Acadia Center | EnergyVision 2030

Massachusetts: 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 Massachusetts on track for an 80% reduction from 1990 levels required by 2050 under the Global Warming Solutions Act. 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.

Massachusetts is setting the standard for best practices in key areas such as energy efficiency; 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 Massachusetts' current levels of implementation for specific polices and technologies in each of the four key areas, compared to the best practice levels needed to meet emissions targets.

While some states like Massachusetts are clear leaders 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. Massachusetts' progress toward this goal is represented below.

Policy	Best Practice Status	Massachusetts Current Status	2030 Recommendations
Renewable Portfolio Standard (RPS)	New York – 50% by 2030[1] Rhode Island – 38.5% by 2035	Class I 25% by 2030	50% by 2030[2]
Distributed Solar Annual Installation Rate	Vermont – 118 watts per capita (2016) Massachusetts – 56 watts per capita (2016)	56 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. See how much Massachusetts needs to do in this area to meet emissions targets below.

Policy	Best Practice Status	Massachusetts Current Status	2030 Recommendations
EV Sales Annual Growth	Vermont – 42% (average, 2013–2016) Massachusetts – 41% (average, 2013–2016)	41% (average, 2013–2016)	40% annually through 2030
EV Incentive Level **Stable Funding Source?**	Connecticut – up to $3000 Colorado – $5000	Up to $2500 Limited	Market levels needed to achieve growth targets Yes
California ZEV Standard Adoption	Several states have adopted	Yes	Yes
EV Chargers **DC Fast Chargers per 1000 Miles of Highway** **L2 Chargers per Billion VMT**	Massachusetts – 17 Vermont – 18	17 8	
EV Charging Rate/Demand Management Program	New York – EV time of use rates and demand management program pilots	No residential time of use rates.	Easy to understand time-varying rates for energy supply, transmission and distribution
Annual Transit Trips per Capita (Buses, Trains, and Subways)	New York – 195	65	
Percentage of Workers 16+ Carpooling	Maine – 10.6%	7.4%	
Emissions Pricing for Transportation Fuel	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 Massachusetts are progressing below.

Policy	Best Practice Status	Massachusetts Current Status
Distribution System Planning to Consider Clean Local Alternatives to Infrastructure	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	Limited – Grid modernization proceeding is insufficient in scope and inconsistent across utilities. Utility rate cases have not sufficiently addressed core grid modernization issues. Limited – Energy Facility Siting Board requires utility-sponsored evaluation of alternatives as part of filing for certain types of infrastructure. This process is insufficient for achieving the goal of comprehensive, innovative grid planning.
Regulatory Proceeding or Other Process Underway to Align Utility Business Models	New York – REV proceeding Rhode Island – Power Sector Transformation	No – Not in scope of current grid modernization proceeding.
Regulatory Proceeding Underway to Modernize Grid	New York – REV proceeding Rhode Island – Power Sector Transformation	Limited – Grid modernization proceeding is insufficient in scope and inconsistent across utilities
Consumer-Friendly Rate Design **Limited Reliance on Fixed Charges** **Easy to Understand Time-Varying Rates for Energy Supply, Transmission and Distribution (T&D)**	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.	**Residential Monthly Fixed Charges** Range from $3.73 to $10. No statutory definition or limit. **Time-varying Rates** No residential time of use rates.
Shared Solar or Virtual Net Metering	New York, Massachusetts, and Vermont	Yes – Community Shared Solar (CSS) program
Distributed Generation Compensation	Monetary crediting, with initial reforms to align credit structures with value	Monetary crediting, but tied to portions of retail rates
Storage Mandate	California – 1325 MW by 2020	Limited – 200 MW aspirational target

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. Massachusetts filled a record 3.3% of its electricity needs with cost effective energy efficiency installed in 2016 alone, far surpassing the 2.9% goal for that year. Not only is efficiency the lowest cost and cleanest energy choice, it provides enormous economic gains, creates jobs, and saves consumers money. Increasing investments in efficiency has made nearly $500 million of expensive transmission line upgrades no longer necessary in New England. More information about current efficiency efforts in Massachusetts below.

Policy	Best Practice Status	Massachusetts Current Status	2030 Recommendations
Electric Energy Efficiency Annual Savings Level	Massachusetts – 2.9% (2017 plan)	2.9% (2017 plan)	3.0%[3]
Natural Gas Energy Efficiency Annual Savings Level	Massachusetts – 1.2% (2016)	1.2% (2017 plan)	1.2%
Residential Heat Pump Conversion Rate	Maine – 0.8% (2016)	0.3% (2016)	1.0% through 2030
Fossil Fuel or Carbon-based Incentive Funding for Heat Pumps	Massachusetts – MassCEC's $30 million Clean Heating and Cooling program	MassCEC's $30 million Clean Heating and Cooling program	Yes

Conclusion

Massachusetts continues to be a regional and national clean energy leader. To build a low-carbon energy system, the state must excel across all policy areas. To reach EnergyVision 2030 goals, the state should strengthen efforts to modernize the grid through current regulatory proceedings and proposed legislation; expand the Renewable Portfolio Standard and eliminate barriers to adoption of solar PV; continue to adopt all cost-effective energy efficiency and increase support for switching to heat pumps; and continue to incentivize and remove barriers to purchasing and using electric vehicles. If Massachusetts 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 a minimum of 42% renewable energy in New England and New York by 2030. In Massachusetts, planned clean energy procurements for onshore renewables and offshore wind are likely to exceed the current RPS requirement of 25% by 2030, and in order to maintain a robust renewable energy market, promote diverse renewable energy technologies, and lead the region, Massachusetts should establish a 50% target for RPS-eligible resources by 2030.

3 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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