

Vermont Standard-Offer Program

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Margaret Cheney, Kevin Fink, Mary Jo Krolewski

Vermont Public Service Board

Range of VT Renewable Energy Programs

Net-metering – Up to 500 kW / Meant to offset a participant's electric usage

Standard offer – Up to 2.2 MW / Long-term contracts for small renewables

PURPA Qualifying Facilities – Under the federal Public Utility Regulatory Policies Act (PURPA), certain renewables < 80 MW receive power contracts at fixed prices based on avoided costs (30 V.S.A. § 209(a)(8) and Board Rule 4.100)

Renewable Energy Standard (RES)

Tier I – Total renewable energy requirement

Tier II -- distributed generation < 5 MW*

* Standard-offer projects installed after June 30, 2015, can be used to meet Tier II requirements.

Standard-Offer Program Summary

- Vermont utilities buy renewable power from an “eligible generator” at a specified price for a specified period of time (also known in other jurisdictions as “feed-in tariff”)
- Created in 2009, with 50 MW initial program cap
- Expanded in 2012, with annual increases until 127.5 MW is reached
- Each project can be no bigger than 2.2 MW
- 7 technologies eligible

What Are Standard-Offer Terms?

- Prices based on “avoided cost”
- Standard-offer contract, up to 25-year term
- Administered by statewide purchasing agent (“Standard Offer Facilitator”) appointed by the Board
- Costs distributed among Vermont utilities based on pro-rata share of electric sales
- Utilities buy all elements of generation (energy, capacity, RECs), with guaranteed rate recovery

Eligible Technologies



Solar PV

Wind: 100 kW or smaller

Wind: 100 kW to 2.2 MW

Farm Methane: 150 kW or smaller

Farm Methane: >150 kW

Landfill Methane

Food Waste Methane

Biomass

Hydro

Farm Methane Has Different Rules

- Farm methane projects can receive a 20-year contract at any time by contacting the Board-appointed purchasing agent
- No cap on number of projects
- Projects do not have to participate in the annual RFP
 - Projects larger than 150 kW: \$0.145 per kWh
 - Projects 150 kW or smaller: \$0.199 per kWh
- Renewable Energy Credits (RECs) accrue to the farmer and not to the Vermont utilities
- Program includes 8 farm projects developed under the CVPS “Cow Power” program

Other Purchasing-Agent Programs

- Small existing hydroelectric (5 MW or less) eligible for standard offer under 30 V.S.A. § 8005a(p)
 - Rates adjusted annually by the Board
 - Two hydro plants currently under 20-year standard-offer contracts
- Baseload Renewable Power
 - Authority under 30 V.S.A. § 8009
 - Utilities must purchase electricity from an eligible biomass plant at a specified price for a specified period of time
 - Price established at the avoided cost of the biomass plant
 - Ryegate Plant currently under 10-year contract

2009:

Initial Program Created by 30 V.S.A. § 8005

- 50 MW of available program capacity
- Initial prices identified in statute, \$0.24 to \$0.30 per kWh for solar
- 200 MW of resources applied the first day (mostly solar)
- October 2009 – 50 MW issued through lottery
- Large waiting list created, with projects dropping from list
- Board established new prices in 2010, with review every two years
- 2015 before the entire 50 MW was built and operating

2012: Changes in 30 V.S.A. § 8005a

- Increased the available capacity from 50 MW to 127.5 MW
 - 5 MW available in 2013, 2014, and 2015
 - 7.5 MW available in 2016, 2017, and 2018
 - 10 MW available in 2019
- Requires allocation among different technology categories
- Projects in constrained areas would not count toward cap
- Allows market-based pricing methodology (RFP implemented in 2013)
- Requires review of avoided-cost price caps every year

2016: Most Recent Changes

- One-year pilot project for standard-offer projects at “preferred locations”
- Statute defines preferred locations:
 - Parking lots or parking canopies – 1/6 annual program capacity
 - Other preferred locations – 1/6 of annual program capacity
- Statute identifies the methodology the Board must use to determine the standard-offer prices for preferred-location projects

Market-Based Mechanism

- Since 2013, Board has issued an annual RFP (request for proposals)
- RFP specifies annual program capacity, technology set-asides, price caps
- Eligible project:
 - New renewable project located in Vermont
 - Bids at or below price cap
 - Demonstrates site control
 - Demonstrates financial security to bid in RFP
- Lowest-priced bids are awarded annual capacity
- Each project must obtain Certificate of Public Good in order to construct
- Standard-offer contract award expires if project not built in 3 years

Determination by PSB of Avoided-Cost Prices

- Section 8005a(f)(2)(B) defines “avoided cost” as:
 - “the incremental cost to retail electricity providers of electric energy or capacity or both, which, but for the purchase through the standard offer, such providers would obtain from distributed renewable generation that uses the same generation technology as the category of renewable energy for which the board is setting the price”
- Definition of avoided cost includes the consideration of each of the following:
 - Cost data of the Vermont composite electric utility system
 - Terms of the contract, including the duration of the obligation
 - Availability, during the system's daily and seasonal peak periods, of capacity or energy purchased, and the estimated savings from mitigating peak load
 - Relationship of the availability of energy or capacity purchased through the standard offer to the ability of the Vermont composite electric utility system or a portion thereof to avoid costs
 - Costs or savings resulting from variations in line losses and other impacts on the transmission or distribution system from those that would have existed in the absence of purchases through the standard offer
 - Supply and cost characteristics of plants eligible to receive the standard offer

Annual Contracts Since Cap Increased in 2012

April 2013: RFP issued for 5 MW

- 35 solar projects apply, 4 projects accepted
 - Bid prices \$0.14 to \$0.20 per kWh

April 2014: RFP issued for 5 MW

- 20 solar projects apply, 3 projects accepted
 - Bid prices \$0.12 to \$0.16 per kWh

April 2015: RFP issued for 5 MW

- 8 small wind projects and 1 food methane project apply, all accepted
 - Bid prices at the price cap for each technology
- 12 solar projects apply, 2 projects accepted
 - Bid prices \$0.11 to \$0.12 per kWh

April 2016: RFP issued for 7.5 MW

- 4 small wind (<150 kW), 1 large wind (>150 kW), and 1 food methane projects apply, all accepted
 - Bid prices at the price cap for each technology
- 18 solar projects apply, 2 projects accepted
 - Bid prices \$0.075 to \$0.13 per kWh

Current Price Caps

Levelized Price (\$/kWh)

Landfill gas	0.09
Wind over 100 kW	0.116
Biomass	0.125
Solar PV	0.13
Hydro	0.13
Farm methane >150 kW	0.145
<150 kW	0.199
Food waste methane	0.208
Wind 100 kW or less	0.253

Standard-Offer Projects Online: Hydro, Biomass, Landfill Methane

Project Name	Technology	Capacity (MW)	Location	Date Online
Ball Mountain Hydro	Hydro	2.2	Jamaica	2016
Factory Falls	Hydro - existing	0.150	Springfield	2012
North Hartland	Hydro - existing	0.138	Hartland	2012
Townshend Hydro	Hydro	0.960	Townshend	2016
Troy Hydro Project	Hydro	0.816	Troy	2013
West Charleston	Hydro	0.675	West Charleston	2011
Cersosimo Lumber	Biomass	0.865	Brattleboro	2012
BCH Landfill Gas	Landfill Methane	0.560	Brattleboro	2010

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Project	Technology	Capacity (MW)	Location	Date Online
Advanced Transit	Solar	0.032	White River Junction	2010
Barton Solar Farm	Solar	1.890	Barton	2014
Bobbin Mill	Solar	0.050	Newport	2013
Bridgeport West Solar Farm	Solar	2.000	Bridport	2015
Butternut Farm Solar	Solar	0.103	Morrisville	2012
Champlain Valley Solar Farm	Solar	2.200	Middlebury	2015
Charlotte Solar	Solar	2.000	Charlotte	2014
Chester Solar	Solar	2.000	Chester	2014
Claire Solar	Solar	2.200	South Burlington	2014
Clarendon Solar	Solar	2.000	Clarendon	2014
Clarke Solar Center	Solar	0.800	Rutland	2015
Coventry Solar	Solar	2.200	Coventry	2014
Cross Pollination	Solar	2.200	New Haven	2013
Ferrisburgh Solar	Solar	1.047	Ferrisburgh	2010
IRA Rentals Solar	Solar	0.037	Newport	2013

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Project	Technology	Capacity (MW)	Location	Date Online
Kingsbury Solar	Solar	0.048	East Montpelier	2012
Leunig's Building	Solar	0.026	Burlington	2010
Limerick Solar	Solar	2.166	Shelburne	2014
Northshire	Solar	0.016	Manchester	2011
Pownal Park Solar	Solar	2.200	Pownal	2016
Sheldon Springs Solar	Solar	2.200	Sheldon	2013
South Burlington Solar	Solar	2.200	South Burlington	2011
Southern VT Energy Park	Solar	2.000	Pownal	2012
Springfield Solar Alliance	Solar	1.000	Springfield	2015
St. Albans Solar Farm	Solar	2.000	St. Albans	2013
Sudbury Solar	Solar	2.000	Sudbury	2016
SunGen1 Solar	Solar	2.100	Sharon	2012
Technology Drive Solar	Solar	2.000	Brattleboro	2014
Whitcomb Farm	Solar	2.200	Essex Junction	2014
White River Junction	Solar	2.166	Hartford	2012
Williamstown	Solar	2.000	Williamstown	2012

Standard-Offer Projects Online: Farm Methane

Project	Technology	Capacity (MW)	Location	Date Online
Audet's Cow Power	Farm Methane	0.680	Bridport	2010
Berkshire Cow Power	Farm Methane	0.600	Richford	2010
Chaput Family Farms	Farm Methane	0.300	North Troy	2010
Dubois Energy	Farm Methane	0.450	Addison	2010
Four Hills Farms	Farm Methane	0.450	Bristol	2012
Gervais Digester	Farm Methane	0.400	Enosburg Falls	2010
Green Mountain Dairy	Farm Methane	0.600	Sheldon	2010
Kane's Cow Power	Farm Methane	0.225	Enosburg	2011
Maplehurst Farms	Farm Methane	0.150	Greensboro	2012
Montagne Cow Power	Farm Methane	0.300	Swanton	2010
Neighborhood Energy	Farm Methane	0.225	Newport	2010
Riverview Farms	Farm Methane	0.189	Franklin	2014
Westminister Energy	Farm Methane	0.450	Westminister	2010
Vermont Technical College	Farm Methane	0.375	Randolph	2014

General Trends (and Challenges)

- RFP has resulted in increasingly lower prices
- Significant participation by solar projects
- Allocation of available program capacity to non-solar technology categories has been challenging
- Annual RFP process involves significant administration by the Board
 - Includes review of price caps and technology allocation
- Standard-offer projects have located disproportionately in one service territory, resulting in the generation of power in excess of that service territory's pro-rata share
 - Excess power must be transmitted (wheeled) to other service territories, resulting in transmission charges

An Emerging Issue

- Section 8005a(k)(2)(B) allows for exemption from program costs:
...if, during the immediately preceding 12-month period ending October 31, the amount of renewable energy supplied to the provider by generation owned by or under contract to the provider, *regardless of whether the provider owned the energy's environmental attributes*, was not less than the amount of energy sold by the provider to its retail customers.
- WEC has historically qualified for an exemption
- Burlington Electric and Swanton Electric applied for exemptions this year. This will spread program costs among Vermont's other utilities and their ratepayers.