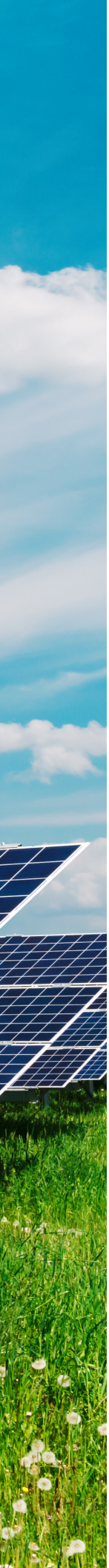

NEW ENGLAND

FARMLAND SOLAR POLICY BRIEF

Thoughtful state solar siting policies help build the renewable energy infrastructure we need for the future, while protecting valuable farmland and improving farm sustainability. Competition between two beneficial land uses, agriculture and solar development, delays the siting of needed renewable energy resources and can threaten prime farmland and food systems. Without land use protections built into state permitting and approval processes, rapid solar development is likely to occur on agricultural land, as it generally provides easy conditions for construction and operation of a solar array: flat, sunny, large parcels.

SMART FARMLAND SOLAR POLICY STRATEGIES

The New England states have adopted the following state-level policies to help balance solar development and agriculture:

ENERGY AND LAND USE PERMITTING	ME	NH	CT	RI	VT	MA
Expedited permitting for rooftop arrays.					●	
Expedited permitting based on array capacity and/or location.	●	●		●	●	●
State siting oversight of large-scale arrays (> 1MW)			●		●	
Role for the Agency of Agriculture in the solar permitting process.			●	●	●	●
Permitting authority must consider impacts to agricultural land.			●		●	
Requires a decommissioning plan for large-scale arrays	●				●	●
Model Solar Zoning By-Law available for municipal adoption.			●	●	●	●

SOLAR ENERGY RATES AND TARIFFS	ME	NH	CT	RI	VT	MA
Solar energy rate incentives available for rooftop arrays.		●	●	●	●	●
Solar energy rate incentives change based on array size.		●	●	●	●	●
Established a net metering category for agricultural customers.			●		●	●
Provides for group or virtual net metering.	●	●	●	●	●	●
Solar energy rate incentives for projects located on preferred sites.				●	●	●
Rate incentives available specifically for agrivoltaic/dual use arrays.						●

AGRICULTURAL USE	ME	NH	CT	RI	VT	MA
Voluntary certification program for pollinator habitat dual use.					●	
Protects status of underlying agricultural land when used for energy.	●	●			●	●
Established rules for solar development on "Current Use" enrolled land.				●	●	●
Performance standards established for agrivoltaics/dual use arrays.				●		●
Energy-specific definition of farmland or agricultural use.					●	●
Established decommissioning requirements for farmland solar.	●		●		●	●

FARM AND ENERGY INITIATIVE VERMONT LAW SCHOOL MARCH 2020

NEW ENGLAND'S CLEAN ELECTRICITY GOALS

In the absence of comprehensive federal policy, ambitious state climate and energy goals are driving solar development across large swaths of the US and shaping renewable energy and emissions policy. States are also participating in regional climate and energy planning and management initiatives.

VERMONT

- Renewable Energy Standard mandates that **75%** of electricity come from renewable resources by 2032, and **10%** of that electricity must come from new distributed renewable generation less than 5 MW in capacity, including new solar PV.
- 2016 Comprehensive Energy Plan sets out a goal of meeting **90%** of the state's energy needs through renewable energy and energy efficiency by 2050.

See: 30 V.S.A. §§ 8002-8005 (2019); June 28 and October 27, 2016 PUC Orders (RES). 30 V.S.A. § 202b (2019) (Energy Plan); and 30 V.S.A. § 255 (2018)(RGGI).

RHODE ISLAND

- Renewable Energy Standard requires 38.5% renewable electricity consumption in RI by 2035.
- 2015 Comprehensive Energy Plan demonstrates that RI can increase sector fuel diversity, produce net economic benefits, and reduce greenhouse gas emissions by 45% by the year 2035.

See: RI Gen. Law §§ 39-26-1, et. seq. (2016) (RES); § 42-11-10 (2019) (Energy Plan); § 23-82-1, et. seq. (2014) (RGGI); 810-RICR-40-05-2 (RES).

MASSACHUSETTS

- Renewable Energy Portfolio Standard requires 35% of electricity come from Class I (new) renewable resources by 2030, increasing by 1% annually thereafter. Additionally, 6.7% must come from eligible sources built before 1997.
- MA has three carve-outs for solar energy:
  - RPS Carve-Out I (2010-2014): 1.6% in 2020
  - RPS Carve-Out II (2014-2018): 3.8% in 2020
  - SMART Tariff (open 2018): 1,600 MW
- Beyond the RPS, the Clean Energy Portfolio Standard requires 80% of electricity come from clean sources by 2050. The Clean Energy and Climate Plan relates to this goal.
- The Alternative Energy Portfolio Standard mandates that some electric load must be met by eligible energy efficiency and fuel-switching technologies. A Clean Peak Standard is also under development.

See: M.G.L. 25A § 11F (2018), 225 CMR 14 and 15 (RPS); 225 CMR 21 (Peak); 225 CMR 20 (SMART); M.G.L. 21A, § 22 (2019), 310 CMR 7.70 (RGGI); M.G.L. c.21N (Climate); 225 CMR 16 (APS).

CONNECTICUT

- Renewable Portfolio Standard requires 40% of electricity come from Class I sources, including Solar PV. An additional 4% must be generated by Class I or Class II sources, and 4% must be generated by Class III sources.
- Emissions-free electricity generated in CT, including solar, may receive Large (projects 250 kW to 1 MW), Medium (<250 kW, but >100 kW), or Small (< 100 kW) ZREC incentive.
- Green Bank will incentivize 300MW of residential solar by 2022, funded by "Solar Home" RECs sold to utilities for use in RPS compliance (or resale).
- Comprehensive Energy Strategy identifies a goal to rapidly expanded renewable energy programs at all project scales.

See: CT Gen. Stat. § 16-245a (2019) (RPS); §§ 16-244r-t (2019) (ZREC); §§ 16-245ff & 16-245gg (2019) (SHREC); § 22a-200c (RGGI); and, § 16a-3d (2019) (CES).

NEW HAMPSHIRE

- Renewable Portfolio Standard requires 25.2% of electricity come from eligible renewable sources by 2025, including a "carve out" of 0.7% for new Solar PV.
- State Energy Strategy prioritizes energy costs, but suggests renewables have an important role in fuel mix.

See: NH Rev. Stat. § 362-F:3 (2017) (RPS); § 4-E:1 (2017) (Strategy); § 125-O:20-29 (2019) (RGGI); and PUC Rule 2500 (RPS).

MAINE

- Renewable Portfolio Standard mandates that 80% of electricity come from renewable resources by 2030, increasing to 100% by 2050. Under the Community-Based Renewable Energy pilot program, community solar projects receive a 1.5 REC multiplier under the state RPS.
- The Maine PUC started soliciting bids for 400 MW of distributed solar generation in 2019.

See: 35-A M.R.S. §§ 3210 et. seq. (2019) (RPS); 38 M.R.S. § 580 (RGGI). 35-A M.R.S. § 3603 (2009) (Pilot); 35-A M.R.S. c. 34-C (2019) (DG).

RGGI STATES: All of the New England states participates in the Regional Greenhouse Gas Initiative, a regional cooperative agreement to reduce greenhouse gas emissions.

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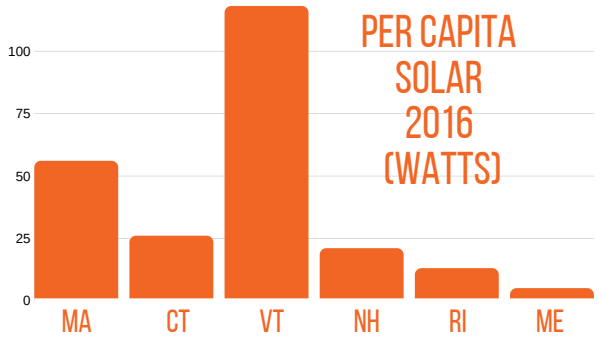
ELECTRICITY AND SOLAR DEVELOPMENT: NEW ENGLAND

The vast majority of New England's solar arrays are small-scale (typically 5 MW or less). They are usually connected to the local distribution grid or provide power to specific customers "behind the meter," which reduces the amount of electricity being drawn from the grid. Massachusetts has experienced more solar development than any other state in New England through 2019.



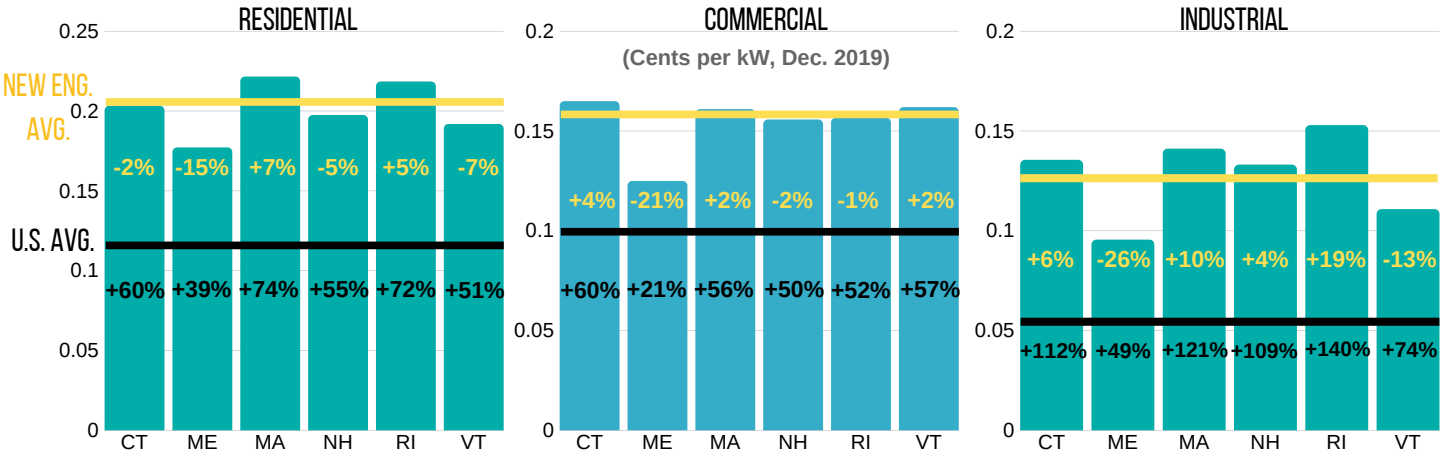
In 2018, **2.8%** of the electricity generated in New England came from solar arrays.

Through 2019, New England developed:

	INSTALLED CAPACITY (MW)	SOLAR ARRAYS
CT	732.96	43,128
ME	85.74	1,946
MA	2,767.68	106,073
NH	110.94	8,195
RI	275.38	5,693
VT	351.66	8,507

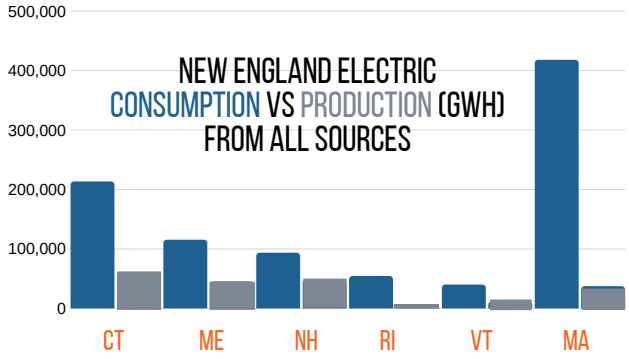
Electricity in New England costs more across all sectors than the U.S. average price, and all of the New England states consume more electricity than they generate in-state. While Massachusetts generates the most solar energy in New England, it is also the largest consumer of electricity overall.

NEW ENGLAND ELECTRIC PRICES



NEW ENGLAND POWER POOL

All of the New England states use the NEPOOL Generation Information System (GIS) to track environmental attributes and issue certificates for all MWh of generation on the ISO New England grid. When the certificates are generated by eligible renewable energy sources, these Renewable Energy Certificates (RECs) may be used by utilities to comply with state RPS requirements. NEPOOL GIS has adapted to the various state RPS laws to track Solar RECs, demand response and conservation and load management certificates.



ISO-NEW ENGLAND

All of the New England States are part of the ISO-New England Control Area, or regional electric grid. ISO-New England is an independent, not-for-profit company authorized to manage and operate the New England high-voltage transmission system, oversee wholesale electricity markets, and perform power system planning.

Data: EIA.gov, SEIA.org, Acadia Center Energy Vision 2030 Reports, NEPOOL GIS Public Reports, and ISO-New England 2019 PV Forecast.

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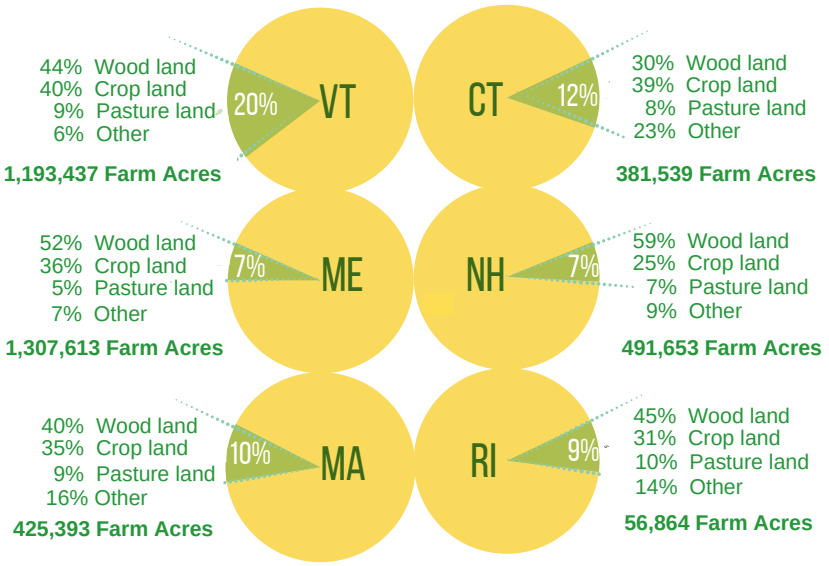
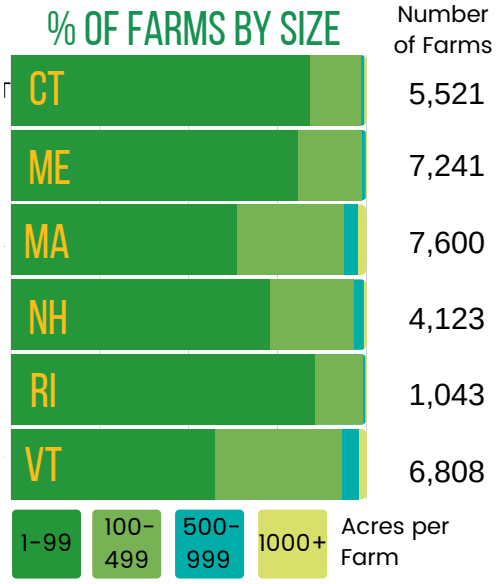
FARMLAND AND AGRICULTURAL PRODUCTION: NEW ENGLAND

The New England states differ in total land area, acreage and types of farmland, and rates of land conversion. Farmland solar policy should consider state land use and agricultural industry characteristics.

PERCENT OF FARMLAND



% OF FARMS BY SIZE



The majority of all farms in New England are less than 99 acres. Vermont has the highest percentage of both farmland and large farms in New England, while Maine has the most farmland acres.

NEW ENGLAND'S TOP COMMODITIES

- Dairy Products
- Cattle and Cows
- Apples
- Maple Products
- Misc. Crops
- Cranberries
- Chicken Eggs
- Turkeys

	CT	ME	MA	NH	RI	VT
FOOD INSECURITY	12.4%	13.6%	9.3%	7.8%	11%	9.6%
RATIO OF FOOD CONSUMED : PRODUCED	21:1	4:1	42:1	25:1	84:1	2:1
FARMLAND PRICE PER ACRE (US AVERAGE 2019: $3,160)	$12,200	$2,410	$11,100	$4,980	$15,600	$3,630
LAND LOSS 2012-2017	13%	10%	6%	10%	18%	5%

Data: USDA 2017 Census of Agriculture; USDA Economic Research Service.

OTHER CONSIDERATIONS FOR SOLAR DEVELOPMENT AND FARMLAND PROTECTION

Incentives for solar development, including special financing, grant and loan programs, and property tax exemptions, may be available for solar projects in New England. Solar development incentives help achieve ambitious state renewable energy goals.

Rules for solar development on farmland enrolled in state, federal, or land trust conservation programs vary widely. Solar arrays on enrolled land may be prohibited or subject to program-specific or land-trust specific restrictions.

Forestland can also be put at risk by rapid solar development. State laws should address the impact of solar development on farmland, forestland and other valuable natural resources.

DISCLAIMER

This document provides general legal information for educational purposes only. It is not meant to substitute, and should not be relied upon, for legal advice. Each potential solar development project and circumstances are unique, state laws vary, and the information contained here is specific to the time of publication. Accordingly, for legal advice, please consult an attorney licensed in your state.

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The Farm and Energy Initiative is a collaboration between the Institute for Energy and the Environment and the Center for Agriculture and Food Systems at Vermont Law School.

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