



# Maine: Pathway to 2030

EnergyVision 2030 describes in detail how seven Northeast states can be on a pathway towards a reliable, consumer-oriented clean energy future that meets a goal to reduce climate pollution at least 45% from 1990 levels by 2030. Reducing climate pollution 45% by 2030 is needed to keep Maine on track for a 75% to 80% reduction from 2003 levels, consistent with the Act to Provide Leadership in Addressing the Threat of Climate Change. Using a data-driven approach, EnergyVision 2030 sets technology-specific targets in four key clean energy markets—grid modernization, electric generation, buildings, and transportation—and proposes supporting policies to achieve those goals.

Maine is setting the standard for best practices in key areas such as heat pump expansion; in others, it can do more. The summary tables below detail policies that can be used to reach the clean energy benchmarks presented in EnergyVision 2030. They show Maine’s current levels of implementation for specific policies and technologies in each of the four key areas compared to the best practice levels needed to meet emissions targets.

While some states like Maine are leading in individual areas, a more uniform and consistent approach is needed across all Northeast states. EnergyVision 2030 shows that a goal to reduce greenhouse gas emissions by 45% can be achieved if all states adopt the best practices of each leading state.



## Electric Generation

Solar and wind power are emerging as cost-effective alternatives to traditional fossil-fueled generation sources. Across the United States, solar prices have dropped dramatically and installed capacity has grown exponentially. New York and New England have vast untapped solar and on- and off-shore wind resources. Harnessing this clean, low-cost generation is critical to meeting the 2030 emissions target. Maine’s progress toward this goal is represented below.

Policy	Best Practice Status	Maine Current Status	2030 Recommendations
<b>Renewable Portfolio Standard (RPS)</b>	New York – 50% by 2030 <sup>1</sup> Rhode Island – 38.5% by 2035	Class I 10% by 2017 and Total 40% by 2017	42% by 2030, primarily wind and solar
<b>Distributed Solar Annual Installation Rate</b>	Vermont – 118 watts per capita (2016) Massachusetts – 56 watts per capita (2016)	5 watts per capita (2016)	48 watts per capita through 2030



## Transportation

Transportation is the largest source of emissions in the Northeast and traditionally the most difficult emissions sector to address, but rapidly evolving technology offers deep reduction potential. Electric vehicles (EVs) and innovations in mobility options can help improve transportation efficiency and reduce emissions. In cities and towns of all sizes and in the state’s more rural areas, increased transit options like buses, trains, and carpools can grow. Maine, the most rural state in the nation, leads the Northeast in carpooling. See what else Maine needs to do in this area below.

Policy	Best Practice Status	Maine Current Status	2030 Recommendations
<b>EV Sales Annual Growth</b>	Vermont – 42% (average, 2013–2016) Massachusetts - 41% (average, 2013–2016)	33% (average, 2013-2016)	40% annually through 2030
<b>EV Incentive Level</b>  <b>Stable Funding Source?</b>	Colorado – \$5000	None Not Applicable	Market levels needed to achieve growth targets  Yes
<b>California ZEV Standard Adoption</b>	Several states have adopted	Yes	Yes
<b>EV Chargers</b>  <b>DC Fast Chargers per 1000 Miles of Highway</b>  <b>L2 Chargers per Billion VMT</b>	Massachusetts – 17  Vermont – 18	2  7	
<b>EV Charging Rate/Demand Management Program</b>	New York – EV time of use rates and demand management program pilots	Limited – Some utilities offer opt-in whole-house time of use rates	Easy to understand time-varying rates for energy supply, transmission and distribution
<b>Annual Transit Trips per Capita (Buses, Trains, and Subways)</b>	New York – 195	4	
<b>Percentage of Workers 16+ Carpooling</b>	Maine – 10.6%	10.6%	
<b>Emissions Pricing for Transportation Fuel</b>	California – \$13/ton	No	Yes – market-based price



## Grid Modernization

To take full advantage of opportunities to benefit consumers and advance emissions-reducing technologies, the rules and regulations governing the electric grid need to be comprehensively updated. The present grid was designed at a time when centralized power generators exclusively controlled a one-way flow of electricity to consumers. A modern grid needs to accommodate greater consumer control and two-way flows of power. Grid modernization will provide the backbone that supports the carbon-cutting changes in all sectors. See how grid modernization processes in Maine are progressing below.

Policy	Best Practice Status	Maine Current Status
<b>Distribution System Planning to Consider Clean Local Alternatives to Infrastructure</b>	Rhode Island – System Reliability Procurement Plan and Power Sector Transformation  New York – Reforming the Energy Vision (REV) proceeding  Vermont – Renewable Energy, Efficiency, Transmission, and Vermont’s Energy Future Act	Regulatory and legislative efforts to establish a process for routine consideration and procurement of NTAs are underway (MPUC 2016-00049; LD 1487).
<b>Regulatory Proceeding or Other Process Underway to Align Utility Business Models</b>	New York – REV proceeding  Rhode Island – Power Sector Transformation	No
<b>Regulatory Proceeding Underway to Modernize Grid</b>	New York – REV proceeding  Rhode Island – Power Sector Transformation	No
<b>Consumer-Friendly Rate Design</b>  <b>Limited Reliance on Fixed Charges</b>  <b>Easy to Understand Time-Varying Rates for Energy Supply, Transmission and Distribution (T&amp;D)</b>	Several states have utilities with residential fixed charges in the \$5 to \$10 range  Green Mountain Power (VT) offers three options for highly differentiated bundled residential rates.  Several New York utilities offer residential rates with differentiated energy and transmission/distribution components.  United Illuminating (CT) offers a residential rate with differentiated transmission and energy components.	<b>Fixed Charges</b> \$12.88 (Central Maine Power) \$6.75 (Emera)  <b>Time-varying Rates</b> CMP: T&D Emera: distribution  MPUC introduced an optional TOU supply rate in 2012 but allowed the program to expire in 2015
<b>Shared Solar or Virtual Net Metering</b>	New York, Massachusetts, and Vermont	Partial – Up to ten metered customers can receive credits from a shared-ownership Community Solar Farm (“CSF”)
<b>Distributed Generation Compensation</b>	Monetary crediting, with initial reforms to align credit structures with value	No - Under Maine’s new “buy-all, sell-all” compensation program, values are not properly aligned, and DG customers lose the right to self-consumption.
<b>Storage Mandate</b>	California – 1325 MW by 2020	No



## Buildings

Buildings offer significant energy efficiency investment opportunities that can be combined with clean heating technologies to provide deep emissions reductions. The Northeast is a national leader in investing in energy efficiency. Not only is efficiency the lowest cost and cleanest energy choice, it provides enormous economic gains, creates jobs, and saves consumers money. Increased investments in efficiency have made nearly \$500 million of expensive transmission line upgrades no longer necessary in New England. In Maine, where the Efficiency Maine Trust Act mandates weatherization of all homes by 2030, the Boothbay Smart Grid Reliability Pilot Project leveraged energy efficiency and distributed energy resources to avoid an \$18 million transmission upgrade. Maine also leads the region in displacing residential oil heating with highly efficient electric heat pumps. More information about current efficiency efforts in Maine is below.

Policy	Best Practice Status	Maine Current Status	2030 Recommendations
<b>Electric Energy Efficiency Annual Savings Level</b>	Massachusetts – 2.9% (2017 plan)	1.6% (2016 actual) – 2017 plan not available	3.0% <sup>2</sup>
<b>Natural Gas Energy Efficiency Annual Savings Level</b>	Massachusetts – 1.2% (2016)	0.6% (2016)	1.2%
<b>Residential Heat Pump Conversion Rate</b>	Maine – 0.8% (2016)	0.8% (2016)	1.0% through 2030
<b>Fossil Fuel or Carbon-based Incentive Funding for Heat Pumps</b>	Massachusetts – MassCEC’s \$30 million Clean Heating and Cooling program	No	Yes

## Conclusion

Maine’s progress toward a clean energy future has been mixed so far. The state leads in heat pump conversion and has made commendable progress toward residential energy efficiency, but it must excel across all policy areas to build a low-carbon energy system. To reach EnergyVision 2030 goals, Maine should strengthen efforts to modernize the grid through regulatory proceedings and legislation; expand the Class I Renewable Portfolio Standard and eliminate barriers to adoption of solar PV; continue to procure all cost-effective energy efficiency and build on support for switching to heat pumps; and remove barriers to purchasing and using electric vehicles through incentives, smarter electric rates, and expansion of EV charging infrastructure. If Maine follows these policy recommendations, it will be on its way to a clean energy future.

### References

- 1 Eligible resources vary by state. New York’s Clean Energy Standard includes large-scale hydro, which is not included in the EnergyVision 2030 recommended minimum target.
- 2 EnergyVision 2030 calls for an average of 2.5% annual electric savings through 2030. Because Massachusetts and other states have demonstrated that savings of 3% or more are currently achievable and lower total electric costs, Acadia Center is currently recommending that states aim for higher near-term levels.

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