Acadia Center | EnergyVision 2030

Connecticut: 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 Connecticut on track for an 80% reduction from 2001 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.

Connecticut is achieving respectable middle of the road performance in many areas, but it also significantly trails leading states. The summary tables below detail policies that can be used to reach the clean energy benchmarks presented in EnergyVision 2030. They show Connecticut'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 Massachusetts and Rhode Island are clear leaders in individual areas, a more uniform and consistent approach is needed across all Northeast states, including Connecticut. 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. Connecticut's progress toward this goal is represented below.

Policy	Best Practice Status	Connecticut Current Status	2030 Recommendations
Renewable Portfolio Standard (RPS)	New York – 50% by 2030[1] Rhode Island – 38.5% by 2035	Class I 20% by 2020 and total 28% by 2020	42% by 2030, primarily wind and solar
Distributed Solar Annual Installation Rate	Vermont – 118 watts per capita (2016) Massachusetts – 56 watts per capita (2016)	26 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 Connecticut needs to do in this area to meet emissions targets below.

Policy	Best Practice Status	Connecticut Current Status	2030 Recommendations
EV Sales Annual Growth	Vermont – 42% (average, 2013–2016) Massachusetts – 41% (average, 2013–2016)	38% (average, 2013–2016)	40% annually through 2030
EV Incentive Level	Connecticut – up to $3000	Up to $3000 ($5000 for fuel cell vehicles)	Market levels needed to achieve growth targets
Stable Funding Source?	Colorado – $5000	No	Yes
California ZEV Standard Adoption	Several states have adopted	Yes	Yes
EV Chargers			
DC Fast Chargers per 1000 Miles of Highway	Massachusetts – 17	9	
L2 Chargers per Billion VMT	Vermont – 18	9	
EV Charging Rate/Demand Management Program	New York – EV time of use rates and demand management program pilots	Limited – Utilities offer opt-in whole-house 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	12	
Percentage of Workers 16+ Carpooling	Maine – 10.6%	8.3%	
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 Connecticut are progressing below.

Policy	Best Practice Status	Connecticut 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	No
Regulatory Proceeding or Other Process Underway to Align Utility Business Models	New York – REV proceeding Rhode Island – Power Sector Transformation	No
Regulatory Proceeding Underway to Modernize Grid	New York – REV proceeding Rhode Island – Power Sector Transformation	Limited: Small number of utility-proposed pilot projects.
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.	**Fixed Charges** UI: $10.04 Eversource: $19.25 (Active rate case could modify this) Statute limiting costs that can be included in fixed charge. **Time-Varying Rates** UI: Supply and transmission Eversource: Supply
Shared Solar or Virtual Net Metering	New York, Massachusetts, and Vermont	Limited shared solar pilots; VNM capped at low amount.
Distributed Generation Compensation	Monetary crediting, with initial reforms to align credit structures with value	Retail rate up to net-zero production in a year. Production in excess of this compensated at the average wholesale price.
Storage Mandate	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. Massachusetts filled a record 3.3% of its electricity needs with cost effective energy efficiency installed in 2016 alone, more than double Connecticut. Recent legislative budget sweeps of efficiency funding will cause Connecticut to fall farther behind in the next two years. 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 Connecticut below.

Policy	Best Practice Status	Connecticut Current Status	2030 Recommendations
Electric Energy Efficiency Annual Savings Level	Massachusetts – 2.9% (2017 plan)	1.4% (2017 plan) [2]	3.0% [3]
Natural Gas Energy Efficiency Annual Savings Level	Massachusetts – 1.2% (2016)	0.7% (2016)	1.2%
Residential Heat Pump Conversion Rate	Maine – 0.8% (2016)	0.1% (2015)	1.0% through 2030
Fossil Fuel or Carbon-based Incentive Funding for Heat Pumps	Massachusetts – MassCEC's $30 million Clean Heating and Cooling program	No	Yes

Conclusion

Connecticut's progress toward a clean energy future has been mixed so far. 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; avoid creating new barriers to adoption of solar PV; adopt all cost-effective energy efficiency savings levels; avoid new investments in fossil fuel infrastructure; increase support for switching to heat pumps; and continue to incentivize and remove barriers to purchasing and using electric vehicles. If Connecticut 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 Connecticut's energy efficiency programs suffered a setback in 2017 when the General Assembly diverted $127 million in future energy efficiency funds and additional RGGI funds for unrelated budget purposes. This will likely reduce annual savings in 2018 and 2019 to levels below 1.0%.

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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