

## North America

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Alternative Energy | Wind Power

# New England Renewable Energy Policies Support Attractive Market

## Continued Federal and State Policies Will Bolster Regional Renewable Energy Investments

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Policy Brief

### Author

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**Erin Carson**  
Senior Policy Analyst

**Eric Davis**  
Research Manager

### Contact

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(212) 537.4797  
info@enerknol.com

#### Key Takeaways:

- New England is a leading region in current and projected renewable energy installations
- Federal tax incentives, strong state renewable portfolio standards and associated renewable energy certificate programs have facilitated installation growth
- Regional investments will hinge on continued federal and state policies and streamlined transmission and interconnection processes

#### Entities Mentioned:

- Anbaric Transmission
- Cape Wind Associates, LLC
- Emera Maine
- First Wind
- Massachusetts Office of Energy and Environmental Affairs
- National Grid
- New England ISO
- Transcanada
- U.S. House of Representatives

#### Related Research

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[New ISO-NE Return on Equity Rate Could Impact Future Transmission Decisions](#)

[Solar Energy Compensation Arguments Intensify as Utilities Aim to Recover Fixed Costs](#)

## New England: A Leader in Renewable Energy Policies

The New England states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont have emerged as renewable energy leaders over the past decade. Federal investment and production tax credits, state renewable portfolio standards (RPS), and renewable energy certificate (REC) markets have continued growth of these alternative energy resources.

Moving forward, federal tax programs could continue to stimulate alternative energy and energy efficiency technology investments. The Federal Business Energy Investment Tax Credit (ITC) allows investors to claim a 30 percent tax credit of investment costs for solar, fuel cell, and other technologies. The ITC remains in place through 2016, at which time it will be reduced to 10 percent. The Federal Renewable Electricity Production Tax Credit (PTC) offers a 2.3 cent/kilowatt-hour (kWh) tax credit for wind projects and 1.1 cents/kWh on other renewables systems, as of 2013. The PTC, which has facilitated a number of New England wind initiatives, including First Wind (Stetson, 83 MW), Transcanada (Kibby, 132 MW), and others, gained a one-year extension on January 1, 2013, with a key provision that defined eligible projects as those that began construction during that year and were placed in service prior to 2016, with flexibility in certain circumstances. This “begin construction” provision has revamped the wind energy project pipeline, and recent estimates show at least 13 gigawatts (GW) are currently under construction and more than 3.5 GW are proposed in New England.

**Federal tax credits remain key to renewable energy development**

In addition, each New England state currently has RPS policies or renewable energy goals in-place. These policies require electric utilities to procure certain amounts of delivered electricity from renewable or alternative energy sources (Figure 1).

**Figure 1 – New England State RPS Summaries**

State	RPS/Goal Summary
Connecticut	27 percent by 2020 (20% Class I [solar, wind, fuel cell, geothermal, landfill methane, and others]; 3% Class II [trash-to-energy, biomass, run-of-river <5MW]; 4% combined heat and power)
Maine	10 percent by 2017 (installed after 2005 and <100 MW [except for wind])
Massachusetts	22.1 percent by 2020 (15% Class I [solar, wind, ocean, fuel cell, landfill gas, run-of-river hydro up to 30 MW, biomass, geothermal, all post-1997], 6.1% Class II [3.5 % muni solid waste, 3.6% Class I pre-1998], with a solar carve-out of 1,600 MW by 2020)
New Hampshire	~25 percent by 2025 (17% Class I [wind, geothermal, biomass, ocean, 2% thermal], 0.3% Class II [solar], 8% Class III [biomass/methane <25 MW and installed prior to 2006], 1.5% Class IV [hydro <5 MW])
Rhode Island	16 percent by 2020 (14% new [after 1997], 2% new or existing)
Vermont	Goal (no RPS): 20 percent by 2017 (From Sustainably Priced Energy Development [SPEED] Program resources [wind, solar, hydro <2GW, methane, biomass, and others]), and 55% total renewables by 2017 [outside of SPEED program])

Source: EnerKnol Data, state websites

State RPS compliance is largely completed through REC purchases. One REC equates to one megawatt-hour (MWh) of produced renewable energy from RPS-qualified sources and represents the environmental attributes of the produced electricity, separate from the physical electricity. RECs are tradable and provide a second revenue stream for renewable asset owners, and thus they support project development. REC prices are closely tied to state supply and demand conditions and are informally capped at each state’s alternative compliance payment (ACP) rates, as utilities may choose to pay this rate in lieu of purchasing RECs.

**RECs provide an additional revenue stream**

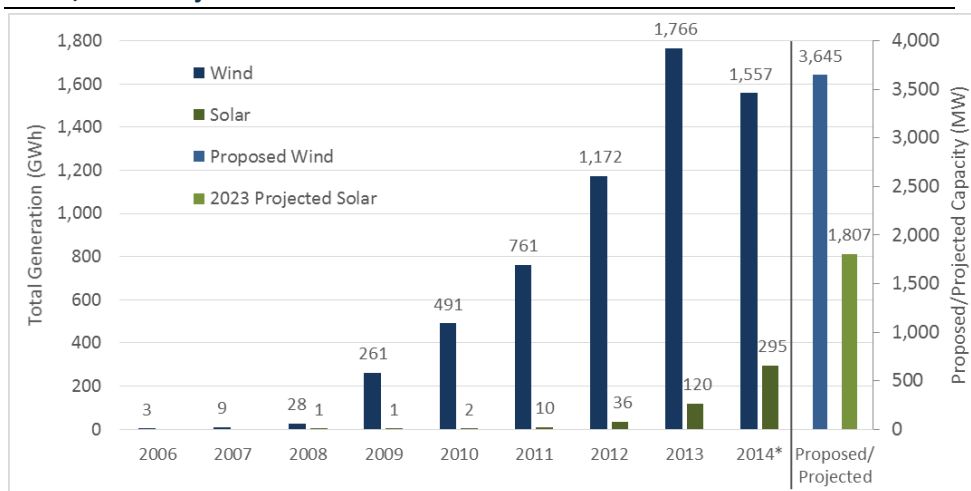
## Renewables Increasing; But Not Without Challenges

Transmitting power from remote areas to down-region load centers is a key challenge to proposed large-scale New England renewable energy projects. Increasing levels of New England state renewable and alternative energy resources help the region transition to a lower emissions-emitting power generation mix and meet associated Regional Greenhouse Gas Initiative (RGGI) goals. The RGGI program is the nation’s first market-based cap-and-trade program for greenhouse gas (GHG) emissions and includes all six New England states, with a cumulative emissions cap of approximately 31.35 million tons CO<sub>2</sub> starting January 1, 2014, declining 2.5% each year until 2020.

According to the New England Independent System Operator (ISO-NE), the region produced nearly two percent (~1,800 GWh) of its energy from wind capacity in 2013 (Figure 2), and it currently has approximately 720 MW of installed capacity, with Maine comprising 53 percent. Maine also currently comprises 84 percent of the region’s 3,645 MW of proposed wind capacity. Transmitting wind energy from Maine and other remote areas to down-region load centers is a challenge due to the high costs associated with transmission projects and the difficulty of siting large projects across multiple jurisdictions, creating opportunities for offshore wind projects located closer to load centers.

**84 percent of proposed New England wind energy is in Maine**

**Figure 2 – New England Utility-Scale Wind and Solar Generation, Proposed Wind, 2023 Projected Solar**



Source: EnerKnol analysis of ISO-NE Data. \*Through October

Offshore wind projects avoid the long-distance transmission challenges of remotely-located onshore installations. After nearly 15 years of planning and permitting, Massachusetts' Cape Wind, LLC project may be nearing installation commencement. The 130-turbine, 468 MW project would more than quadruple Massachusetts' current wind power capacity. Rhode Island's proposed 5-turbine, 30 MW Block Island Wind Farm may also be nearing construction commencement. Further facilitating New England offshore wind development, the Department of Interior's (DOI) Bureau of Ocean Energy Management (BOEM) will offer more than 742,000 acres of the Massachusetts Wind Energy Area (WEA) in a competitive lease sale on January 29, 2015.

The New England solar market is largely driven by state RPS policies, as the region's insolation levels are low, relative to the southwest United States. Massachusetts leads the region with nearly 700 MW installed – according to the State Office of Energy and Environmental Affairs – and is poised to scale with the recently-enacted RPS solar carve-out of 1,600 MW by 2020. If Massachusetts meets its requirement – and other New England States meet ISO-NE projections – the region could exceed 3,000 MW of installed solar PV capacity by 2023.

**New England could exceed 3 GW of solar capacity by 2023**

## Regional Project Finance Still Relies on Federal and State Policies

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New England states must continuously analyze and update their RPS policies to ensure renewable energy growth, as developers currently rely on the standards and associated REC markets for project demand. Current REC prices – which help facilitate project financing – of CT, MA, NH, and RI are all within 86 percent of their respective Class I ACPs, however, these levels could be threatened by increasing forward supply projections.

State-level demand is also supported by federal ITCs and PTCs. The ITC continues at its current rate through 2016, but the PTC currently remains expired for projects beginning construction after December 31, 2013. On December 3, 2014 the U.S. House of Representatives passed the Tax Increase Prevention Act of 2014 (H.R. 5771). If signed into law, this bill would extend more than 50 expired tax provisions – including the wind energy PTC, energy efficiency, and biofuels credits – for several weeks through the end of 2014. The retroactive extension would impact financial accounting for multiple energy industries but would not directly support new wind energy construction. A Senate version of the bill would extend the credits through 2015, which would be instrumental in supporting much of the proposed 3.6 GW of New England wind energy projects, as these may not commence without a PTC extension. Senate Majority Leader Harry Reid (D-NV) has indicated that the Senate bill may not be considered prior to year-end, as new government spending and defense bills will take precedence.

**H.R. 5771 would retroactively extend many energy tax credits**

With or without the federal incentive, project and transmission siting and interconnection costs will continue to challenge large-scale wind developers. Approximately 84 percent of Maine's 3,080 MW proposed wind capacity is

located in the northeast portion of the State, and may require new transmission lines to deliver power to down-region load centers. Many transmission developers have proposed new lines – such as Anbaric Transmission’s Maine Green Line, and Emera Maine/National Grid’s Northeast Energy Link – hoping to capitalize on the potential northeast Maine projects.

## Disclosures Section

### RESEARCH RISKS

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Regulatory and Legislative agendas are subject to change.

### AUTHOR CERTIFICATION

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