Commonwealth of Massachusetts

Gulf of Maine Intergovernmental Task Force

Undersecretary Michael Judge

Executive Office of Energy and Environmental Affairs

May 11, 2022

Building a Net-Zero Commonwealth

- **MA Climate Law 2021**:
  - Must achieve **stringent, economy-wide GHG reduction limits**: ≥50% in 2030; ≥ 75% in 2040; and **Net-Zero in 2050**
  - Must set emissions limits every 5 years and sub-limits for 6 sectors of the state economy
  - Defines environmental justice populations, principles, and environmental burdens
- **5,600 MW authorized for offshore wind** procurements by 2027
- Economic analysis conducted for the Clean Energy and Climate Plan shows that in meeting our emissions limits we can also grow the economy
- **Net gain of over 22,000 jobs by 2030**
- **Public health benefits valued at over $400 million per year**

Net-Zero Modeling

Electricity Generation

- **Offshore wind is the backbone of decarbonized electricity generation** in Massachusetts.
- Recent modeling points to 23 GW of offshore wind by 2050, accounting for roughly 60% of total annual generation.
- Modeling also suggests about 35% of total annual electricity generation will be from solar through both rooftop and ground-mounted PV.

Electricity Balancing

- Challenge with infrequent but long-lasting periods of fallow wind production.
- **Solar and hydro imports required at large scale** as well as residual dispatchable thermal to maintain reliability on low-wind days.
- Flexible operation of electrolysis facilities to produce hydrogen.

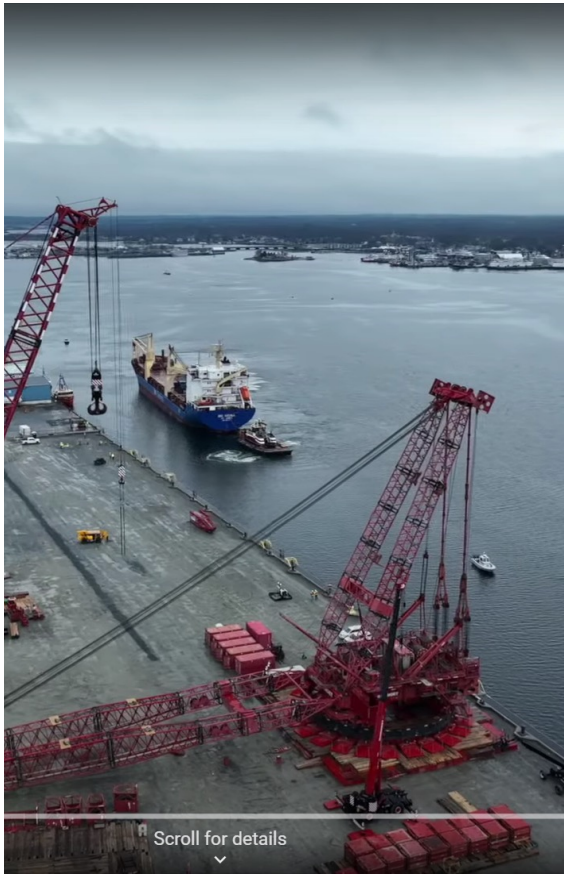
Transmission

- Intra-New England transmission capacity found to be economic in multiple modeling pathways.
- Substantial **expansion of transmission and distribution within Massachusetts** is necessary to meet the more-than-doubled final electricity demand resulting from electrification.

Commonwealth Offshore Wind Procurement

- **3 procurement rounds conducted to date: 2017, 2019, 2021**
  - Vineyard Wind 1 - 800 MW
  - SouthCoast Wind - 804 MW + 400 MW
  - Commonwealth Wind - 1,200 MW
- **May 2 - RFP for Massachusetts' 4th procurement filed with Department of Public Utilities**
  - Bids for offshore wind generation up to 3,600 MW, which represents 25% of state's annual electricity demand
  - Requires environmental and fisheries mitigation plans
  - Economic development commitments with emphasis on diversity, equity and inclusion
  - Department of Energy Resources to lead review and select winning bids in consultation with utilities

Ports and Infrastructure

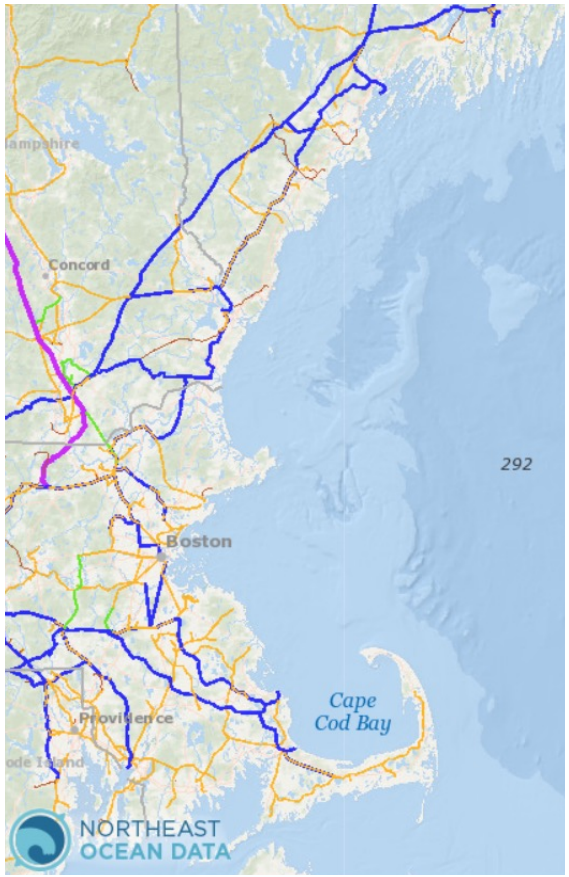


- **New Bedford Marine Commerce Terminal**
  - 1st purpose-built OSW port in U.S., engineered for heavy loads
  - Owned and operated by MassCEC
  - Vineyard Wind 1 currently under construction
- **Offshore Wind Industry Ports Challenge -** $180 million investments leveraging more than $444 million in port redevelopment:
  - **Salem Wind Port** - New marshalling port key for floating OSW
  - **Prysmian - Marine HV cable manufacturing** facility and terminal
  - New Bedford Foss Marine Terminal - New laydown and berthing for feeder barges and O&M service operations
  - New Bedford North Terminal - New berthing and laydown for commercial fishermen, OSW vessels, and other port users
  - **Gladding Hearn Shipbuilding** - Upgrades for local crew transfer vessel (CTV) fabrication and repair
  - Shoreline Marine Terminal - Lift piers, berths, and fueling for CTVs

Workforce and Supply Chain Development

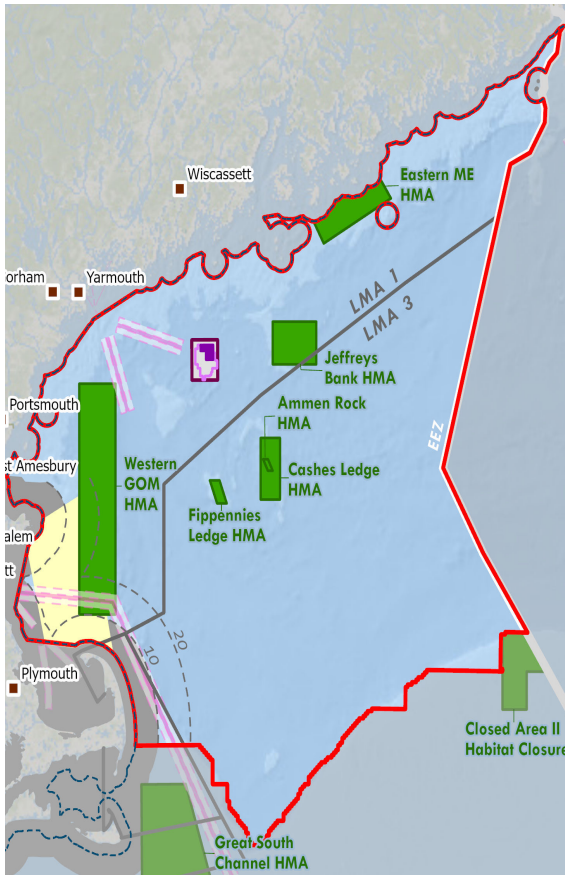
- **Technical and financial support** to more than **20 organizations and institutions** in OSW workforce for:
  - Introductory and offshore wind “101” courses
  - Health/safety and technical training and certifications
  - Industry and trades partnerships
  - Undergraduate and graduate programs
  - Access to Opportunity (DEI)
- MassCEC’s Offshore Wind Works: more than **$8 million in awards** and current 2023 program in process
- **New offshore wind tax credits** for jobs and cap-ex investment to facilitate economic development
- Supply chain forums, “Meet the Buyer” events, and new **Offshore Wind Business-Ready Program**

Transmission



- Offshore wind presents the challenge of bringing large volumes of high voltage current to customers through a **limited number of onshore interconnection sites**
- Imperative that we start planning now to:
  - **Improve reliability** of offshore wind generation and efficient utilization of offshore transmission infrastructure;
  - Allow for **higher-capacity transmission** and avoid unnecessary upgrades to existing regional onshore grid; and
  - Explore **new transmission links between regions**
- MA joined with NE states in joint proposal to US DOE for the **Grid Resilience and Innovative Partnerships Program**:
  - Backbone multi-terminal HVDC system will be the key technology for an efficient and resilient grid
  - Seek to select one or more HVDC transmission lines and associated onshore system upgrades to unlock the region's significant offshore wind potential

Marine Spatial Planning: Marine Life, Habitat & Uses



- Build on comments on BOEM RFI leveraging conversations with key Commonwealth stakeholders
- Identify **multiple lease areas** to encourage competition and diversity
- Exclude protected habitat management areas and groundfish closure areas
- Create buffer from shore to reduce visual impacts and avoid busier nearshore areas
- **Identify areas of complex habitat** which support multiple habitats and uses
- **Identify and refine areas of high-density fishing activity and value** (Wilkinson's Basin, Northern Edge of Georges Bank)
- Consider transit routes to/from areas of high-density fishing

Coordination and Engagement

Leverage existing MA working groups relative to fisheries and marine habitat uses in Gulf of Maine:

- **Fisheries Working Group on Offshore Wind Energy**: commercial fishermen and reps, recreational fishermen, researchers, state/federal agencies; outreach to fishing industry sectors to understand temporal and geographic footprint of industry
- **Habitat Working Group on Offshore Wind Energy**: Scientists and technical experts from environmental organizations, academia, and state/federal agencies

Two new commissions established to help accelerate the state's clean energy development

- **Interagency Offshore Wind Council**: interagency collaboration and development of strategic plan
- **Commission on Clean Energy Infrastructure Siting & Permitting**: evaluate existing permitting processes and identify potential areas of improvement

Thank you

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