Introductions

Dugan Becker
Community Liaison Officer
Temperatures in RI have increased by more than 3°F over the past century.

Newport has seen more than 12” of sea level rise since 1930, with projections of up to 9 feet by 2100.

Damaging coastal floods are expected to become 10x more frequent than present.

Significant increase in frequency and intensity of extreme heat events and coastal flooding are expected.
Rhode Island Energy Snapshot

In the year 2016, the composition of Rhode Island’s greenhouse gas (GHG) emissions was as follows:

- Electricity: 36%
- Transportation: 17%
- Residential Heating: 10%
- Commercial Heating: 8%
- Industrial Heating and Processes: 3%
- Other: 3%

These emissions are categorized into various sectors, including transportation, electricity consumption, residential heating, commercial heating, industrial heating and processes, and other sources.

Rhode Island Renewable Energy Procurement Projections

Source: RI Office of Energy Resources, “The Road to 100% Renewable Electricity”, 2020
Rhode Island – Path to 100% Renewable

<table>
<thead>
<tr>
<th>Renewable Energy Source</th>
<th># MW Needed to Reach 100% Renewable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offshore Wind</td>
<td>900 – 1,100</td>
</tr>
<tr>
<td>Land-Based Wind</td>
<td>1,300 – 1,700</td>
</tr>
<tr>
<td>Wholesale Solar</td>
<td>2,700 – 3,600</td>
</tr>
<tr>
<td>Retail Solar</td>
<td>3,200 – 4,300</td>
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</tbody>
</table>

Current RI legislation seeking 600-1000 additional MW of offshore wind energy
2000+ GW of Technical Energy Potential

Data Source: AWS Truepower 0-50nm; NREL WIND Toolkit beyond 50nm.
Benefits of Offshore Wind

- Emissions reductions
- Scalability
- Strong/consistent offshore wind resources
- Job creation & supply chain growth
- Accessibility
- Energy independence
- Fixed low-cost energy
U.S. Development Outlook

- National goal of 30GW by 2030, 110GW by 2050
- 35+ GW of potential in development pipeline
- 39 distinct offshore areas

Source: U.S. DOE 2021 Offshore Wind Market Report
What is needed to meet the 30GW by 2030 Target?

- $97 Billion in capital expenditure
- 2,110 Offshore wind turbines
- $375-500 Million in port infrastructure upgrades
- 83,000 New jobs

Southern New England Development Pipeline

- 9 Projects
- 740,000+ Acres
- 13,000+ MW of generation potential
  - 7,396 MW procured (55%)
    - Orsted: Revolution (704 MW), South Fork (140 MW), Sunrise (880 MW)
    - Vineyard Wind: Vineyard Wind 1 (800 MW), Park City (804 MW), Commonwealth (1200 MW)
    - Equinor/BP: Beacon Wind (1230 MW)
    - Shell/Ocean Winds: Mayflower Wind (1200 MW)
Mayflower Wind Project Overview

• **Lease Area**
  - 127,000 acres
  - 149 turbine positions

• **Generation Potential**
  - Up to 2,400 MW depending on technologies

• **Two points of interconnection**
  - Brayton Point, Somerset, MA- 95 mile distance
  - Falmouth, MA- 45 mile distance
Project Description - Offshore to Onshore

Outer Continental Shelf  Aquidneck Island/Portsmouth  Brayton Point
Lease Area Layout

- Aligned **1 nm x 1 nm** (1.9 km x 1.9 km) grid for layouts across all MA/RI Wind Energy Area leases
- **Uniform** spacing
- 1-nm wide **north-south and east-west corridors**
- Layout complies with U.S. Coast Guard recommendation for **safe navigation** within MA/RI WEA
Turbine Spacing & Navigation

Pictured here is a rendering of a 90’ vessel navigating through the 1x1 nm grid in Mayflower Wind’s offshore lease area.
Turbine Generators (WTGs)

<table>
<thead>
<tr>
<th>Project</th>
<th>Turbine Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Island (2016)</td>
<td>6 MW</td>
</tr>
<tr>
<td>Vineyard Wind (2023)</td>
<td>13 MW</td>
</tr>
<tr>
<td>Mayflower Wind (~2028)</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Image Source: NYSEDA
Foundations & Substructures

MONOPILE

PILED JACKET

SUCTION-BUCKET JACKET

GRAVITY BASE

*Foundation types under consideration
Inter-Array Cable & OSP

Indicative Inter-Array Cable Layout

Indicative Offshore Substation Platform (OSP)
Export Cable Route to Brayton Point

- HVDC export cables will be buried within a defined 1,640-2,300 ft wide corridor offshore
- Cable Route Length (approximate):
  - 70 mi in federal waters
  - 20 mi in RI state waters
  - 2 mi in MA state waters
- Cables will cross under Portsmouth, exit into Mount Hope Bay, before making landfall at Brayton Point
- Overland route avoids narrow, hazardous route section between Old Stone Bridge and Sakonnet River Bridge
• **Horizontal Directional Drilling** (HDD) will be employed to avoid impacts to sensitive nearshore environmental resources, including beaches.

• Permanent surface impacts will be minimal – onshore cable vaults will be buried.

• **Site Selection Considerations:**
  • Previous disturbance
  • Nearshore marine habitats
  • Cable crossings
  • Existing utilities in the vicinity
Onshore Cable Installation in Practice
Studies and Assessments Overview

Physical Environment Studies
• Geology and sediment quality
• Geotechnical surveys
• Wind and metocean conditions

Fauna Studies
• Fisheries (including benthic habitat)
• Birds and bats
• Marine mammals
• Sea turtles
• Subsea noise propagation modeling

Flora Studies
• Wetlands and onshore ecology
• Seafloor surveys
• Seagrass and macroalgae field surveys

Socioeconomic Studies
• Commercial and recreational fishing activity
• Marine transportation and hazard studies
• Archaeology and historic properties
• Aviation studies
• Supply chain, ports, and harbor evaluation
• Noise and traffic impact studies
Fishing Industry Engagement

Commercial and Recreational Fisheries

- Mayflower has a full time Fisheries Liaison Officer (FLO) who is engaged with the commercial and recreational fishing industry
- Monthly Port Hours at New Bedford, MA and Point Judith, RI
- Actively contracting scouting vessels, onboard representatives, and Fisheries Representatives
- Routine scouting areas for fishing gear ahead of surveys
- Active coordination with fishing vessels before and during surveys

https://mayflowerwind.com/our-commitment/marine-users/
Permitting Process – Overview

Regulatory authorities with jurisdiction over one or more part(s) of the proposed Project.

**FEDERAL**
- Bureau of Ocean Energy Management (BOEM)
- U.S. Department of Defense (DOD) Clearinghouse
- U.S. Army Corps of Engineers (USACE)
- U.S. Coast Guard (USCG)
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (FWS)
- National Oceanic and Atmospheric Administration (NOAA)
- National Marine Fisheries Service (NMFS)
- Federal Aviation Administration (FAA)

**MASSACHUSETTS**
- Massachusetts Executive Office of Energy and Environmental Affairs (EEA)
- Massachusetts Energy Facility Siting Board (EFSB)
- Massachusetts Department of Public Utilities (DPU)
- Massachusetts Department of Environmental Protection (MassDEP)
- Massachusetts Office of Coastal Zone Management (CZM)
- Massachusetts Department of Transportation (MassDOT)
- Massachusetts Board of Underwater Archaeological Resources (BUAR)
- Massachusetts Historical Commission (MHC)
- Massachusetts Fisheries and Wildlife (MassWildlife) – Natural Heritage & Endangered Species Program (NHESP)
- Massachusetts State Legislature
- Massachusetts Division of Marine Fisheries (DMF)

**RHODE ISLAND**
- Rhode Island Coastal Resources Management Council (CRMC)
- Rhode Island Energy Facility Siting Board (RIEFSB)
- Rhode Island Historical Preservation and Heritage Commission (RIHPHC)
- Rhode Island Department of Environmental Management (RIDEM)
- RIDEM Division of Fish & Wildlife (DFW)
- Rhode Island Department of Transportation (RIDOT)

**LOCAL**
- Cape Cod Commission
- Martha’s Vineyard Commission
- Falmouth, Portsmouth, and/or Somerset Planning & Zoning Board(s)
- Falmouth and/or Somerset Conservation Commission(s)
- Edgartown, Oak Bluffs, Tisbury and/or Nantucket Conservation Commissions
- Falmouth, Portsmouth, and/or Somerset Department of Public Works, Board of Selectmen, and/or Town Council
Benefits to the Region

• The project will eliminate over 4 million metric tons of GHGs annually

• Approximately 8% of the U.S. National goal of 30 GW of OSW by 2030

• Over 14,000 new jobs

• Based off first 804MW PPA - Ratepayers will save over $2 billion over the life of the project

• Supply chain growth across all phases – development, construction, and operations

• New operations and maintenance base in Fall River

• At least 75% of operations and maintenance jobs will be locally-based
Our investment of over $115 million in initiatives is based on commitments made under our recent wind procurement awards:

- $42.4 million offered under the 83C III solicitation (400 MW awarded)
- $77.5 million offered under the 83C II solicitation (800 MW awarded)
Rhode Island - Industry Assets

**Ports**
- ProvPort
- South Quay
- Quonset Point

**Research & Innovation**
- URI RF Blue Economy Technology Cluster
- 401 Tech Bridge
- URI Graduate School of Oceanography
- Naval Undersea Warfare Center (NUWC)

Image Source: RI Commerce, Offshore Wind RI
Rhode Island – Jurisdictional Snapshot

Projects Delivering to RI:

• Revolution Wind – 704 MW

Other Projects in RI Jurisdiction:

• Mayflower Wind – 1204 MW
• Vineyard Wind 1 – 800 MW
• South Fork Wind – 130 MW
• Revolution Wind – 880 MW
• Sunrise Wind – 880 MW
• New England Wind – 804 MW
• Others?

Rhode Island GLD Boundaries

Image Source: RI CRMC
Stay Informed!

Federal Government:
• Rhode Island Activities | Bureau of Ocean Energy Management (boem.gov)

State Government:
• RI Public Utility Comission - Energy Facility Siting Board
• RI Coastal Resource Management Council - Wind Energy

General Information - RI
• Rhode Island | Offshore Wind Hub
• Rhode Island Offshore Wind Opportunities (offshorewindri.com)
• Rhode Island for Offshore Wind (newenglandforoffshorewind.org)
• RI Offshore Wind Public Participation Guide

Educational Materials:
• GuideToAnOffshoreWindFarm.com
• Offshore Wind Energy | NOAA Fisheries

Sign up for Project Updates:
• Mayflower Wind
• Revolution Wind
• Vineyard Wind
• South Fork Wind
• Sunrise Wind

Come to Mayflower Wind’s RI Community Forum on Wednesday August 3rd!
Thank You

Questions and Comments?
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www.linkedin.com/company/mayflower-wind/

www.youtube.com/c/MayflowerWind