

Vermont's Act 56 Renewable Energy Standard & 2017

Presented to the Vermont System Planning Committee
19 October 2016
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- Law approved June 2015
- Established a Renewable Portfolio Standard (RPS) like standard for VT
- Eliminated SPEED Goals
 - Standard Offer projects remain but no longer a SPEED based goal in 2017
- Removed the CT REC Double Counting concern
- Rather than RPS we have an Renewable Energy Standard (RES)
 - Tier 1&2 similar to other state RPSs
 - Tier 3 unique

Act 56 RES Tier 1,2 & 3

- **Tier 1** “Total Renewable Energy” requirement.
- 2017 need 55% retail load served by renewables
- Annually Increasing incrementally to 75 percent by 2032.
- What counts:
 - Pre REC Market Contracts (NYPA, HQ US PPA)
 - RECs traded in NEPOOL GIS
 - All classes of RECs count toward Tier 1

Tier 1

- **Tier 2** is referred to as the “Distributed Generation” requirement.
- Over and above Tier 1 amounts
- One percent of retail sales served by new renewables by 2017
 - Note based on energy not peak
 - “new renewables” are defined as resources generating less than 5 megawatts and coming on line after 7/2015
- Increasing to 10 percent by 2032.

Tier 2

- **Tier 3** is referred to as the “Energy Transformation” requirement.
 - somewhat reminiscent of the demand-side management programs instituted in the 1990s to help reduce electricity consumption through energy-efficiency improvements in their homes.
- Two percent retail sales served by projects that improve energy efficiency
 - Not just for electricity, but also other fuels, such as home heating and transportation fuels.
- Increasing by 2/3 percent of retail sales annually
- Increasing to 12 percent by 2032.
 - Energy based percent

Tier 3

- Examples of what may qualify
 - Additional DG over and above Tier 2 requirement
 - Non-EVT Efficiency Measures
 - Distribution utility (DU) can't claim savings for any EVT program it is already running
 - Air Source Heat Pumps (ASHP)
 - Weatherization
 - Solar hot water
 - Electric vehicle charging stations
- MWH savings are calculated as a conversion of btu's to kWh. Each year to report lifetime savings of measures installed in that year.

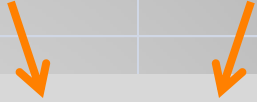
Tier 3

- Use NEPOOL GIS system to Track Tier 1 & 2
- Some contracts may be counted outside NEPOOL GIS (NYPA & HQ US)
- WEC File for satisfaction of Tier 2 as a “reduced amount provider” as we are 100% renewable
- Banking
- Aggregation of Net Metered systems
- PSB rules for generation and contract qualification

Tier 1 and Tier 2

Rate Impact columns are "worst case" scenario; assumes effect of full ACP payment and no increase in sales from Tier 3 measures.

Tier 3 WEC Max Dollar Impact									
Assumptions:									
Inflation		1.01							
2016 Cost of Service		\$ 13,945,659							
Year	Tier 3 Percent Requirement	Load (MWH)	Tier 3 MWH	Alternative Compliance Payment (ACP)	Dollar Cap	Cumulative Rate Impact	Annual Rate Impact		
2017	2.0000%	70,000	1,400	\$ 60.00	\$ 84,000	0.6023%	0.6023%		
2018	2.6667%	70,000	1,867	\$ 60.60	\$ 113,120	0.8111%	0.2088%		
2019	3.3333%	70,000	2,333	\$ 61.21	\$ 142,814	1.0241%	0.2129%		
2020	4.0000%	70,000	2,800	\$ 61.82	\$ 173,091	1.2412%	0.2171%		
2021	4.6667%	70,000	3,267	\$ 62.44	\$ 203,958	1.4625%	0.2213%		
2022	5.3333%	70,000	3,733	\$ 63.06	\$ 235,426	1.6882%	0.2256%		
2023	6.0000%	70,000	4,200	\$ 63.69	\$ 267,503	1.9182%	0.2300%		
2024	6.6667%	70,000	4,667	\$ 64.33	\$ 300,198	2.1526%	0.2344%		
2025	7.3333%	70,000	5,133	\$ 64.97	\$ 333,520	2.3916%	0.2389%		
2026	8.0000%	70,000	5,600	\$ 65.62	\$ 367,478	2.6351%	0.2435%		
2027	8.6667%	70,000	6,067	\$ 66.28	\$ 402,082	2.8832%	0.2481%		
2028	9.3333%	70,000	6,533	\$ 66.94	\$ 437,342	3.1360%	0.2528%		
2029	10.0000%	70,000	7,000	\$ 67.61	\$ 473,267	3.3936%	0.2576%		
2030	10.6667%	70,000	7,467	\$ 68.29	\$ 509,866	3.6561%	0.2624%		
2031	11.3333%	70,000	7,933	\$ 68.97	\$ 547,150	3.9234%	0.2674%		
2032	12.0000%	70,000	8,400	\$ 69.66	\$ 585,128	4.1958%	0.2723%		



Tier 3

- **Cost Effectiveness Screening**
 - Least Cost planning
 - Technology Screening
 - Anticipate link to EEU
 - Technical Reference Manual ("TRM") and Technical Advisory Group ("TAG") used in current Efficiency
- **Measure Verification, Monitoring & Evaluation by DPS**
- **Utility Reporting**
 - Annual Plan
 - Compliance Plan
- **Statute calls for equity and coordinated delivery with other programs**
 - including energy efficiency programs delivered under section 209
 - other energy efficiency programs delivered locally or regionally within the State.
- **Shared Savings Claims necessary when working with other entities**
 - No double counting of MWH savings allowed

Statutory Requirements and Upcoming Rule Making for Tier 3

- Filed November 1
- Outline savings targets
- Summarize strategy and plan to reach Tier 3 savings
 - Description of Energy Transformation projects
 - How much of Tier 2 plan to use
 - Collaboration plans
 - Claimed savings allocation
 - Any Energy Transformation projects that increase kWh sales summarize impacts of measures on demand and strategies to mitigate those impacts
 - Public document to allowing information share among stakeholders
- Should be sufficiently detailed support legislative goal of Transparency and Collaboration

Annual Plan

- Energy Transformation projects will require PSB approval
- Screening of Energy Transformation projects will be required
 - Stakeholders and PSB participating in TAG working group process, with TRM structure
- Consistency with other legislative requirements for cost effective screening

Tier 3

- April 1 report saving claims to DPS
- DPS charged with EM&V
- DPS recommend to PSB by June 10
amount of verified Savings Claims
- 15 day response to DPS report
- Final determination by PSB

Timelines Post Compliance Year

- DU Compliance filing due for Tier 1-3, 30 days following Board determination of Tier 3
- PSB approval by December 15
- Appeal process if disagree
- Ultimately if short will pay ACP for shortfall

Tier 1, 2 & 3

- Review of the costs and benefits of the program
 - including administrative costs of the DUs and partners
 - participant and non-participant costs
 - EM&V costs of the Department
- Rate impacts of Tier 3
- Income and Rate Class Equity
- Value of Annual Plan processes

Proposed Pause 2020 Review

- “Soft” roll out first 3 years then look back
- Review Cost-Effectiveness Screening Mechanisms, including analysis on:
 - Participant and non-participant costs
 - Resulting net-societal benefit of Energy Transformation Projects
 - Understanding what, if any, projects proceeded based on the ACP alone and was not subject to the societal cost test.
- Review of market impacts of the program, including any customer satisfaction or confusion with the delivery of programs.
- Impacts on other State programs and services
- Other areas that the Board deems appropriate

Proposed Pause 2020 Review

Extra Material for Act 56 Tier 3 Legislative Excerpts

8005:

- **(C) Eligibility criteria. For an energy transformation project to be eligible under this subdivision (a)(3), each of the following shall apply:**
- (i) Implementation of the project shall have commenced on or after January 1, 2015.
- (ii) Over its life, the project shall result in a net reduction in fossil fuel consumed by the provider's customers and in the emission of greenhouse gases attributable to that consumption, whether or not the fuel is supplied by the provider.
- (iii) The project shall meet the need for its goods or services at the lowest present value life cycle cost, including environmental and economic costs. Evaluation of whether this subdivision (iii) is met shall include analysis of alternatives that do not increase electricity consumption.
- (iv) The project shall cost the utility less per MWH than the applicable alternative compliance payment rate.

8005

• **(E) Other sources.**

- (i) A retail electricity provider or a provider's partner may oversee an energy transformation project under this subdivision (3). However, the provider shall deliver the project's goods or services in partnership with persons other than the provider unless exclusive delivery through the provider is more cost-effective than delivery by another person or there is no person other than the provider with the expertise or capability to deliver the goods or services.
- (ii) An energy transformation project may provide incremental support to a program authorized under Vermont statute that meets the eligibility criteria of this subdivision (3) but may take credit only for the additional amount of service supported and shall not take credit for that program's regularly budgeted or approved investments. (iii) To meet the requirements of this subdivision (3), one or more retail electricity providers may jointly propose with an energy efficiency entity appointed under subdivision 209(d)(2) of this title an energy transformation project or group of such projects. The proposal shall include standards of measuring performance and methods to allocate savings and reductions in fossil fuel consumption and greenhouse gas emissions among each participating provider and efficiency entity.
- (iii) To meet the requirements of this subdivision (3), one or more retail electricity providers may jointly propose with an energy efficiency entity appointed under subdivision 209(d)(2) of this title an energy transformation project or group of such projects. The proposal shall include standards of measuring performance and methods to allocate savings and reductions in fossil fuel consumption and greenhouse gas emissions among each participating provider and efficiency entity.

8005

- **(F)Implementation. To carry out this subdivision (3), the Board shall adopt rules:**
- (i) For the conversion methodology in accordance with subdivision (3)(D) of this subsection (a).
- (ii) To provide a process for prior approval of energy transformation projects by the Board or its designee. This process shall ensure that each of these projects meets the requirements of this subdivision (3) and need not consist of individual review of each energy transformation project prior to implementation as long as the mechanism ensures those requirements are met. An energy transformation project that commenced prior to initial adoption of rules under this subdivision (F) may seek approval after such adoption.
- (iii) For cost-effectiveness screening of energy transformation projects. This screening shall be consistent with the provisions of this subdivision (3) and, as applicable, the screening tests developed under subsections 209(d) (energy efficiency) and 218c(a) (least-cost integrated planning) of this title.
- (iv) To allow a provider who has met its required amount under this subdivision (3) in a given year to apply excess net reduction in fossil fuel consumption, expressed as a MWH equivalent, from its energy transformation project or projects during that year toward the provider's required amount in a future year.
- (v) To ensure periodic evaluation of an energy transformation project's claimed fossil fuel reductions, avoided greenhouse gas emissions, conversion to MWH equivalent, cost-effectiveness and, if applicable, energy savings, and to ensure annual verification and auditing of a provider's claims regarding project completion and resulting MWH equivalent. Changes to project claims resulting from periodic evaluations shall not reduce retroactively claims made on behalf of a project approved under subdivision (3)(F)(ii) of this subsection (a) or reduce verified claims carried forward under subdivision (3)(F)(iv) of this subsection (a).
- (vi) To ensure that all ratepayers have an equitable opportunity to participate in, and benefit from, energy transformation projects regardless of rate class, income level, or provider service territory.
- (vii) To ensure the coordinated delivery of energy transformation projects with the delivery of similar services, including low-income weatherization programs, entities that fund and support affordable housing, energy efficiency programs delivered under section 209 of this title, and other energy efficiency programs delivered locally or regionally within the State.
- (viii) To ensure that, if an energy transformation project will increase the use of electric energy, the project incorporates best practices for demand management, uses technologies appropriate for Vermont, and encourages the installation of the technologies in buildings that meet minimum energy performance standards.
- (ix) To provide a process under which a provider may withdraw from or terminate, in an orderly manner, an ongoing energy transformation project that no longer meets the eligibility criteria because of one or more factors beyond the control of the project and the provider.

Implementation Model

	2017
Utility Sales (kWh)	70,000,000
Compliance Rate	2.00%
MWh Target	1,400
Maximum Investment (ACP)	\$ 84,000

Disclaimer: This tool and the values are estimates and have not been fully reviewed nor approved by the DPS. It serves merely as a starting point for utility planning. VEIC shall not be held liable for any errors or omissions.

Users: please enter your modeling values in the yellow cells

Modeled Savings Totals	1,426
Over/(Under) Target	26
Non-Incentive Totals	-
Incentive Totals	\$ 14,000

Forecast assumes “worst case” scenario, full ACP payment, and no increase in sales from Tier 3 implementation.

Measure		Units	MWh Savings	Incentives	Implementation
Weatherization, HPWH, CCHP and PV	per unit	-	210	\$ 10,000	TBD
	Total	-	-	\$ -	TBD
Weatherization Only	per unit	-	78	\$ 1,600	TBD
	Total	-	-	\$ -	TBD
Cold Climate Heat Pump (no Wx)	per unit	28	51	\$ 500	TBD
	Total	-	1,426	\$ 14,000	TBD
Heat Pump Water Heaters	per unit	-	23	\$ 400	TBD
	Total	-	-	\$ -	TBD
Full Electric Vehicles	per unit	-	23	\$ 1,000	TBD
	Total	-	-	\$ -	TBD
Hybrid Electric Vehicles	per unit	-	10	\$ 500	TBD
	Total	-	-	\$ -	TBD
Charging Stations-L2 Home	per unit	-	22	\$ 500	TBD
	Total	-	-	\$ -	TBD
Charging Stations-L2 Work/public	per unit	-	7	\$ 500	TBD
	Total	-	-	\$ -	TBD
Charging Stations-DC	per unit	-	60	\$ 500	TBD
	Total	-	-	\$ -	TBD
Pellet Boilers (no Wx)	per unit	-	253	\$ 2,500	TBD
	Total	-	-	\$ -	TBD
Pellet Stoves (no Wx)	per unit	-	57	\$ 500	TBD
	Total	-	-	\$ -	TBD

WEC first year program scenario #1

Implementation Model

	2017
Utility Sales (kWh)	70,000,000
Compliance Rate	2.00%
MWh Target	1,400
Maximum Investment (ACP)	\$ 84,000

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Modeled Savings Totals	1,428
Over/(Under) Target	28
Non-Incentive Totals	-
Incentive Totals	\$ 47,200

Forecast assumes “worst case” scenario, full ACP payment, and no increase in sales from Tier 3 implementation.

Measure		Units	MWh Savings	Incentives	Implementation
Weatherization, HPWH, CCHP and PV	per unit	4	210	\$ 10,000	TBD
	Total		838	\$ 40,000	TBD
Weatherization Only	per unit	-	78	\$ 1,600	TBD
	Total		-	\$ -	TBD
Cold Climate Heat Pump (no Wx)	per unit	8	51	\$ 500	TBD
	Total		407	\$ 4,000	TBD
Heat Pump Water Heaters	per unit	8	23	\$ 400	TBD
	Total		182	\$ 3,200	TBD
Full Electric Vehicles	per unit	-	23	\$ 1,000	TBD
	Total		-	\$ -	TBD
Hybrid Electric Vehicles	per unit	-	10	\$ 500	TBD
	Total		-	\$ -	TBD
Charging Stations-L2 Home	per unit	-	22	\$ 500	TBD
	Total		-	\$ -	TBD
Charging Stations-L2 Work/public	per unit	-	7	\$ 500	TBD
	Total		-	\$ -	TBD
Charging Stations-DC	per unit	-	60	\$ 500	TBD
	Total		-	\$ -	TBD
Pellet Boilers (no Wx)	per unit	-	253	\$ 2,500	TBD
	Total		-	\$ -	TBD
Pellet Stoves (no Wx)	per unit	-	57	\$ 500	TBD
	Total		-	\$ -	TBD

WEC first year program scenario #2