Department of Agri

ARRA Renewable Energy Awards

and State Renewable Incentives



Source: Molly F. Sherlock, *The Renewable Electricity Production Tax Credit: In Brief*, Congressional Research Service, R43453, 2015, <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43453.pdf>.

The Small Business Energy Loan Program provides loans to businesses for smaller renewable energy and energy efficiency projects, with the maximum loan amount being \$350,000. Loans are provided at fixed rates and loan terms are determined on a case-by-case basis, but the maximum loan term is 10 years with a maximum 15-year amortization.¹²

Standard Offer Program

The Standard Offer Program is a feed-in tariff program which offers long-term contracts with fixed standard offer rates to promote the rapid deployment of renewable generation facilities which have a capacity of 2.2MW or less and were commissioned on or after September 30, 2009. The Standard Offer Program built off of and replaced the original Sustainably Priced Energy Enterprise Development (SPEED) Program in 2009, which encouraged the development of renewable energy resources in Vermont as well as the purchase of renewable power by the

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Investment Tax Credit

The Vermont Department of Taxes offers a personal tax credit program for installations of renewable energy equipment on business properties. The credit amounts are:

7.2% for solar, fuel cells and small wind placed in service on or before 12/31/2016

2.4% for solar (except hybrid solar lighting) placed in service on or after 12/31/2016

Renewable Energy Systems Sales Tax Exemption

Vermont has a sales tax exemption for renewable energy systems. Specifically, the exemption applies to systems up to 500 kilowatts that generate electricity using renewable energy resources, combined heat and power systems up to 20 kilowatts, and to solar water-heating systems. The exemption is for 100% of the sales tax upon purchase. It applies to both on- and

Modern Wood Pellet Heating

Residential: \$2,000 per unit, up to \$4,000 or 50% of the installed cost

- Thermal efficiency adder: \$350
- High performance adder: \$500 per unit, up to \$1,000

Non-residential: \$2,000 per unit, up to \$4,000 or 50% of the installed cost

- Thermal efficiency adder: \$500
- High performance adder: \$500 per unit, up to \$1,000¹⁸

Net Metering

Vermont provides net metering subsidies for its electric customers after the customer has obtained a Certificate of Public Good from the Vermont Public Service Board. The system capacity limit is 2.2 megawatts for renewable energy facilities on military

This report was completed on May 16, 2016 by Laura Felone, Tracy Guion, and Evan Leonard under the supervision of Professors Jack Gierzynski, Robert Bartlett and Eileen Burgin in response to a request from Senator MacDonald.

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Disclaimer: This report has been compiled by undergraduate students at the University of Vermont under the supervision of Professor Jack (Anthony) Gierzynski, Professor Robert Bartlett and Professor Eileen Burgin. The material contained in the report does not reflect the official policy of the University of Vermont.