Vermont's Renewable Energy Standard and the Climate Crisis

Presentation to the Central VT Regional Planning Commission
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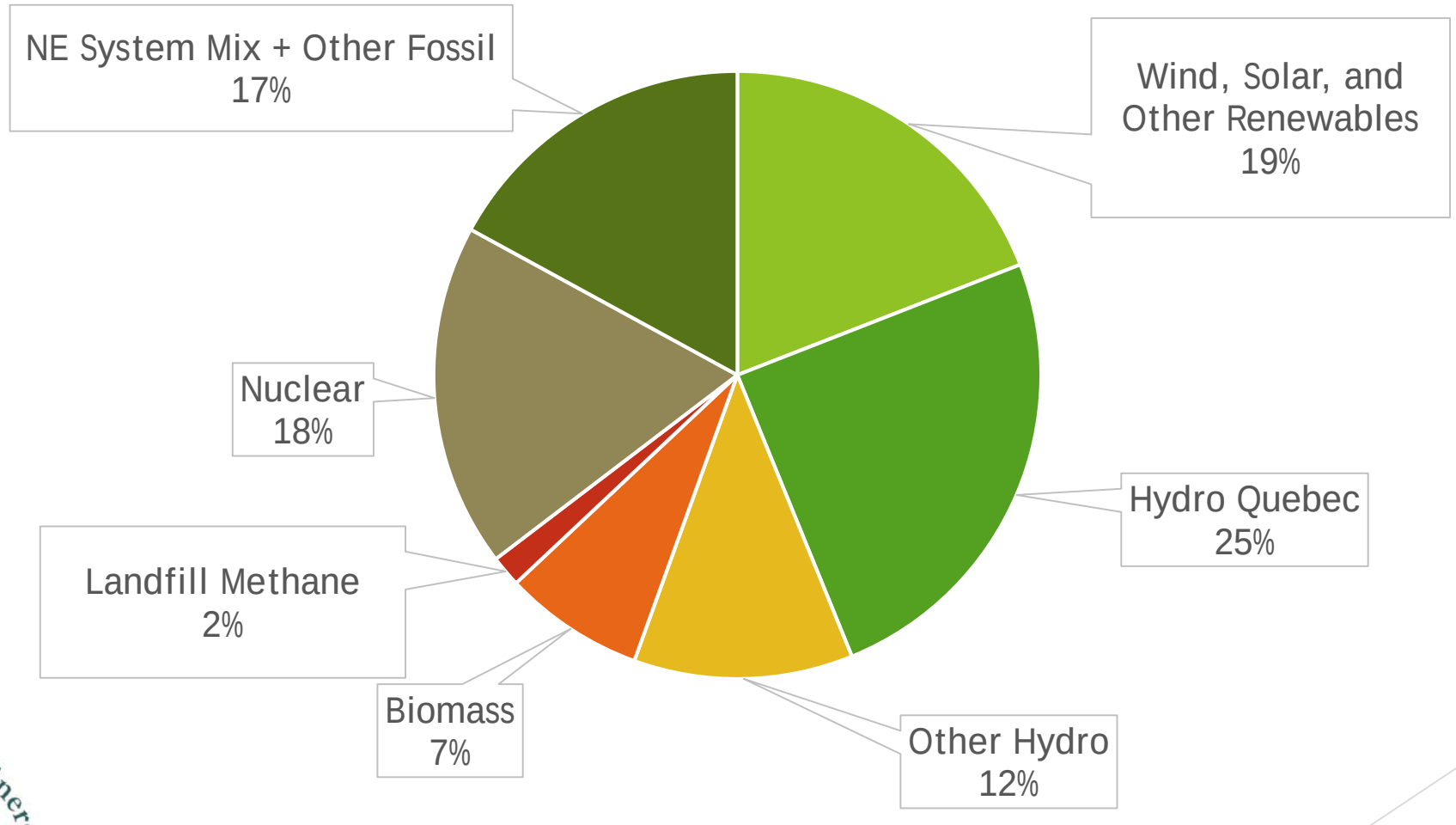
July 11th, 2023

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: Our electricity isn't sustainable as load grows



Vermont's Physical Electricity Supply Portfolio 2021

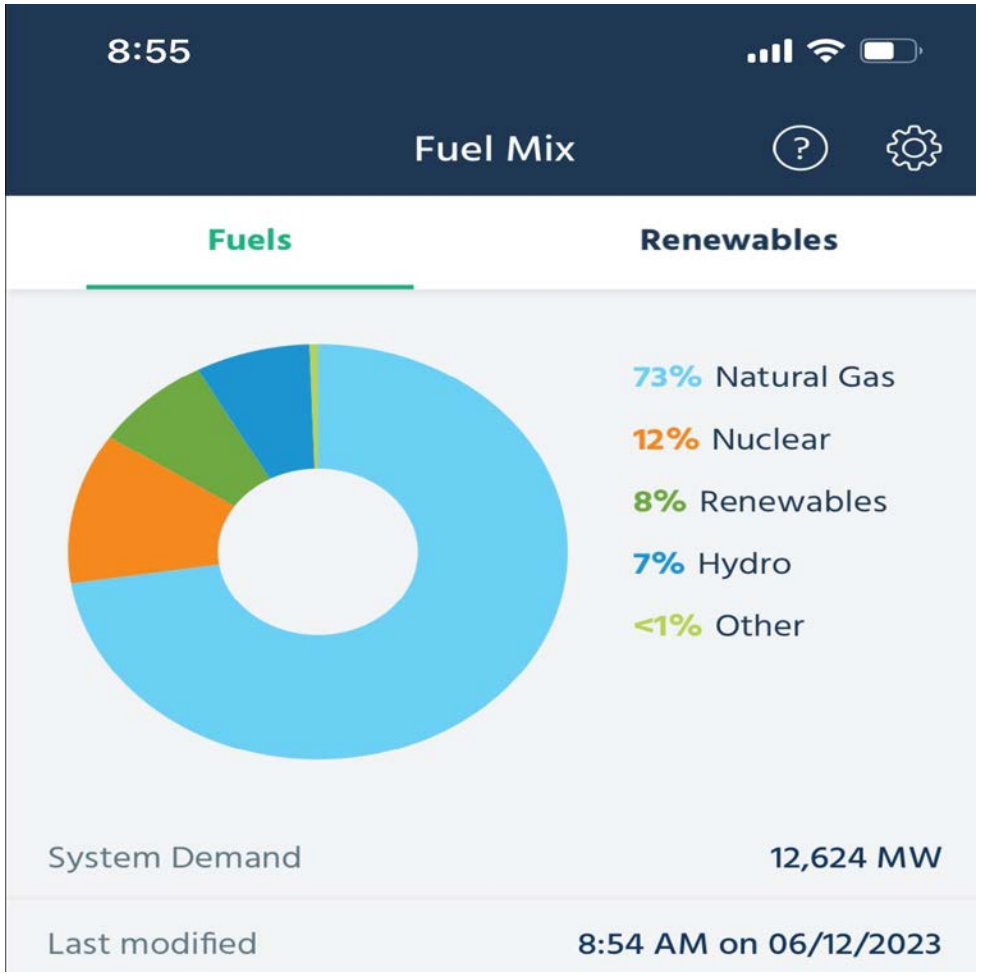
Source: VT Department of Public Service
REV2022 Presentation, 10/27/2022

Why Vermont Needs RES Reform: Environmental Justice

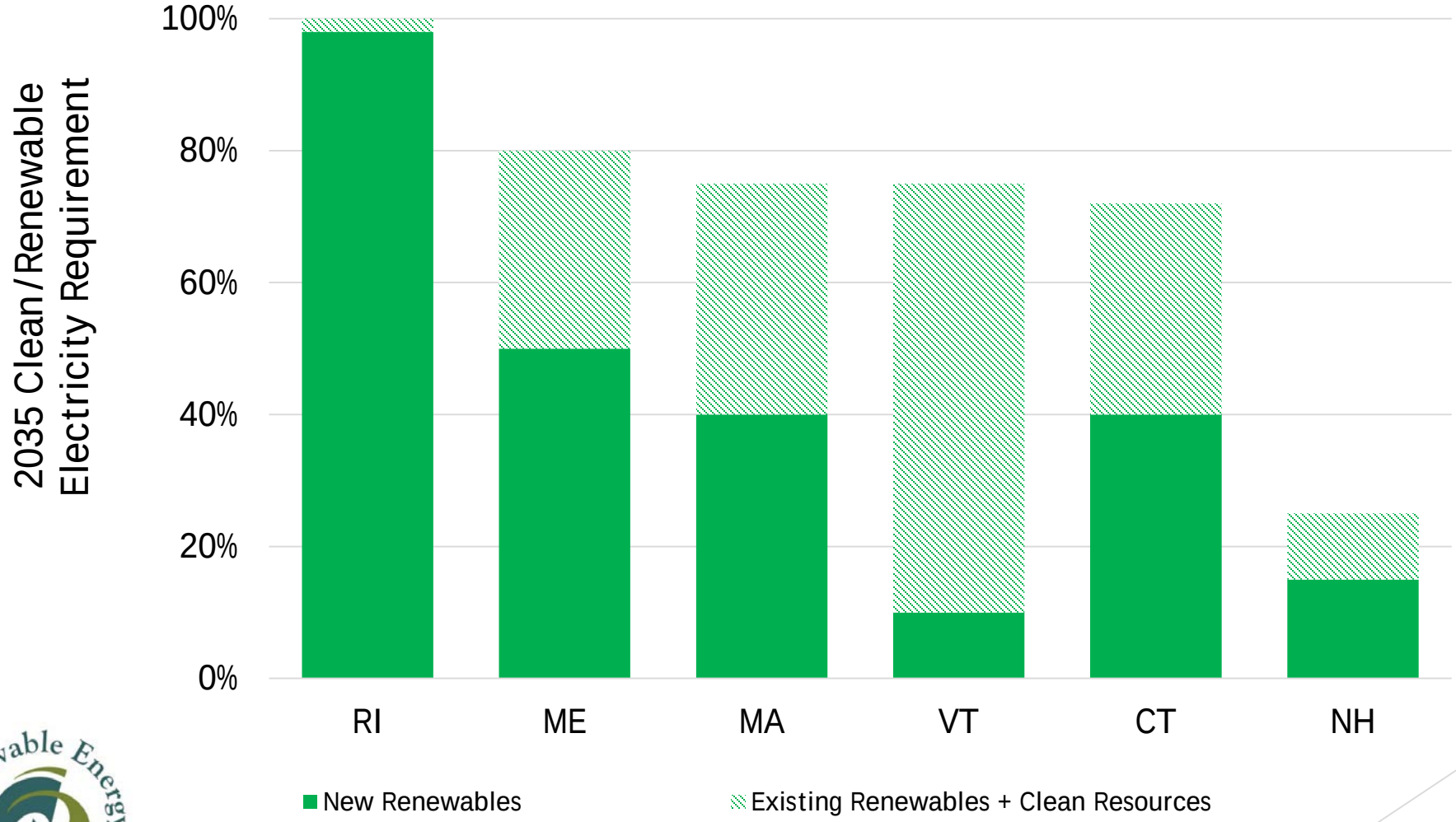
60 acre 360MW natural gas facility in Dayville, CT

- 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

A Daily Snapshot of NE's Energy Mix Doesn't Look Much 'Greener'



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



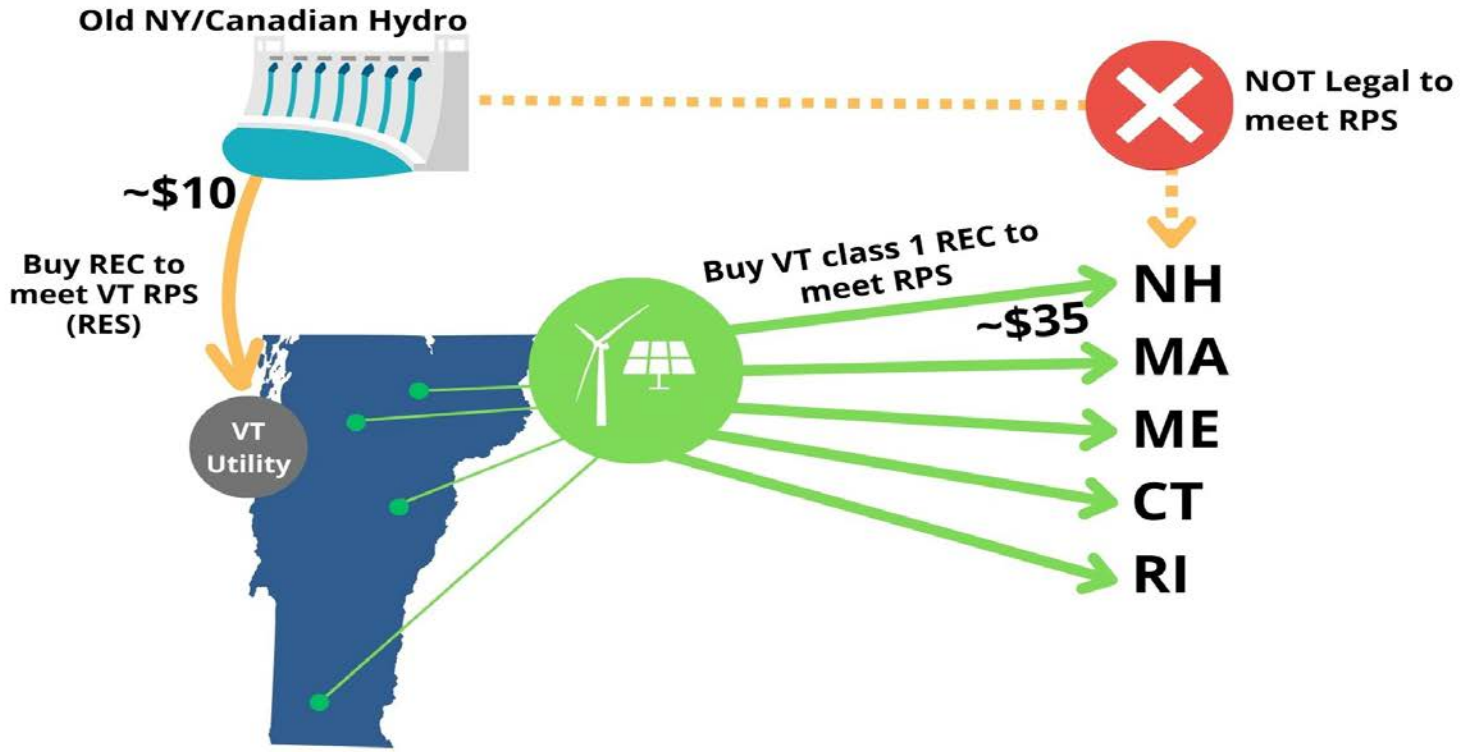
Sources: Database of State Incentives for Renewable Energy (DSIRE)
CT SB 10, Session Year 2022

What has worked with Vermont's RES

- Has deployed solar at a steady pace
- Meeting Tier 1 requirements has not had a significant rate impact
- Provided a good transition to make RE mainstream
- Helped with economic growth

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

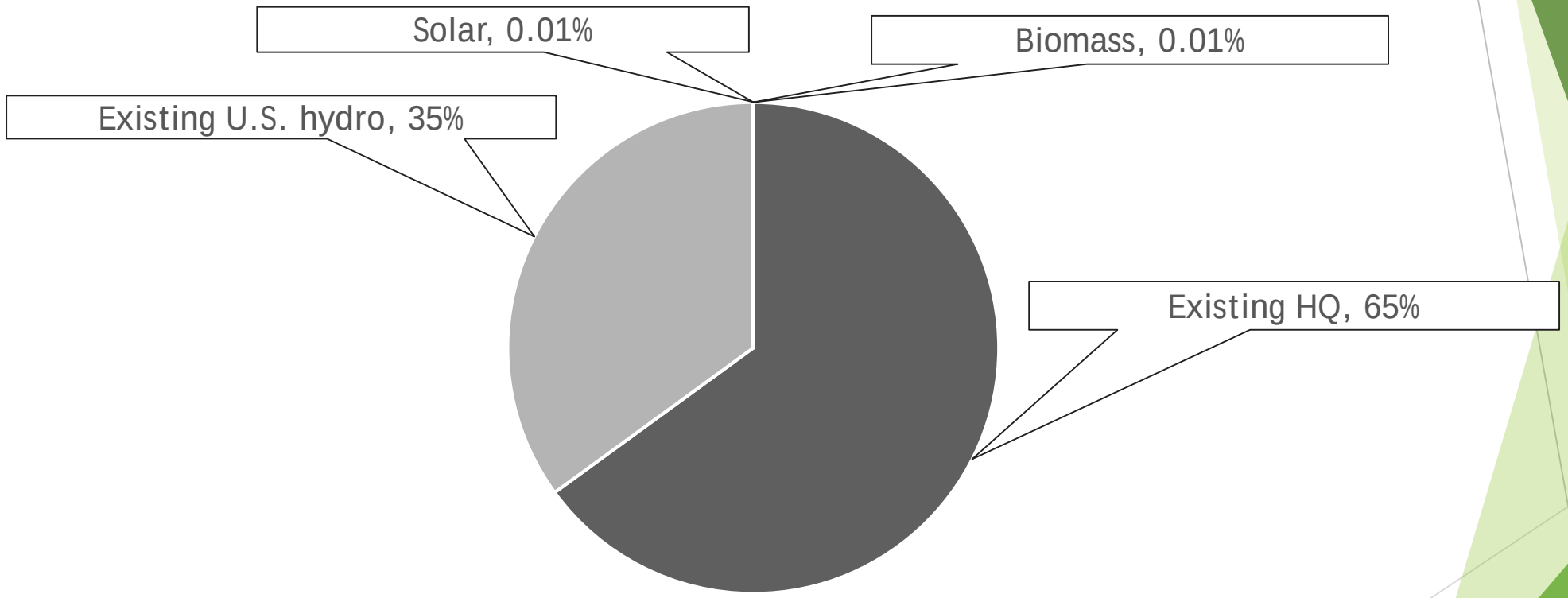
"Much of the Tier I savings are a result of purchasing RECs from existing resources, so while Vermont is reducing its fossil fuel consumption, ***the regional impact on incremental renewable energy is limited.***"
VT DPS 2022 Annual RES Report



REC's from out of region large hydro are not considered renewable under the RPS of any other NE state

Renewable Energy Vermont

99.8% of Tier I Requirements are Met Exclusively by Retiring Old Hydropower RECs



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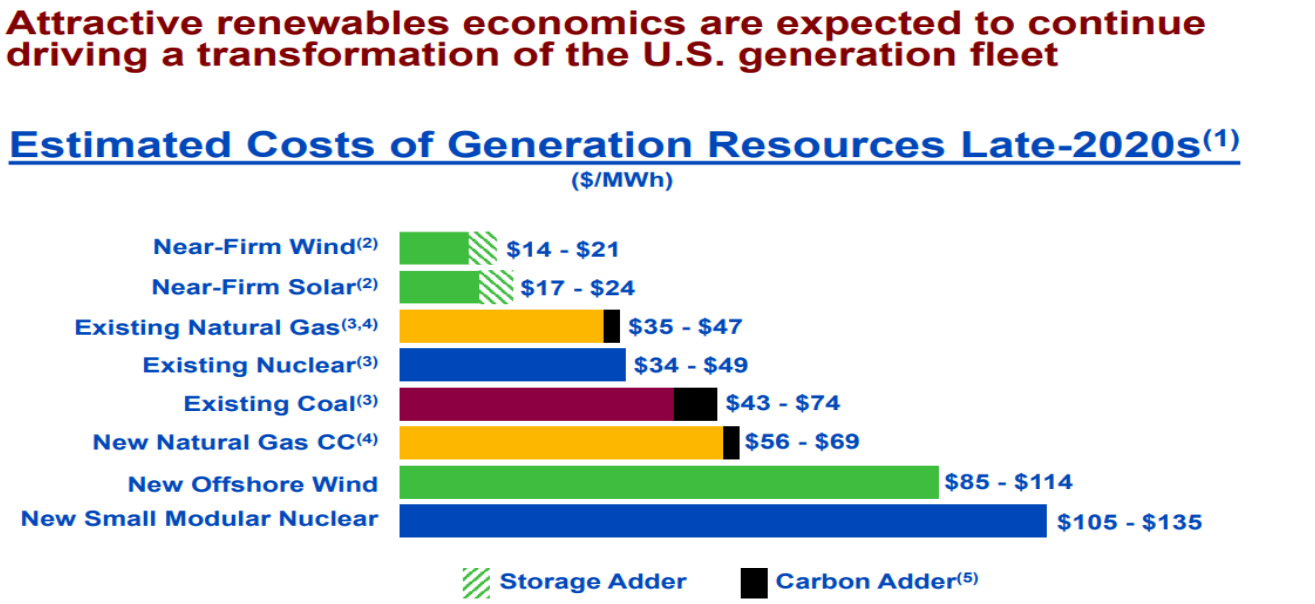
Impacts of Increasing In State Renewables

- **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%

Legislative Working Group on RES Reform

- S.112 creates the Legislative Working Group on Renewable Energy Standard Reform led by two members of each the House and Senate bringing together stakeholders from the environmental movement, utility sector, business community and low income advocates.
- Will hold eight meetings in 2023 to, "… draft legislation to be considered by the General Assembly during the 2024 Legislative session."
- The Working Group is charged with reporting on eight broad topics including:
- "Identifying any barriers to moving to a 100% percent renewable standard for all electrical utilities by 2030"
- "How current programs impact environmental justice focus populations, households with low income, and households with moderate income."
- "Whether any changes to Vermont's existing renewable energy requirements, or other energy policies, are needed to increase grid stability, resiliency, modernization and reliability."

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