Vermont H.289
Renewable Energy Standard Update

Land Use and Community Impacts

Senate Natural Resources and Energy Committee, April 19, 2024

Vermonters for a Clean Environment

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https://publicservice.vermont.gov/sites/dps/files/documents/VT%20RES%20Technical%20Analysis%20Final%20Report%2011.27.23.pdf

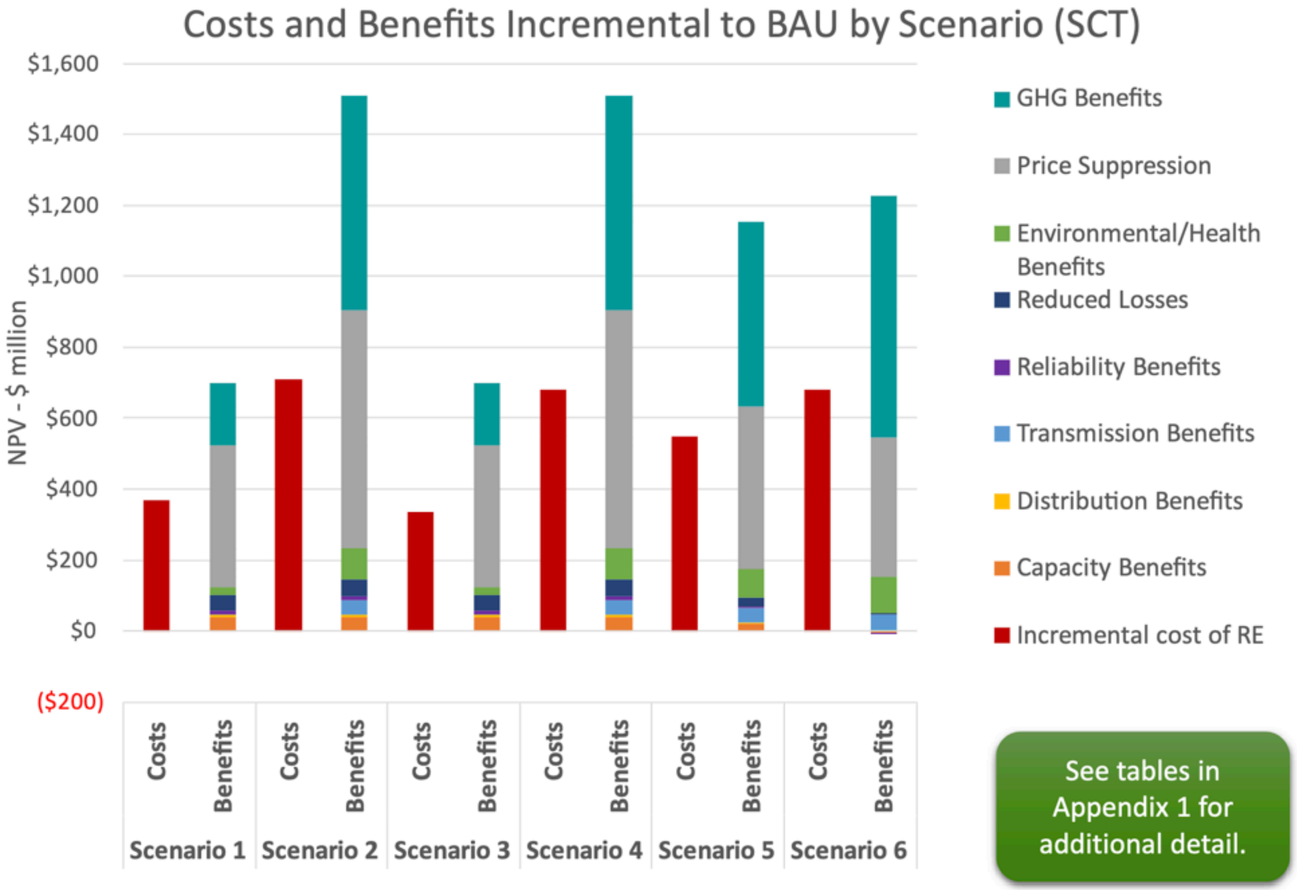
Costs & Benefits by Scenario: Incremental, SCT

Observations:

- Positive net benefits in all scenarios
- GHG and price suppression (all types) drive majority of benefit stack
- Tier I is not assigned any benefits, given absence of "additionality" for legacy resources

Scenario Definitions

	Reg. Tier Target	Tier II Target	Tier I Target	Target Date	Nuclear Tier I Eligible	Biomass Tier I Eligible
BAU	0%	10%	BAU	2032	No	Yes
Scenario 1	0%	30%	100% by 2030	2035	No	Yes
Scenario 2	30%	30%	100% by 2030	2035	No	Yes
Scenario 3	0%	30%	100% by 2030	2035	Yes	Yes
Scenario 4	30%	30%	100% by 2030	2035	Yes	Yes
Scenario 5	30%	20%	100% by 2030	2035	No	No
Scenario 6	50%	10%	100% by 2030	2035	Yes	No



See tables in Appendix 1 for additional detail.

https://publicservice.vermont.gov/sites/dps/files/documents/VT%20RES%20Technical%20Analysis%20Final%20Report%2011.27.23.pdf

Costs & Benefits by Scenario: Incremental, RIM

Observations:

- RIM focuses exclusively on items impacting VT bills
- Excludes GHG benefits
- Price suppression benefits limited to in-state (~4% of regional benefits)
- RIM approach yields net costs under every scenario

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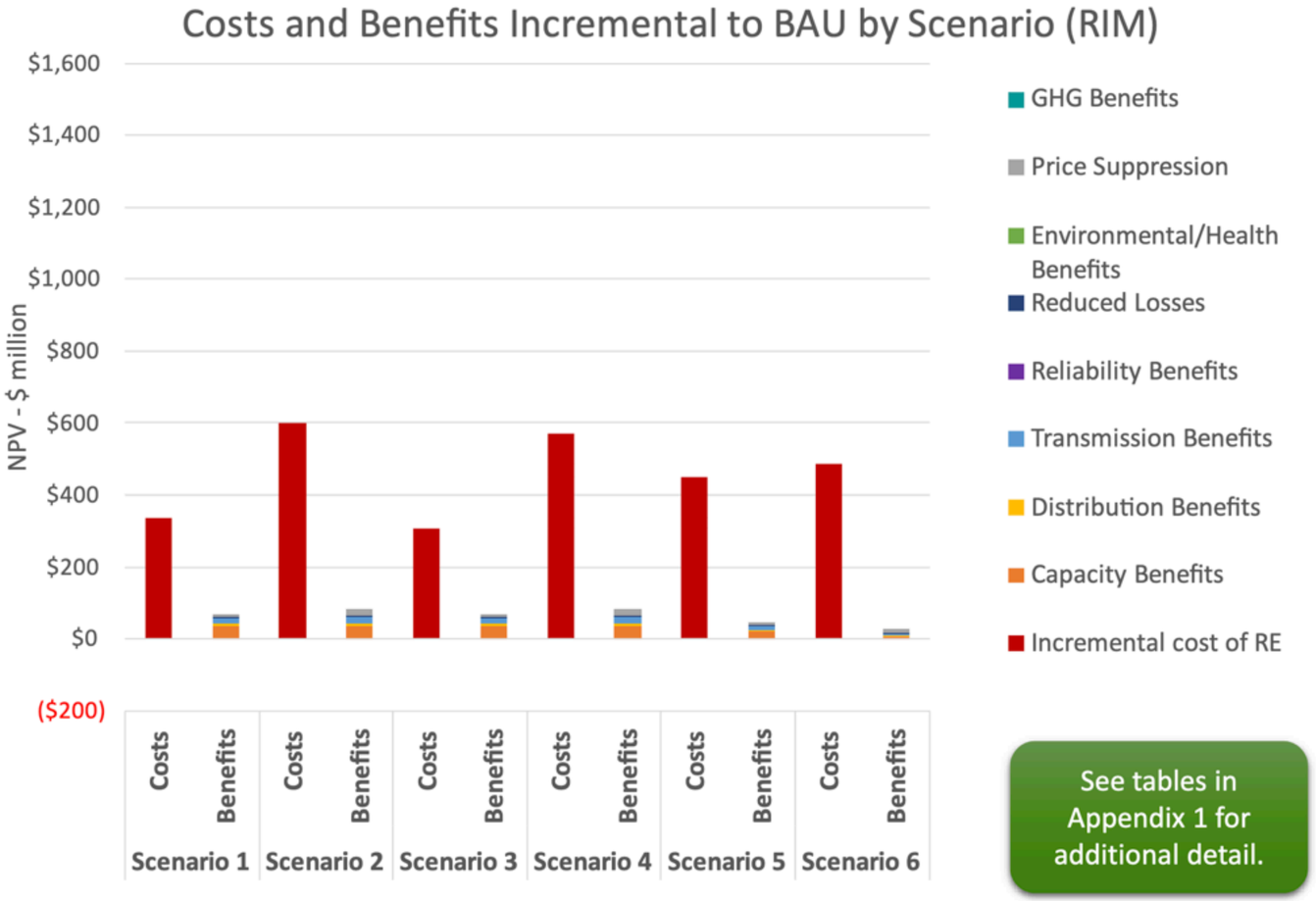


See tables in Appendix 1 for additional detail.

https://publicservice.vermont.gov/sites/dps/files/documents/VT%20RES%20Technical%20Analysis%20Final%20Report%2011.27.23.pdf

LAND USE IMPACT BY SCENARIO (ACRES)

THROUGH 2035

Tech (Location)	BAU	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Solar (In-State)	873.9	2197.8	2232.6	2197.8	2232.6	1582.0	937.0
Wind (In-State)	5.4	5.4	152.4	5.4	152.4	152.4	154.7
Hydro (In-State)	0.0	0.0	3.5	0.0	3.5	3.5	3.5
Total In-State	**879**	**2,203**	**2,388**	**2,203**	**2,388**	**1,738**	**1,095**
Solar (Out-of-State)	0.0	0.0	5301.2	0.0	5301.2	5007.3	11736.9
Wind (Out-of-State)	0.0	0.0	208.9	0.0	208.9	208.9	212.2
Hydro (Out-of-State)	0.0	0.0	63.0	0.0	63.0	63.0	64.1
Total Out-of-State	**-**	**-**	**5,573**	**-**	**5,573**	**5,279**	**12,013**

FROM THE SEA MODEL

11

https://storymaps.arcgis.com/stories/932be293f1af43c8b776fdad24d9f071

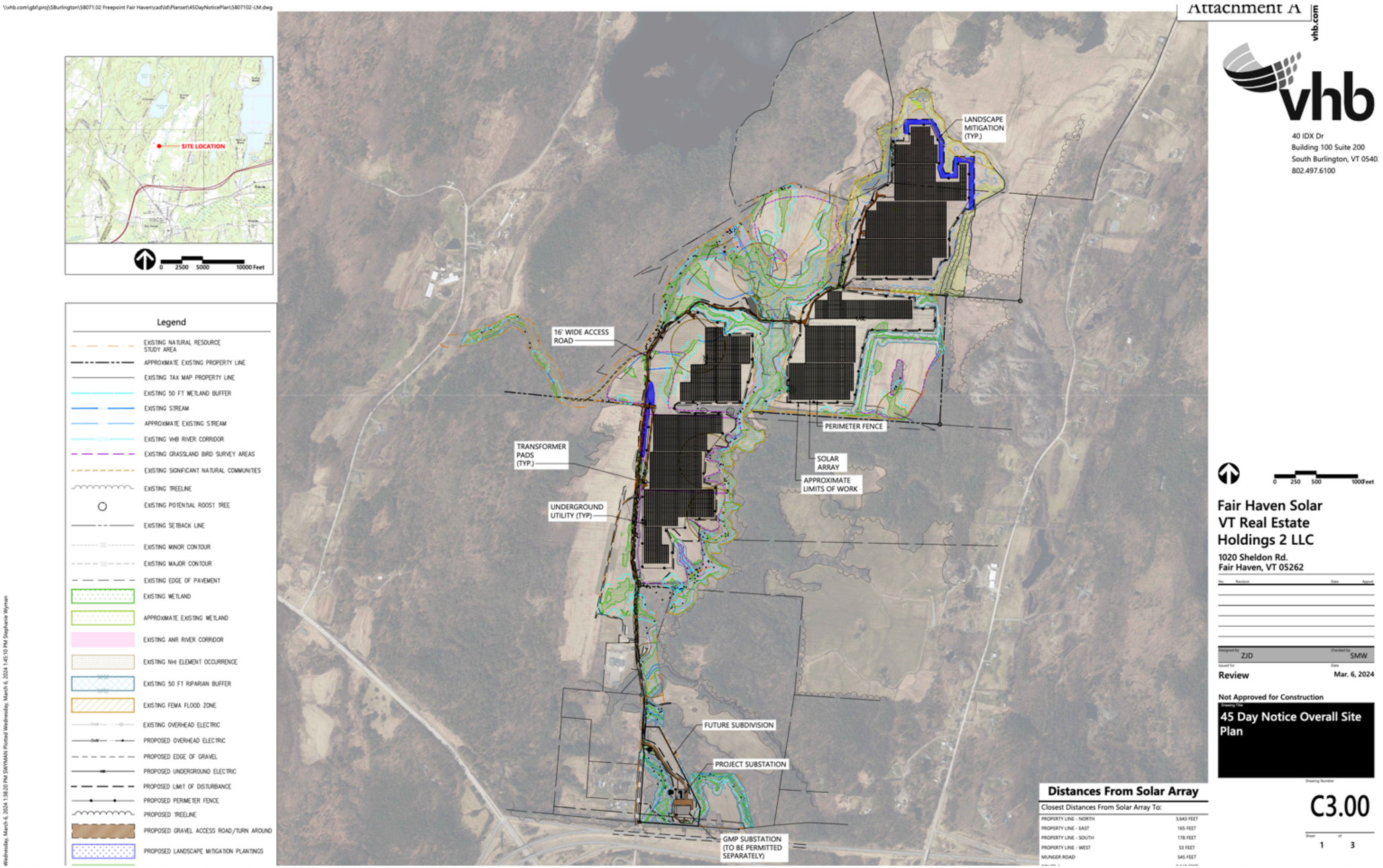
Shaftsbury Solar 20 MW

https://storymaps.com/stories/d1603e0b29924697a12db7eb3b6e2a84

Environment & Climate

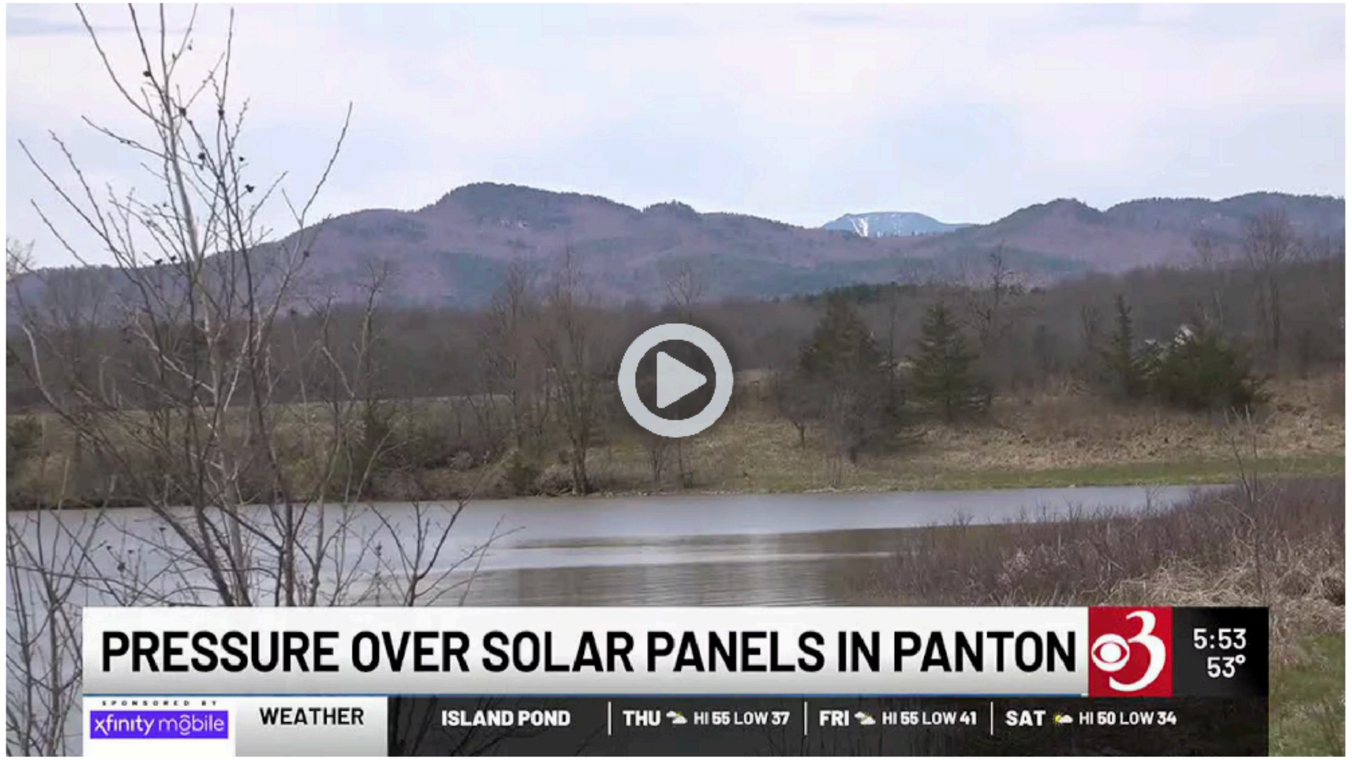
From Serene Shaftsbury to Industrial Solar?

Fair Haven Solar 20 MW



https://www.wcax.com/2024/04/17/backlash-over-panton-solar-project-plan/

Backlash over Panton solar project plan



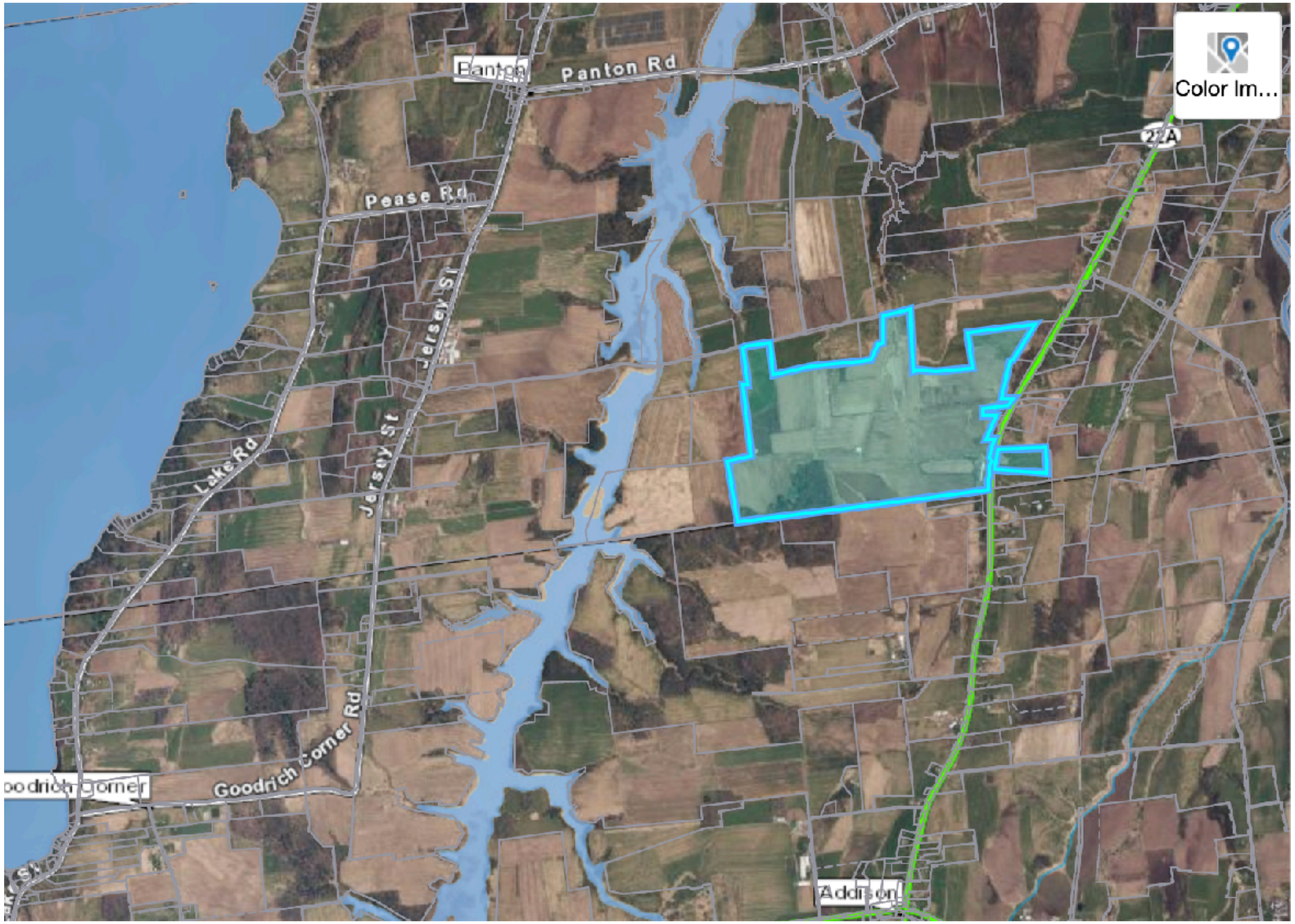
By Sophia Thomas

Published: Apr. 17, 2024 at 5:14 PM EDT | Updated: 17 hours ago

PANTON, Vt. (WCAX) - Could the Addison County town of Panton become home to Vermont's largest solar array?

Freepoint Solar and SunEast Development are behind the so-called Viridis Solar project, a 50-megawatt array that would cover 300 acres -- nearly 230 football fields -- adjacent to the Dead Creek Wildlife Area.

Panton Solar 50 MW Location

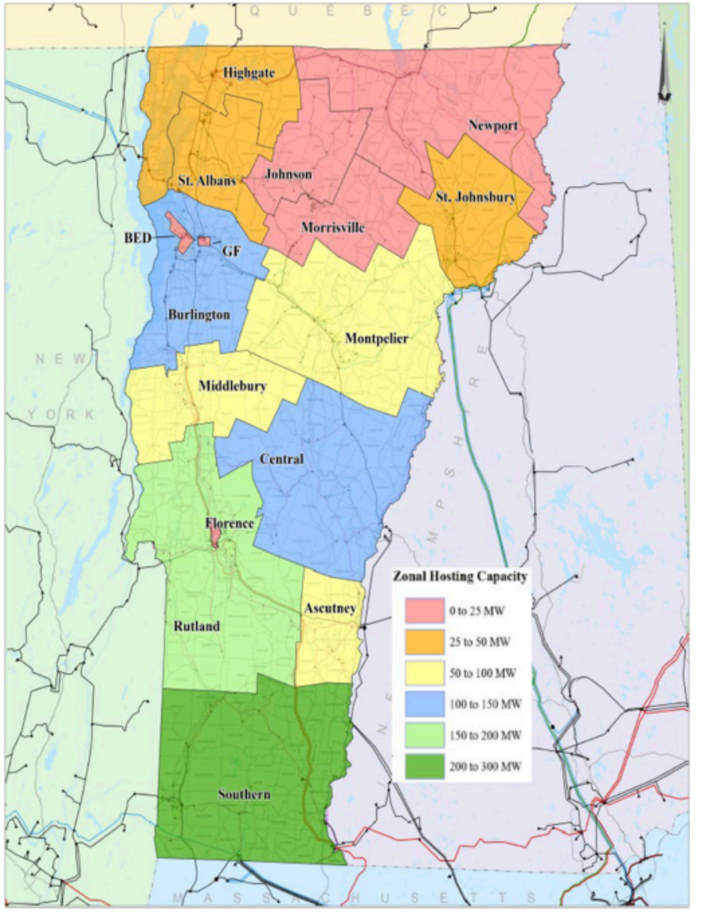


https://legislature.vermont.gov/Documents/2024/WorkGroups/Senate%20Natural%20Resources/Bills/H.289/Witness%20Testimony/S.289~Kerrick%20Johnson~VT%20Electric%20Company~4-18-2024.pdf

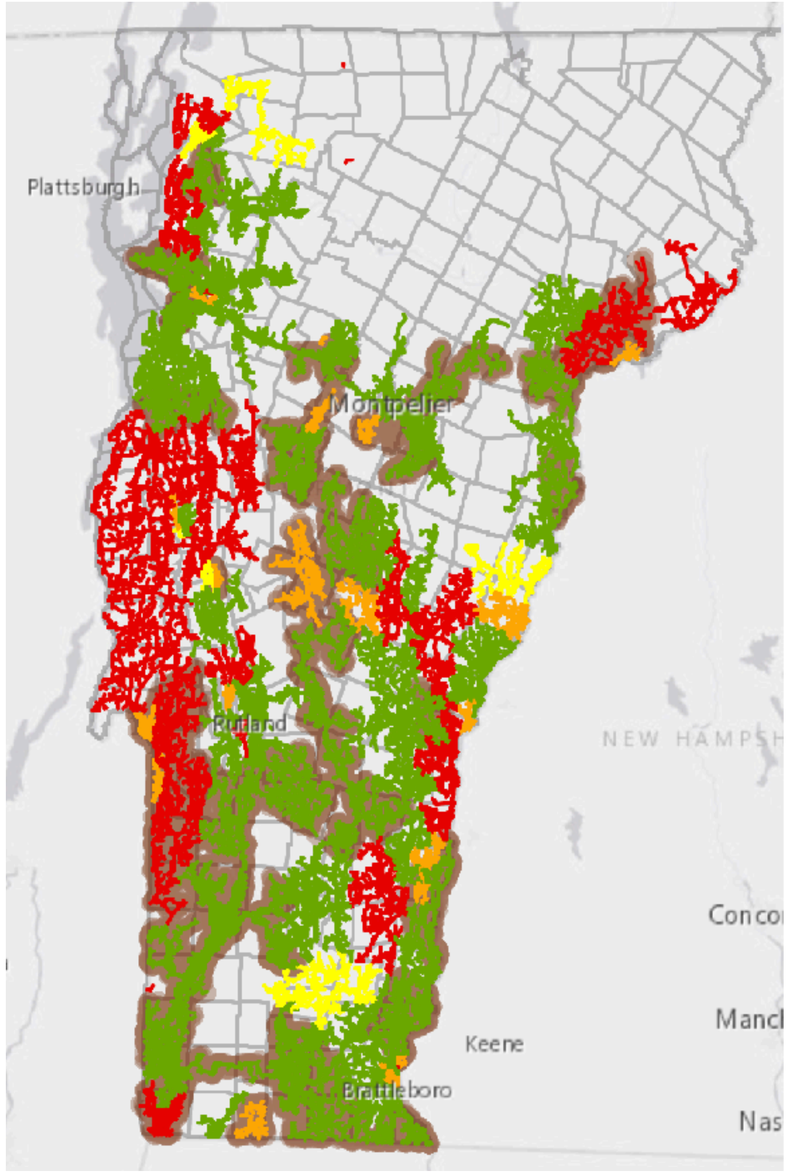
Optimized geographical distribution of distributed generation (DG)

- Allowed 5% overloads
- Maximum DG amount
  - 1175 MW (considering Transmission limits)
  - 1057 MW (considering Transmission and subtransmission limits)

UTILITY	INSTALLED SOLAR PV AS OF 2023 (MW)	ADDITIONAL SOLAR PV (MW)	OPTIMIZED SOLAR PV DISTRIBUTION (MW)
BED	9	0	9
GMP	396	525	921
HYDE PARK	1	0	1
VEC	41	34	75
VPPSA	25	7	32
WEC	10	4	15
STOWE	3	0	3
TOTAL	487	570	1057



https://gmp.maps.arcgis.com/apps/webappviewer/index.html?id=4eaec2b58c4c4820b24c408a95ee8956



GMP Solar Map 2.0

DG Circuit Capacity Per Substation Nameplate Rating

- Unrated
- Substation transformer with at least 20% capacity remaining
- Substation transformer with less than 20% capacity remaining
- Substation transformer with less than 10% capacity remaining
- Due to system limitations, interconnections on this circuit may experience higher costs and delayed interconnections

TGFOV Circuits

- Interconnections on these circuits subject to GMP TGFOV Tariff fee of $37 per kW of AC capacity authorized by VT PUC Docket # 19-0441-TF.

Towns

Shaftsbury, Fair Haven, Panton Solar Developer https://www.freepoint.com/ https://www.suneastdevelopment.com/

https://www.justice.gov/opa/pr/commodities-trading-company-agrees-pay-over-98m-resolve-foreign-bribery-case

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PRESS RELEASE

Commodities Trading Company Agrees to Pay Over $98M to Resolve Foreign Bribery Case

Thursday, December 14, 2023

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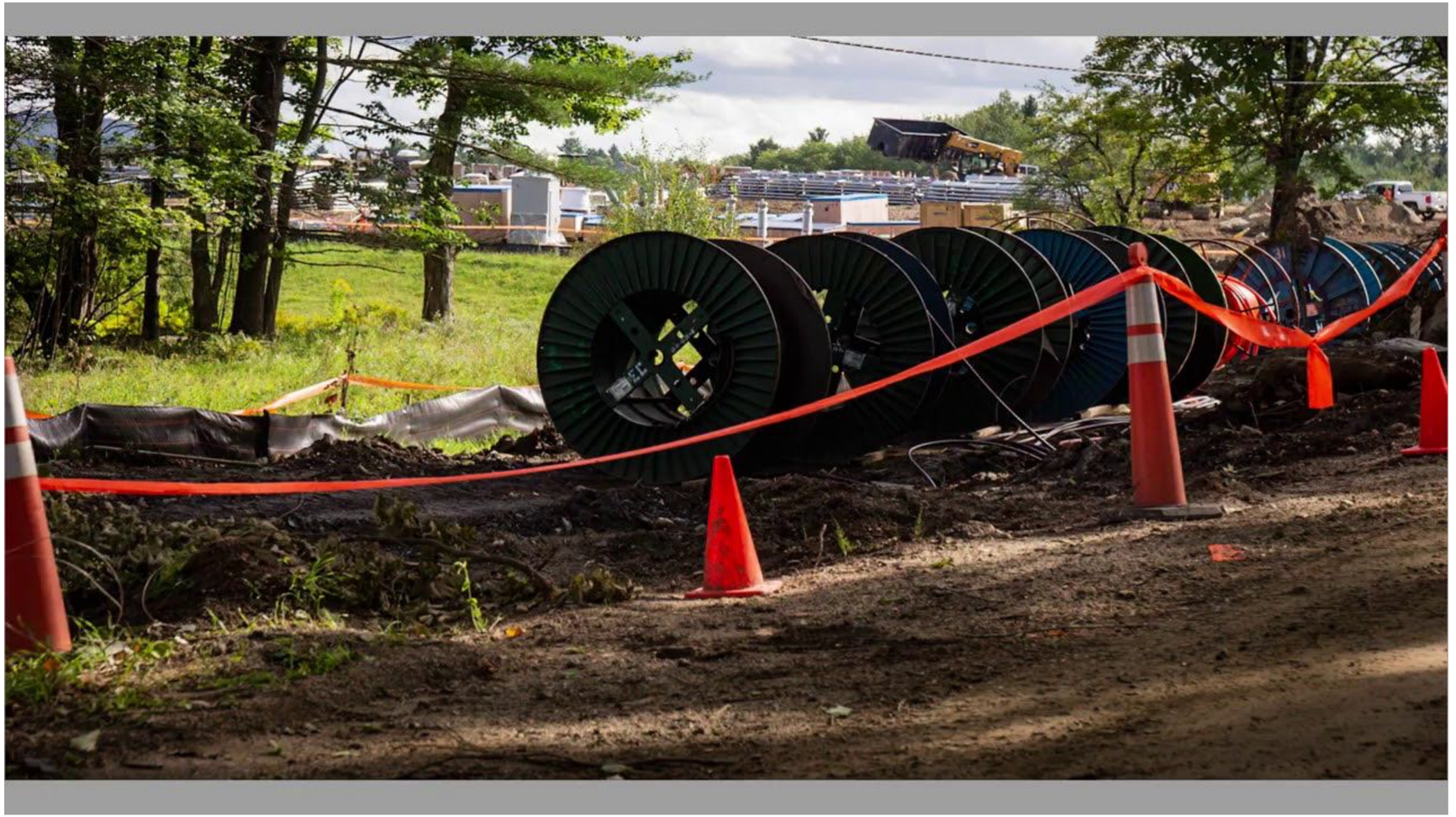
For Immediate Release
Office of Public Affairs

Freepoint Commodities LLC (Freepoint), a commodities trading company based in Stamford, Connecticut, has agreed to pay over $98 million to resolve an investigation by the U.S. Justice Department into violations of the Foreign Corrupt Practices Act (FCPA) stemming from the company's involvement in a corrupt scheme to pay bribes to Brazilian government officials.

Freepoint has also agreed to disgorge more than $7.6 million to the Commodity Futures Trading Commission (CFTC) in a related matter.

Owner of Coolidge Solar, Ludlow 20 MW and some Standard Offer projects

https://www.nexteraenergy.com/home.html



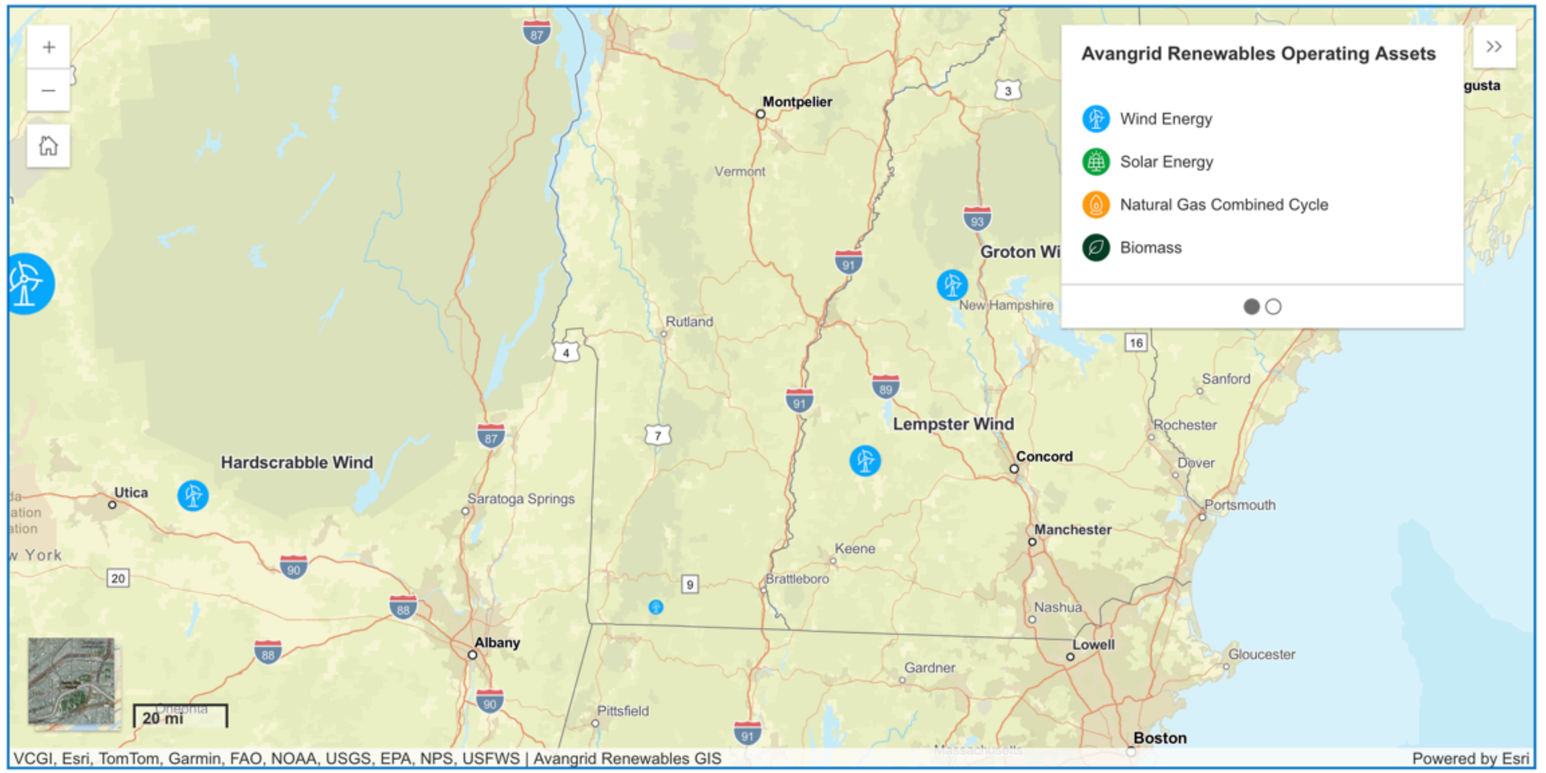
Owner of Deerfield Wind. GMP has an option to purchase the project.

https://www.avangrid.com/aboutus/renewables

Leading the Clean Energy Force

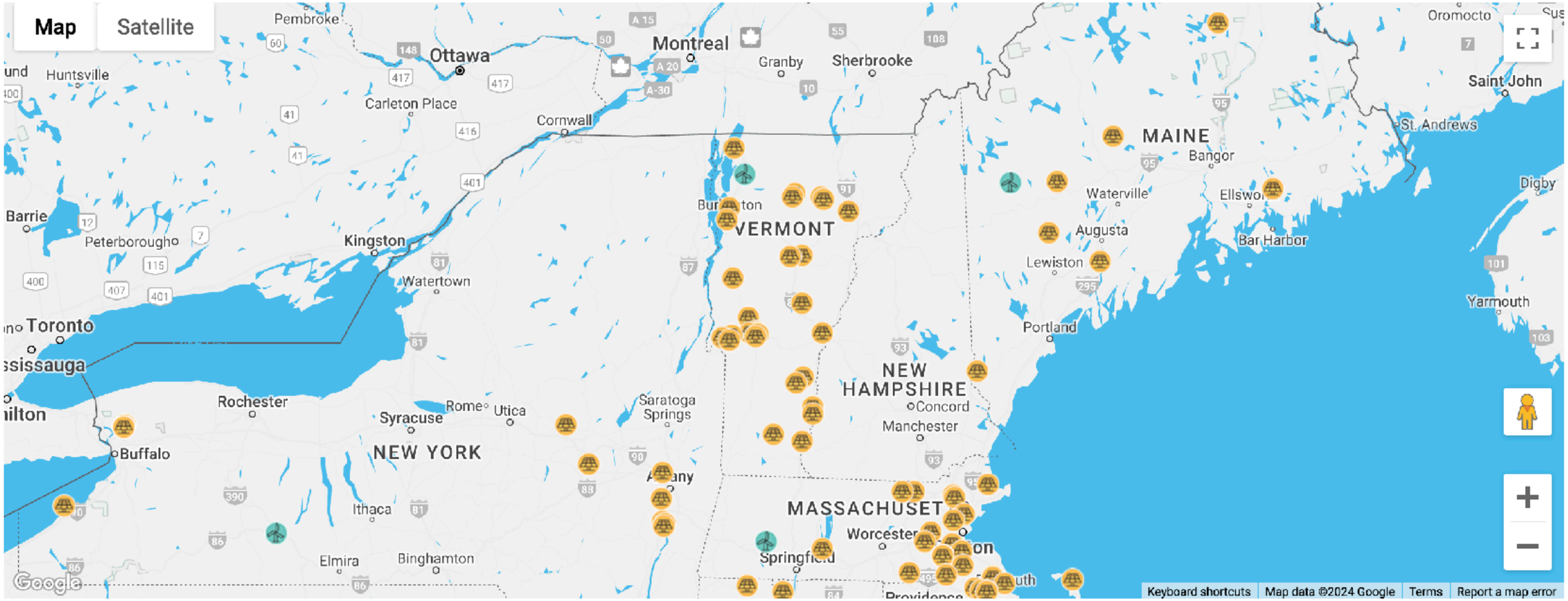
Today, we serve the energy needs of over 7 million people in the Northeast, operating across 24 states, and have built 8.7 gigawatts of renewable energy capacity. As the third largest onshore renewables operator in the U.S., we're driving innovation in wind, solar, hydrogen, and more to overcome a new generation of challenges and support the United States in meeting its climate goals. Whether we are generating clean, renewable energy from the sun and wind, or building the first large-scale offshore wind facility in the U.S., everything we do as a company is focused on creating a more sustainable, equitable future.

Avangrid Renewable Operating Assets



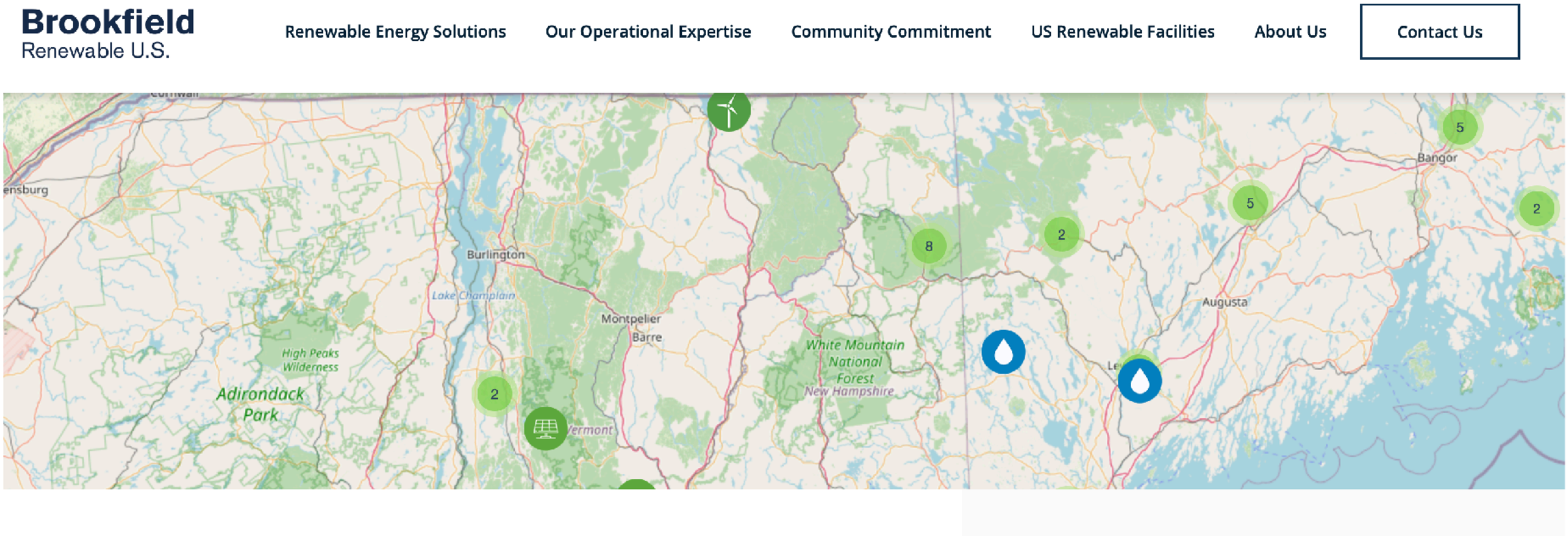
Owner of Georgia Mountain Wind, Encore Redevelopment, Norwich Solar and other Solar projects in Vermont

https://greenbackercapital.com/impact/#project-gallery



Owner of Sheffield Wind and some Solar projects

https://brookfieldrenewableus.com/explore-market/iso-ne/



Owner of projects permitted by MHG Solar

https://standardsolar.com/projects/?state=vermont

https://energizevermont.org/blog/2024/4/2/development-that-threatens-biodiversity-is-not-legitimate-climate-action

500 kW AllEarth Hardscrabble Road in Bristol sold to Marina Energy LLC

Legacy Case - Commission Issued Documents-Portal

Caption: Petition of Hardscrabble Solar, LLC for a certificate of public good, pursuant to 30 V.S.A. § 219a and Board Rule 5.100, for a 500 kW group net-metered photovoltaic electric generation facility to be located in Bristol, Vermont. Transfer notice to Vermont AllSun Solar VII, LLC deemed approved 11/10/2014. Transfer notice to Marina Energy, LLC deemed approved 03/18/2015.

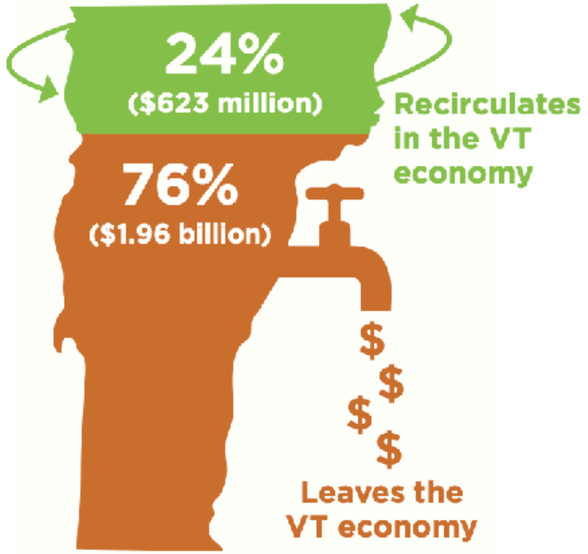
https://www.sjindustries.com/marina/home

5. Relying on fossil fuels is a drain on Vermont's economy

100% of the fossil fuels used in Vermont are imported from out of state. **More than three quarters of the money we spend on fossil fuels drains out of the state economy.** In 2022 alone, nearly $2 billion of the approximately $2.6 billion in total fossil fuel spending in Vermont left the state economy.

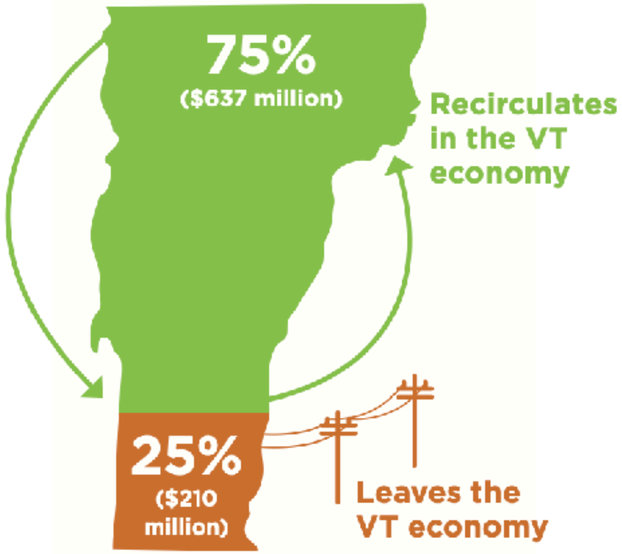
The ratio is essentially reversed when we use electricity to meet our energy needs. For example, by driving electric cars or heating with high-efficiency electric heat pumps, 75% of the dollars we spend stay and then recirculate in Vermont. This is because most of the cost of delivering electricity is bound up in local labor and infrastructure, whereas most of the cost of fossil fuels goes to importing a global commodity product. Using electricity instead of fossil fuels creates a positive feedback loop that strengthens Vermont's economy, helping support working families by paying the salaries of Vermont lineworkers, tree-trimmers, and local clean power producers, among others.

Vermont fossil fuel spending, 2022



Sources: Fossil fuel spending: Vermont Department of Taxes, 2023; VGS, 2023. Dollar recirculation share: EAN Senior Fellow for Economic Analysis, Ken Jones, 2023. **Note:** This graph includes spending on thermal and transportation fuels only.

Vermont electricity spending, 2021



Sources: Electricity spending: Vermont Department of Public Service, 2021 Electric Utility Resource Survey; Dollar recirculation share: EAN Senior Fellow for Economic Analysis, Ken Jones, 2023.

EAN slide is about labor, not about electricity sales and profits staying in or leaving the state.

VCE Resources

VCE Compilation of Photos of Solar Projects in Vermont — very large file created for Kevin Jones' class at Vermont Law School for students to go through and discuss siting, is it a good site or a bad site?
vtce.org/GOODandBAD_SOLAR.pdf

VCE Comments to Act 174 PSB Working Group, 2016
vtce.org/1234.pdf

VCE White Paper on Vermont's Energy Policies, March 2018
vtce.org/VCE_White_Paper_UnderstandingVermontEnergyPolicies_09August2018.pdf