

Utilities and Energy Markets: State of the Industry

ACEC/MA Webinar Program

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Climate Bill & DOER - Renewable Energy

Renewable Energy Portfolio Standard (RPS)

- Increased from 2% to 3% for 2025-2030
- Municipal and other government solar facilities of 60 kilowatts or less to qualify for Class 1
- Excess RPS credits transferable for solar facilities coming online after January 1, 2021

Offshore Wind Generation

- 2016 authorization increased by 2400 Mw to 4000Mw
- DOER may require ECS to conduct procurements of transmission capacity for OSW

Electric Distribution Companies

- Allowed to own generation facilities in environmental high-risk areas with municipal approval
- Generating capacity cap of 10% of the states total as of FY2020



Climate Bill & DOER – Energy Efficiency

Changes to the energy efficiency programs intend to better balance cost with emissions reductions

- Three-Year Energy Efficiency Plans must include an estimate of social value of emissions reduction
- EEA Secretary sets a goal (in tons of carbon) for EE plans to achieve
 - > EEA Secretary certifies if plan's goal was met and files report with Legislature
- Cost effectiveness review based on "social value of greenhouse gas emissions reductions"
- Distribution companies are required to file quarterly reports on progress and contribution
- EEAC's annual report to include annual estimation of impacts on meeting climate goals



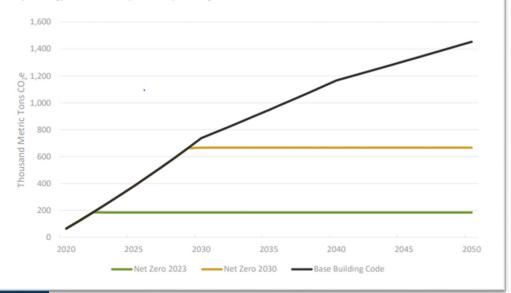


Climate Bill & DOER - Building Code

Stretch Energy Code

- Established in statute
- DOER may update
- Commissioner of DOER sits on board of Building Regulation and Standards (BBRS) and shares responsibility with DPL

Figure 14. Annual emissions from new construction associated with a 2023 and 2030 implementation of a high-performance electric code, as well as a no implementation scenario for commercial and residential buildings. Note that this does not include forecasts of unclassified energy-demand currently serviced by natural gas.



Specialize Stretch Energy Code

- Established in DOER's statutory mandate
- DOER promulgates within 18 months
- Municipal opt-in code for cities and towns
- Includes definition of net-zero buildings and sets performance standard
- DOER must hold at least 5 public hearings in geographically and population density diverse locations





DOER Mission



Solar and renewable generation

Peak reduction and energy efficiency

Stored energy; Flexible resources





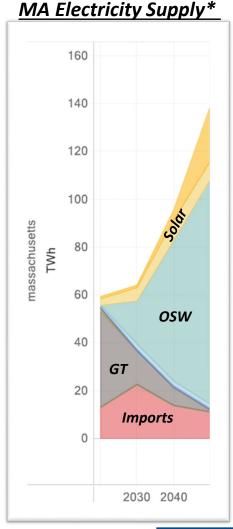


- Texas Tribune.



2050 Decarbonization Roadmap Study

- 2050 Massachusetts Decarbonization Roadmap Study was published last December. It includes scenario modeling to achieve net-zero GHG emissions in 2050
- Least-cost pathways are dominated by offshore wind (over 25 GW) and require new transmission
- A draft 2030 Clean Energy and Climate Plan was released for public comment as well



*Draft initial results.



NESCOE Vision

- Recent NESCOE Vision document signed by five New England governors provides states' recommendations to ISO-NE:
 - Conduct a comprehensive long-term regional transmission planning process to integrate the new offshore wind resources necessary to meet state policy goals
 - Modernize wholesale market structures to accommodate state clean energy goals
 - Increase transparency and state voices in ISO governance
- Upcoming Technical Conferences to be hosted by NESCOE to generate dialogue with interested stakeholders



New England's Regional Wholesale Electricity Markets and Organizational Structures Must Evolve for 21st Century Clean Energy Future

A clean, affordable, and reliable regional electric grid — together with transparent decision-making processes and competitive market outcomes that fully support clean energy laws — is foundational to achieving our shared clean energy future. Connecticut, Maine, Massachusetts, Rhode Island and Vermont are deeply committed to addressing climate change and cost-effectively reducing economy-wide greenhouse gas emissions by at least 80 percent below 1990 levels by 2050, recognizing some states have higher goals. To achieve these goals, we need a decarbonized grid capable of supporting the accelerated adoption of more sustainable electric, heating, and transportation solutions for families and businesses. Moreover, the region's electric markets must account for the full value of on-going state investments in clean energy resources made pursuant to our laws.

Going forward, we require a regional electricity system operator and planner that is a committed partner in our decarbonization efforts, and will:

- Proactively develop market-based mechanisms, in concert with state policymakers, that
 facilitate growth in clean energy resources and enabling services, while fully accounting for
 on-going renewable energy investments made pursuant to enacted state laws;
- 2. Conduct best-in-class system planning activities that proactively address our clean energy needs;
- Ensure grid resiliency and reliability at least cost in a manner that is responsive to state and consumer needs; and
- Adopt an organizational mission and structure to reflect our energy transition and establish a higher degree of accountability and transparency to the participating States and other stablishides

Our States have long supported open, competitive market-based mechanisms as a primary means to meet the resource adequacy and reliability needs of our shared electricity grid. Our States restructured the markets for electric generation and retail supply in the 1990s (with the exception of Vermont), and rely on FERC jurisdictional markets and an Independent System Operator (ISO-New England) to operate the regional power system, implement competitive wholesale markets, and ensure open access to the transmission system. As our States accelerate efforts to expand clean energy resources and combat the global challenge of climate change, we now seek to better align our regional competitive markets with the achievement of our decarbonization goals.

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SMART Storage

- The percentage of projects utilizing the storage adder is increasing for Approved & Qualified resources to-date
- Developers say requiring storage is "healthy medicine"
- FCA Auction Results signal new era commencing;
- The nearly 1,600 MWh of approved and qualified storage projects exceeds the Commonwealth's 2025 energy storage target
- Long-term challenges:
 - Interconnection (20-75);
 - Land-use/Clean Energy;
 - Long-duration storage.

SMART Status	# With Storage	MW of Storage	MWh of Storage
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Approved	788	63	136
Qualified	1,088	508	1,459
Under Review	300	16	50
Approved + Qualified	1,876	571	1,595
Approved, Qual, &			
Under Review	2,176	587	1,645



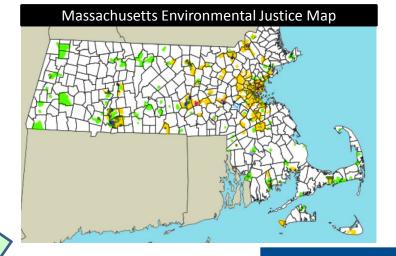
Happy Hollow Community Solar + Storage Farm



MOR-EV Trucks

- In February, through a \$10 million commitment, DOER expanded MOR-EV to include light, medium and heavy-duty vehicles
- Program will help to reduce air pollution and increase access to clean transportation options
- Some program features include:
 - An individual fleet may only reserve up to 10% of any particular incentive block, additional purchases are subject to block declines
 - Public and private purchases are eligible
 - Environmental Justice Adder: 10% increase for vehicles registered in, or which primarily operate in EJ Communities

GVWR (lbs.)	BEV/FCEV Block 1	Incentive Reservation	Block Size (# Veh)
	Value	Reservation	(# Vell)
8,501 – 10,000	\$7.5k	Rebate	200
10,001 – 14,000	\$15k	Rebate	200
14,001 – 16,000	\$30k	Voucher	100
16,001 – 19,500	\$45k	Voucher	100
19,501 – 26,000	\$60k	Voucher	100
26,001 – 33,000	\$75k	Voucher	50
33,001 +	\$90k	Voucher	50





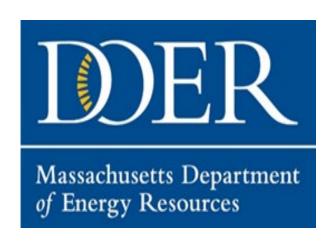


Environmental Justice and Equity Efforts

- A recent non-participant study found that moderate-income households, renter households, and language isolated households have lower awareness of Mass Save energy efficiency programs and participate at lower rates than other populations
- To address this, DOER is working closely with utilities to create the next three-year energy efficiency plan for the Mass Save programs with robust community engagement which included:
 - Six virtual public comment sessions
 - Six workshops
 - Equity working group created to address low participation and ensure community-driven priorities
- Some other EJ and equity focus areas in 2021:
 - SMART Low-Income
 - Expanded eligibility to income eligible EJ areas
 - Reserved 5% of all remaining capacity for certain low-income projects
 - > 83C III Offshore Wind Draft RFP
 - Would require bidders to submit diversity, equity and inclusion plans that includes a Workforce Diversity Plan and Supplier Diversity Program Plan
 - Asks bidders to detail any potential impacts, including assessments of cumulative environmental impacts, on EJ Populations and host communities







THANK YOU

