

EBC Energy Resources Program: Renewable Energy Procurement in Massachusetts and New England



Welcome

Daniel K. Moon

*Executive Director & President
Environmental Business Council*



Environmental Business Council of New England
Energy Environment Economy

Program Purpose – What You Will Learn

Julie Barry

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Partner, Prince Lobel Tye LLP



Environmental Business Council of New England
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Massachusetts' Offshore Wind Pursuits

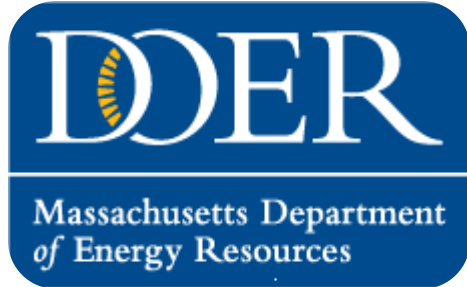
Joanne Morin

*Deputy Commissioner
Massachusetts DOER*



Environmental Business Council of New England
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Creating A Cleaner Energy Future For the Commonwealth



COMMONWEALTH OF MASSACHUSETTS

Charles D. Baker, Governor

Karyn E. Polito, Lt. Governor

Matthew A. Beaton, Secretary

Judith Judson, Commissioner

Massachusetts' Offshore Wind Pursuits

Presentation to EBC April 9, 2019

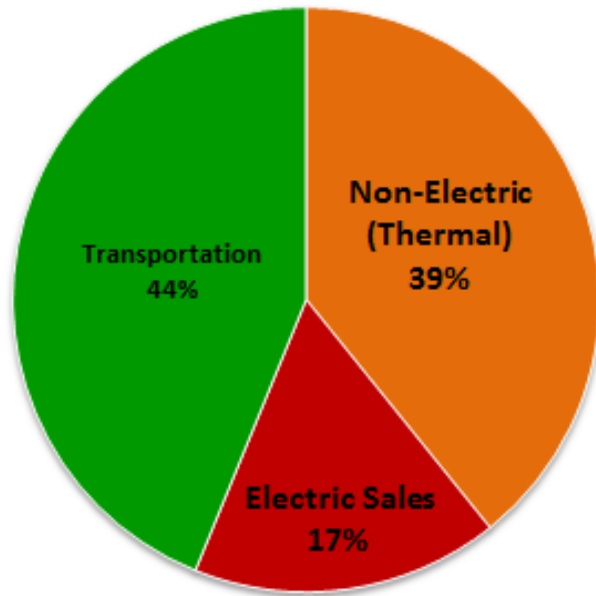
Joanne Morin

Deputy Commissioner

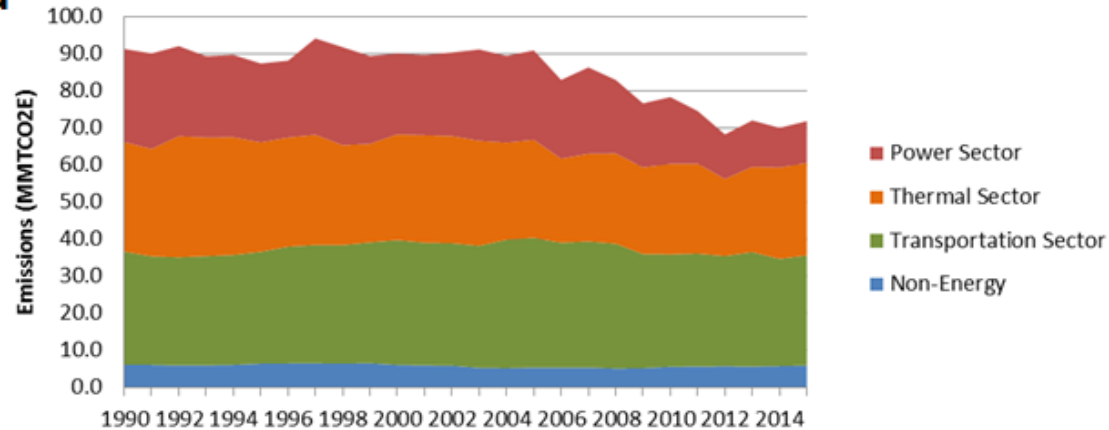
Massachusetts Energy Use and Emissions by Sector

Massachusetts Energy Demand

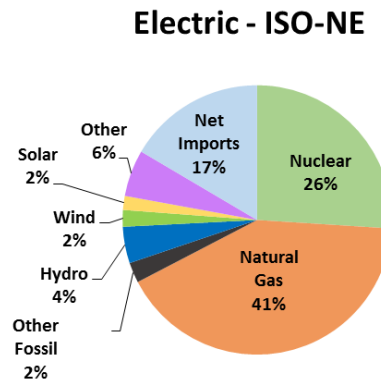
Total: 1,074 Trillion BTU in 2016



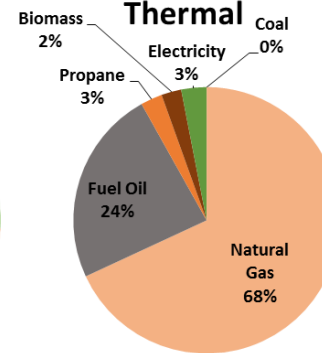
Massachusetts Greenhouse Gas Inventory



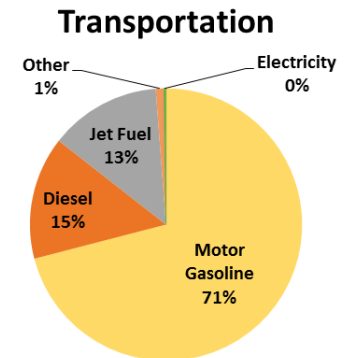
Electric - ISO-NE



Thermal



Transportation



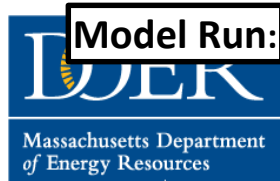
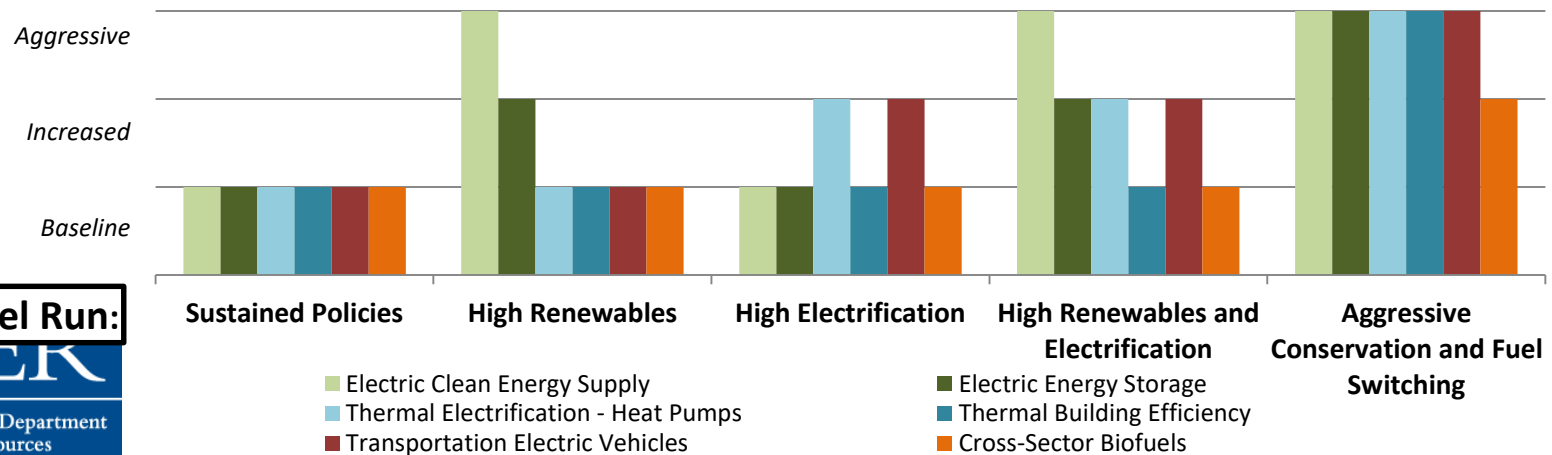
Massachusetts Comprehensive Energy Plan (CEP) 12-18-2018

<https://www.mass.gov/service-details/massachusetts-comprehensive-energy-plan-cep>

Modeling Analysis

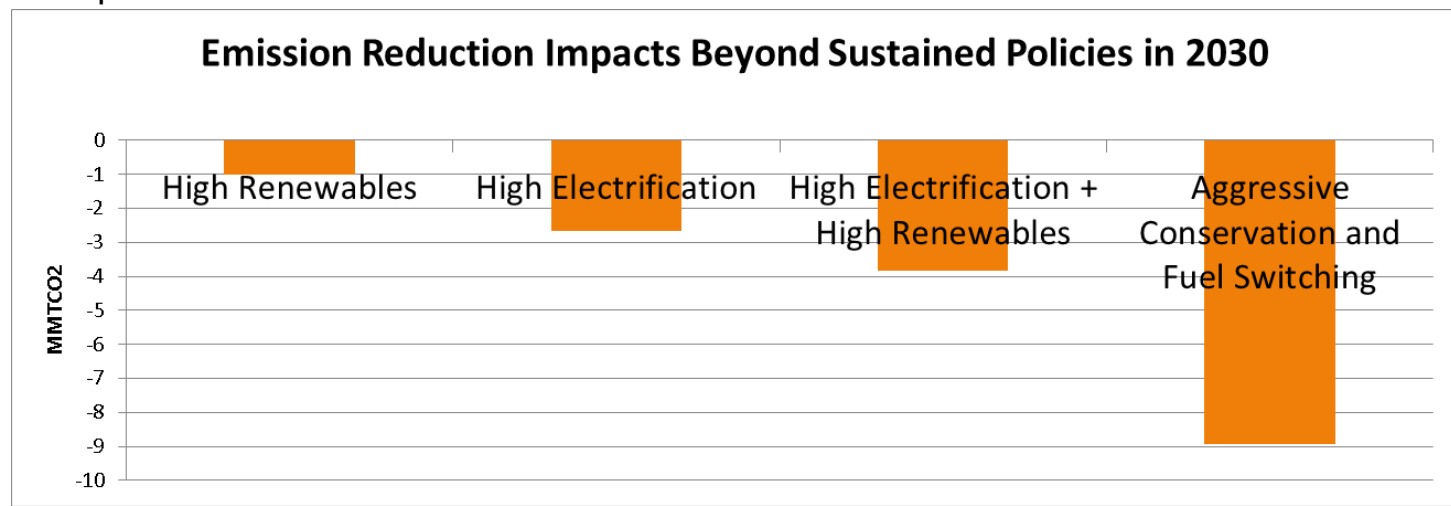
Modeled various hypothetical amounts of clean energy and demand between now and 2030 to see impact on cost, emissions and reliability:

| Scenarios | Modeling Assumptions by 2030 |
|---|---|
| Sustained Policies | <i>Assumption of what outcomes will be achieved by 2030 as a result of current policies (Pre-2018 Legislation) 45% clean retail electricity; 500 MWh storage; 1.2 million EVs</i> |
| High Renewables | <i>Sustained Policies with additional clean electricity: + 16 TWh of Clean Electricity (4,000 – 7,000 MW), 65% clean retail electricity + 3x amount of energy storage (1800 MWh)</i> |
| High Electrification | <i>Sustained Policies with increased electrification of Thermal and Transportation Sectors + Accelerated growth in EVs (1.7 million LDV (36%) - by 2030) + 25% of oil-heated and 10% of gas-heated buildings switch to ASHP</i> |
| High Renewables + Electrification | <i>Combine the High Renewables and High Electrification assumptions</i> |
| Aggressive Conservation + Fuel Switching | <i>High Renewables + Electrification scenario with: + More aggressive fuel switching in the Thermal and Transportation sectors + 3x increase in pace of weatherization and building efficiency + 2 GW peak demand reduction</i> |



Findings: Impact on Emissions

- With sustained policies, Massachusetts estimated to achieve 35% emission reduction from 1990 levels by 2030 (~61 MMTCO₂); key findings for additional reductions:
 - Focusing policies primarily on the electric sector has diminishing returns, increasing rates with while realizing only modest decreases in GHG emissions
 - Electrifying the thermal and transportation sector leverages investments made in a cleaner electric grid
 - Conservation and peak demand reduction important as use of electricity for heating and transportation grows
 - Improving building efficiency is important to achieving reduced emissions in thermal sector
 - Alternative fuels, such as biofuels, can assist in transition to cleaner heating and transportation



Policy Priorities and Strategies

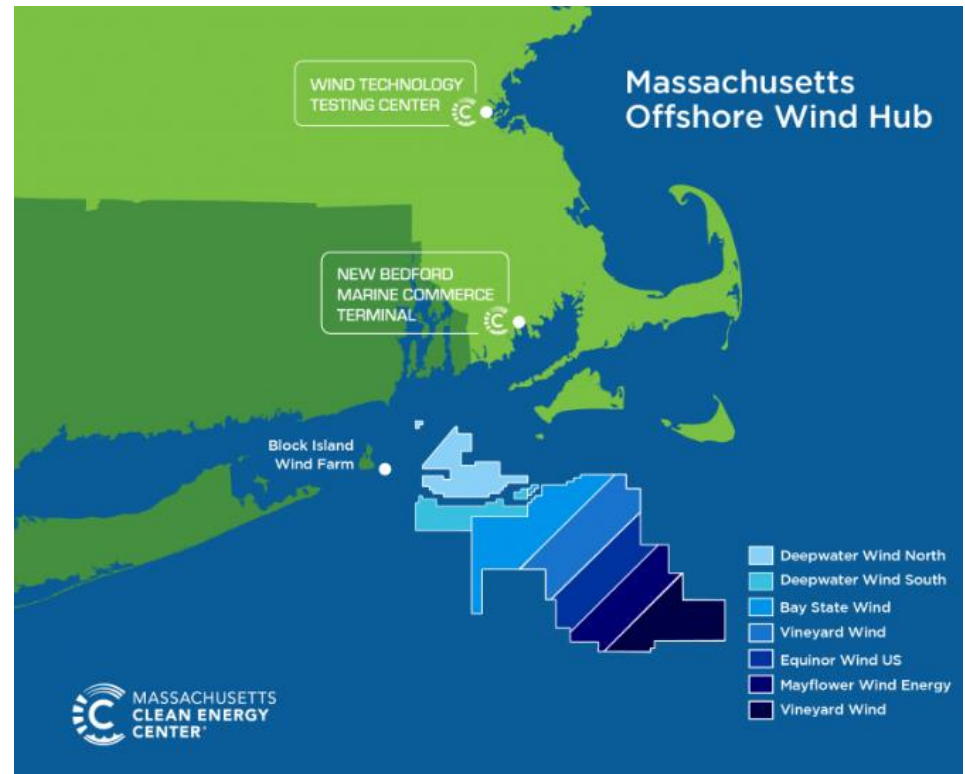
for a clean, affordable, resilient energy future

Electric Sector

- Prioritize electric energy efficiency and peak demand reductions
 - Implement policies and programs, including the **Clean Peak Standard**, that incentivize energy conservation during peak periods.
 - Develop policies to **align new demand** from the charging of EVs and heating/cooling with the production of clean, low-cost energy.
 - Include cost-effective **demand reduction** and **additional energy efficiency initiatives** in our nation-leading energy efficiency programs and plans
 - Utilize our successful **Green Communities** programs and **Leading By Example** programs to continue to make state and municipal infrastructure clean and efficient
- Continue to increase cost-effective renewable energy supply
 - Investigate policies and programs that support **cost-effective clean resources** that are **available in winter** to provide both cost and emission benefits to customers
 - Evaluate or expand **continued policies to support distributed resources**, including distributed solar and storage development in the Commonwealth after the SMART program concludes, to continue lowering costs while providing benefits to ratepayers

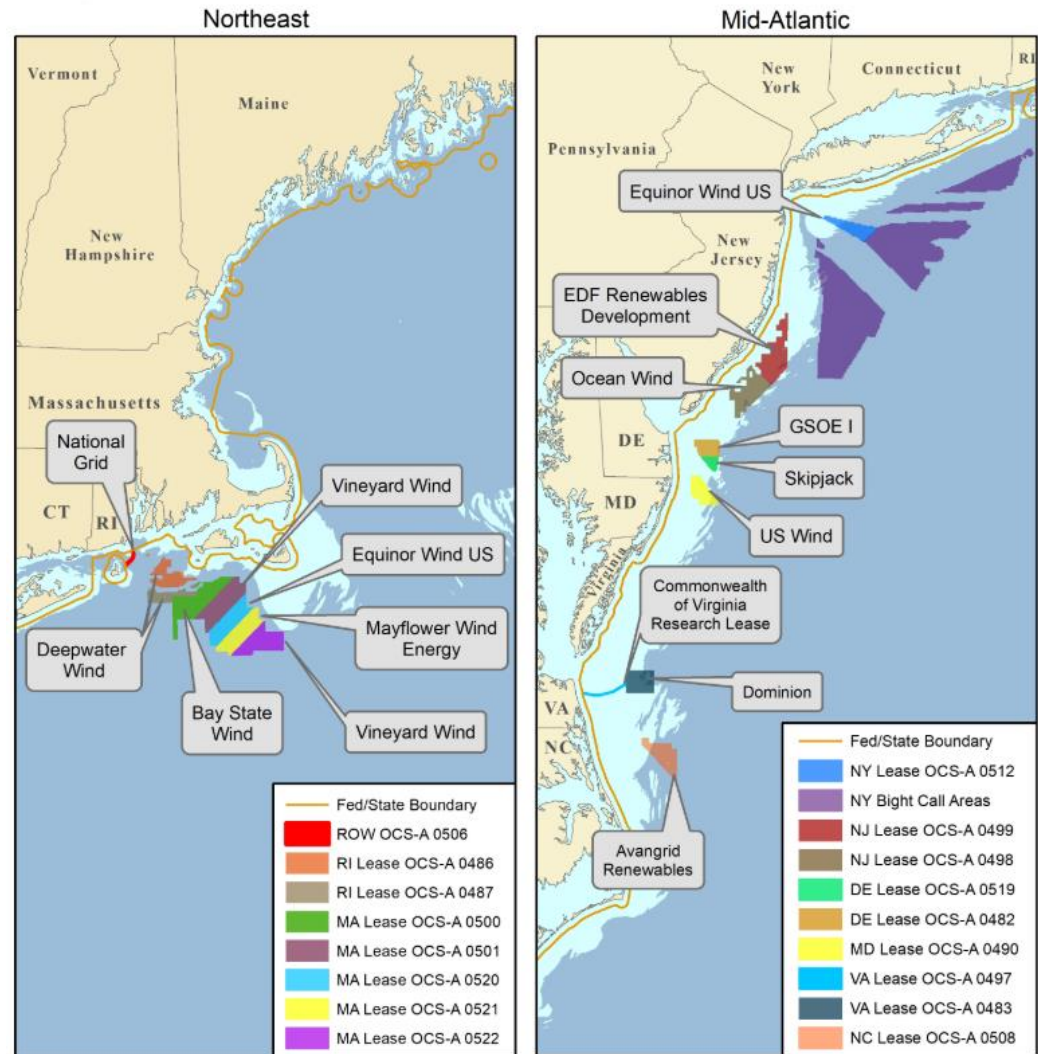
Offshore Wind Opportunity

- Clean, Diverse Energy Goals
- Massive Opportunity
 - +10GW potential
 - Pipeline Constraints
 - Winter Price Spikes
 - Significant GHG Reductions
- Competition and market confidence increasing
 - 2013- \$3.8m (3 bidders)
 - 2015- \$400k (2 bidders)
 - 2018- \$135m/lease (total \$405m) (19 eligible bidders)



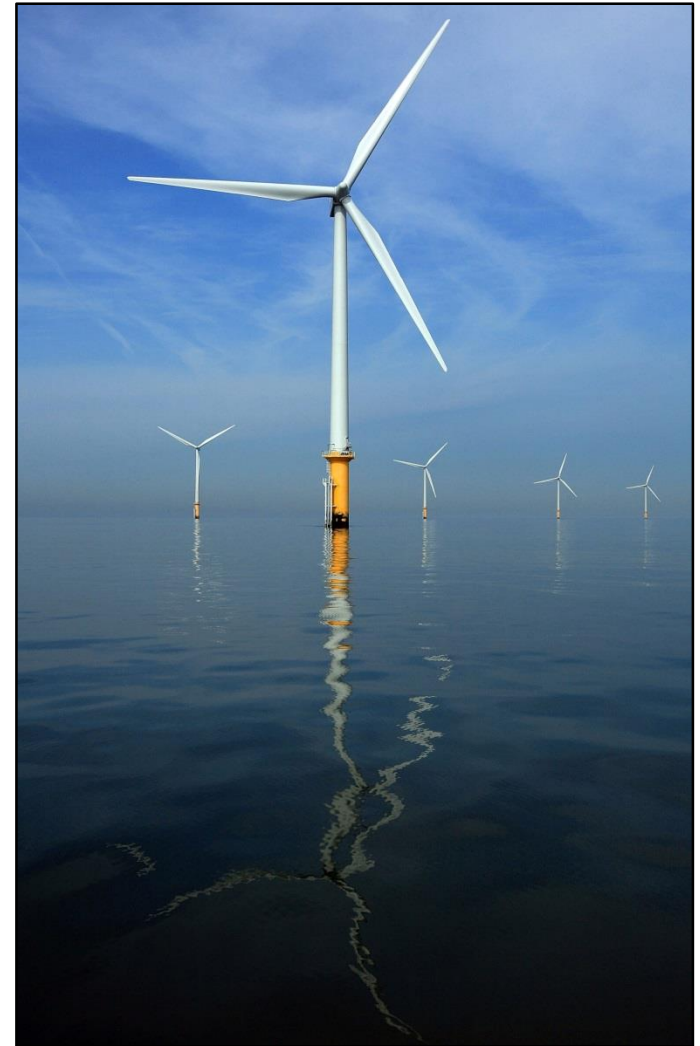
Robust Project Pipeline

- 15 Wind Energy Areas (possibly more in NY Bight)
- MA- 1,600MW (considering 3,200MW)
- RI- 400MW
- CT- 300MW (considering 2,000MW)
- NY- 9,000MW goal
- NJ- 3,500MW
- MD- 480MW (considering 1,200MW)
- VA- 2,000MW goal



Massachusetts 83C Procurements- 1st Round

- Authorization for 1,600MW
- Power Purchase Agreement
 - Energy and RECs (Not Capacity)
- 2017- Sought 400MW, with potential for 800MW
- May 2018- Selected Vineyard Wind 800MW project
 - **Real Levelized 6.5 cents/kwh (2017\$)**
- Commercial Operation Date
 - 1st 400MW Dec 2021
 - 2nd 400MW May 2022
- Rhode Island secured 400MW Revolution Wind project.



Massachusetts 83C Procurements- 2nd Round

- 83C Procurement- 2nd Round
 - Stakeholder Questions- Timing of RFP
 - issued in January 2019
 - Responses received in February 2019
 - Draft RFP filed with DPU on 3/27
 - www.macleaneenergy.com (click on follow, bottom right)



Offshore Wind Study

- An [Act to Advance Clean Energy](#), signed August 9, 2018.
- Investigate the necessity, benefits and costs of doing an additional procurement for up to 1,600MW.
- This is in addition to the initial 1,600MW authorization.
- Stakeholder Questions
 - Issued in February
 - Response in March
- Working expeditiously to complete study.



Challenges and Opportunities

Transmission



Fisheries



Economic Development



Customer Procurement of Renewable Energy

Cynthia Arcate

*President & Chief Executive Officer
PowerOptions, Inc.*



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The Intersection of Public Policy and Commerce: The Developer Perspective on the Procurement of Renewables

Dave Wilby

President

Wilby Public Affairs, LLC



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Moderated Discussion

Moderator: Juliet Browne, *Verrill Dana*

Panelists:

- **Cynthia Arcate, *PowerOptions, Inc.***
- **Joanne Morin, *MA DOER***
- **Dave Wilby, *Wilby Public Affairs, LLC***



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