

## State-Federal RPS Collaborative Webinar

# Hawaii's 100% RPS and Vermont's New RPS

Hosted by  
Warren Leon, Executive Director, CESA

March 14, 2016

# Housekeeping



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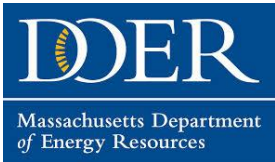
Submit your questions at any time by typing in the Question Box and hitting Send.

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You will find a recording of this webinar, as well as all previous CESA webcasts, archived on the CESA website at

[www.cesa.org/webinars](http://www.cesa.org/webinars)

**Clean Energy States Alliance (CESA)** is a national nonprofit coalition of public agencies and organizations working together to advance clean energy.



# State-Federal RPS Collaborative

- With funding from the Energy Foundation and the US Department of Energy, CESA facilitates the **Collaborative**.
- Includes **state RPS administrators, federal agency representatives**, and other stakeholders.
- Advances dialogue and learning about RPS programs by **examining the challenges and potential solutions** for successful implementation of state RPS programs, including **identification of best practices**.
- To sign up for the Collaborative listserv to get the **monthly newsletter** and announcements of **upcoming events**, see: [www.cesa.org/projects/state-federal-rps-collaborative](http://www.cesa.org/projects/state-federal-rps-collaborative)

# Today's Guest Speakers

**Veronica Rocha**, Renewable Energy Branch  
Manager, Hawaii State Energy Office

**Tom Knauer**, Utilities Analyst, Vermont Public  
Service Board

**Kevin Fink**, Policy Analyst, Vermont Public Service  
Board



# Hawaii's 100% Renewable Portfolio Standard (RPS)

## Veronica Rocha

Renewable Energy Branch Manager  
Hawaii State Energy Office

### Clean Energy States Alliance

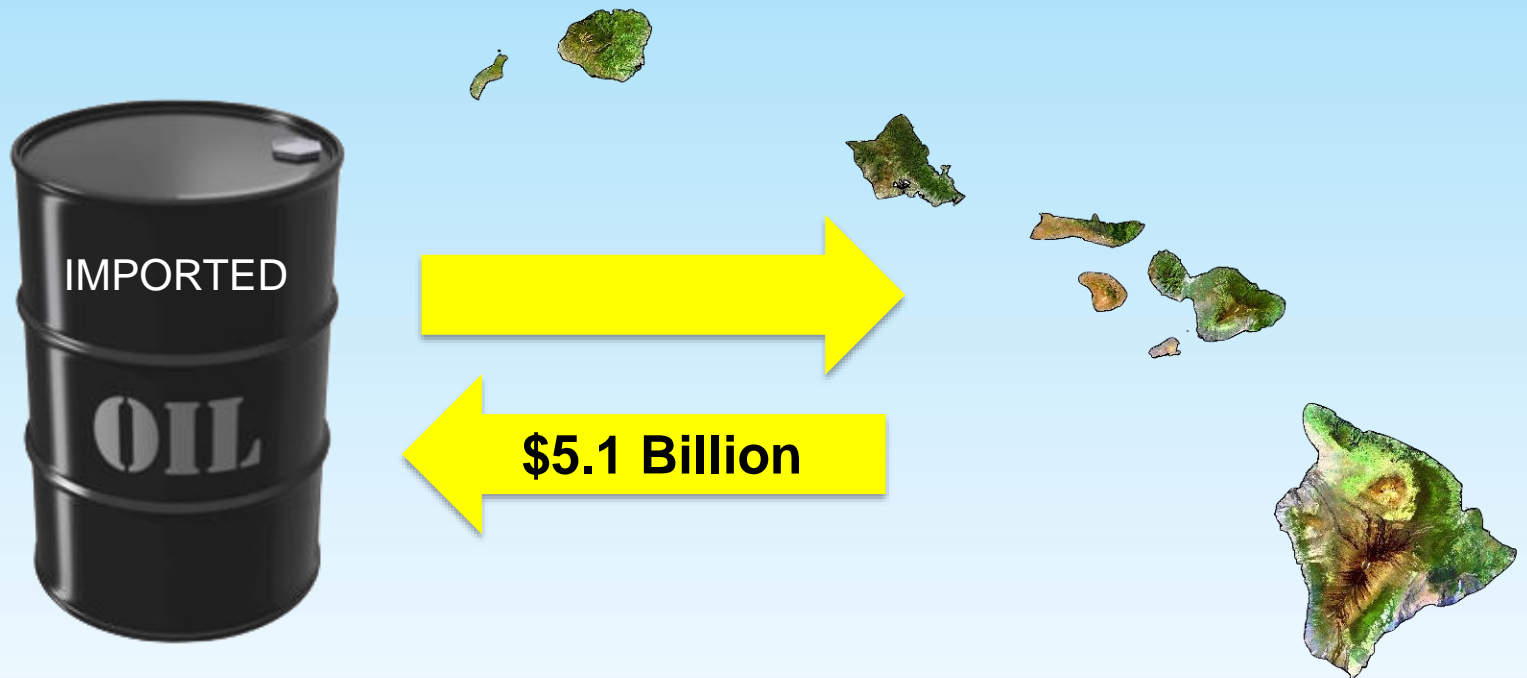
Hawaii's 100 Percent RPS and Vermont's New RPS

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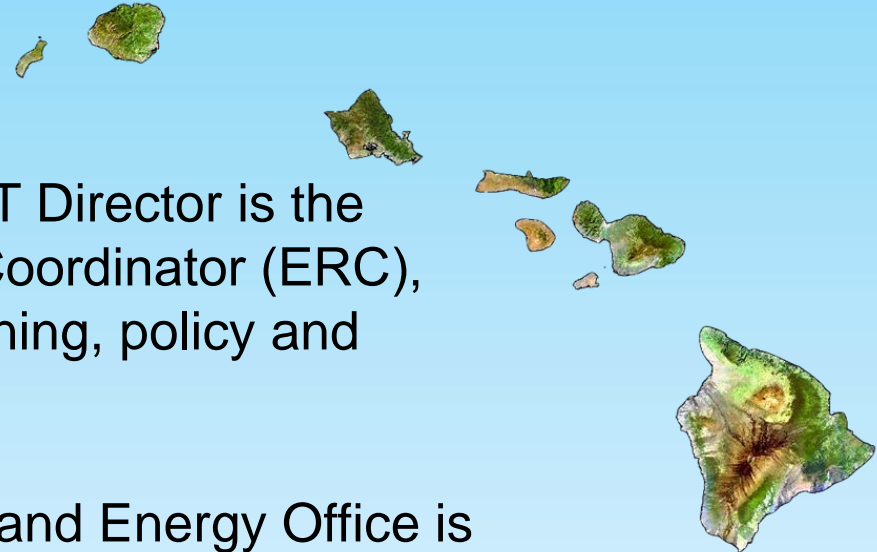
# Breaking Our Addiction to Oil

- Most oil dependent state in the U.S. – imported 93% of our energy in 2014
- Pays the highest electricity rates in the U.S.



# Hawaii's Energy Policy

The Energy Resources Coordinator sets Hawaii's energy policy



- Under HRS 196, the DBEDT Director is the state's Energy Resources Coordinator (ERC), responsible for energy planning, policy and programs.
- State Energy Administrator and Energy Office is delegated with fulfilling ERC energy policy directives.
- In 2011, the ERC repositioned clean energy as economic driver – departing from original principal focus on environmental and energy security.





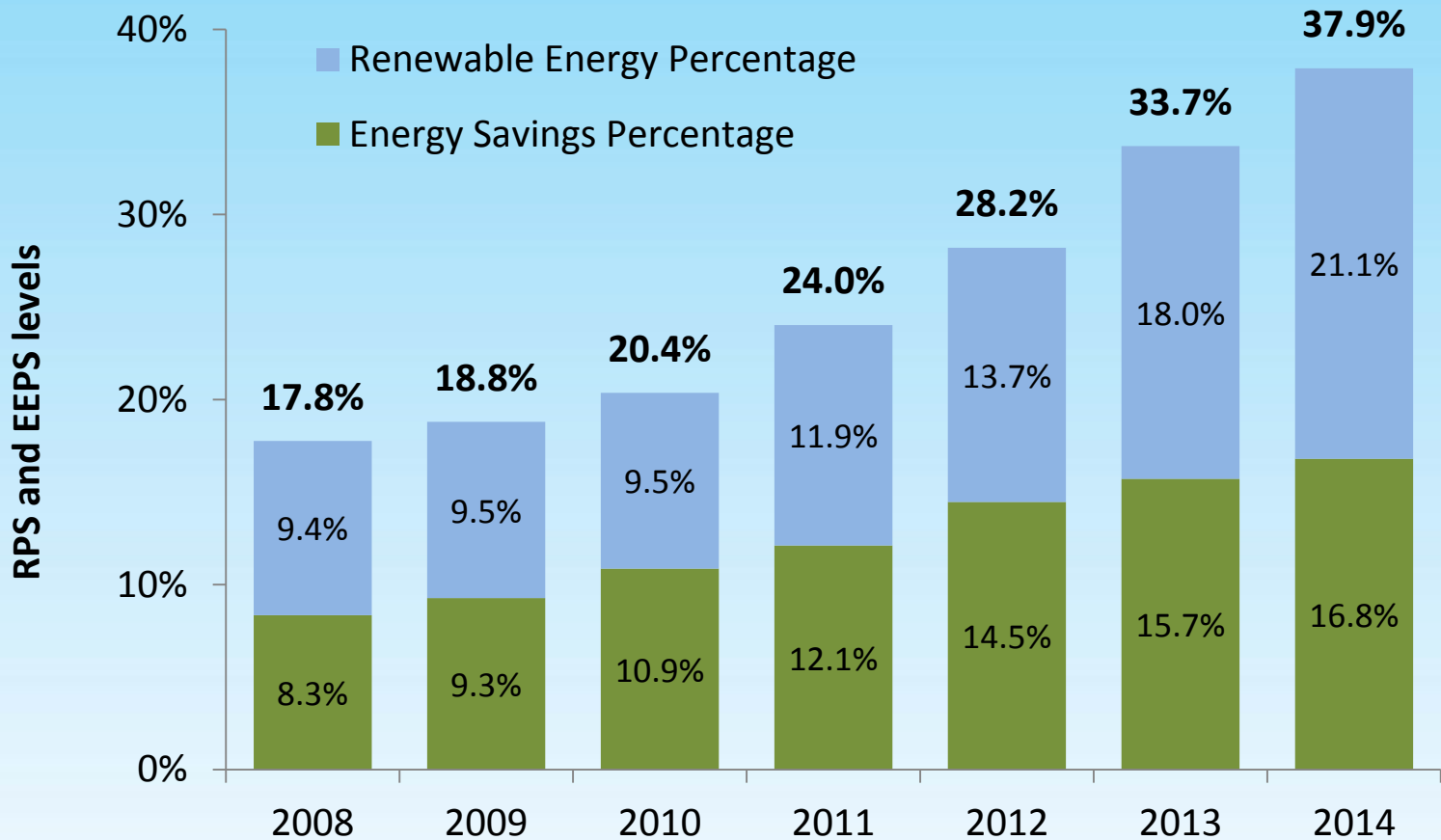
# Balanced Approach



- Diversifying our energy portfolio.
- Connecting the islands through integrated, modernized grids.
- Balancing technical, economic, environmental and cultural considerations.
- Leveraging our position as a test bed to launch an energy innovation cluster.
- Creating an efficient marketplace that benefits producers & consumers.



# Portfolio Standards: Renewable & Energy Efficiency

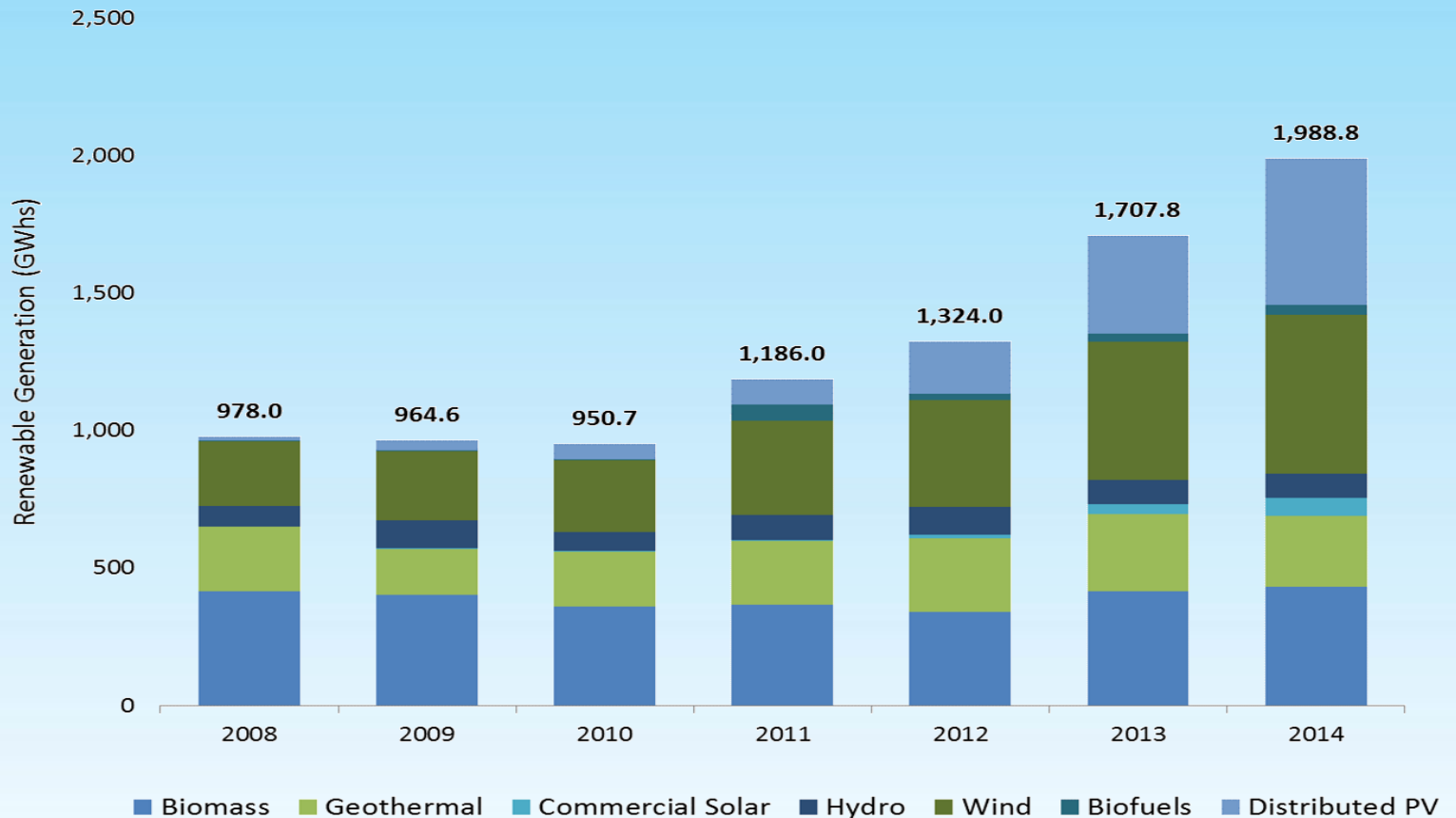


Source: Renewable Portfolio Standards Reports, 2008-2014 (Hawaii Public Utilities Commission).



# Striving for a Diversified Portfolio of Renewables

**Hawaii Renewable Energy Generation by Resource  
2008-2014**



Source: *Renewable Portfolio Standards Status Reports, 2008-2014* (Hawaii Public Utilities Commission)

# 100% RPS by 2045



- Under Act 97 Hawaii is the first state to set a 100% RPS.
- Establishes confidence in the market.
- Drives investment decisions.



# Community Renewables



- SB1050 approved as Act 100 (2015)
- HECO & KIUC submitted tariffs; under review by PUC
- Our office is working collaboratively with stakeholders on finalizing tariffs as quickly as possible



# PSIP – Comprehensive system utility planning toward 100% RPS

- Power Supply Improvement Plans Stemmed from IRP and initial PSIP submissions
  - PUC Observations regarding PSIPs
    - Cost impacts and risks not reasonable
    - Plans don't aggressively seek lower cost new utility-scale RE
    - DER utilization and integration not addressed adequately
    - Plans for fossil-fueled power plants not sufficiently justified
    - System security requirements appear costly and not sufficiently justified
    - Ancillary services lack transparency & many not be most cost-effective
    - Inter-island cable analysis lacks sufficient detail
    - Customer and implementation risks not adequately addressed
  - Change of various circumstances



# PSIP Status

- Timelines
  - Update Interim Status Report – filed on 2/16/16
  - Revised plan – due 4/1/16
- One of the theme's to be explored by the utility's PSIP is more aggressive RPS goals than required by law

Milestone Date	HRS §269-92	Hawaiian Electric Companies and NextEra Energy's Commitment for Renewable Energy
December 31, 2020	30%	35% of sales
December 31, 2030	40%	50% of sales
December 31, 2040	70%	70% of sales
December 31, 2045	100%	100% of sales

Table I-2. Increased Merger Commitments for Meeting State RPS Mandate

The Companies are committed to transforming the generation fleet so that 100% of the power generated comes from renewable sources. Thus, under the RPS formula established by the Legislature, we will exceed the 100% RPS goal.

# DER – Advancement of Distributed Energy Resources Interconnection

- Distributed Energy Resources Docket
  - Stemmed from RSWP, IRP, DGIP
  - Phase I PUC Decision & Order
    - Stipulated revisions of RSWG PV Subgroup
    - NEM closure
    - Establishment of Grid-Supply and Self-Supply Tariffs
    - Modified TOU tariff
    - Approval of advanced inverter functions





# Advancement of Distributed Energy Resources Interconnection - Continued

- Phase II is underway; topics of discussion include:
  - Opportunities to integrate and aggregate various forms of Distributed Energy Resources (PV, Storage, Demand Response, etc.)
  - Ongoing assessment of technical integration challenges and ensuring safe and reliable integration of DER
    - Evaluate impact of legacy inverters
    - Collaboration with inverter manufacturers and Parties to proceeding on self-certification process and test-plan for advanced inverter functions approved for inclusion in Rule 14H
    - Distribution-level and system-level hosting capacity
  - Developing proposals for establishing an appropriate DER market structure



# Key Bills Before Hawaii Legislature

- HB 2291 – RPS Amendment
  - Amends RPS definition to more accurately reflect the amount of renewable energy generation in Hawaii by basing RPS calculation on electrical energy generation as instead of sales (current definition).
- SB 2738 – Renewable Energy Technologies Income Tax Credit (REITC)
  - Reduces the REITC for solar energy properties used to generate electricity from 35% (currently) to 15% after December 31, 2022, and creates energy storage property tax credits.
- SB 2652 / HB1689 – Renewable energy fuels tax credit
  - Establishes a renewable fuels production tax credit and repeals/amends the ethanol facility tax credit.



# Mahalo

*Thank you!*



HAWAII STATE  
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HAWAII STATE  
Energy Office

# Vermont Renewable Energy Standard

Asa Hopkins  
Director

Planning &  
Energy Resources  
Division

# Comprehensive Energy Plan

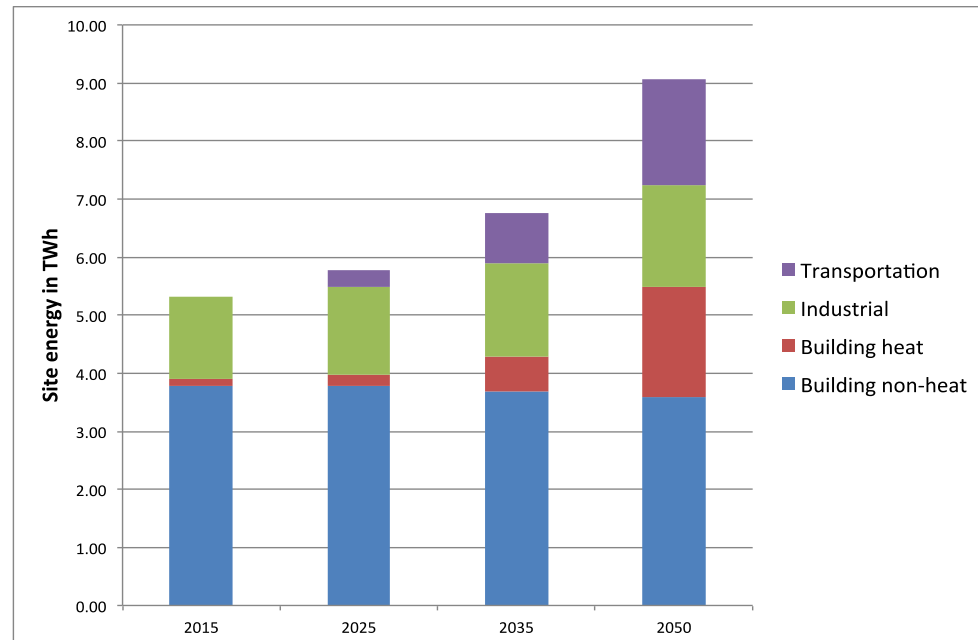
- Reduce total energy consumption per capita by 15% by 2025, and by more than one third by 2050.
- Meet 25% of the remaining energy need from renewable sources by 2025, 40% by 2035, and 90% by 2050.

# Electric Power

**Currently: 45% renewable (hydroelectric)**

**Goal: 67% renewable by 2025**

Electrifying heat and transport will increase electric energy demand:



# Vermont History

In the mid-2000s, the other 5 New England states adopted RPS policies. Vermont chose a different path: “SPEED”

SPEED involved Vermont as host and generator of renewable energy, but not claimer of renewable power supply.

2011: Public Service Board report recommended adopting an RPS (as did the 2011 CEP).

2012: Legislature considered and didn't adopt.

2013: PSB follow-up report

# Act 56

By 2014, the cracks were showing.

Dept. of Public Service worked with utilities, advocates, and other stakeholders to develop a 3-tier renewable energy standard (RES):

1. Total renewable energy
2. Distributed generation
3. Energy transformation

Passed into law as Act 56 in 2015.



# Three Tiers

1. Total renewable energy (55% to 75%)
  - Capture low-value RECs not claimed elsewhere in New England
  - High renewable % for use in electrification
2. Distributed generation (1% to 10%, carve-out of Tier 1)
  - Drive new “Vermont-scale” distributed generation on our grid
  - “Standard Offer” generators will count for this
3. Energy transformation (2% to 12%, not a carve-out)
  - Measured on fossil-fuel-reduction basis
  - Address challenges in building heat and transportation through weatherization and electrification (heat pumps, EVs)
    - Or additional DG
  - Encourage utilities to expand business models, build partnerships

# Vermont's Renewable Energy Standard



*Tiers I & II – Total Renewable Energy and Distributed Generation*

*by  
Kevin Fink*

Vermont Public Service Board

March 14, 2016



## Tier I - Total Renewable Energy

*Purpose* - To encourage Vermont retail electricity providers to procure renewable energy for a large share of their power supply needs

*Required amounts* - 55% of each electric utility's annual retail sales beginning January 1, 2017, increasing by an additional 4% each third year until reaching 75% on and after January 1, 2032



## Tier I - Eligible Sources

- ▶ Broad range of eligible sources - source needs to meet statutory definition of renewable energy and be capable of delivery within ISO-NE.
- ▶ Sources expected to be predominately lower-cost renewables from New England region, as well as hydropower already under contract from NY and HydroQuebec.
- ▶ Alternative compliance payment of \$10/MWh



## Tier II - Distributed Generation

*Purpose* - To encourage Vermont retail electricity providers to support the development of distributed renewable generation

*Required amounts* - 1% of each electric utility's annual retail sales beginning January 1, 2017, increasing by an additional 0.6% each third year until reaching 10% on and after January 1, 2032

Tier II resources count towards a utility's Total Renewable Energy obligation under Tier I.



## Tier II - Eligible Sources

- ▶ Tier II sources must be new renewable energy installed after June 30, 2015.
- ▶ Must be under 5 MW in size.
- ▶ Must be connected to the subtransmission or distribution system of a Vermont retail electric provider or part of a plan to defer transmission upgrades.
- ▶ Alternative compliance payment of \$60/MWh



# Regulatory Implementation

- ▶ Board staff have been convening working group meetings with stakeholders since September 2015
- ▶ Board will issue at least two orders implementing the relevant sections of Act 56, and subsequently will draft an administrative rule to govern the entirety of the RES Program



# Implementation Challenges

- ▶ In general, Vermont's implementation can rely on existing regional infrastructure, particularly the NEPOOL GIS.
- ▶ However, NEPOOL GIS does not accurately track a large share of Vermont's renewable mix, particularly hydropower from out of region.
- ▶ On an interim basis, Vermont will need to account for these attributes outside of NEPOOL GIS.





## Implementation Challenges (cont.)

- ▶ Tracking small-scale projects expected to qualify in Tier II may also be a challenge because metering data is not reported to ISO.
- ▶ Utilities are expected to aggregate small projects and register them in GIS.
- ▶ Board needs to develop verification standards.



## Implementation Challenges (cont.)

- ▶ Broad statutory definition of what a renewable resource is - statute defines renewable energy as “energy produced using a technology that relies on a resource that is being consumed at a harvest rate at or below its natural regeneration rate.”
- ▶ The Board is also looking at options for automatically qualifying existing resources through GIS.

# Vermont's Renewable Energy Standard



*Tier III - Energy transformation projects and  
additional distributed generation*

*by  
Tom Knauer*

Vermont Public Service Board

March 14, 2016



# Overview of Tier III

*Purpose* - to encourage Vermont retail electricity providers to support additional distributed renewable generation or to support other projects that reduce fossil fuel consumed by their customers

*Required amounts* - 2% of each electric utility's annual retail sales beginning January 1, 2017, increasing by an additional 2/3% each year until reaching 12% on and after January 1, 2032



# Overview (continued)

## *Eligibility*

- Distributed Generation, same eligibility requirements as Tier II
- Energy Transformation projects:
  - Project must have commenced after January 1, 2015
  - Project must result in a net reduction in fossil fuel consumed by the utility's customers and in the emission of greenhouse gases attributable to that consumption, whether or not the fuel is supplied by the utility
  - The project must 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 criterion is met includes analysis of alternatives that do not increase electricity consumption.
  - The project must cost the utility less per MWh than the applicable alternative compliance payment rate (\$0.06/kWh)



# Why is this Tier important?

- ▶ Vermont is a relatively cold, rural state
- ▶ Roughly 2/3 of Vermont's total energy use goes to space heating and transportation
- ▶ Thus, Vermonters use a lot of fossil fuels!
- ▶ Historically, we have not had a robust source of funds to target the efficient use of fossil fuels



# Utility Implementation

- ▶ Utilities may seek prior regulatory approval of their energy transformation projects through the Vermont Technical Advisory Group (“TAG”) or petition to the Board
- ▶ Prior approval through either mechanism will ensure that projects meet statutory eligibility requirements, will give utilities confidence in savings expectations, and will ensure that savings are verifiable
- ▶ It is anticipated that utilities will file annual plans with the Board detailing how they anticipate meeting the coming years’ compliance requirements
- ▶ It is anticipated that utilities will also file annual savings claims for review and approval, and subsequently file annual compliance reports



# Anticipated Outcomes

- ▶ Utilities will satisfy their Tier III requirements through a combination of additional distributed generation and energy transformation projects
- ▶ Utilities will engage a variety of partners to implement energy transformation projects --- energy efficiency utilities, weatherization agencies, energy service providers, home performance contractors, vendors, and many more
- ▶ Utilities will undertake a variety of energy transformation projects to reduce their customers' fossil fuel consumption --- weatherization, biofuels, heat pumps, heating system improvements, heating fuel changes, transportation measures, and others
- ▶ Utilities' programs may have many different appearances including incentives, financing, bulk purchases, and others





# Interesting and complicating factors

- ▶ Vermont has 17 electric distribution companies, each with an exclusive service territory
- ▶ However, Vermont law requires that ratepayers have an “equitable opportunity” to participate in energy transformation projects regardless of rate class, income level, or **service territory**
- ▶ The simplest energy transformation project may not be the least-cost option
- ▶ Electrification projects (e.g. heat pumps) have additional requirements: must incorporate best practices for demand management, must use a technology appropriate for Vermont, must “encourage” that installation takes place in buildings that meet minimum energy performance standards



# 2020 Review?

- ▶ Stakeholders suggest that we review the program after the first three years of implementation
- ▶ Suggested purpose is to formalize learning opportunities and to assess regulatory treatment, stakeholder perspectives, performance of Tier III programs, and consideration of whether statutory changes would effectuate a better program



# Questions?

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# Thank you for attending our webinar

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