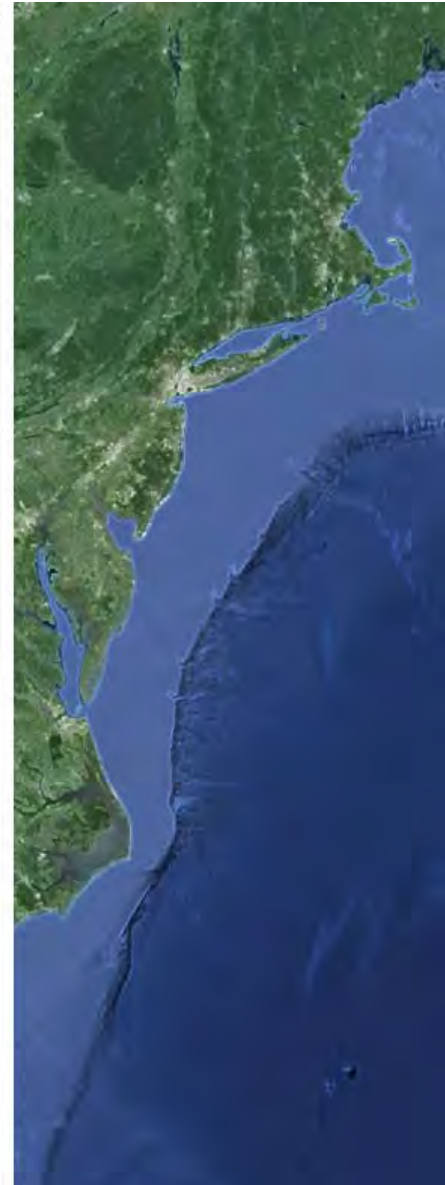
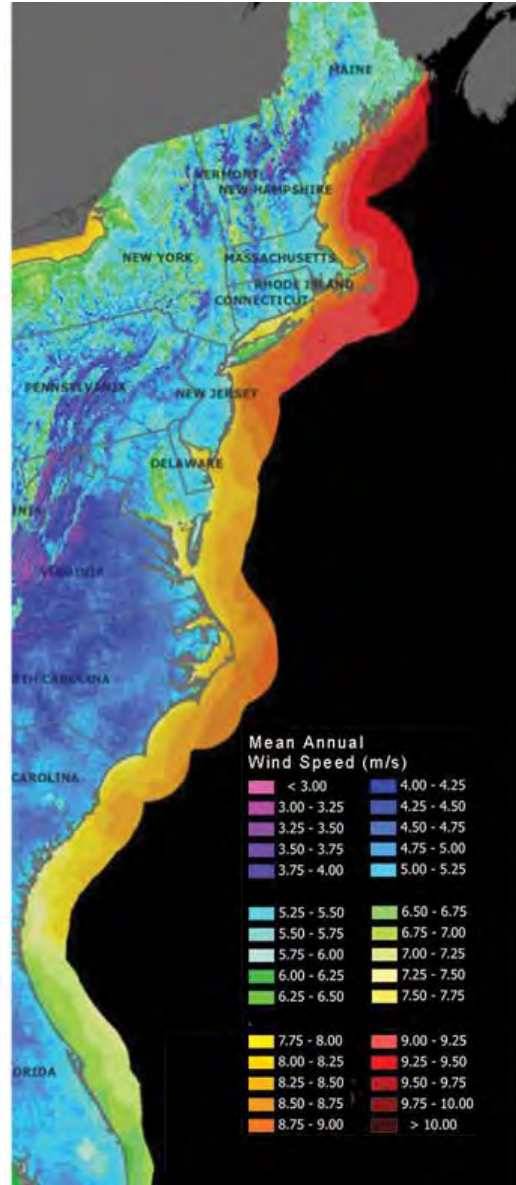
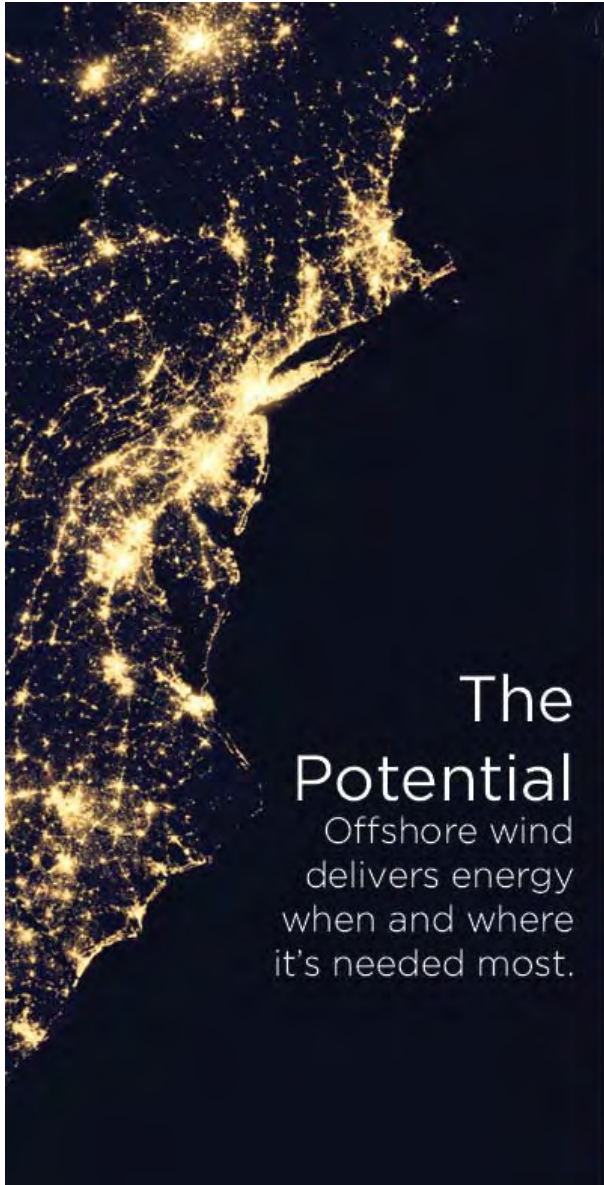




# Why offshore wind power?



# Regional Urgency

- Major New Natural Gas Projects Coming On Line between 2018 and 2020
  - Generation at Risk
  - Closed or Retiring
- |             |      |
|-------------|------|
|             |      |
| Natural Gas | Coal |
|             |      |
| Nuclear     | Oil  |



Several Major Non-Gas-Fired Generators Have Closed or Are at Risk of Retiring

Source: ISO New England Status of Nonprice Retirement Requests and Retirement Delist Bids, August 17, 2018

2 million Barrels of Oil in 15 days



arch  
**Bloomberg**

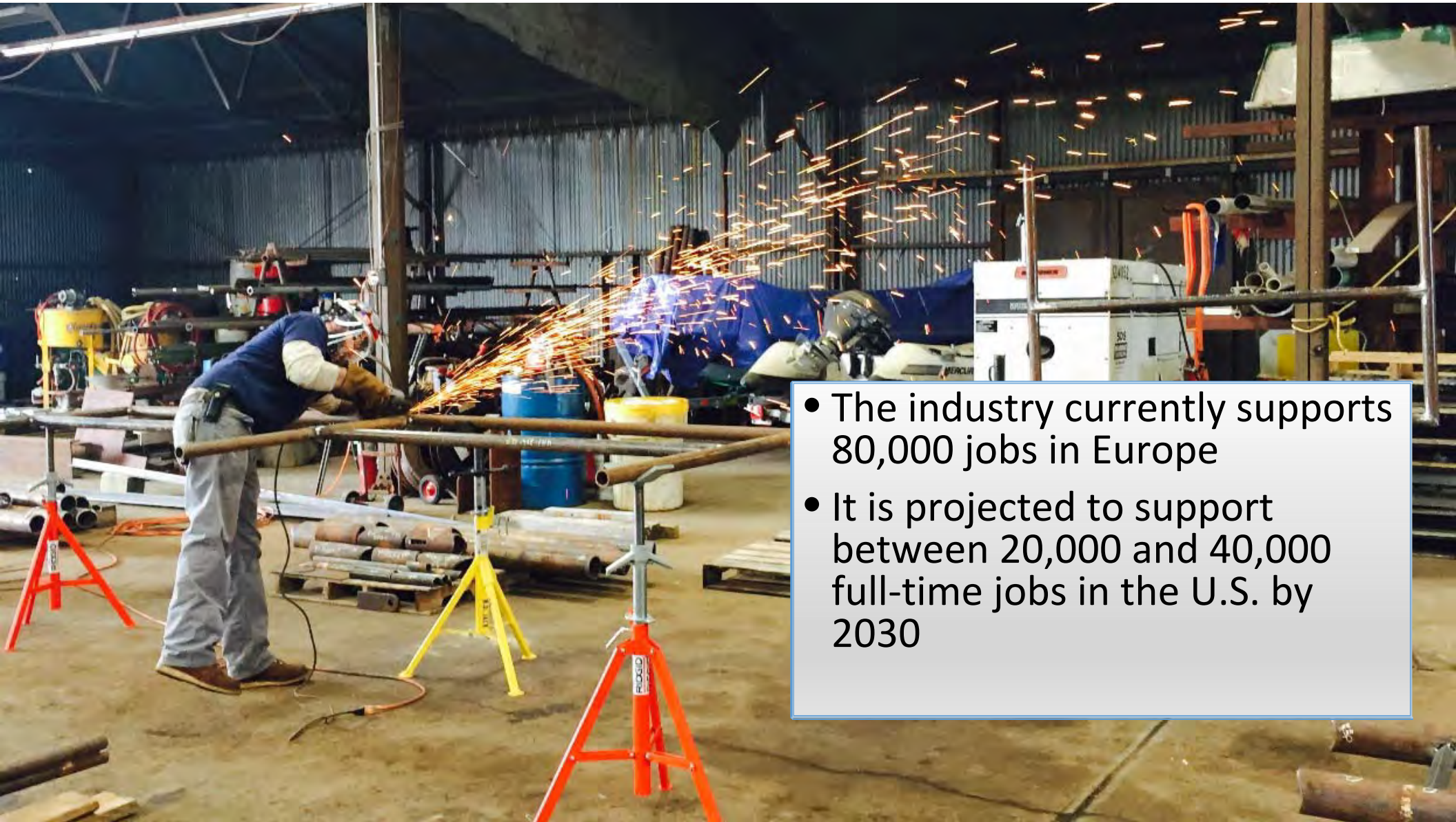


Photogr

Climate Changed

# **First Big U.S. Offshore Wind Farm Offers \$1.4 Billion to Customers**



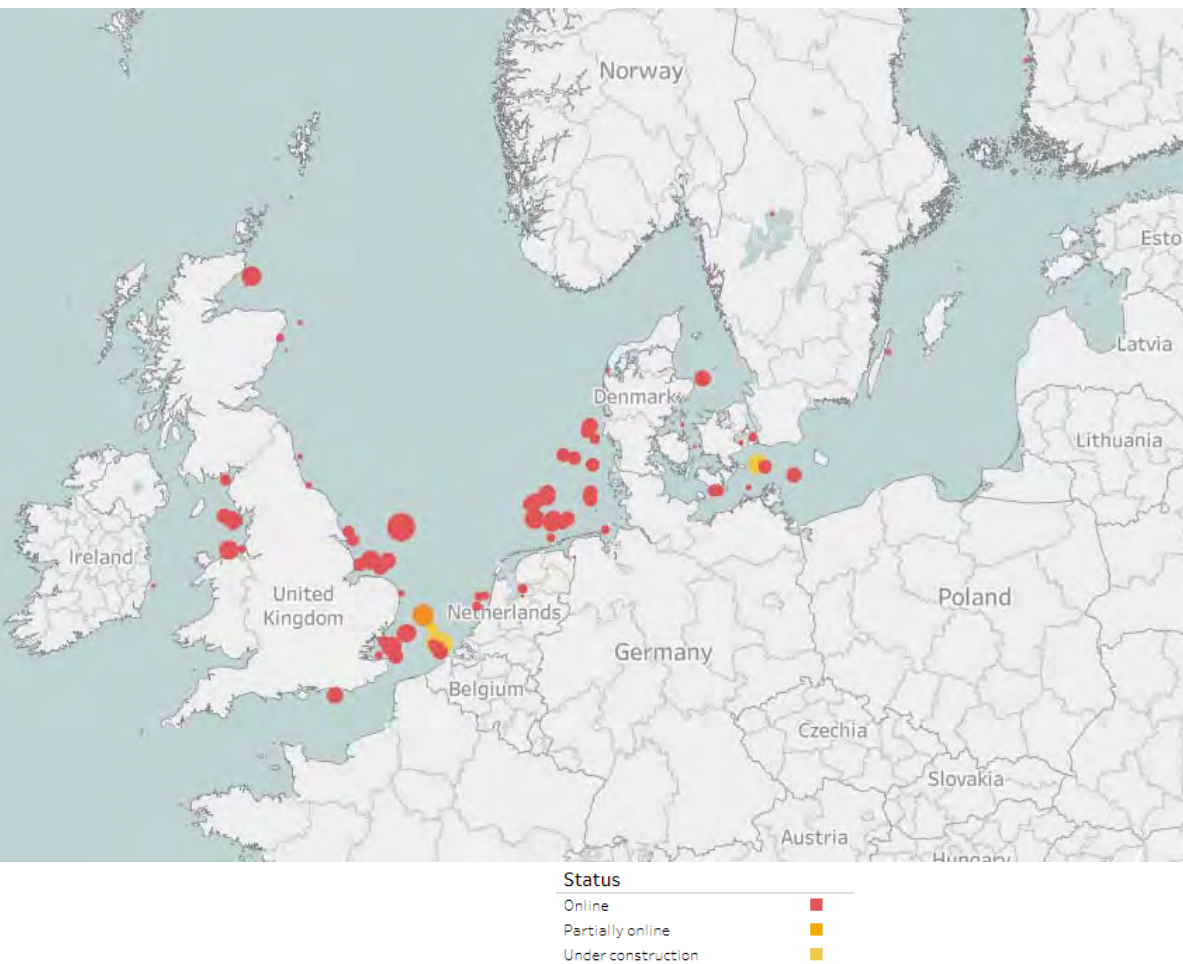


- The industry currently supports 80,000 jobs in Europe
- It is projected to support between 20,000 and 40,000 full-time jobs in the U.S. by 2030





# Offshore Wind in Europe



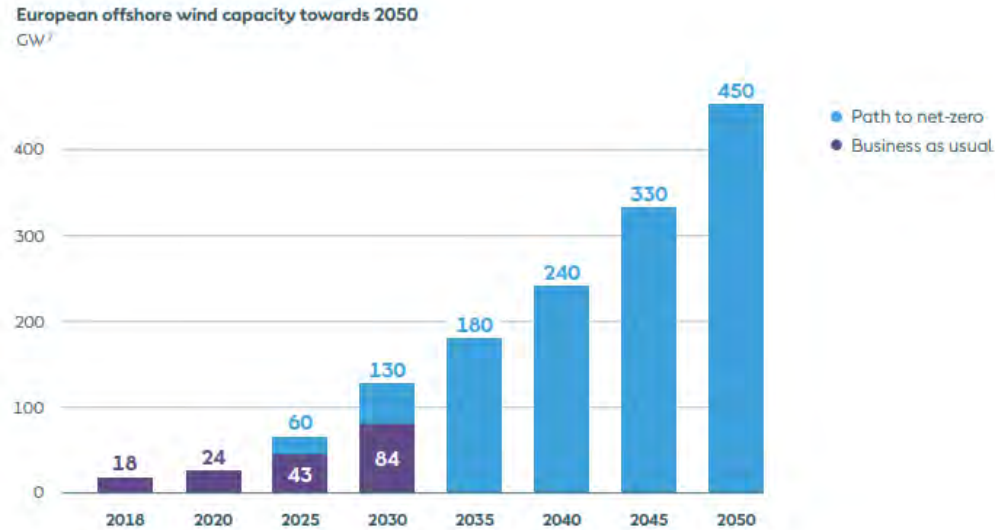
Offshore wind is a mature, established technology

## Key Statistics

- 22 GW installed since 1991
- 110 projects in 12 countries
- UK, Germany, Denmark, Belgium, Netherlands

Source: Wind Europe

## Current Context: European Green New Deal



### Key Objectives of the Green New Deal in Europe:

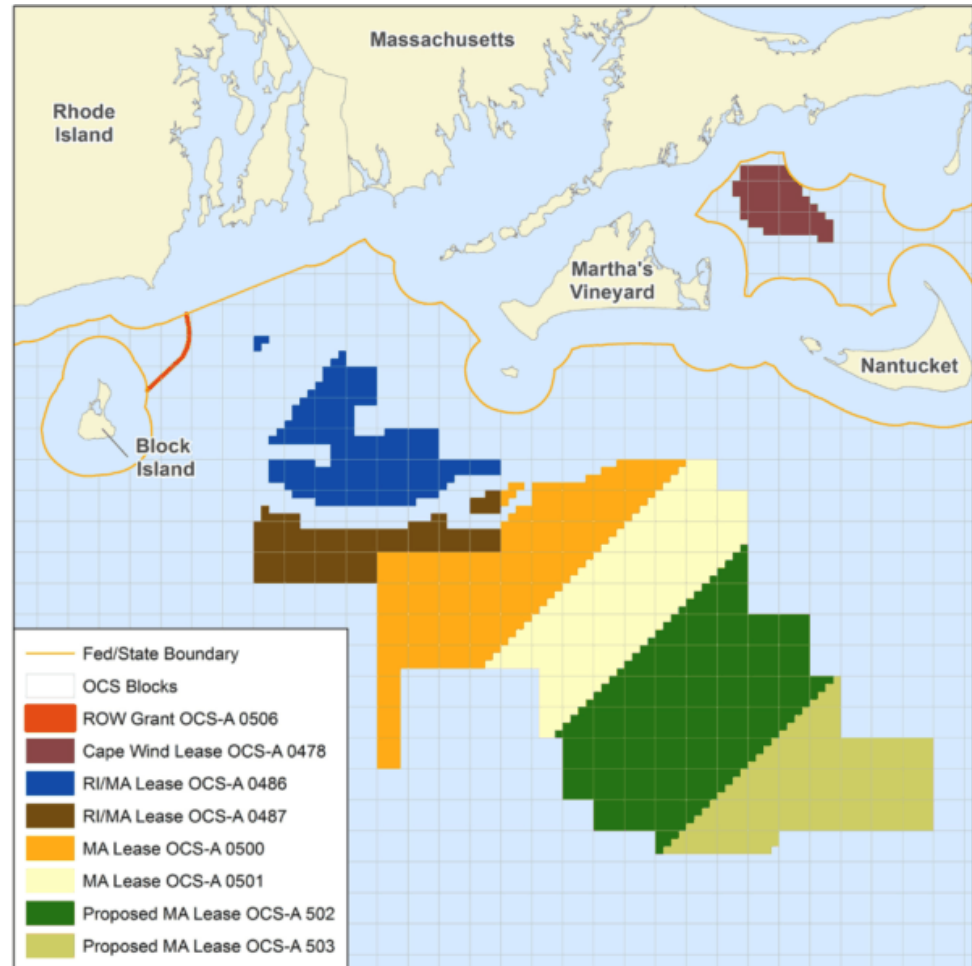
Net zero greenhouse gas emissions across Europe by 2050  
Deploying 450 GW of offshore wind in European waters by 2050

# US Offshore Wind: 2001-2018

## Timeline

- 2001:** Cape Wind Proposed
- 2015:** First US WDA leases
- 2016:** Block Island Operational
- 2018:** First US OSW Contracted (Vineyard Wind – 800MW)

•**TODAY:** Five Turbines, 30 MW capacity ~15,000 households



## Massachusetts Wind Energy Area Development

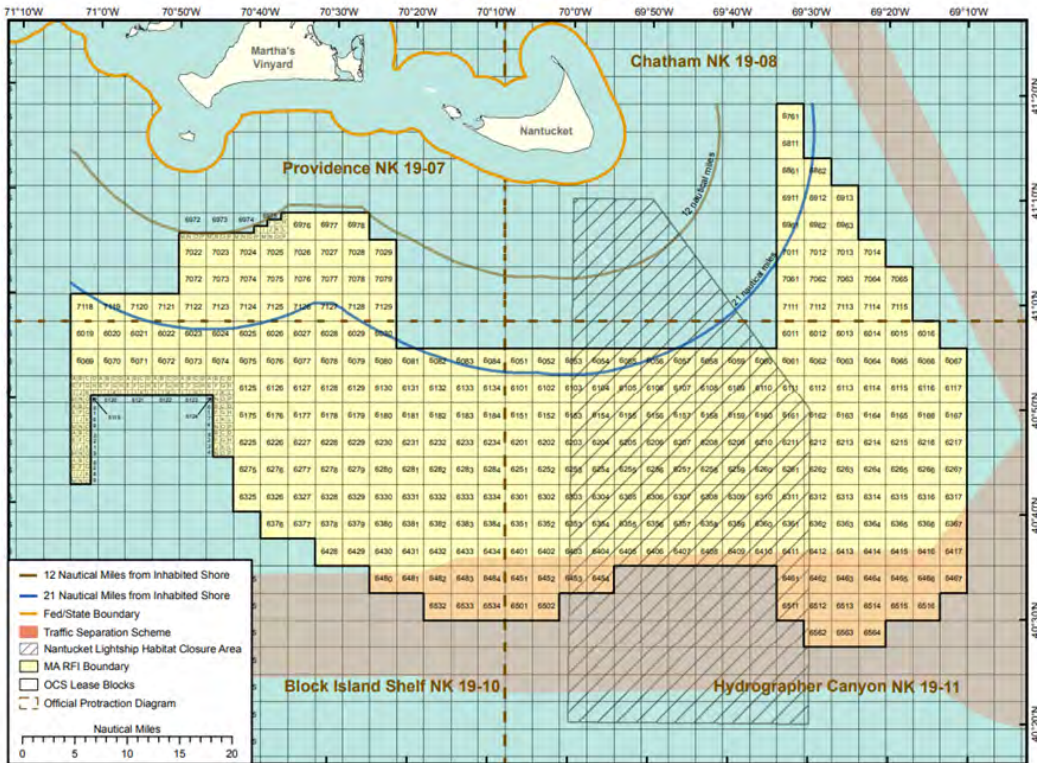
### Planning & Analysis and Leasing: Six year public engagement process

#### Overview

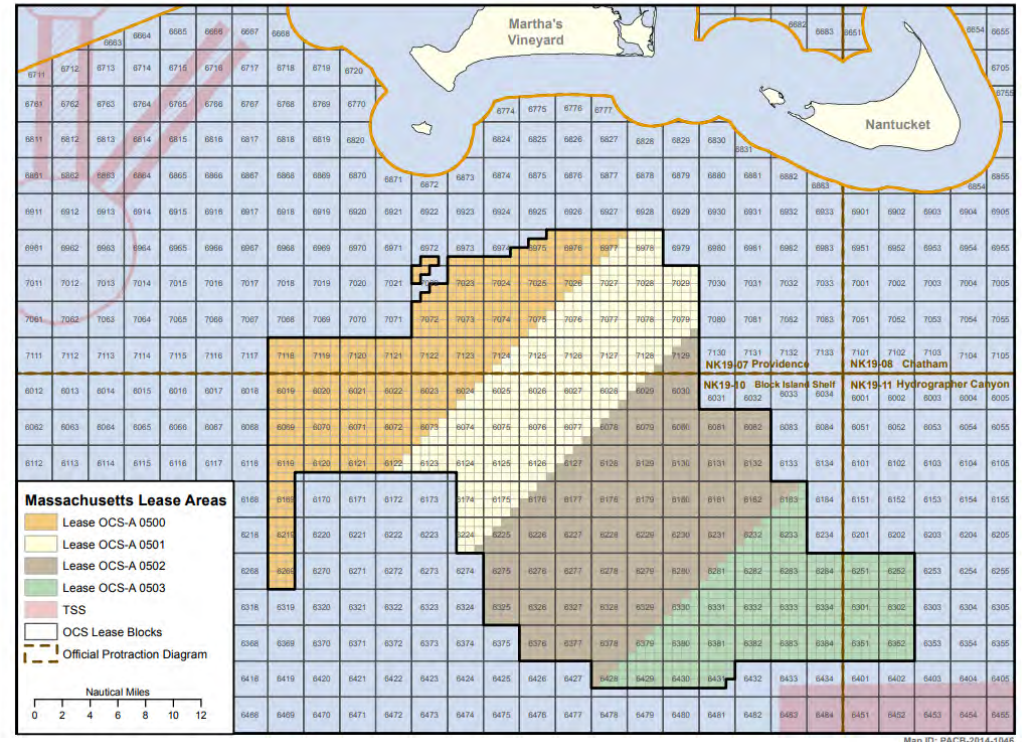
- 2009:** MA Intergovernmental Renewable Energy Task Force
- 2010:** “Request for Interest”
- 2012:** Call for Information, area ID, Environmental Assessment
- 2012- 2014:** Environmental Assessment Review
- 2015:** Final Sale Notice, auction, lease issuance;

# Massachusetts Wind Energy Area Development

Massachusetts Request for Interest (RFI) Area

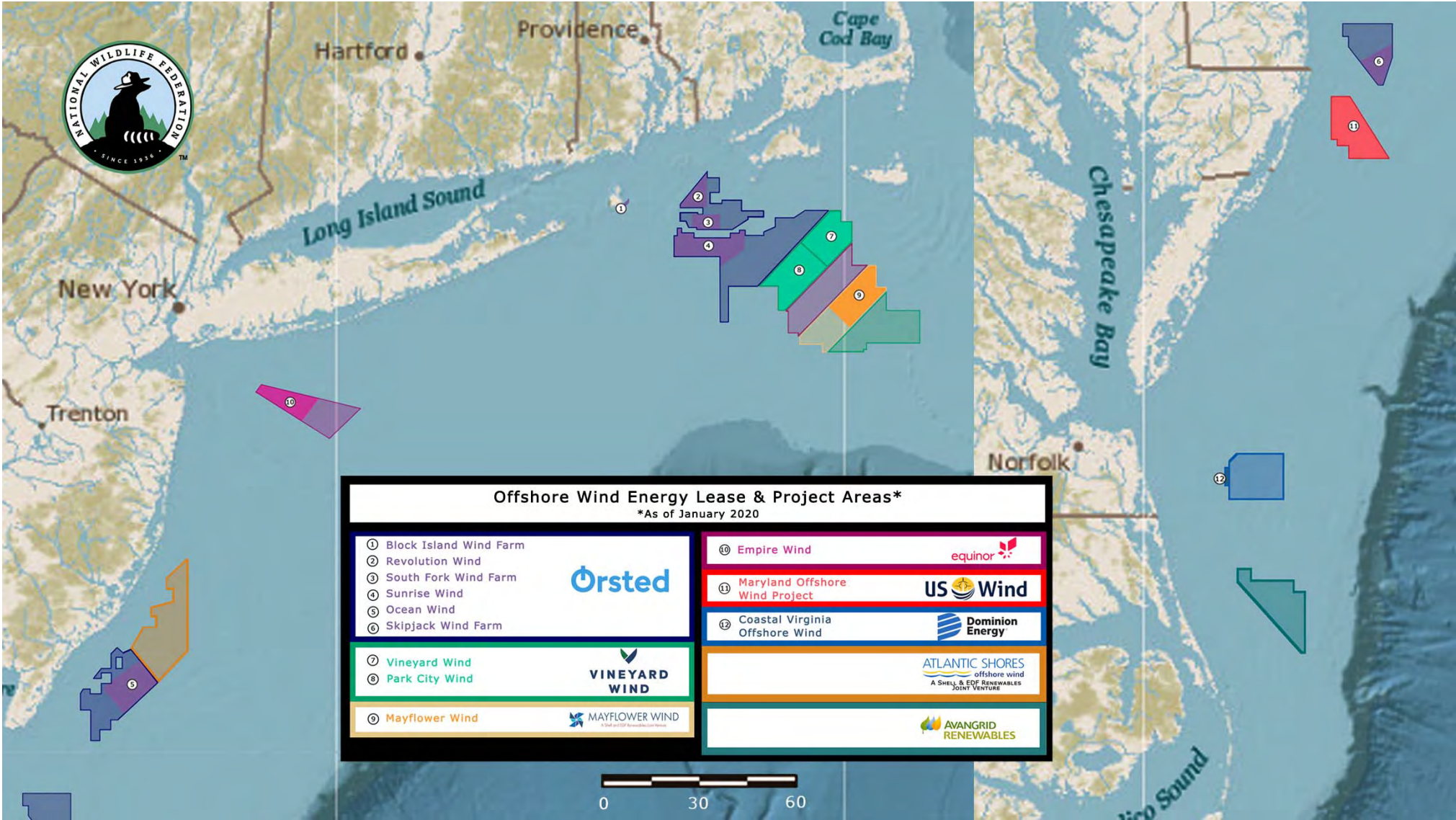


Massachusetts Lease Areas



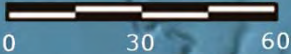
Map ID: PACB-2014-1046

# **Offshore Wind Power Market & State Policies**



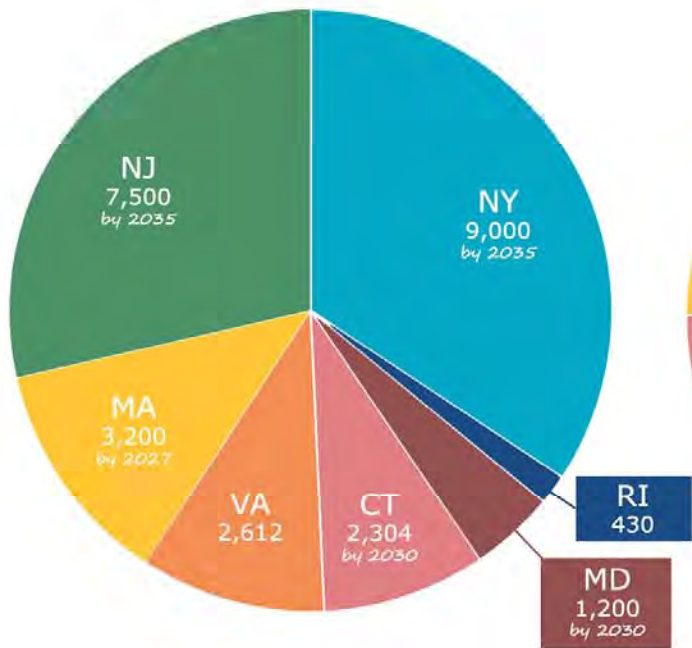
**Offshore Wind Energy Lease & Project Areas\***  
\*As of January 2020

<ul style="list-style-type: none"> <li>① Block Island Wind Farm</li> <li>② Revolution Wind</li> <li>③ South Fork Wind Farm</li> <li>④ Sunrise Wind</li> <li>⑤ Ocean Wind</li> <li>⑥ Skipjack Wind Farm</li> </ul>		<ul style="list-style-type: none"> <li>⑩ Empire Wind</li> <li>⑪ Maryland Offshore Wind Project</li> <li>⑫ Coastal Virginia Offshore Wind</li> </ul>	  
<ul style="list-style-type: none"> <li>⑦ Vineyard Wind</li> <li>⑧ Park City Wind</li> </ul>			 <small>A SHELL &amp; EDF RENEWABLES JOINT VENTURE</small>
<ul style="list-style-type: none"> <li>⑨ Mayflower Wind</li> </ul>	 <small>A DTE and EDF Renewables Joint Venture</small>		



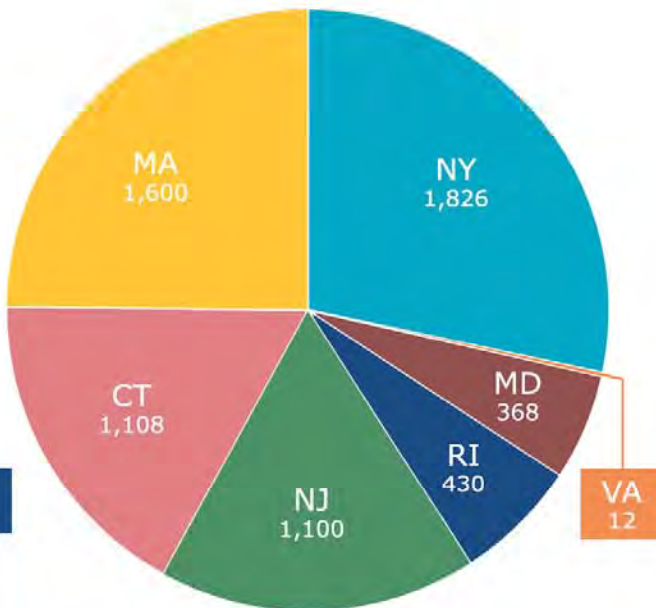


State Policy Commitments  
(megawatts)



Total Policy Commitments:  
26,246 MW

Projects Awarded  
(megawatts)



Total Awarded:  
6,444 MW

Projects Online  
(megawatts)

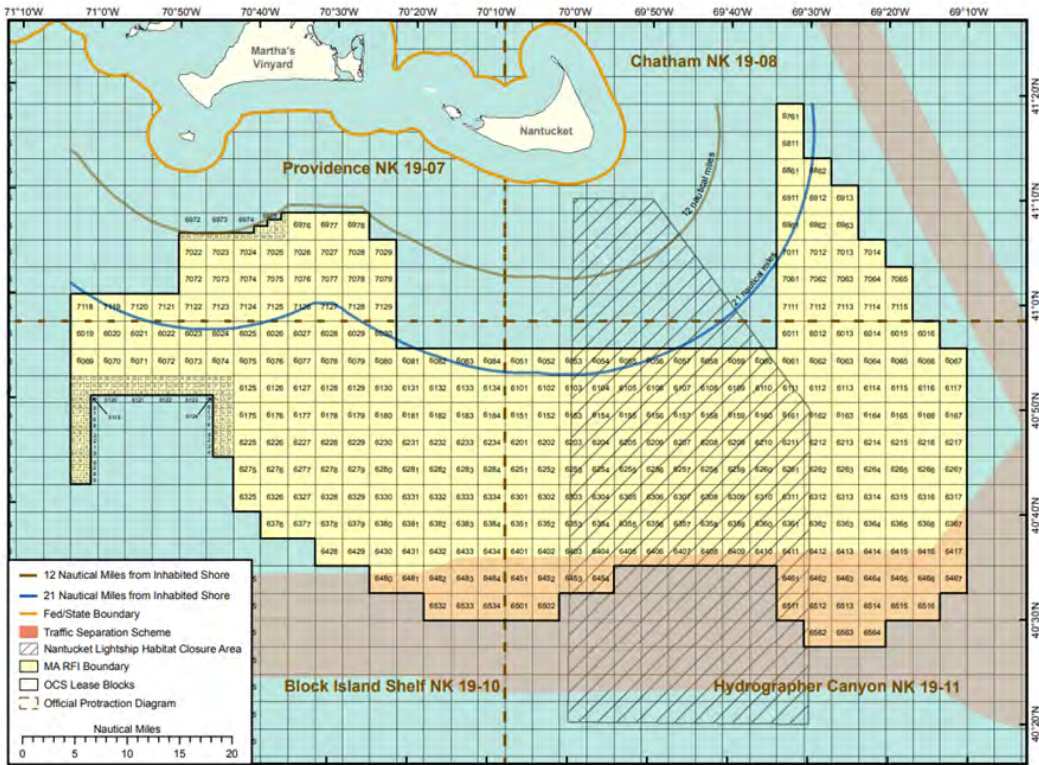


Total Online:  
30 MW

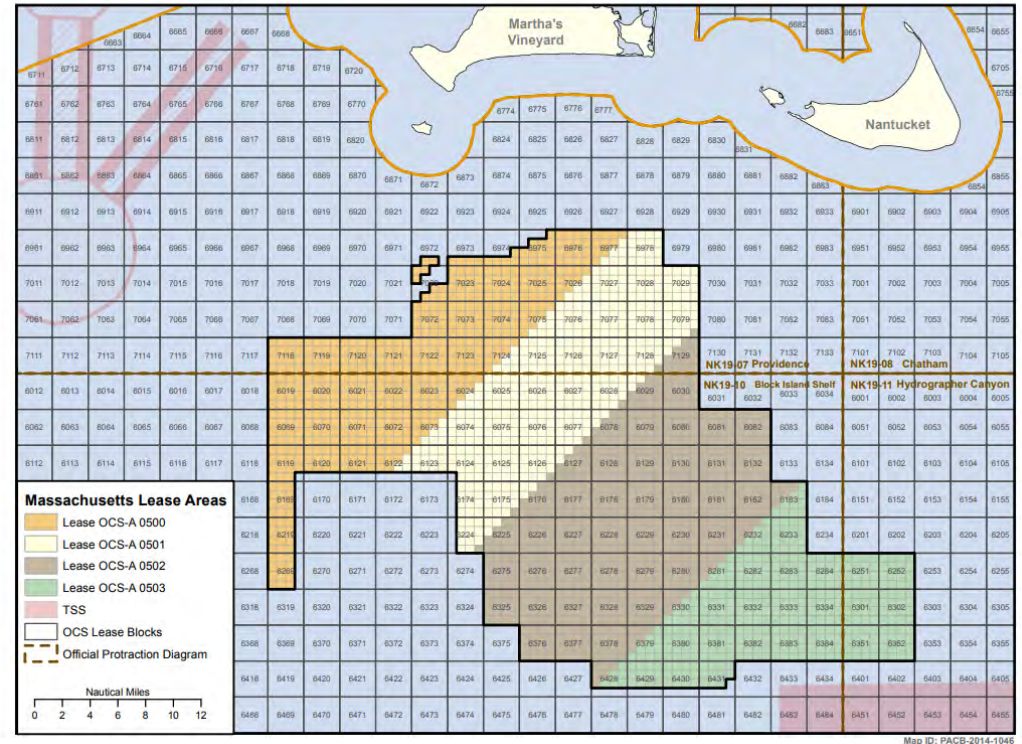
# Development Process & Permitting

# Massachusetts Wind Energy Area Development

Massachusetts Request for Interest (RFI) Area

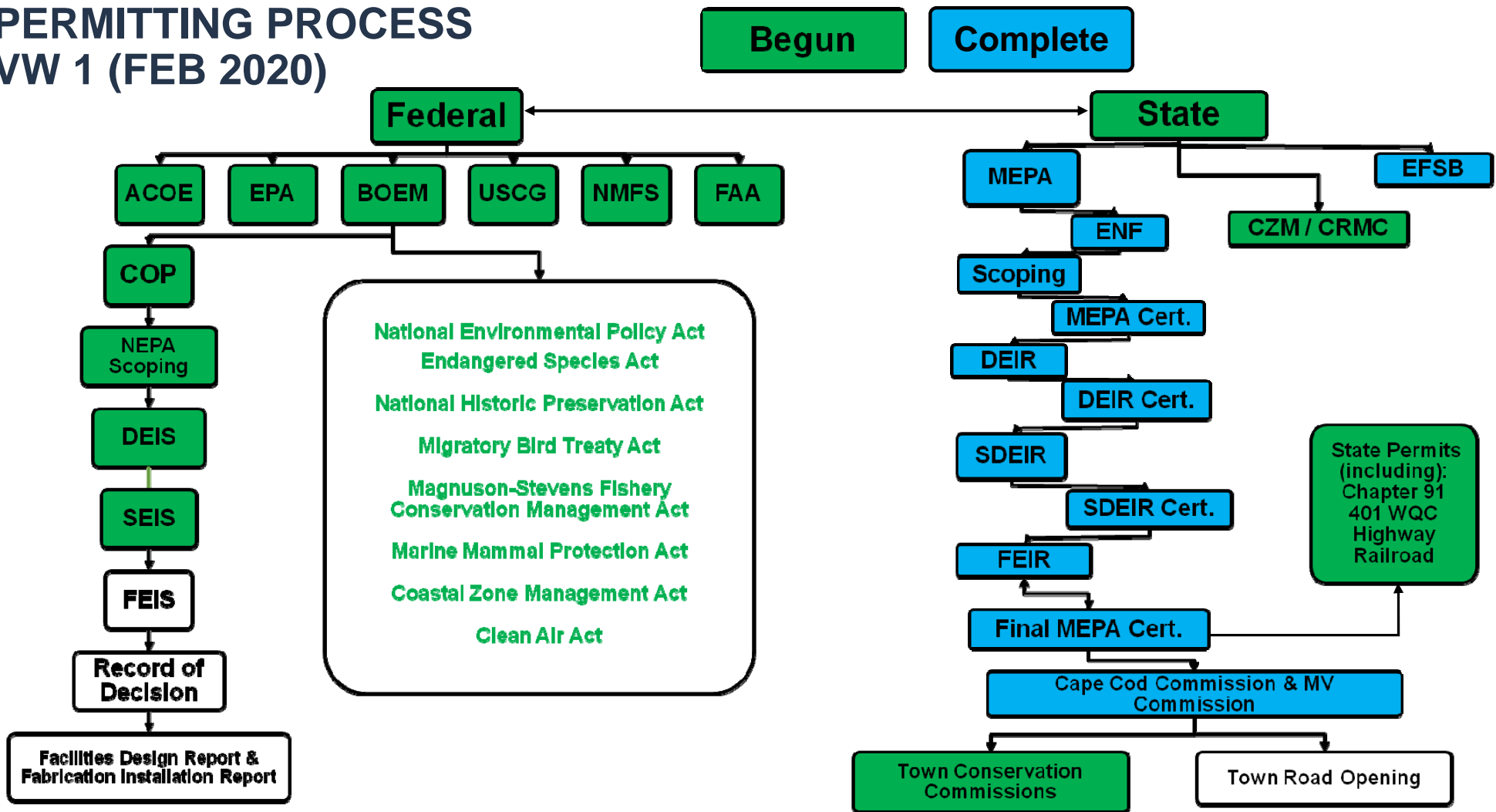


Massachusetts Lease Areas



Map ID: PACB-2014-1046

# PERMITTING PROCESS VW 1 (FEB 2020)



# Responsible Development

## NWF's Goal: Responsible Offshore Wind Development

Every megawatt of offshore wind power built for America  
must be developed responsibly in a manner that:

- ✓ protects our valuable marine and coastal resources
- ✓ maximizes job creation and other local economic benefits for the state





# Key Principles for Environmentally Responsible Offshore Wind Development

**Guided By Science & Comprehensive Input** - All leasing & permitting decisions informed by:

best available data

effective expert & stakeholder engagement

current ocean planning efforts

ongoing, comprehensive monitoring (both potentially impacted wildlife populations + technology solutions to minimize impacts)

**Mitigation Hierarchy Approach at All Stages of Development** - Avoid, minimize, &/or offset impacts during:

**SITING:** Avoid locating projects in sensitive, critical wildlife habitat areas (i.e. near shore, shoals, boulder reefs, etc.)

**CONSTRUCTION:** Adjust timing/method of survey & construction activities to protect wildlife (i.e. migrating marine mammals)

**OPERATIONS & MAINTENANCE:** Employ proven wildlife impact reduction strategies (i.e. lighting, vessel speed restrictions)

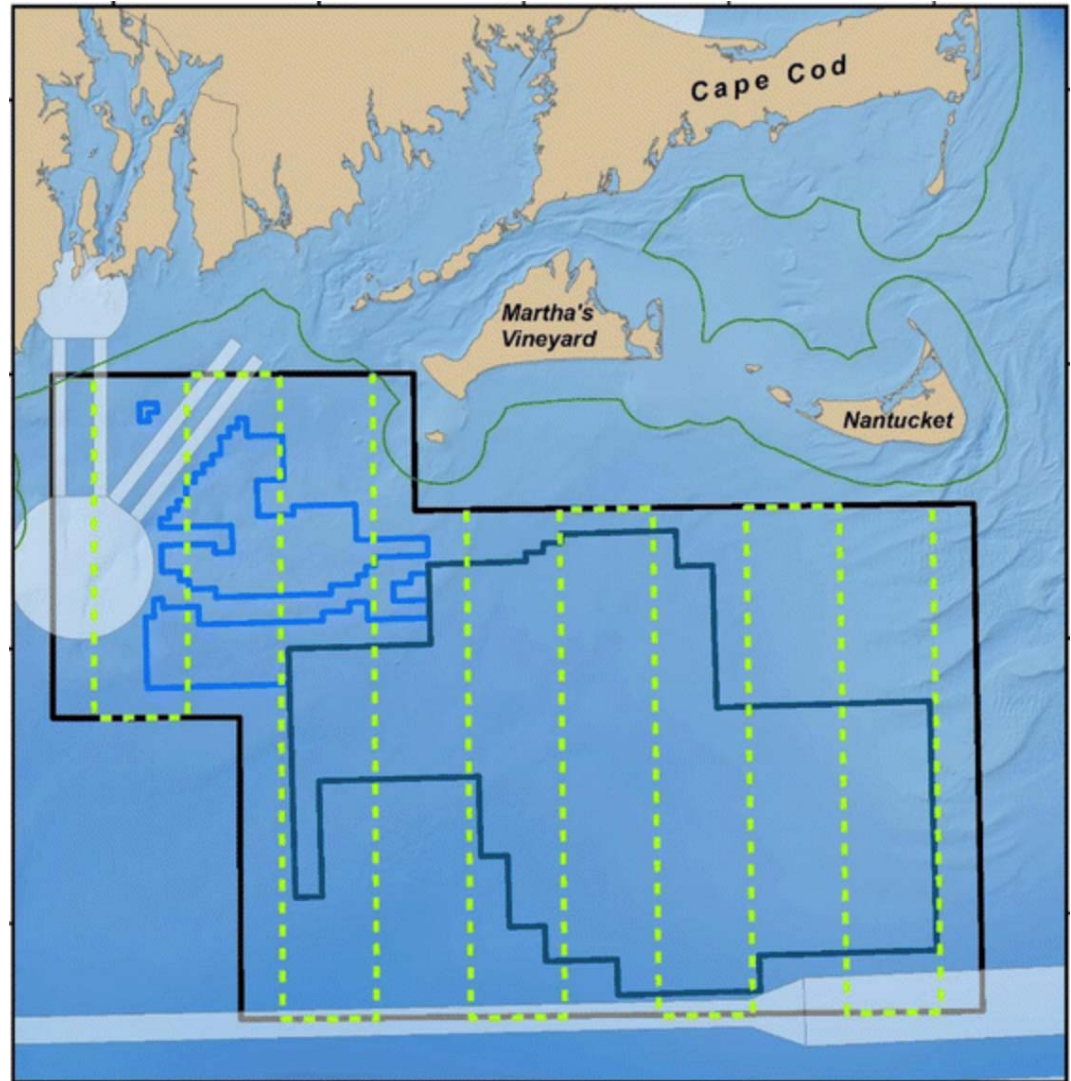
**DECOMMISSIONING:** Ensure long-term planning for all project development sites





## Ongoing Collaborations with State Governments

- **Massachusetts: MassCEC**  
marine mammal surveys  
Habitat Working Group
- **New York: NYSERDA**  
Environmental Technical Working Group
- **Connecticut**  
Commission on Environmental Standards
- **New Jersey**





## **VINEYARD WIND** **OFFICE HOURS**

Please join Vineyard Wind's Manager of Policy and Development, Nate Mayo, for office hours!

**Friday, March 23 and Friday, March 30**  
**1:00 - 3:00 PM**

**Yarmouth Senior Center, 528 Forest Road**

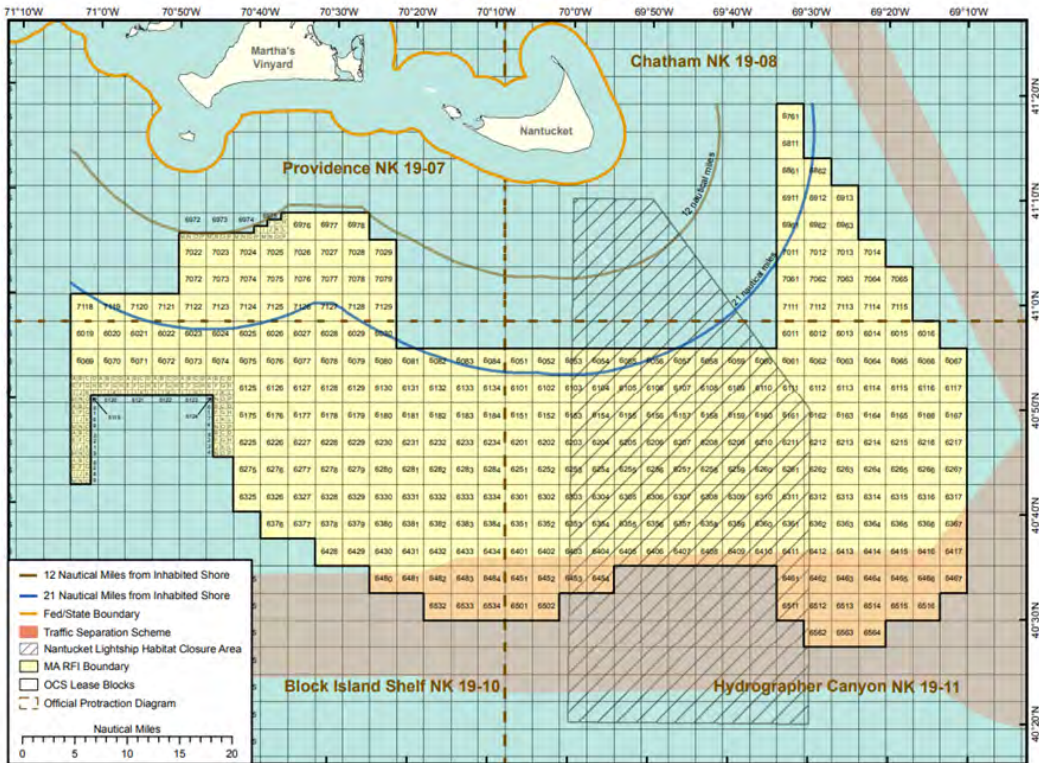
Ask questions or learn more about our efforts to build the nation's first large scale renewable wind energy project 30 miles south of Cape Cod.

To make an appointment or set up a separate time to meet, please contact Nate Mayo, Policy and Development Manager, at 617-840-4045 or [nmayo@vineyardwind.com](mailto:nmayo@vineyardwind.com).

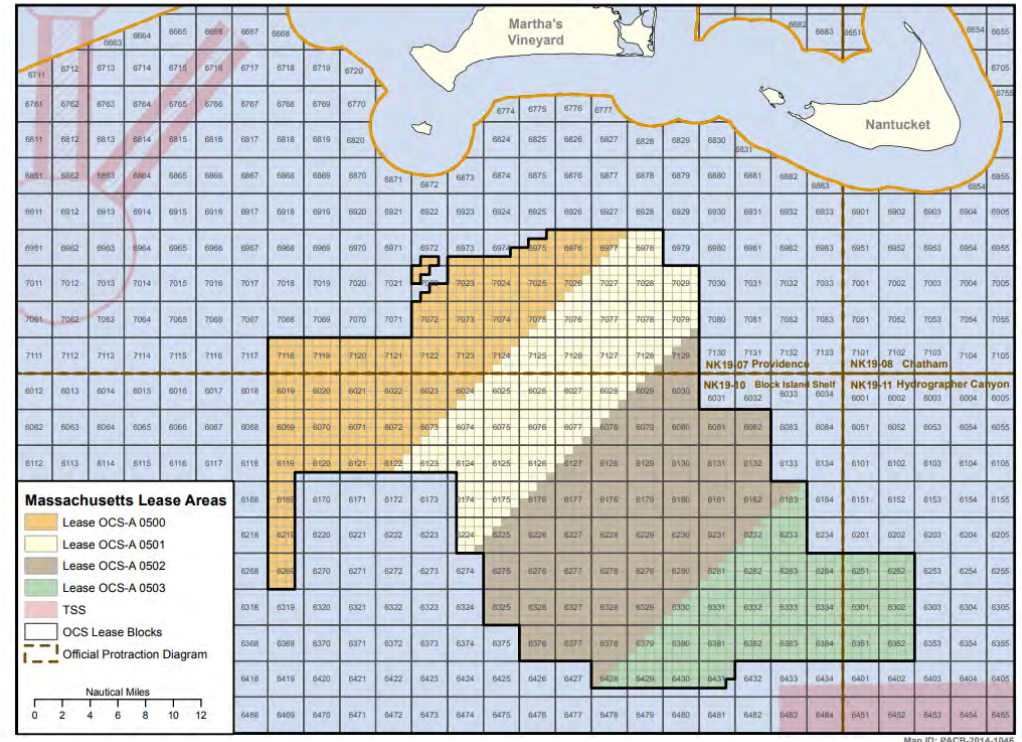


# Massachusetts Wind Energy Area Development

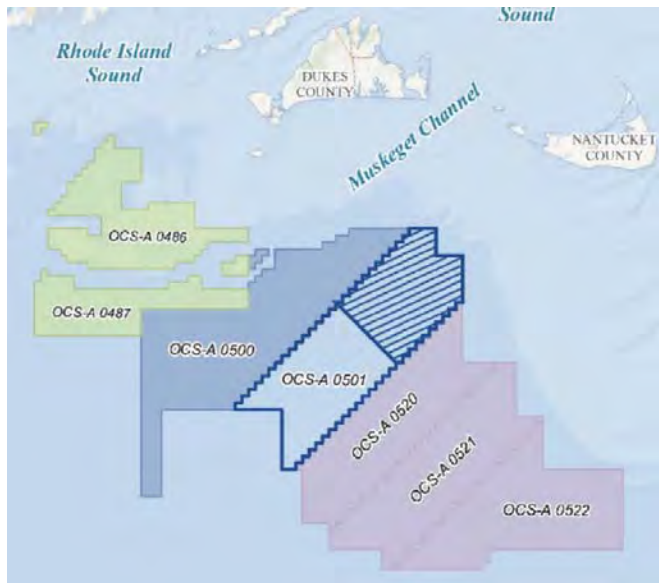
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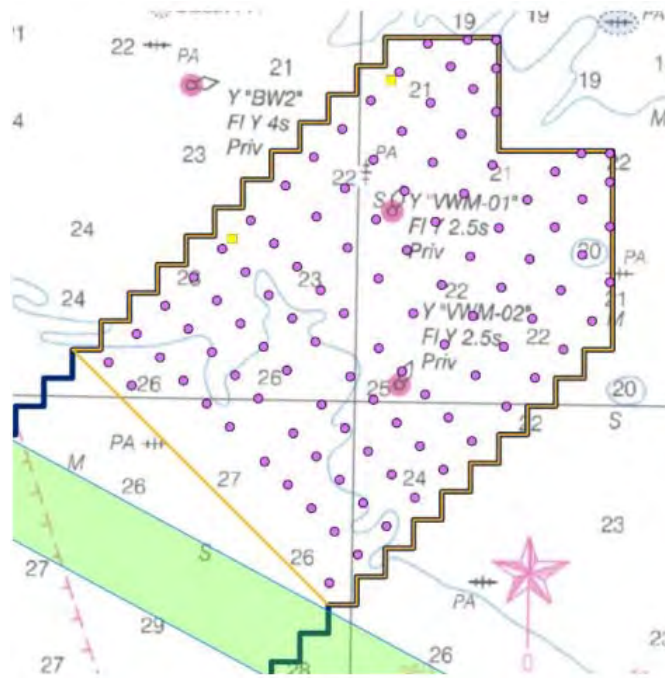
Massachusetts Lease Areas



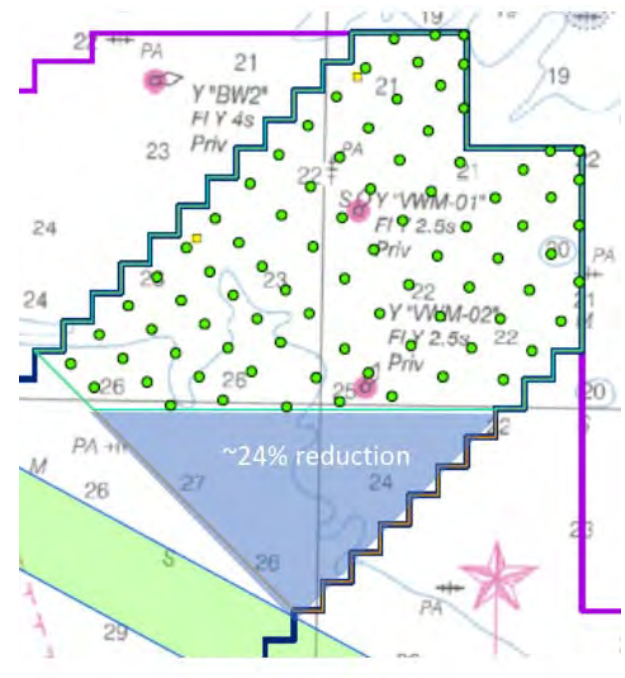
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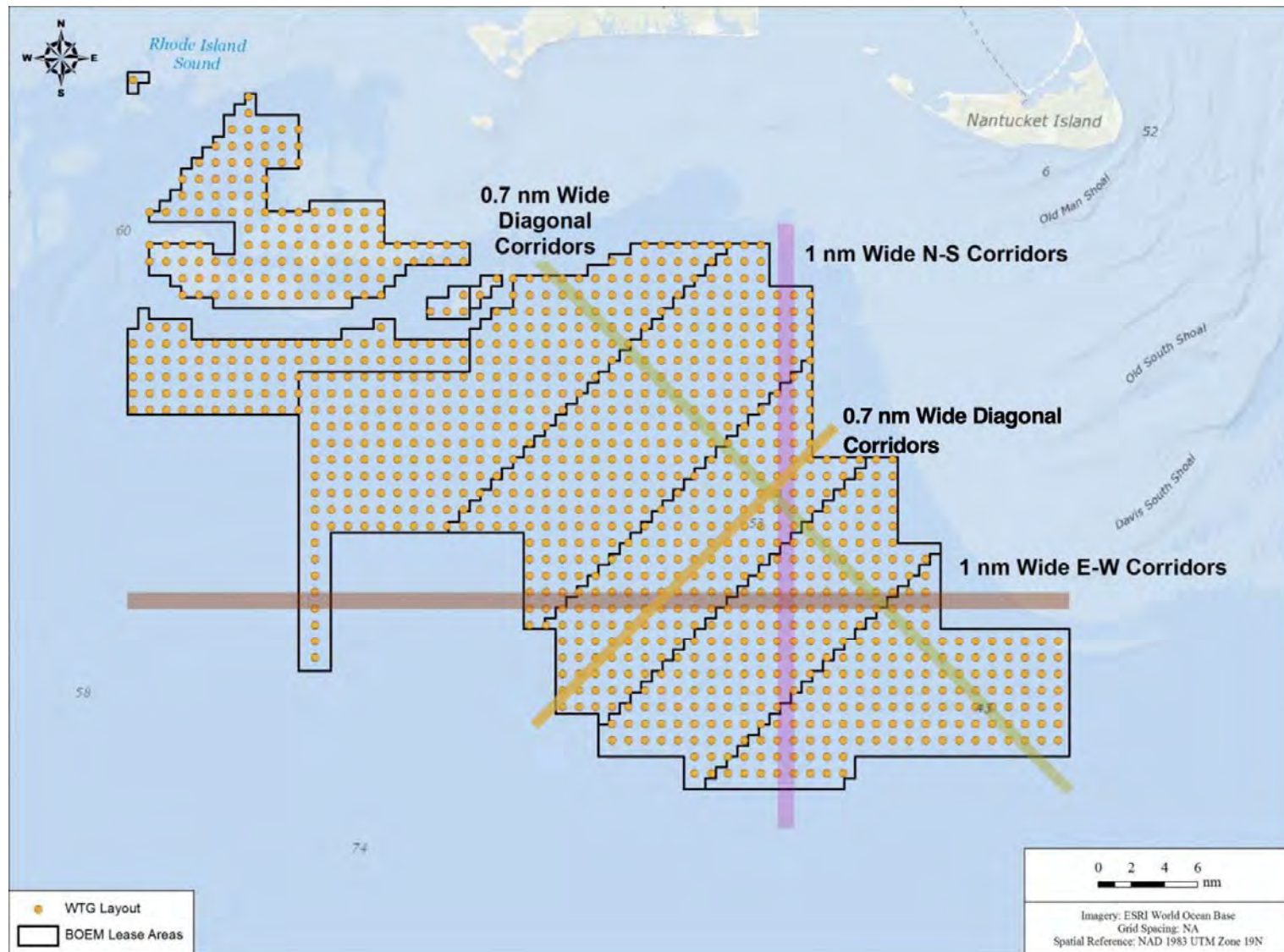
2016

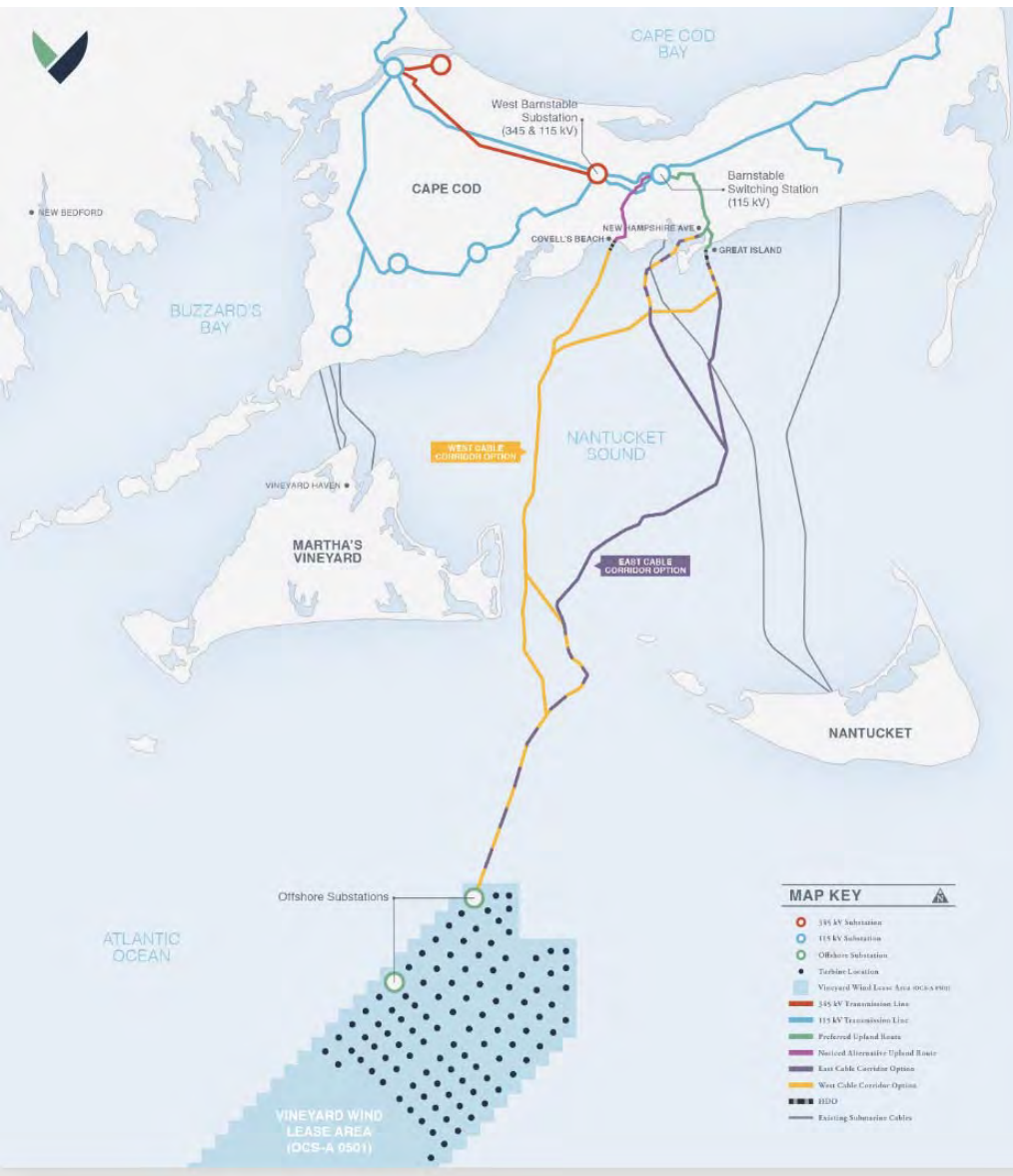


2019



Fall 2019 Agreement  
Uniform layout





# Agreements







- **Agreement with Environmental Groups on Right Whale Protection (January 2019)**
- Achieved with Conservation Law Foundation, National Wildlife Federation, Natural Resources Defense Council
- Sets a standard avoid Right Whale impacts
- Stipulates seasonal restrictions, activity restrictions, robust monitoring, and others



- **Host Community Agreement (Oct 2018)**
- Partnership to support the project while protecting local interests
- Town input and coordination on design and construction
- Significant Long-term benefits for the town





**Let's make it happen!**

## Major Public Comment and Engagement Opportunities

### Federal Review – NEPA (BOEM)

- “Notice of Intent” – **Public Comment** and **Public meetings**
- Draft Environmental Impact Assessment - **Public Comment** and **public hearings**
- Various agency-level comment periods

### State Review

- Public comment periods** on Environmental Impact Report
- Energy Facilities Siting Board (MA) **comment period and hearings**
- Ocean Plan Consistency Review - **Public Meetings**

### Regional/Local Review

- Public comment and hearings** at regional planning agencies, local conservation commissions etc.

Thank you!



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dipaolon@nwf.org // 401-440-0665  
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nmayo@vineyardwind.com / 617-840-4045  
vineyardwind.com