Updating Vermont's Renewable Energy Standard

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

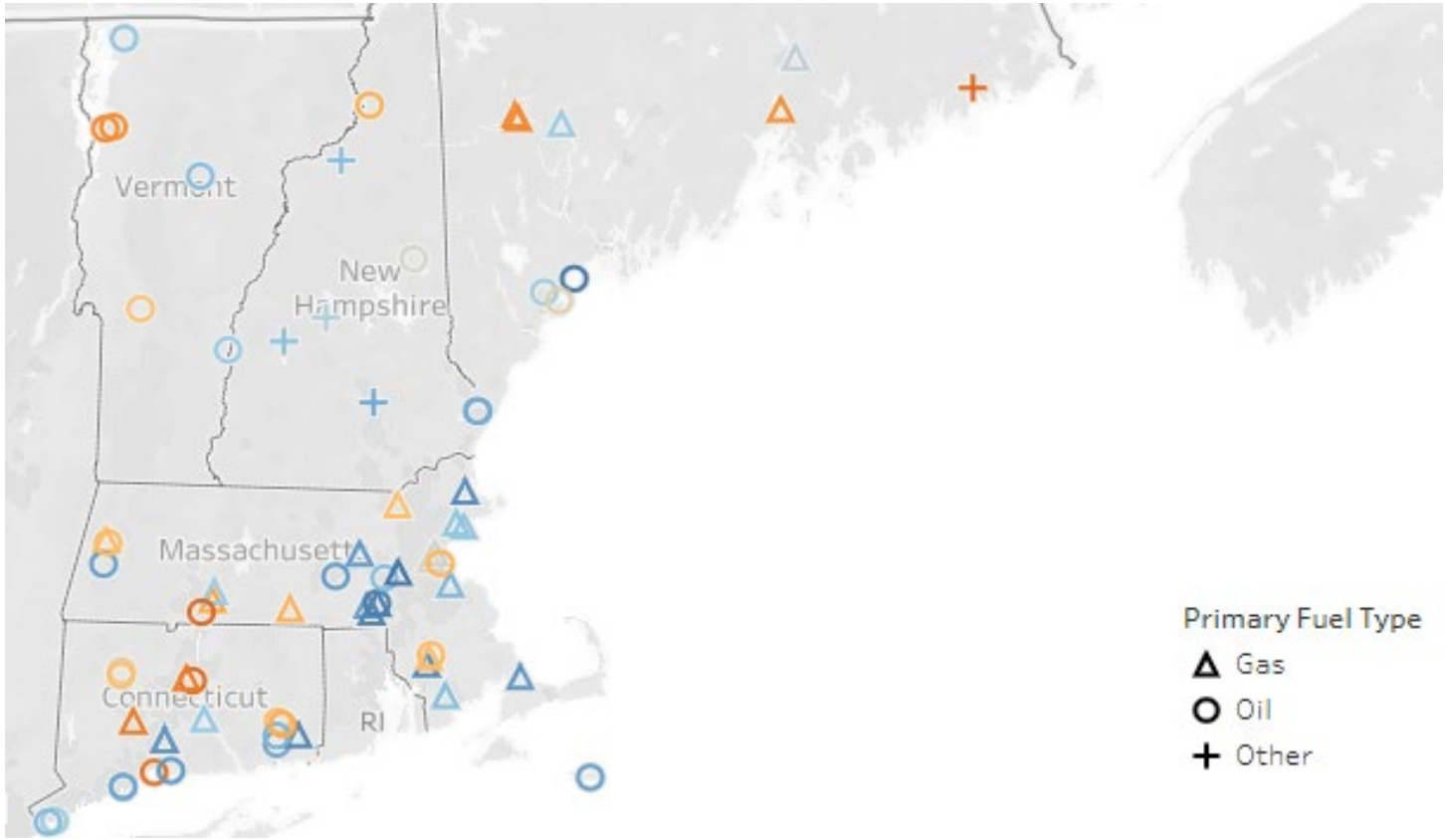
Peter Sterling, Renewable Energy Vermont
Testimony to House Environment & Energy Committee
January 11th, 2024

Why Vermont Needs RES Reform: Environmental Justice

60 acre 360MW baseload natural gas facility in Dayville, CT

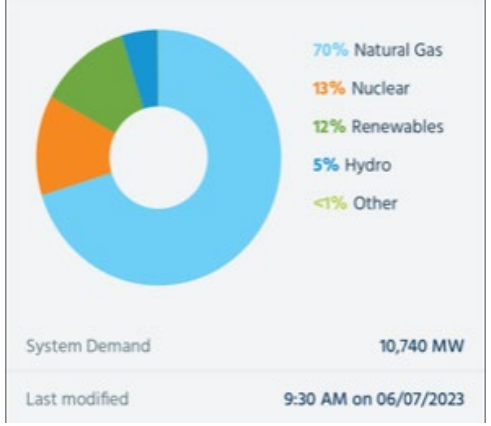
- New England has 81 oil & baseload natural gas plants
- **VT has no baseload natural gas plants**

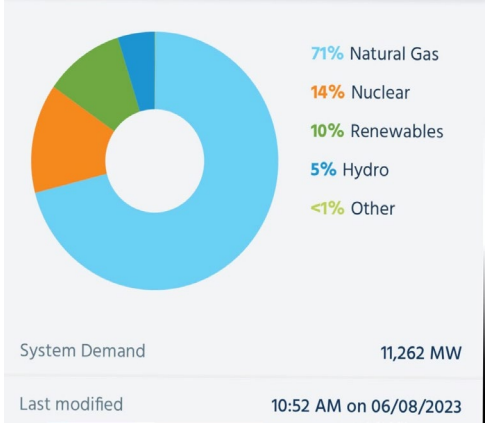
Vermont Also Relies on Other NE States for Electricity From "Peaker Plants"

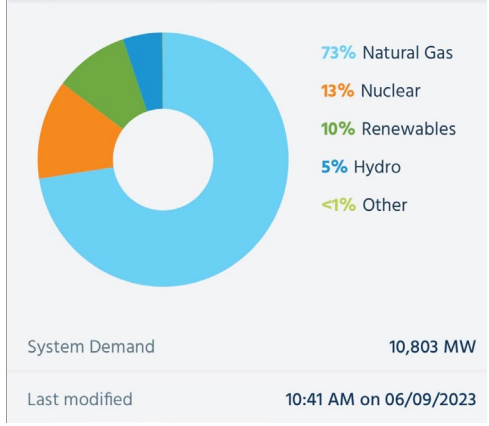


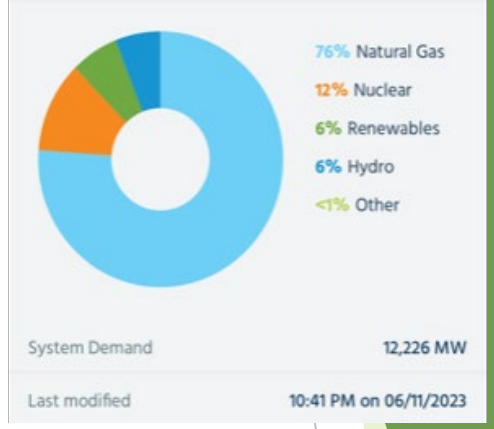
- Vermont 5 has oil "peaker" plants that each run <9hrs/yr

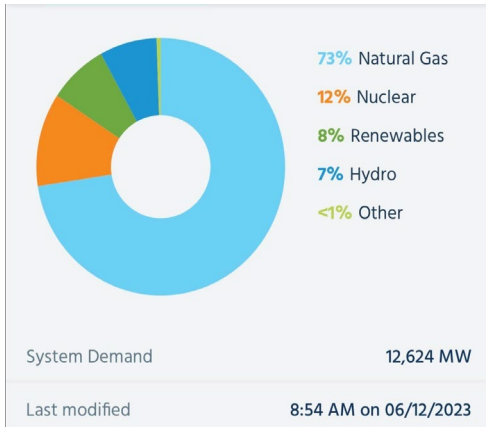
www.cleanegroup.org/initiatives/phase-out-peakers/maps/

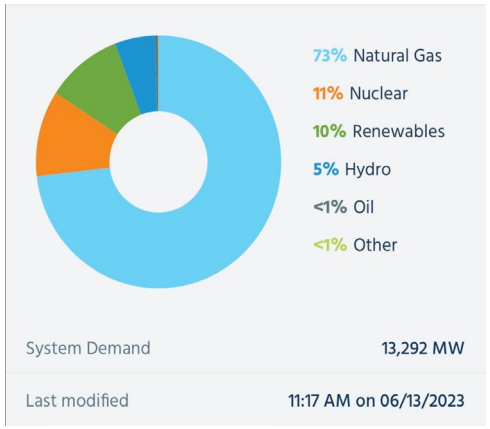


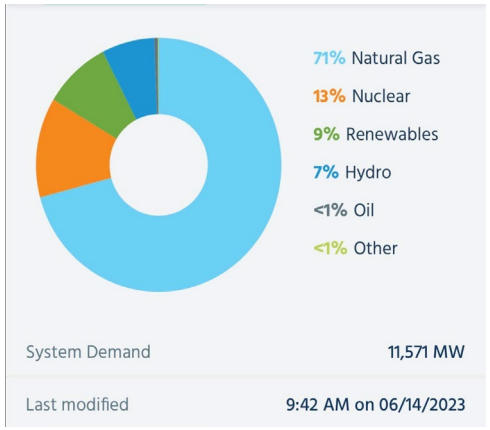


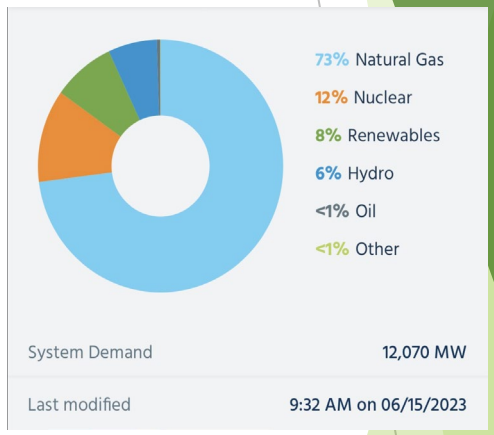


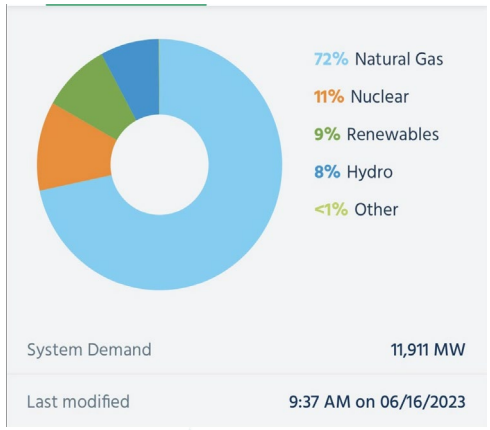


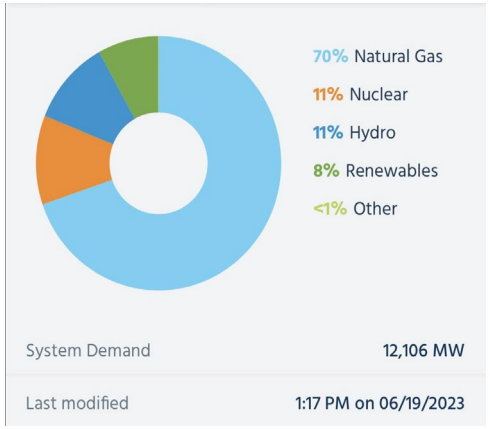


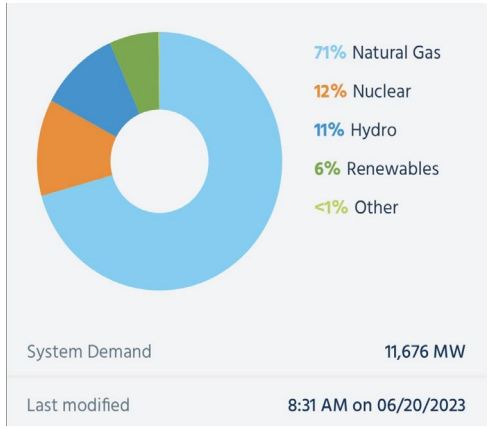


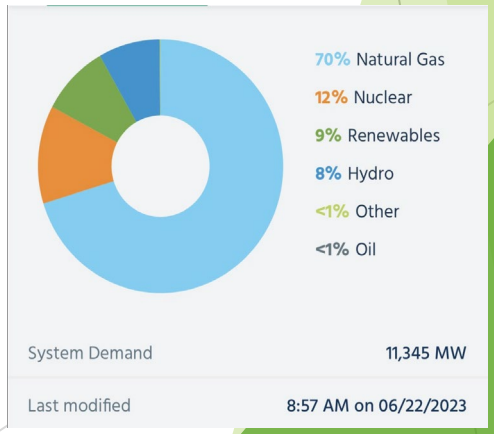










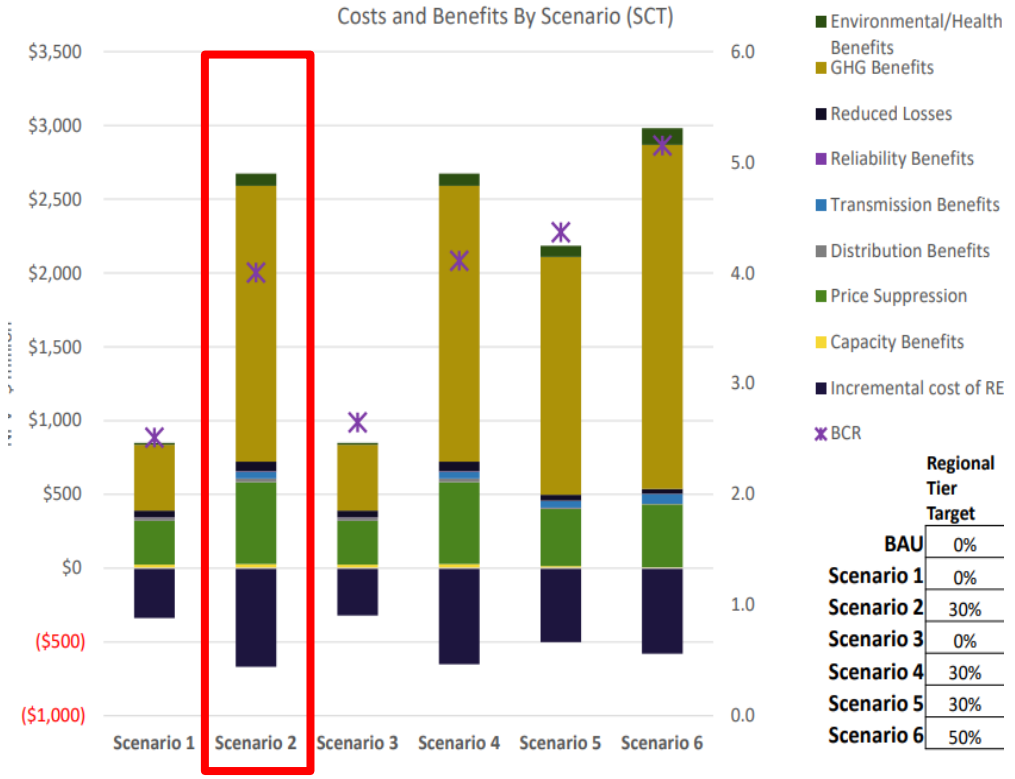


June 6-22, 2023: Daily Snapshot of NE's Energy Mix Doesn't Always Look 'Green'

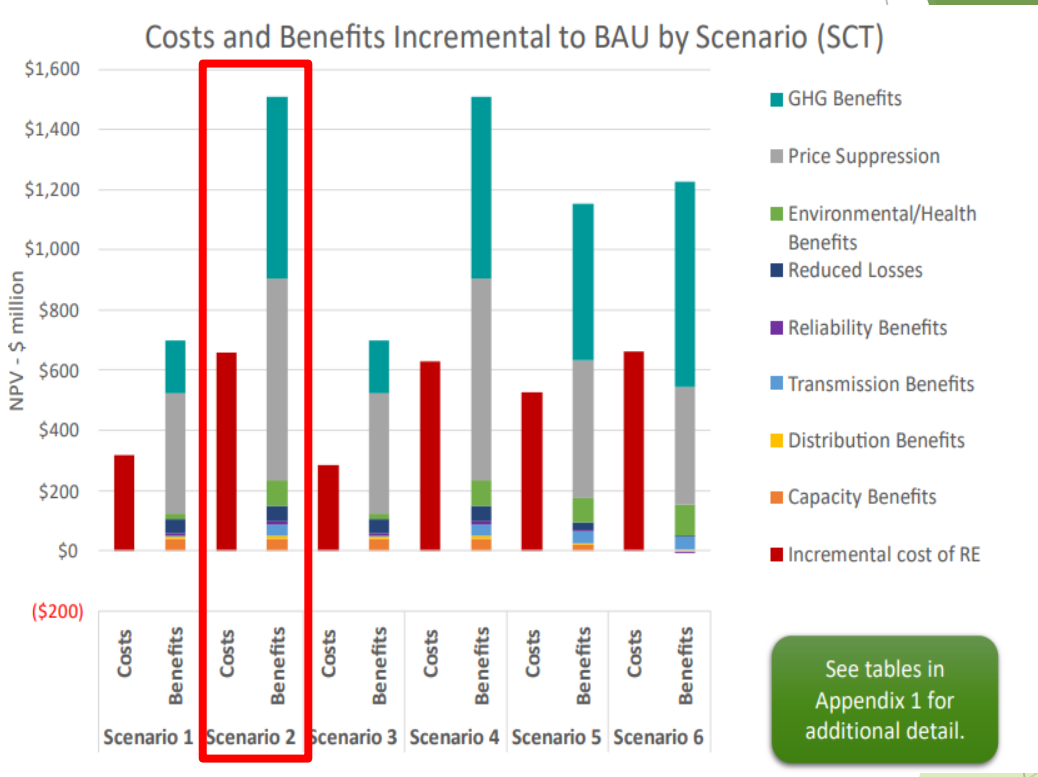
The Consensus Working Group Recommendation is Significant Progress Towards a Cleaner Electric Grid

- Requires Vermont utilities to purchase more **new renewables** in state and in region which is critical to reducing GHG emissions from the electric sector
- Moves Vermont from a 75% renewable energy requirement to 100% renewable energy
- Provides rural utilities and municipal utilities with financial flexibility primarily through changes to net metering and grandfathering in existing Vermont small hydro, wind, and solar

VT DPS Modeling: Societal Benefits of Increasing Renewables Far Outweighs the Costs



	Regional Tier Target
BAU	0%
Scenario 1	0%
Scenario 2	30%
Scenario 3	0%
Scenario 4	30%
Scenario 5	30%
Scenario 6	50%



$1.8b in net savings through 2035

- Largest share is GHG reduction benefits
- Using a 1% discount rate for the social cost of carbon

$900m in net savings through 2035

- Largest share is GHG reduction benefits
- Using a 2% discount rate for the social cost of carbon

The higher the social cost of carbon discount rate, the less you are accounting for future damages from carbon pollution

RES Reform's Impact on Vermont Ratepayers and Landscape are Modest

- REV estimates that for the average VEC, GMP, and municipal utility customer the rate increase is about $4.70/mo in 2030. For an average WEC customer, it's about $3.29/mo in 2030 and for an average BED customer it's $3.90/mo in 2030.
- REV's model found that the current 10% Tier 2 in state purchasing requirement will take ~700 acres for solar statewide.
- 20% Tier 2 by 2030 will require an additional total of ~2,300 acres (versus the 1500 acres a year lost to residential sprawl per a 2017 Harvard study).
- DPS modeling found that doubling the Tier 2 in state purchasing requirement adds $3m-10m a year in state taxes through 2031.

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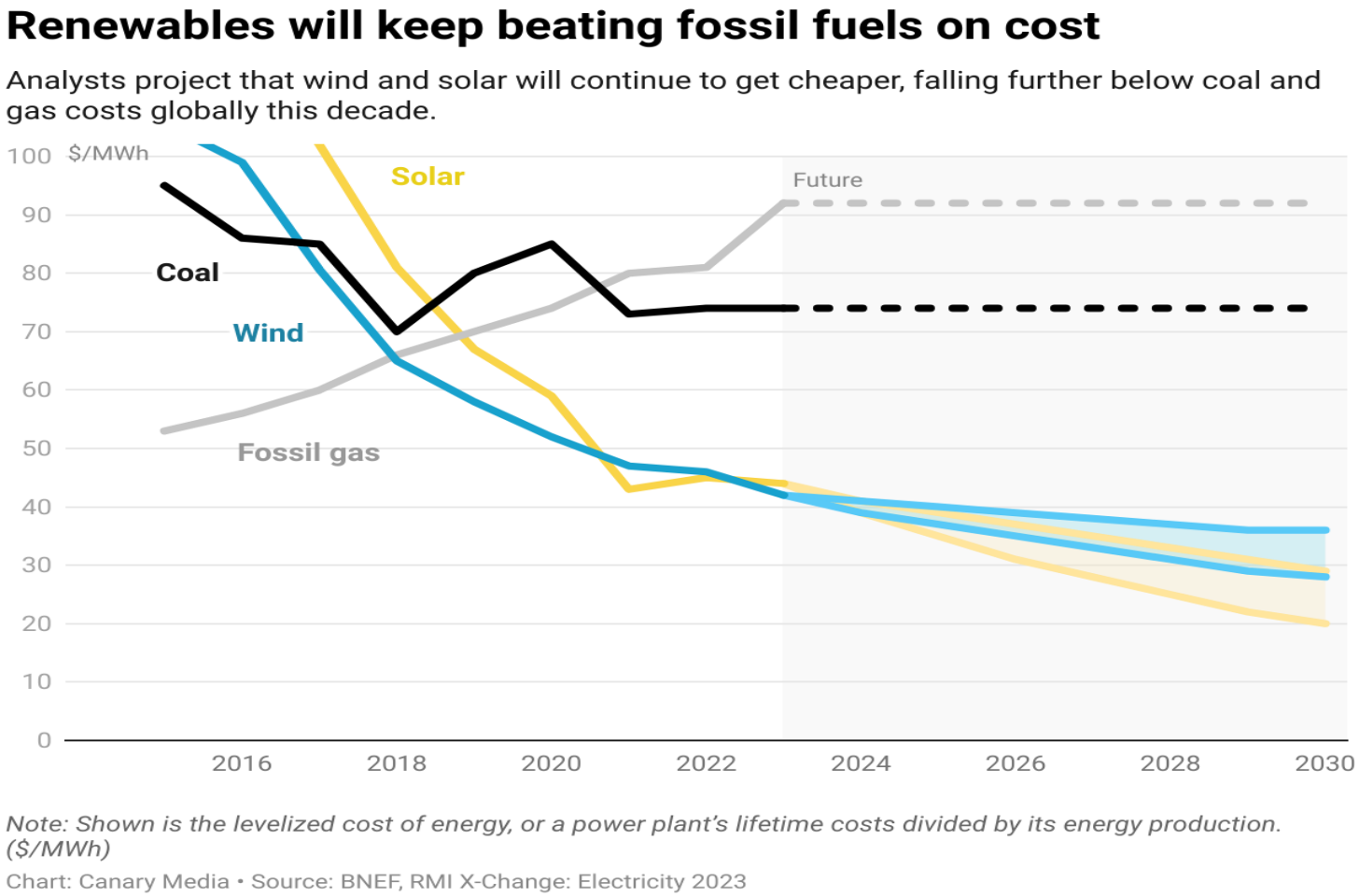
The Price of New Wind and Solar is Projected to Keep Decreasing



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Missed Renewable Projections and Overestimated Costs are Ubiquitous

A 2022 peer-reviewed study of 2,905 global projections of solar system cost reductions between 2010 and 2020 found:

- Experts projected the average cost decrease of deploying solar at 2.6%/yr
- The **actual** cost decrease of deploying solar during this period was 15%/yr
- Over 80% of US DOE Annual Energy Outlook projections underestimate wind & solar generation

Table 1. Comparison of AEO Reference case projections with realized outcomes, 1994–2021

Variable	Average absolute percentage differences (%)	Percentage of projections over-estimated (%)
Solar net generation (all sectors), projected versus actual (table 17)[5,6]	46.2	19.9
Wind net generation (all sectors), projected versus actual (table 18)[5]	29.4	16.2

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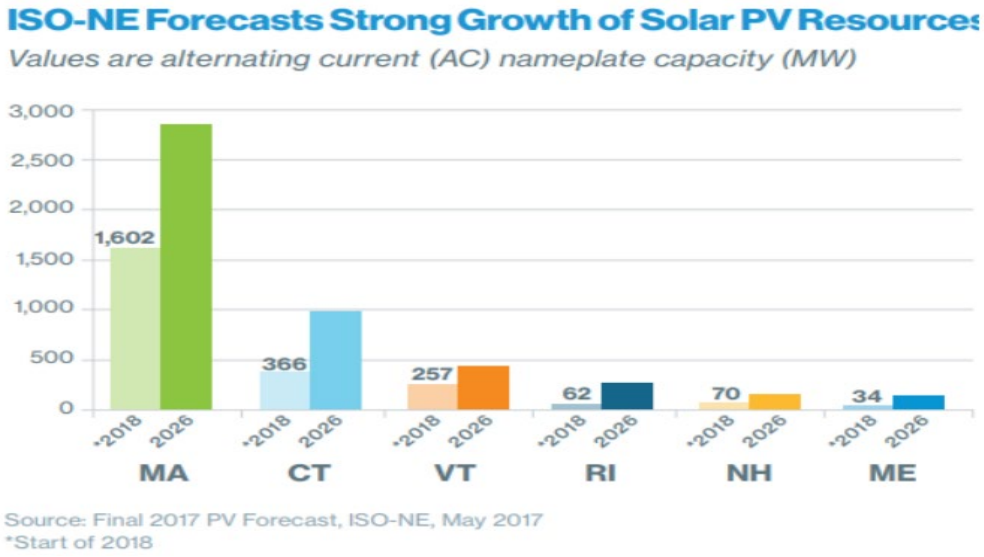
In 2019 testimony to Senate Finance, DPS used a forecast that dramatically underestimated solar deployment just four years out

DPS testimony cited 2017 ISO-NE forecasts that by 2026:

- Maine would have about 100MW of solar
  - Maine in fact had 782MW of solar by Q2 of 2023
- Rhode Island would have about 300MW of solar
  - Rhode Island in fact had 721MW of solar by Q2 of 2023
- New Hampshire would have about 100MW of solar
  - New Hampshire in fact had 234MW of solar by Q2 of 2023



https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate%20Finance/Power/VT%20Power%20Sector%20Landscape/W~Riley%20Allen~VT%20Power%20Sector%20Landscape%20~1-15-2019.pdf

The Consensus RES Reform Working Group Agreement:

- ✓ Gets Vermont to a 100% Renewable Energy Future
- ✓ Helps Fight Climate Change by Decarbonizing the Electric Sector
- ✓ Enhances Grid Reliability & Resilience
- ✓ Helps Vermont Take Control of its Energy Future
- ✓ Has a Small Impact on Electric Rates
- ✓ Gives Needed Flexibility to Vermont Utilities

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