Vermont's Renewable Energy Standard and the Climate Crisis

Every kWh of electricity generated by new renewables in Vermont & New England reduces electricity generation from fossil fuel plants in New England

Peter Sterling, Renewable Energy Vermont

Testimony to House Environment & Energy Committee

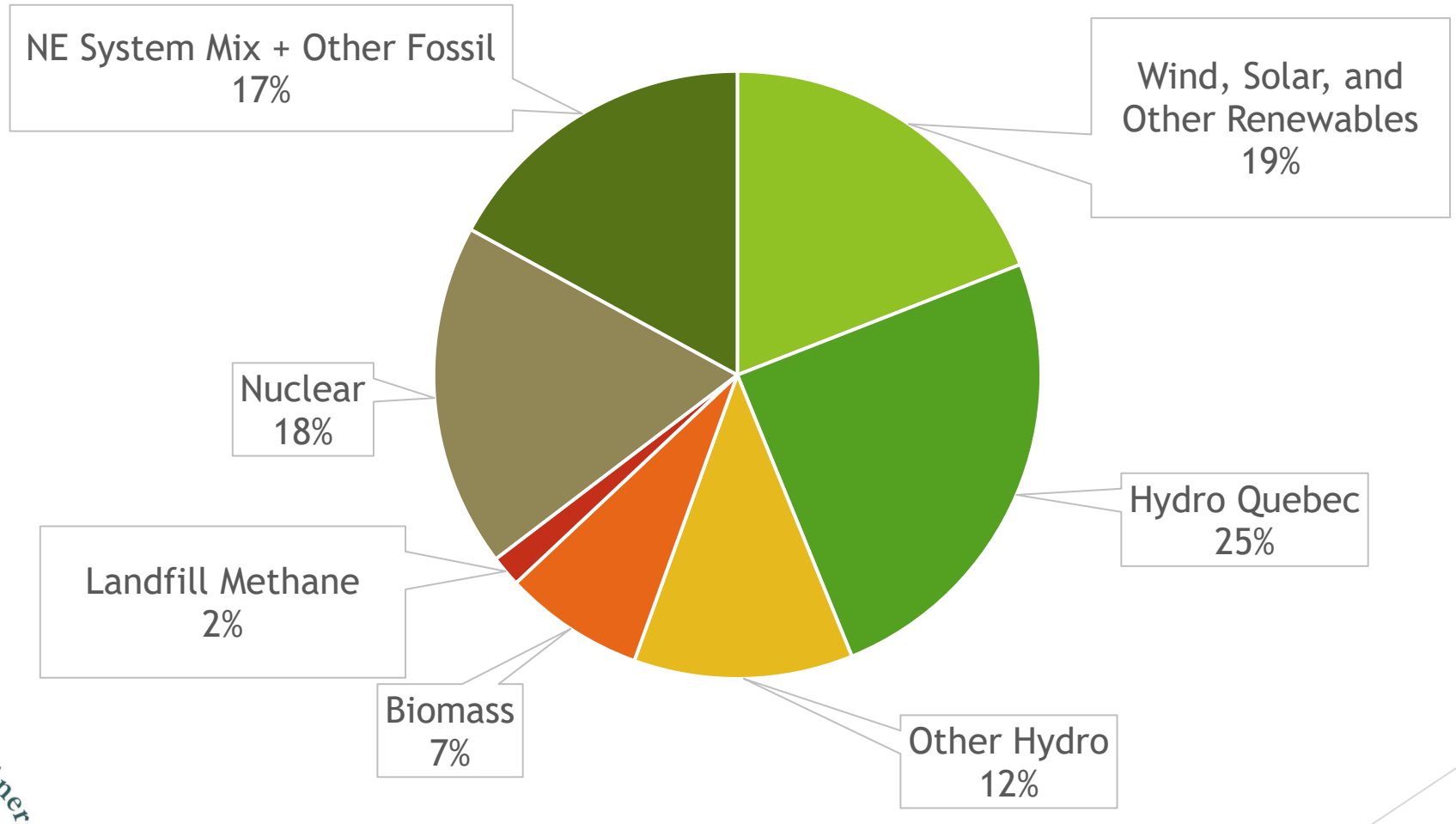
May 3, 2023

Why Vermont Needs RES Reform: Environmental Justice

60 acre 360MW natural gas facility in Dayville, CT

- NE has 81 oil & natural gas plants running at >10% capacity
- VT has NO natural gas plants
- VT 5 oil plants that each run <9hrs/yr

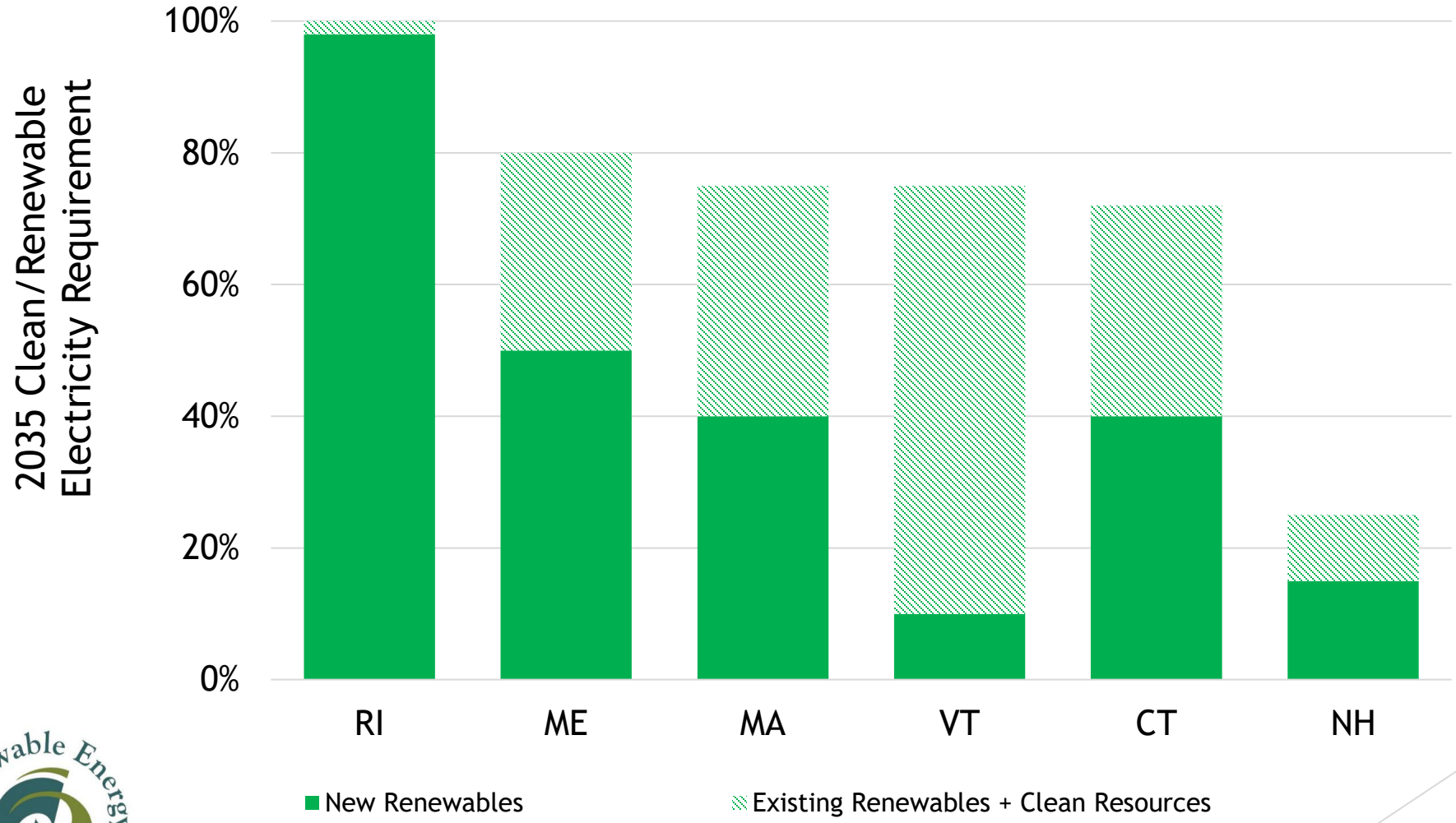
Why Vermont Needs RES Reform: Our electricity isn't sustainable as load grows



Vermont's Physical Electricity Supply Portfolio 2021

Source: VT Department of Public Service
REV2022 Presentation, 10/27/2022

Why Vermont Needs RES Reform: VT's requirement for *new* renewables is the worst in New England



Sources: Database of State Incentives for Renewable Energy (DSIRE)
CT SB 10, Session Year 2022

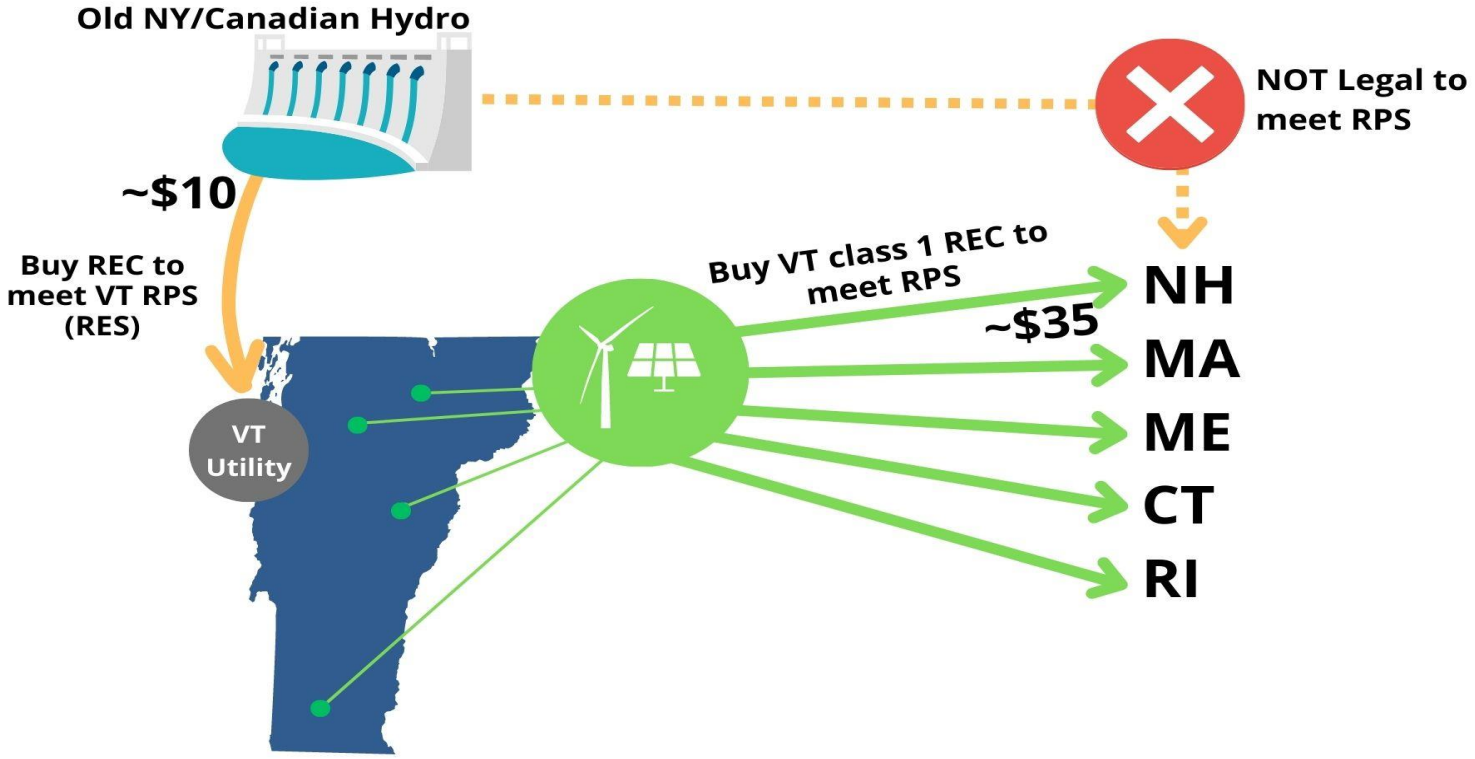
How did we get here?
Vermont's 2015 Renewable Energy Standard (RES)

The RES set two renewable energy targets for 2032:

- **Total Renewable Energy (Tier I)**
  - 75% of retail sales from renewable facilities that can deliver power to the New England grid
- **In-State Renewable Energy (Tier II)**
  - 10% of annual retail sales from in-state sources <5MW
  - Met through net-metering, Standard Offer & PPAs

Why Vermont Needs RES Reform:
The RES Was Not Designed to Address Climate Change

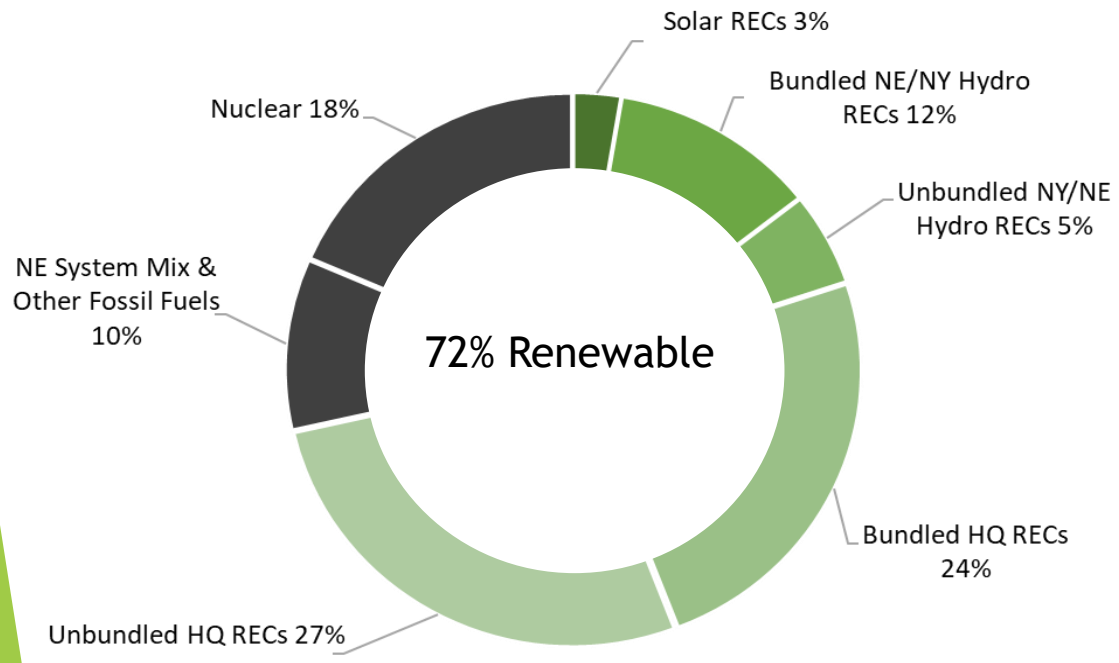
"Much of the Tier I savings are a result of purchasing RECs from existing resources, so while Vermont is reducing its fossil fuel consumption, ***the regional impact on incremental renewable energy is limited.***"
VT DPS 2022 Annual RES Report



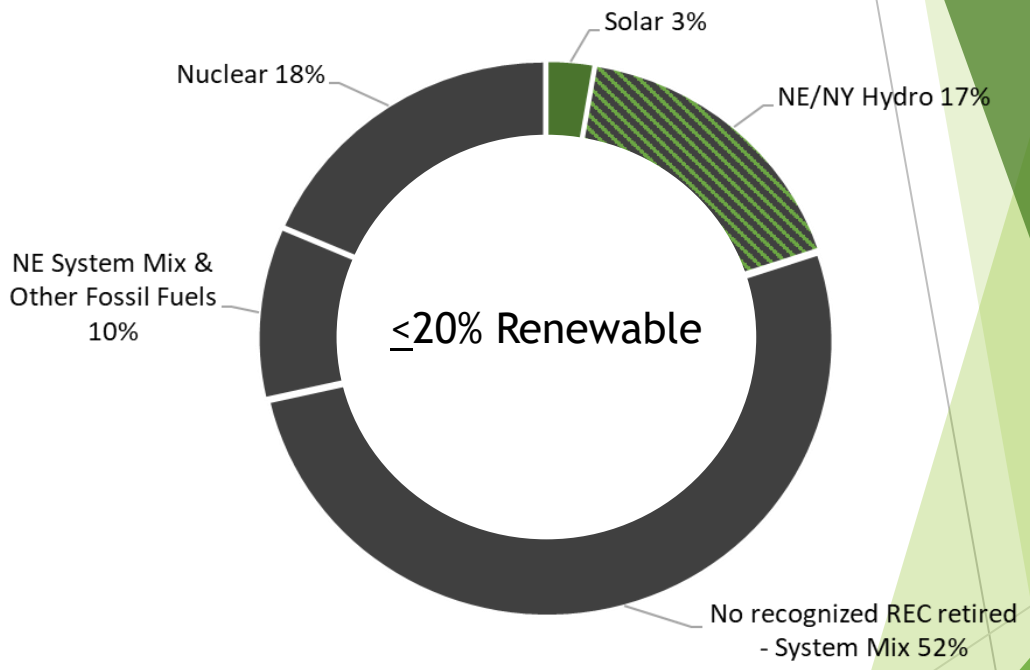
* 99.8% of Tier I requirements are met by retiring old hydropower RECs. The use of unbundled RECs from old out of region hydropower has stifled RE deployment in VT and throughout NE.
* REC's from out of region large hydro are not considered renewable under the RPS of any other NE state

How VT DPS and other New England states view our energy mix after REC trading

Vermont DPS



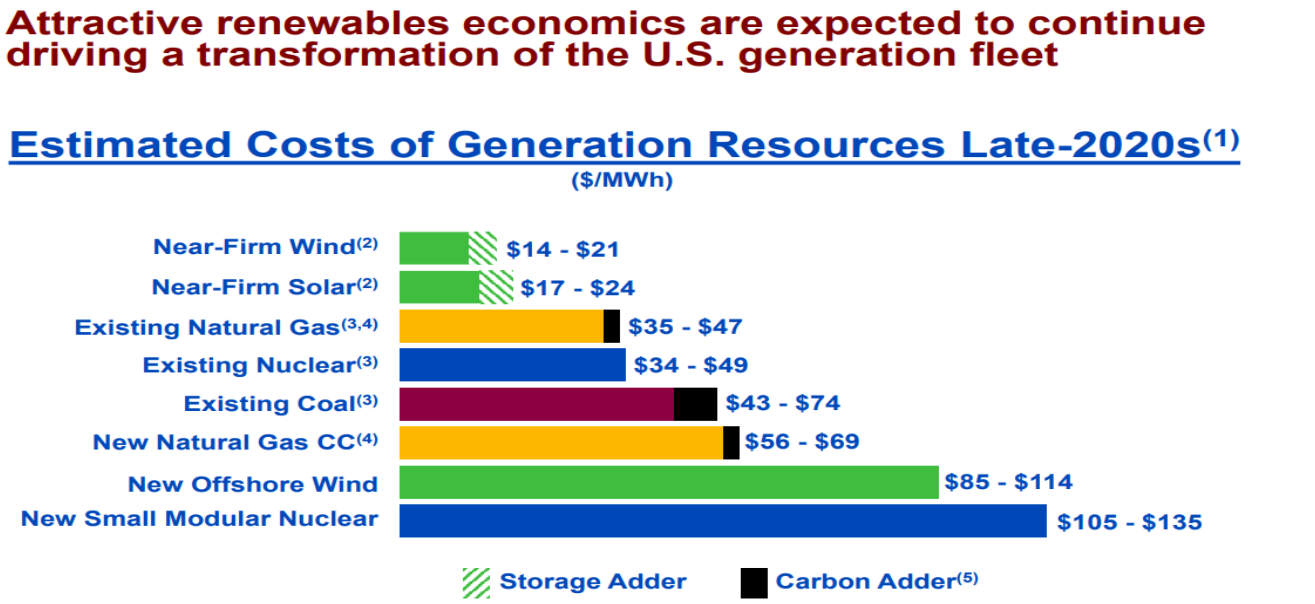
Rest of New England



- Vermont's Renewable Energy Standard is out of step with the rest of New England.
- No other New England state accepts RECs from Hydro Quebec as part of their RPS or puts as few restrictions on what hydro facilities are REC eligible.

Impacts of Increasing In State Renewables

- **Cost:** Next Era estimates for generation later this decade



- **Prime Agricultural Soils:**
- Vermont has 1 million acres of prime agricultural soils
- The Farmland Information Center found that 21,000 acres of VT's agricultural land was developed for residential land uses 2001-2016
  Another 41,000 acres projected to be converted between 2016 and 2040
  In 2022, the PUC issued CPGs for 19 solar projects 250 kW or larger. Collectively, <100 acres of PAS fell within the area of disturbance for these projects

Land use impacts of doubling in-state renewables

New Renewable Project Scenario Modeler							
Project Type	Average Project Size (kW)	Average Capacity Factor	Tier II Generation	Capacity (MW)	Annual Output (MWh)	Number of New Projects	Approximate Acres Utilized
Traditional NM (<50 kW)	10	0.13	33%	251	286,064	25,120	395
New Solar Tarriff (50kW - 1 MW)	750	0.15	22%	145	190,709	194	1,103
Standard Offer 2.0 (1 MW - 5 MW)	4000	0.18	45%	247	390,087	62	1,484
		Total	**100%**	**644**	**Tier II requirements met**		**2,983**

REV model found that

- Current Tier II requirements will take ~700 acres of solar
- 20% Tier II by 2030 will require an additional **total of ~2,300 acres of solar**

A 2017 study from Harvard found residential sprawl consumes 1,500 forested acres/year in Vermont.

Forests:

A 2021 study by Synapse Energy Economics found converting one acre of typical New England forests to solar takes 15x more carbon out of the atmosphere than forestland. This carbon balance will not shift in favor of maintaining forest cover until the marginal emissions rate in New England is reduced by 94%

Renewable Energy Vermont

VNRC, VPIRG, CLF, Rights & Democracy, VCV, Sierra Club, 350VT, REV: Goals for RES Reform

- Capping energy purchases from existing renewable sources at 40% by 2035 to replace the current “Tier 1” renewable energy purchasing requirement
- Increasing the existing 10% in state renewables purchasing requirement to 20% by 2030 and 30% by 2035
- Creating a new "new renewable energy” purchasing requirement of 30% new renewables of any size from within New England by 2035
- Ending the use of unbundled RECs from out of region old hydropower
- Direct the PUC to develop rules that guide and support the development of community solar and to create new procurement programs to ensure Vermont can affordably meet its in state renewable energy goals

Specific Clarifying Changes to Legislative Language

- "Whether if any changes to Vermont's existing renewable energy requirements or other energy policies are needed to increase grid stability, resiliency, modernization and reliability."

- JFO "may issue an RFP to one or more independent third parties to provide facilitation and mediation services to the working group, and ~~economic~~ data, ~~and~~ analysis, and recommendations at the direction of the legislative members."

Why Vermont Needs RES Reform

Every kWh of electricity generated by new solar in New England reduces electricity generation from fossil fuel plants elsewhere in New England

Renewable Energy Vermont