BOEM Bureau of Ocean Energy Management

Massachusetts Leasing Process History: OCS-A 0520

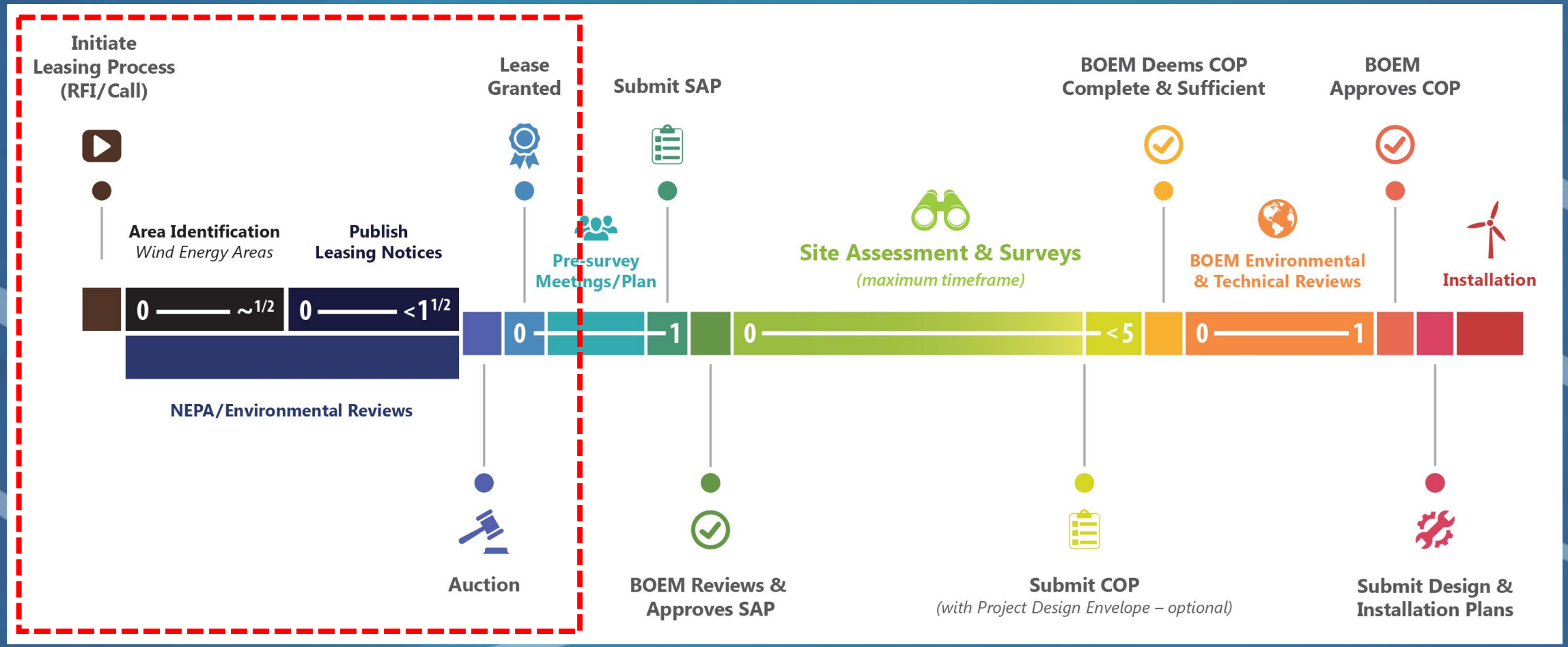
Josh Gange

Project Coordinator

BOEM Office of Renewable Energy Programs

July 2023

Planning and Leasing Process



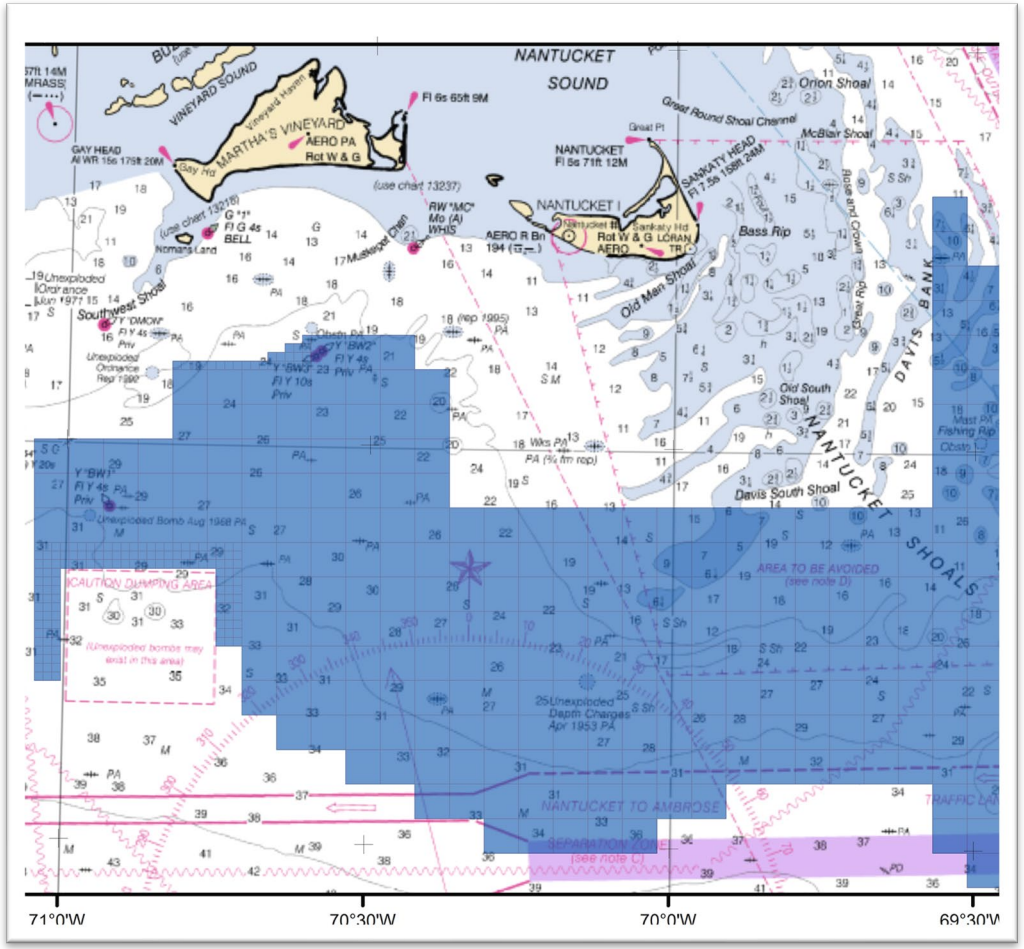
Stakeholder Outreach in Massachusetts

- 14 Task Force Meetings
  - First meeting November 2009
- 20 Public Meetings
  - Informational, Environmental Assessment meetings
- Engagement with Stakeholder Groups
  - Stakeholder engagement from first Task Force to Final Environmental Assessment
- Last Task Force Meeting: April 24, 2018

2010-2011: Massachusetts Request for Interest

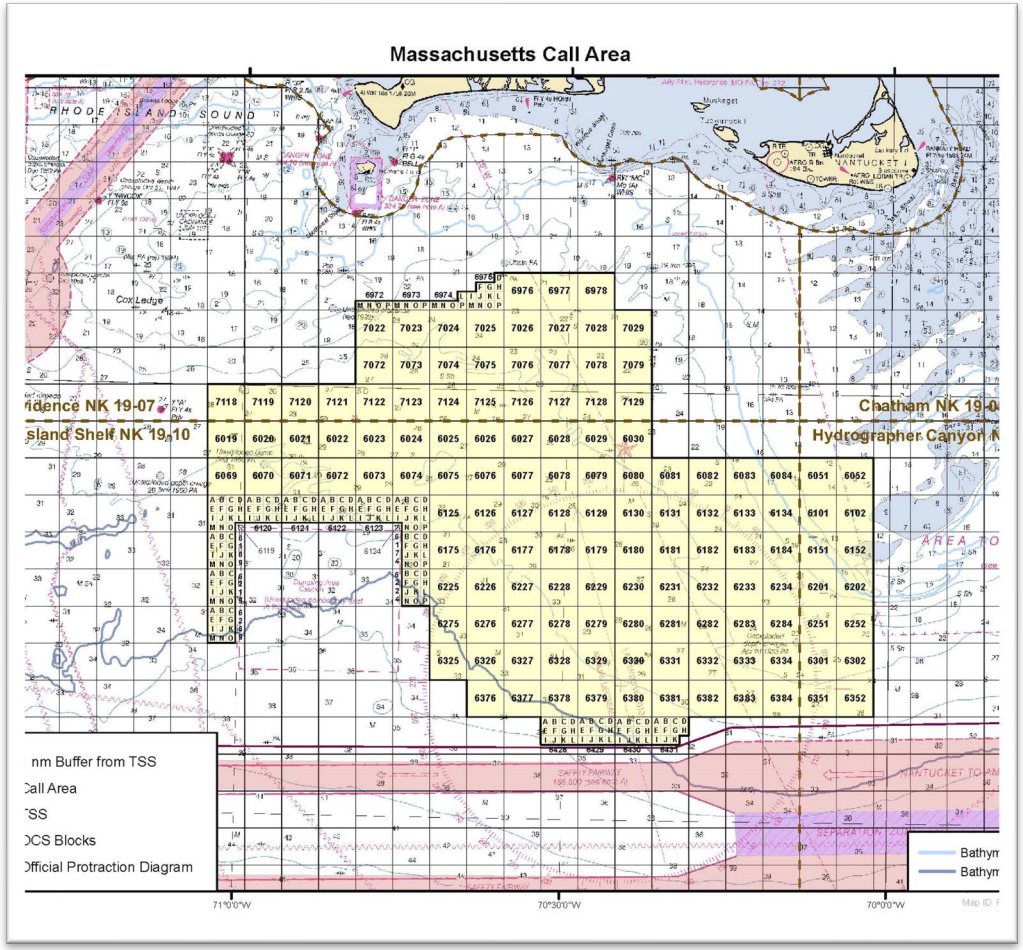
- Request for Interest
  - Commercial interest
  - Public comments
  - Task Force meetings

- Areas eliminated from map:
  - Shipping/navigation
  - Fishing areas
  - Habitat for protected species

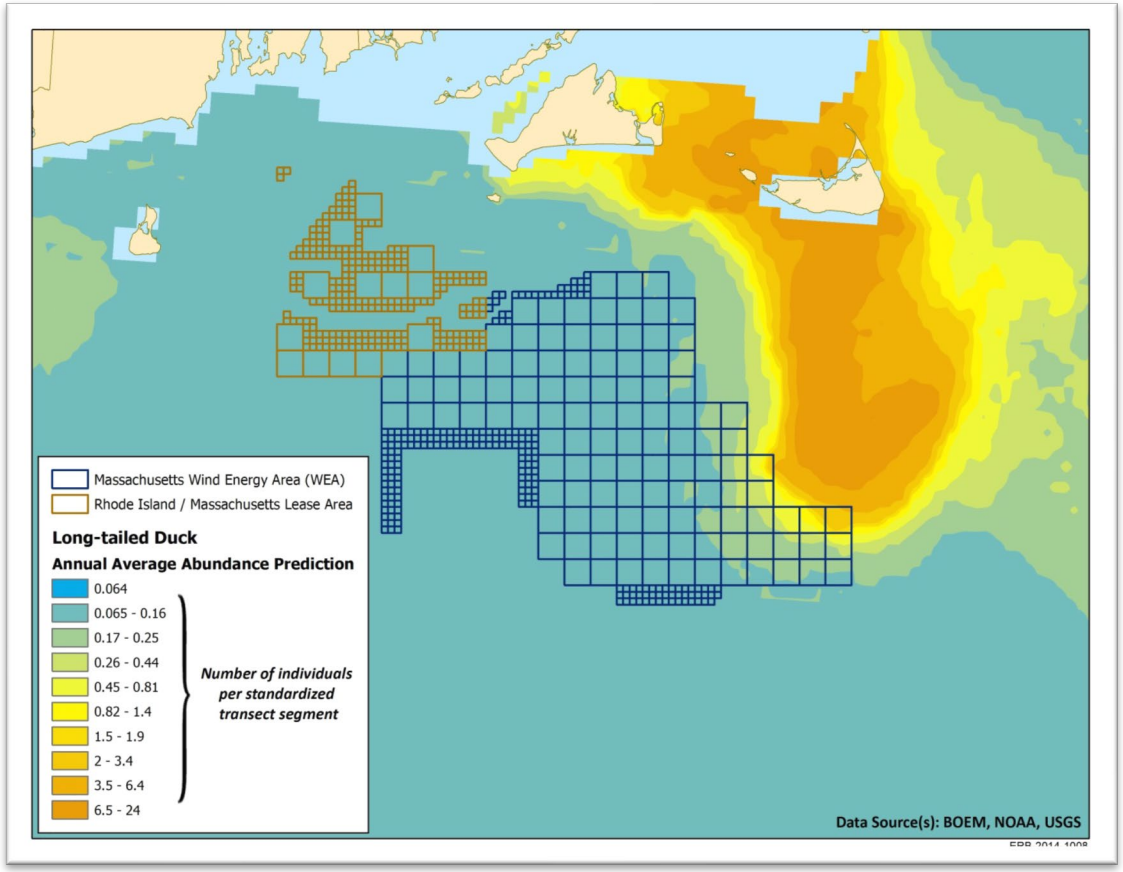


2012: Massachusetts Call Area

- 2012: Massachusetts Call for Information and Nominations Area (Right)
  - Public Comments
  - Industry nominations
- 2012: Notice of Availability of Environmental Assessment
  - Limited to site assessment activities
  - Public comments



2014: Revised Environmental Assessment



Source: Kinlan et al., 2014

Figure 4-4. Predicted annual distribution and relative abundance of Long-tailed Ducks per 15-minute ship survey equivalent transect segment at 10 knots

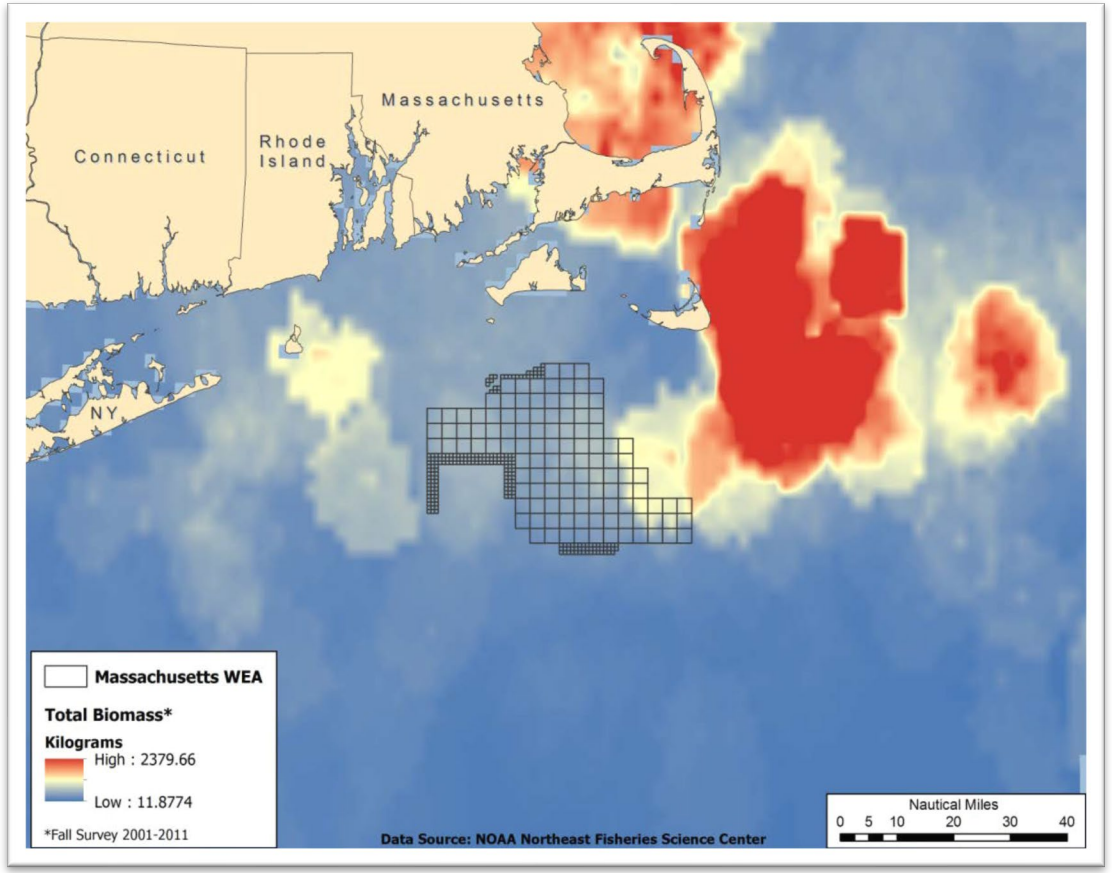
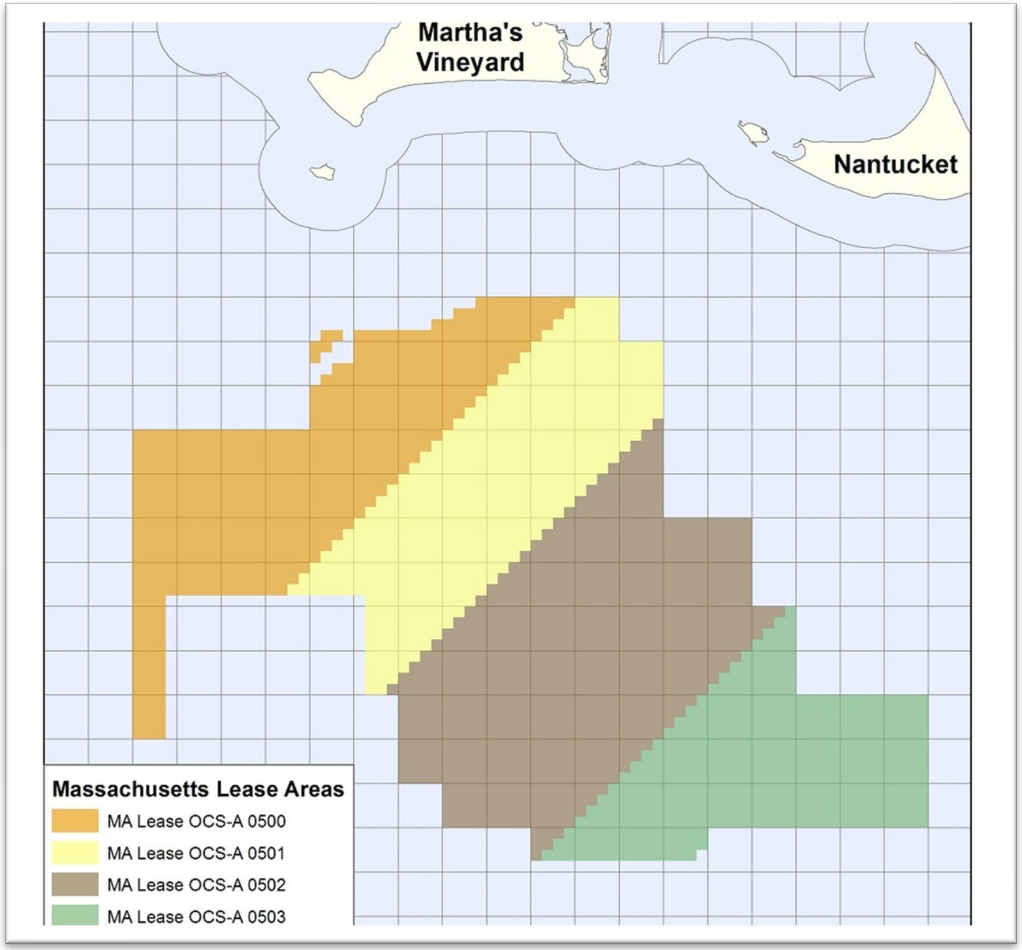


Figure 4-7. Total biomass (kg) of fish caught during the NEFSC Autumn Bottom Trawl Survey
(2001-2011)

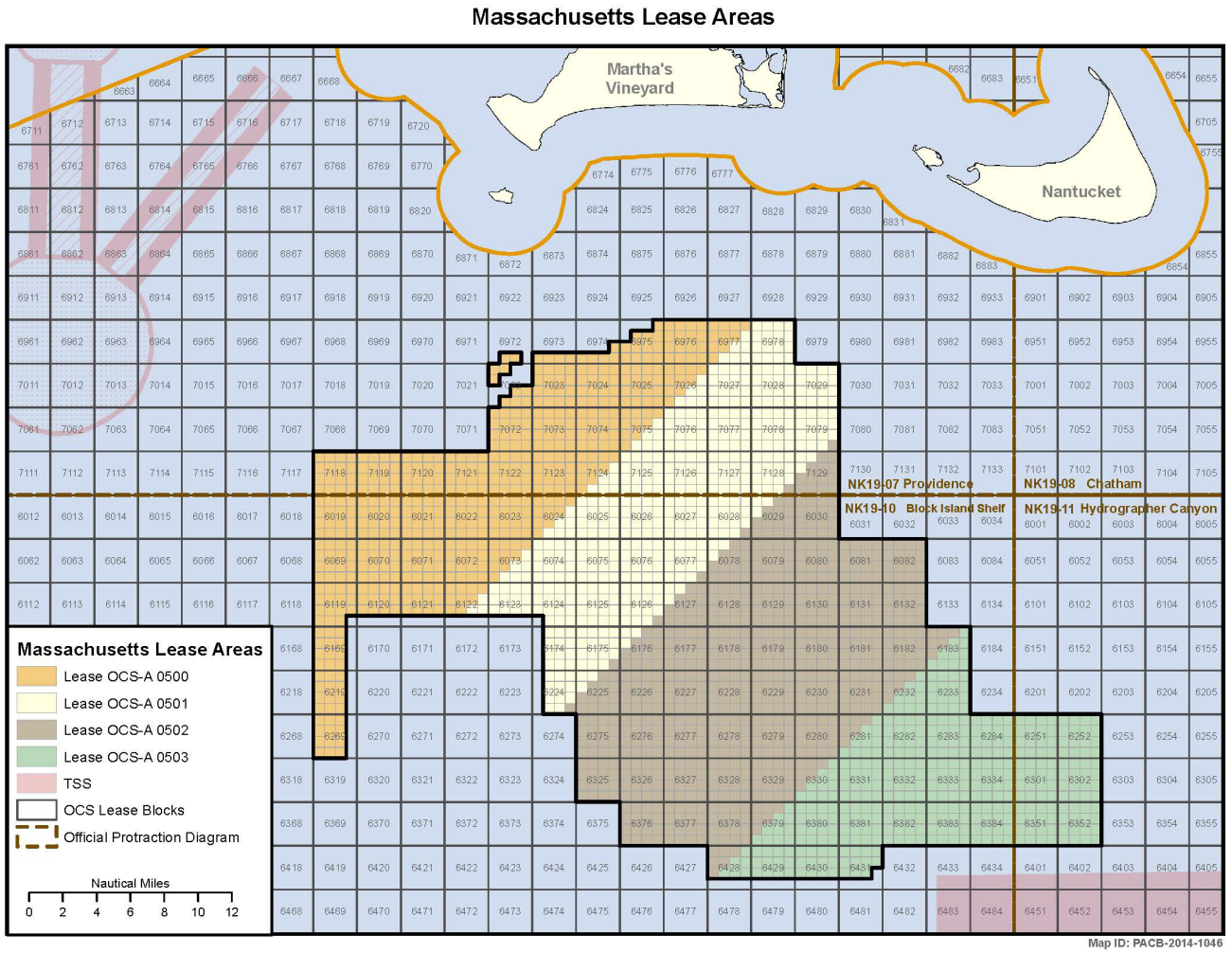
2013 and 2014: Final Massachusetts WEA and Lease Delineation

- 2013: National Renewable Energy Laboratory Report
  - Recommended delineation of leases
- 2014: Wind Energy Area (WEA)
  - Shown with delineated lease areas



2014-2015: Massachusetts Lease Sale

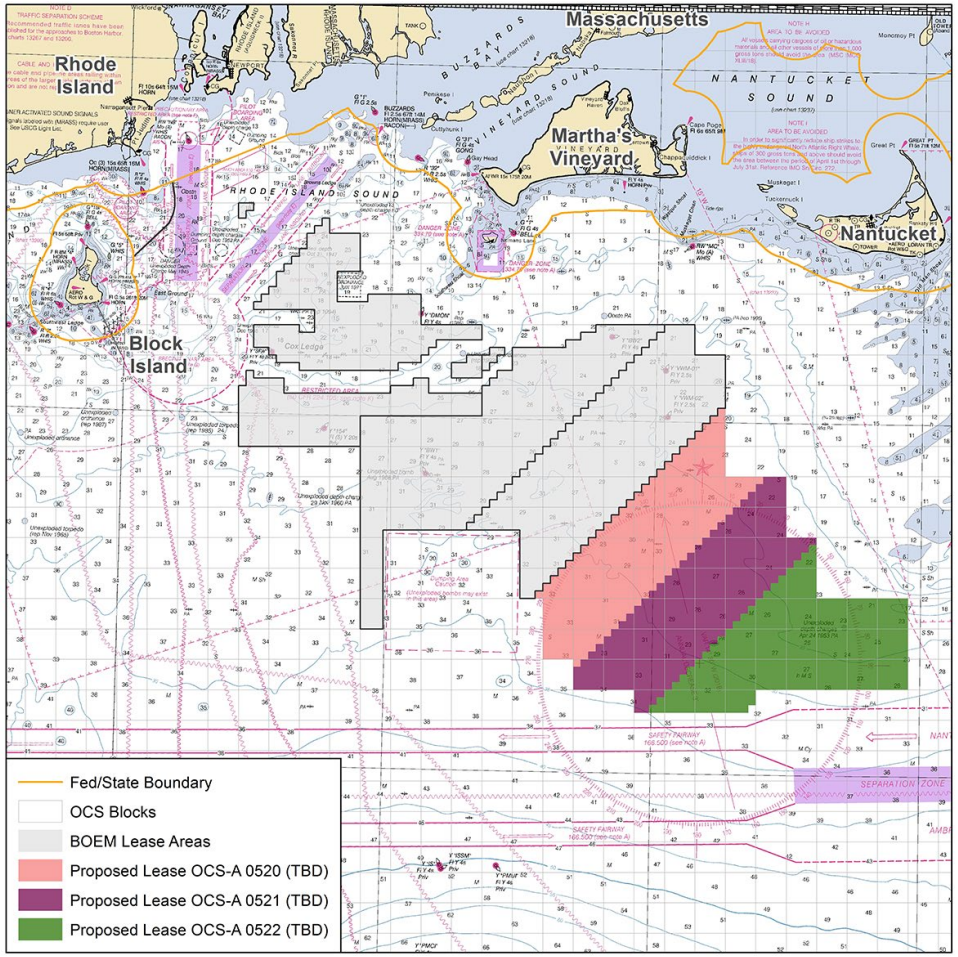
- 2014: Proposed and Final Sale Notices
  - Public comments
- 2015: Commercial Lease Sale
  - Leases OCS-A 0502 and OCS-A 0503 not sold



2018: Massachusetts Lease Sale

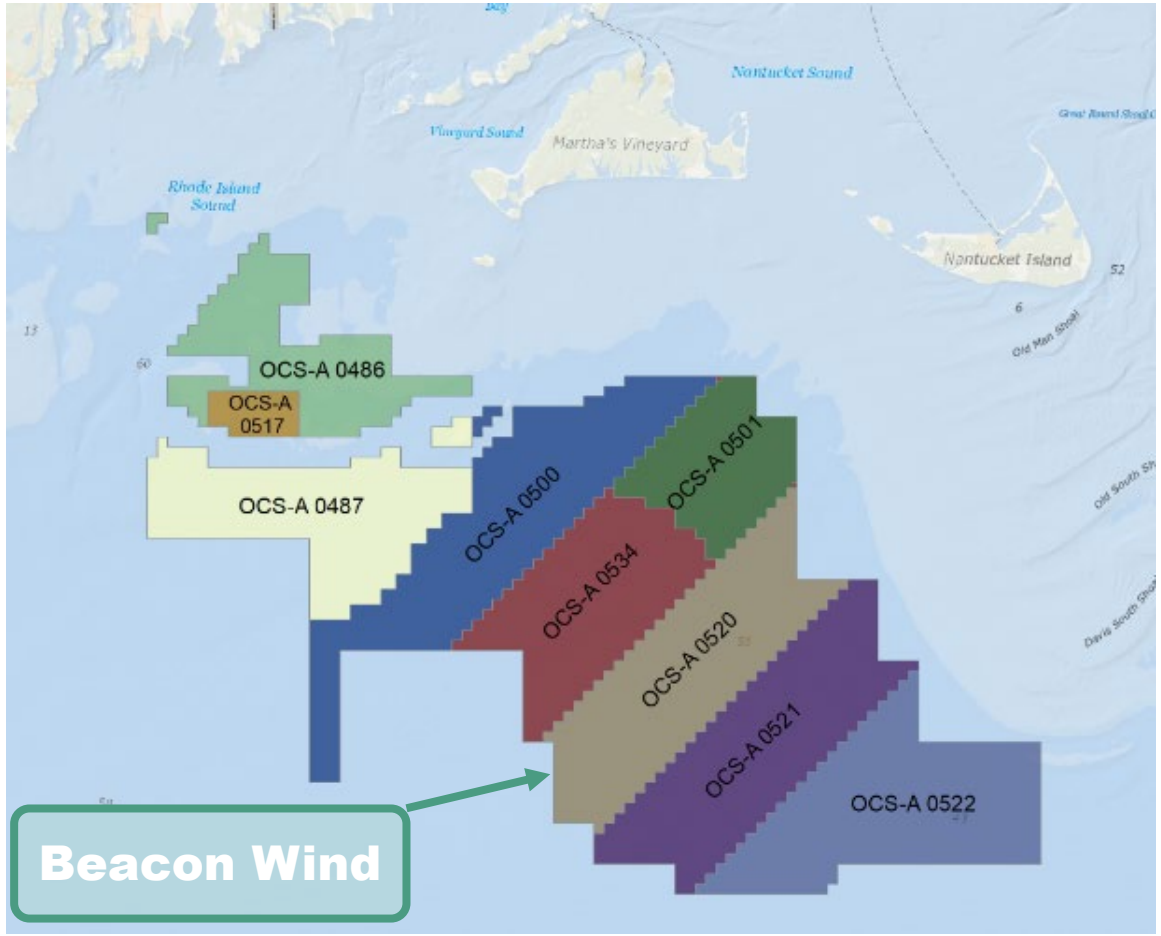
- 2018: Proposed and Final Sale Notices
  - Public comments
  - Changed from two to three lease areas

- 2018: Commercial Lease Sale
  - Leases OCS-A 0520 to Equinor Wind US, LLC
  - Lease executed March 2019
  - Equinor subsequently assigned the lease to a subsidiary, Beacon Wind, LLC



2020-Present: Lease OCS-A 0520

- Site Assessment Activities
  - Survey work for site characterization
  - 2021: Site Assessment Plan Approved
- Beacon Wind Construction & Operations Plan
  - OCS-A 0520 Lease Area
  - Submitted February 2022

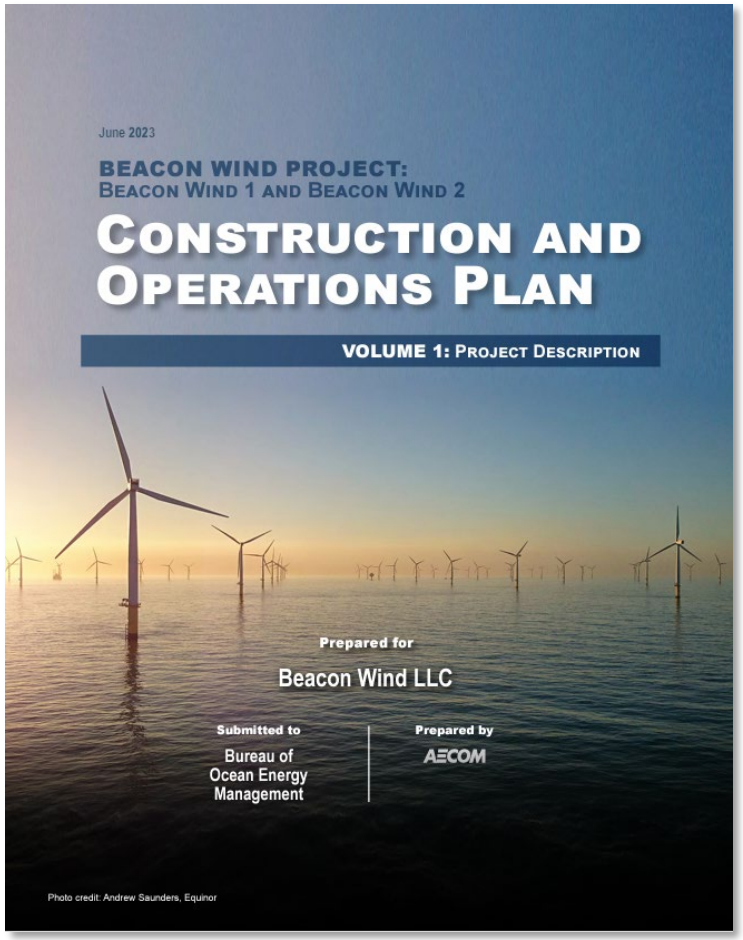


Beacon Wind Construction and Operations Plan (COP)

- COP is available at:

  https://www.boem.gov/renewable-energy/state-activities/beacon-wind

- BOEM's decision to approve the COP, disapprove, or approve with modifications will be documented in the Record of Decision (ROD) after completing the environmental impact statement (EIS)



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Josh Gange | Joshua.Gange@boem.gov | 703-787-1121

For more information on the Beacon Wind Project, visit:
https://www.boem.gov/renewable-energy/state-activities/beacon-wind

Beacon Wind

Project Overview

NOI Public Scoping Meetings

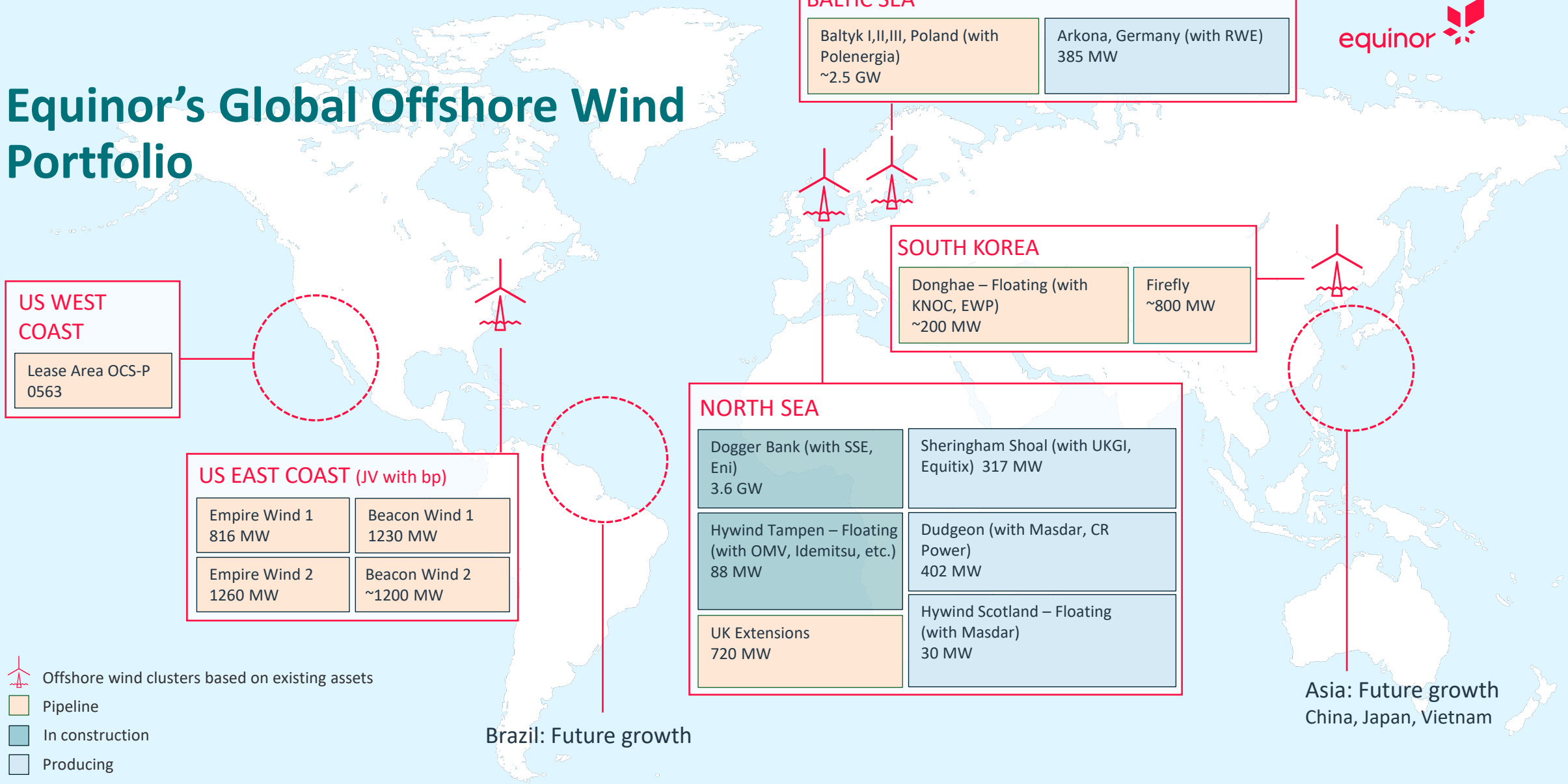
July 2023

Equinor:
A World Leader in Offshore Wind

Who We Are

- Equinor is an international energy company based in Norway
- In the US since the 1980s
- 22,000 employees
- A presence in 30 countries
- Projects across the world and expertise in global logistics
- 50 years in offshore experience, 10+ years in offshore wind

Equinor's Global Offshore Wind Portfolio



Bringing a Decade of Offshore Wind Technical Expertise to the US East Coast

- 60 miles off the eastern tip of Long Island and 20 miles south of Nantucket, MA
- Lease Area spans 128,000 acres
- Part of a portfolio bringing 3.3 GW, with Beacon Wind 1 delivering 1.2 GW to New York
- The Beacon Wind lease area can produce up to 2.4 GW, enough to power 2 million homes
- 1x1 nm layout provides 157 total positions (155 wind turbines and 2 offshore substation facilities)

Beacon Wind's Timeline from Leasing to Operations

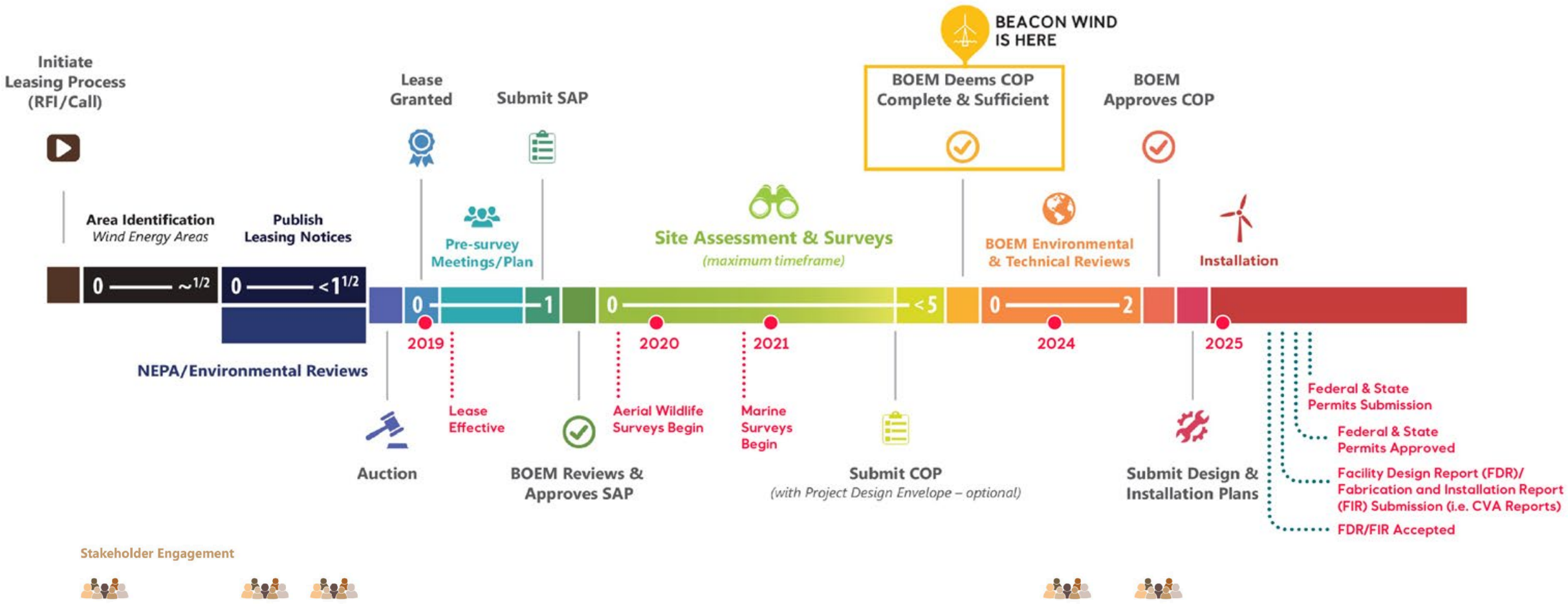


TABLE 1.3-1. SUMMARY OF PDE PARAMETERS

Parameter	BW1	BW2	Total
Number of wind turbines a/	61 – 94	61 - 94	155
Number of offshore substation facilities	1	1	2
Number of foundations b/	62 – 95	62 - 95	157
Type of foundations (wind turbines)	piled jackets, suction bucket jackets, monopiles		-
Type of foundations (offshore substation facilities)	piled jackets, suction bucket jackets		-
Rotor diameter	984 ft (300 m)		-
Hub height	591 ft (180 m)		-
Upper blade tip height	1,083 ft (330 m)		-
Voltage of interarray cables	150 kilovolt (kV)		-
Total length of interarray cables	162 nm each (300 km each)		324 nm (600 km)
Voltage of submarine export cable	Up to 400 kV		-
Total length of submarine export cable	202 nm (375 km)	202 nm (375 km) to Queens, NY	Up to 404 nm (750 km)
		113 nm (209 km) to Waterford, CT	Up to 315 nm (583 km)

Note:
a/ The maximum number of wind turbines for the Project will not exceed 155. If BW1 includes 61 wind turbines (the minimum) then the 33 wind turbines in the Overlap Area would be incorporated into BW2 which would include the remaining 94 wind turbines; and conversely if the Overlap Area is incorporated into BW1. Of the 33 wind turbines within the Overlap Area they may also be split between BW1 and BW2.
b/ Number of foundations will be based on the number of wind turbines in BW1 and BW2 with one offshore substation facility foundation located in each individual wind farm.

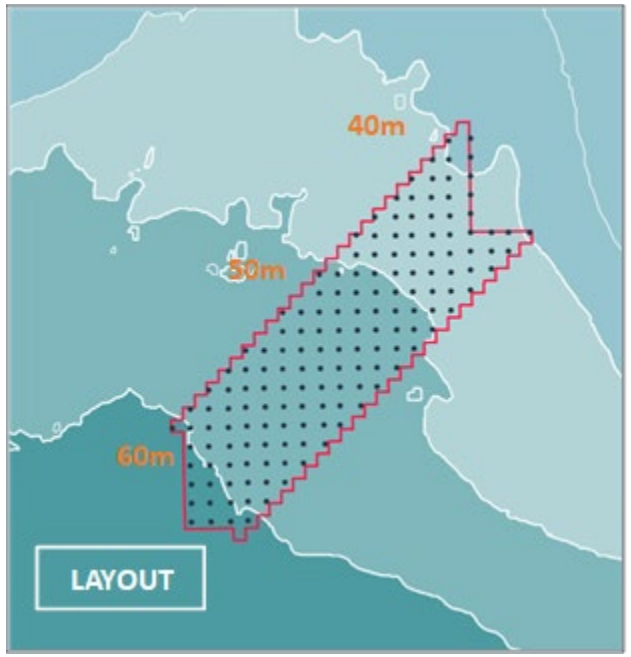
Source: Beacon Wind LLC: Beacon Wind Project (BW1 and BW2), Construction and Operations Plan, Vol. 1: Project Description, pp. 1-28.

Project Design Envelope (PDE) Parameters

- The Project Design Envelope is “a reasonable range of project designs” associated with various project components
- Up to 155 wind turbines and their foundations are proposed within the Lease Area
- Turbine model and capacity selection will be based on the most technologically advanced and efficient model available

Industry-leading Turbine Technology

- One rotation of one turbine can power a home for ~1.5 days
- Full lease area can support 155 turbines and 2 offshore substation facilities
- Predictable grid layout



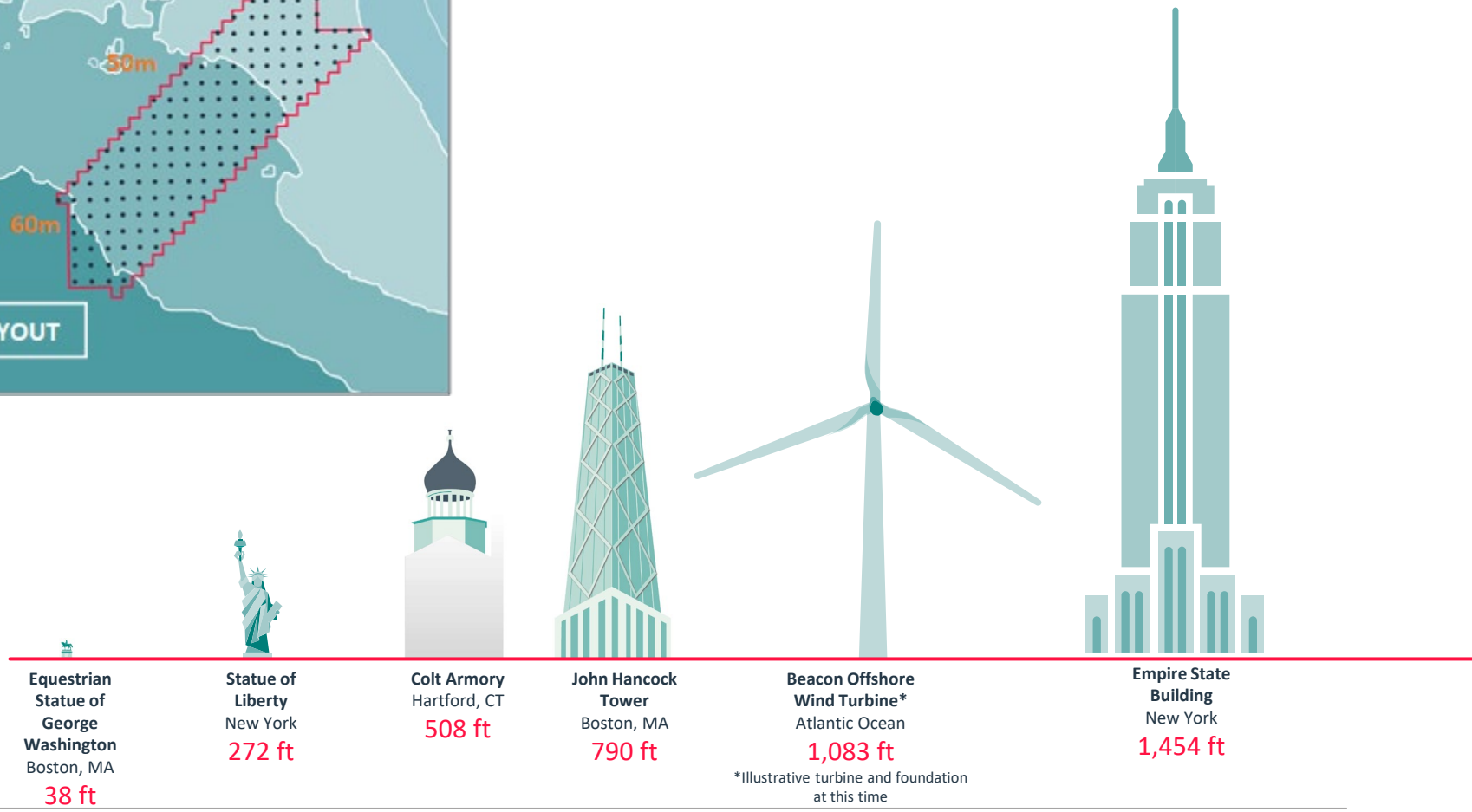
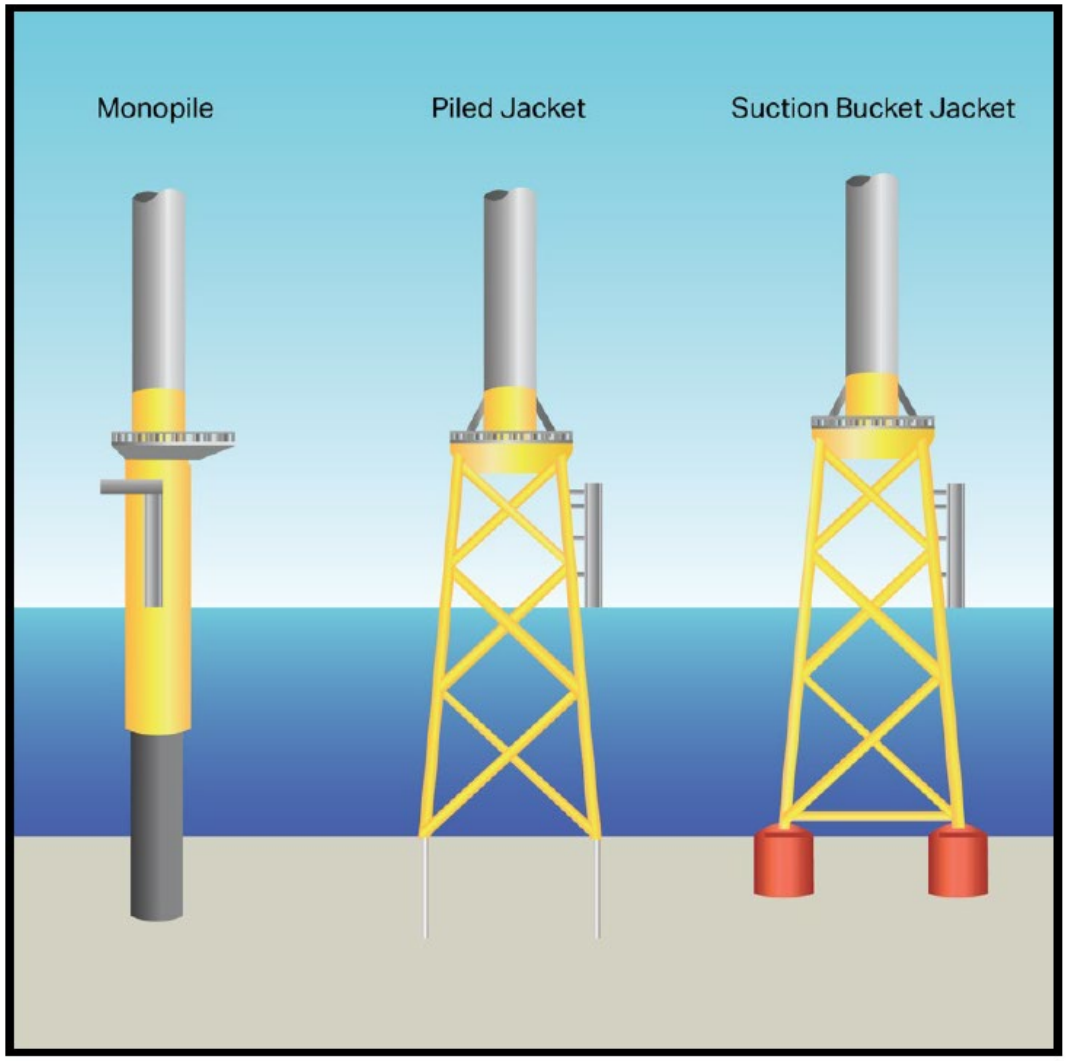


FIGURE 3.3-4. WIND TURBINE FOUNDATION TYPES

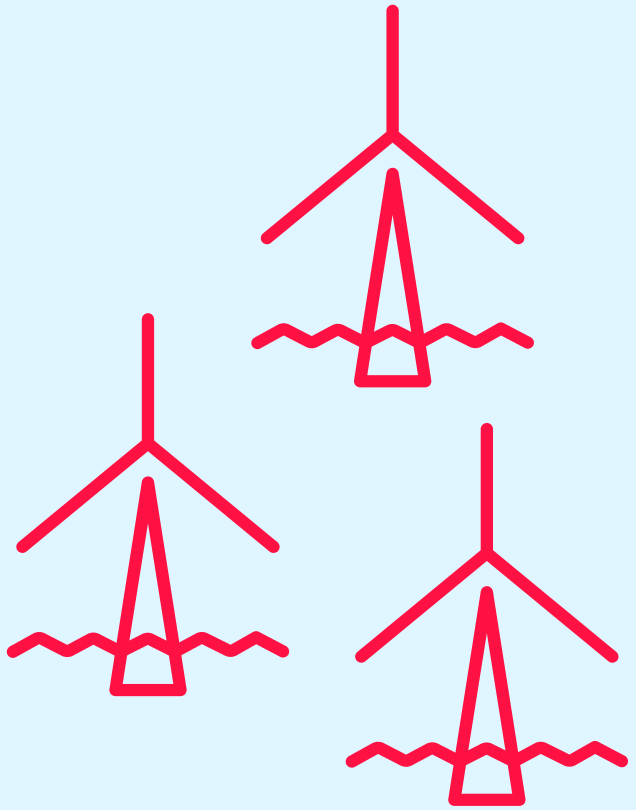


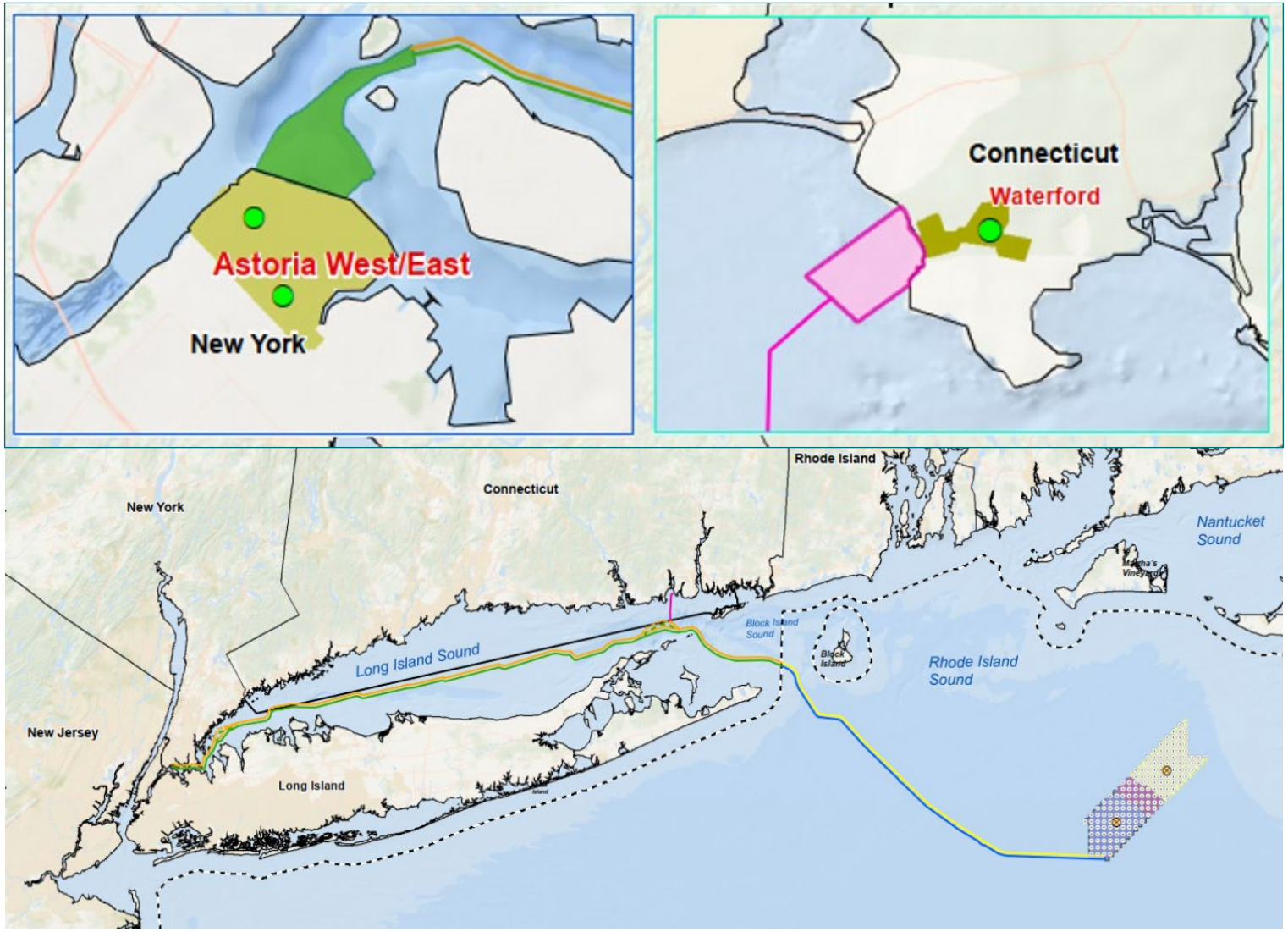
Foundation Types

- For wind turbines:
  - Monopile (up to 13 m diameter)
  - Piled jacket (3 or 4 legs)
  - Suction bucket jacket (3 or 4 legs)
- For offshore substations:
  - Piled jacket
  - Suction bucket jacket
  - Up to 8 legs, piles/buckets at corner legs

Source: Beacon Wind LLC: Beacon Wind Project (BW1 and BW2), Construction and Operations Plan, Vol. 1: Project Description, pp: 144.

Cable Route Design to Minimize Disturbance





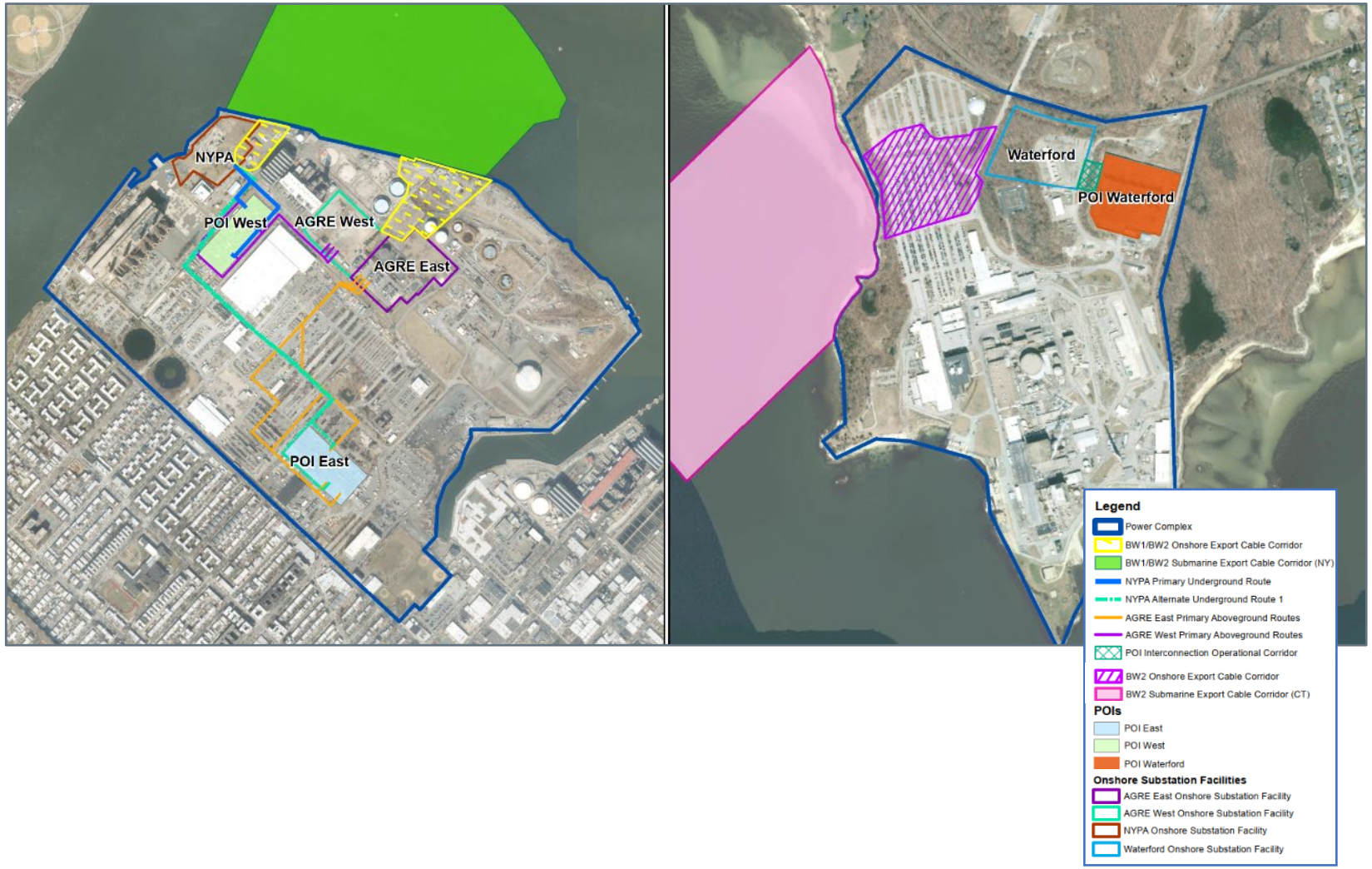
Technology Selected to Reduce Required Cables

- Project will use High-Voltage Direct Current (HVDC) transmission technology to minimize the number of required cables
- Submarine export cables will connect to the energy grid at a previously developed industrial site in the Astoria Power Complex in Queens, NY or the Waterford Power Complex in Waterford, CT

Source: Beacon Wind LLC: Beacon Wind Project (BW1 and BW2), Construction and Operations Plan, Vol. 1: Project Description, pp: 6.

Onshore Facilities

- Each onshore substation (BW1 and BW2) is inclusive of an onshore substation and an onshore converter station to convert HVDC to HVAC
- Onshore facilities are sited close to landfall and close to the Point of Interconnection, so onshore cable is minimal: approx. 2,000 ft in Queens, NY and 2,900 ft in Waterford, CT
- Onshore facilities are sited in existing industrial areas, both of which are already power complexes

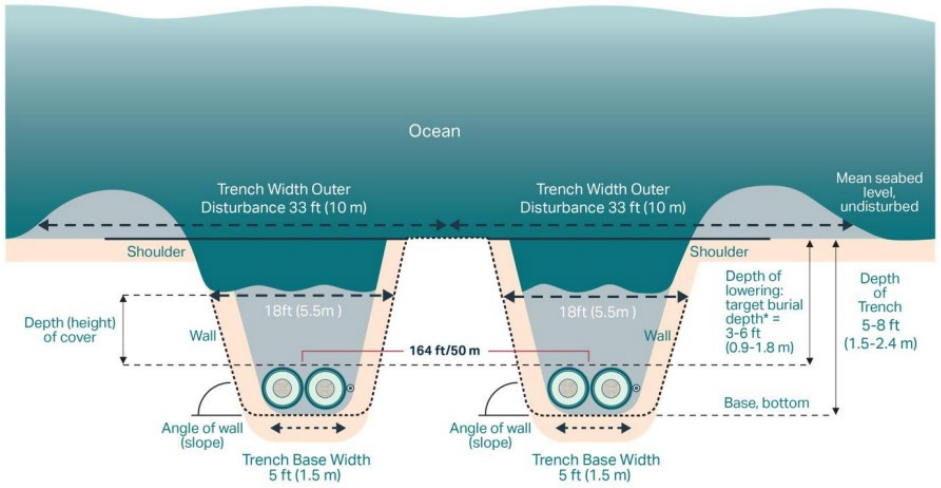


Source: Beacon Wind LLC: Beacon Wind Project (BW1 and BW2), Construction and Operations Plan, 2-32, Page 119.

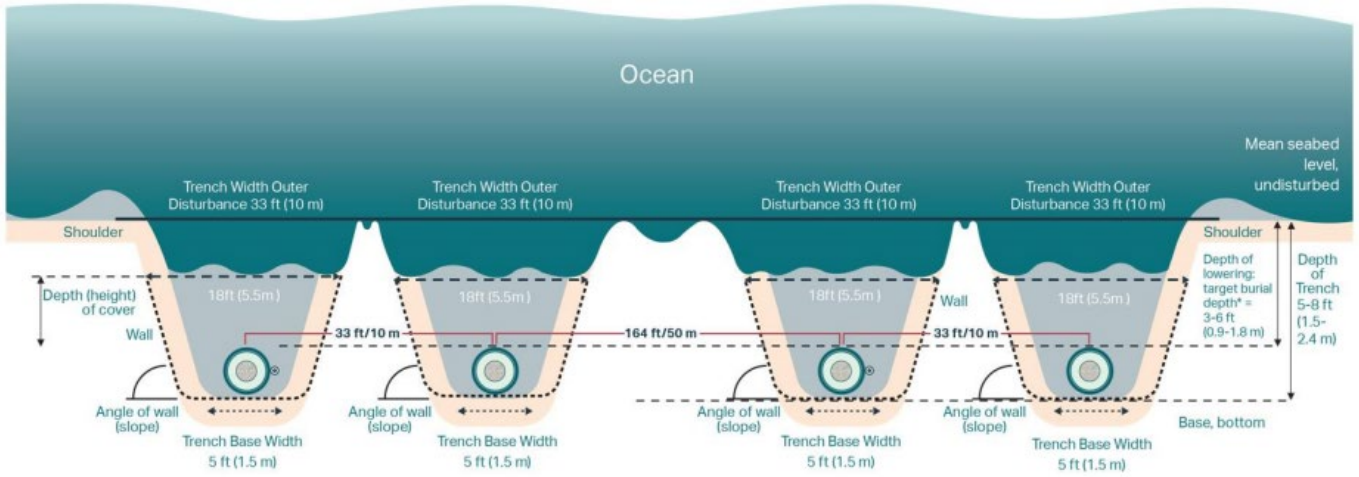
Submarine Cable Installation

- Installation via jetting, mechanical plowing, and/or trenching
- Each circuit (BW1 and BW2) includes two electrical cables and one fiber optic cable
- Cables for each circuit will be bundled together for the majority of the route (approximately 95%)
- Unbundled installation is planned near the Queens, NY landfall, due to shallow water depths and installation vessel requirements

Bundled



Unbundled

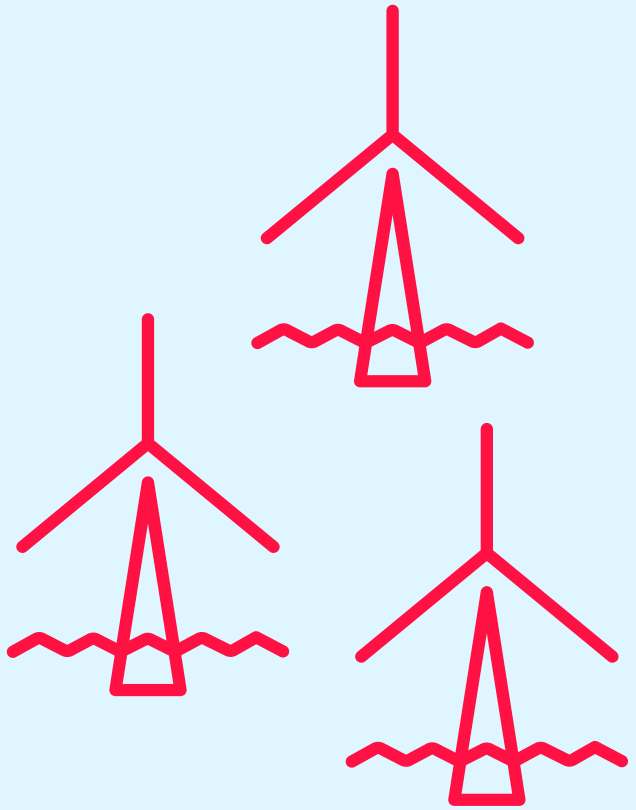


*Note: Target burial depth will be 15ft (4.7m) below the current (and future) authorized depth or depth of existing seabed (whichever is deeper) in federally maintained navigation features (e.g., anchorages and shipping channels).

*Note: The trench width outer disturbance of 33 ft (10 m) represents the potential maximum disturbance generated by the jet plow required for harder seabed conditions. It is anticipated that along the majority of the submarine export cable route, a jet trencher tool will be used which is expected to generate an outer disturbance with of approximately 13 ft (4m).

Source: Beacon Wind LLC: Beacon Wind Project (BW1 and BW2), Construction and Operations Plan, Proposed Unbundled Cable Burial Methodology 3-46, page 175

Rigorous Surveys Investigate Conditions to Inform Responsible Planning and Design

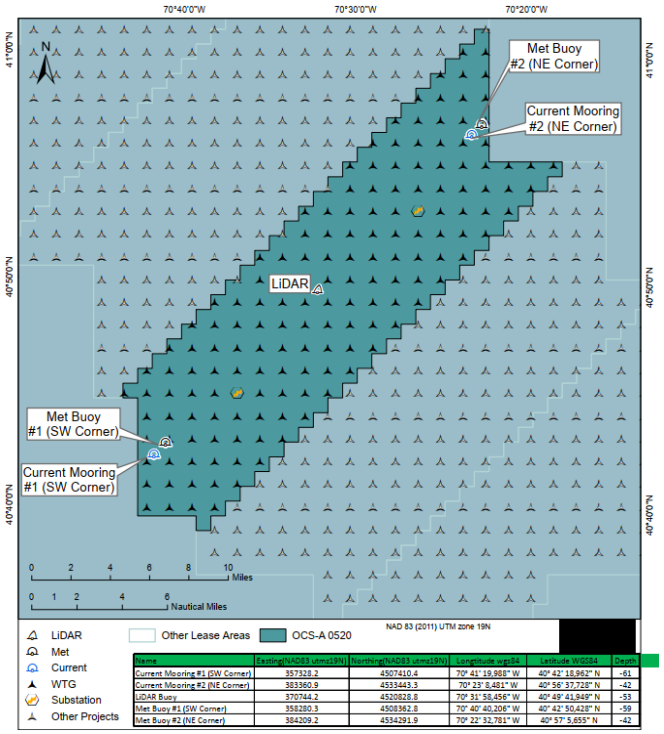


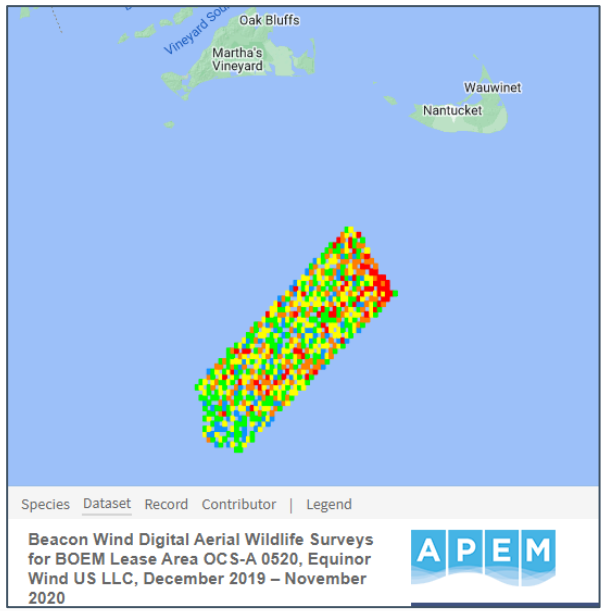
Surveys Have Been Conducted to Investigate and Assess Properties of Surface and Subsurface

- High-resolution Geophysical
  - Multibeam echosounder
  - Sub-bottom profiler
  - Side-scan sonar
  - Magnetometer
- Geotechnical
  - Cone penetration tests
  - Vibracores
- Benthic
  - Grab samples
  - Sediment profile image/plan view
  - Video transects
- Geophysical Information Surveys
  - Archaeological
  - Geohazards
  - Habitat
  - Existing cable routes
  - Sediment characteristics

Aerial Surveys and Metocean Data Collection

- High-Resolution aerial surveys were conducted in the Lease Area
  - Year 1: 16 surveys Dec 2019 – Nov 2020
  - Year 2: 12 surveys Mar 2021 – Oct 2021
- Metocean buoys, Current Moorings, and LiDAR collect meteorological, wildlife, and ocean data
- Vemco fish tag receivers deployed in collaboration with the New England Aquarium





Source: Ocean Biodiversity Information System, Spatial Ecological Analysis of Megavertebrate Populations, Beacon Wind Digital Aerial Wildlife Surveys for BOEM Lease Area OCS-A 0520, Equinor Wind US LLC, December 2019 – November 2020, link.

Respecting and Protecting the Marine Environment

- Contributing to the marine sciences and responsible development by publicly sharing meteorological, wildlife, and ocean data through platforms like ReMOTe, OBIS-SEAMAP, MARACOOS, and soon through the Motus Wildlife Tracking System
- Research, collaboration, and data sharing with regional stakeholders include:
  - $25 million to fund research supporting regional commercial fish stocks & wildlife
  - Collaboration with New England Aquarium to track migratory species
  - $12 million partnership with the Wildlife Conservation Society & Woods Hole Oceanographic Institute

Dedication to Marine Health, Maritime Safety, and Commercial Fishing

Collaboration & Communication with Fisheries

- Agreement for safe navigation and fishing, monthly port hours, and modifications to survey schedules
- Scout boat program to support safe survey operations
- Cross-industry collaboration with:
  - Long Island Sound Lobstermen Association
  - Responsible Offshore Science Alliance
  - New York Fishing Technical Working Group
  - Massachusetts Fisheries Working Group

Beacon Wind Goals & Community

- Beacon Wind is critical to achieving:
  - The US goal of 30 GW of offshore wind by 2030
  - The New York State goal of 70% of electricity from renewables by 2030
  - A clean energy future for the US northeast

Sign up for Project Updates:

www.beaconwind.com

Twitter: @EquinorWindUS

For more information:

www.permits.performance.gov
search “Beacon Wind”

www.dps.ny.gov

- Equinor is a values-driven developer with 10 years of offshore wind experience
- Beacon Wind 1 is part of 3.3 GW portfolio for NY
- Beacon Wind 2 will deliver additional ~1.2 GW to the northeast
- Cable route is designed to minimize onshore and offshore impacts using cutting-edge technology
- Supporting economic growth in the Northeast
- Portfolio’s Inclusive and Equitable Initiatives:
  - Offshore Wind Innovation Hub
  - Offshore Wind Ecosystem Fund
  - Regional Wildlife Fund
  - Regional Fisheries Fund
  - GENext Initiative
  - Investment in Variety Boys & Girls Club of Queens

Thank You

Julia Lewis

julew@equinor.com

BOEM Bureau of Ocean Energy Management

Overview of the National Environmental Policy Act (NEPA) Process

Bonnie Houghton, NEPA Coordinator

Beacon Wind Offshore Wind Project

July 26, 2023

Office of Renewable Energy Programs, Environment Branch for Renewable Energy

BOEM Renewable Energy Program

Mission: To facilitate the responsible development of renewable energy resources on the OCS through conscientious planning, stakeholder engagement, comprehensive environmental analysis, and sound technical review

Wind

Wave

Ocean Current

Transmission

Notice of Intent (NOI) to Prepare an Environmental Impact Statement (EIS) for the Beacon Wind project

Published in the *Federal Register* on June 30, 2023

https://www.regulations.gov/

Docket Number: BOEM-2023-0037

Initiates the NEPA EIS process

Begins 30-day public scoping comment period, ending **July 31, 2023**

What is in an Environmental Impact Statement (EIS)?

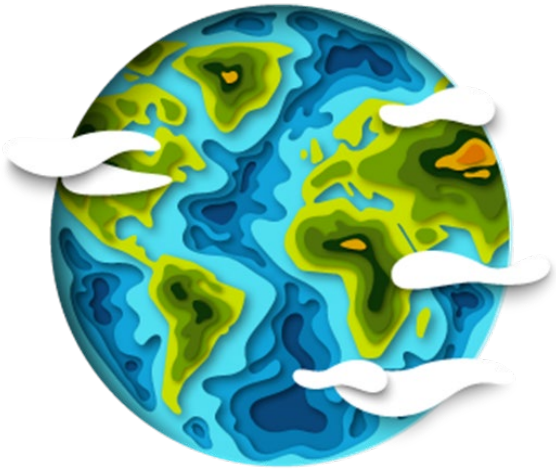
A Document that analyzes the potential impacts of a proposed Federal action and it's alternatives on the human and natural environment

Proposed Action

Project to being analyzed

Alternatives

Reasonable alternatives that could reduce or eliminate impacts. At a minimum, a proposed action and no action alternative.



Effects

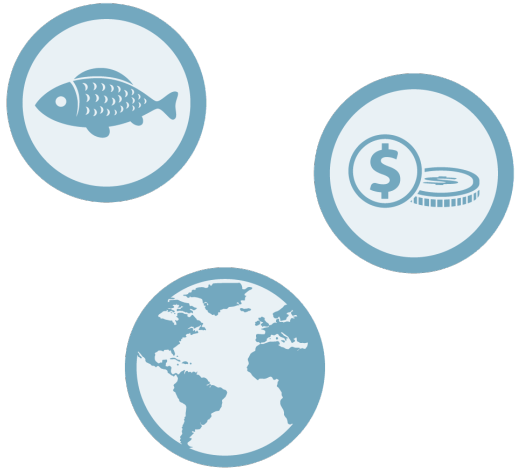
Beneficial and adverse effects.

Affected environment description includes reasonably foreseeable environmental trends and planned actions other than the Project.

Environmental and Socioeconomic Resources

Biological

- Marine Mammals
- Sea Turtles
- Fish and Essential Fish Habitat (EFH)
- Coastal Habitats
- Benthic Resources
- Avian and Bat Species



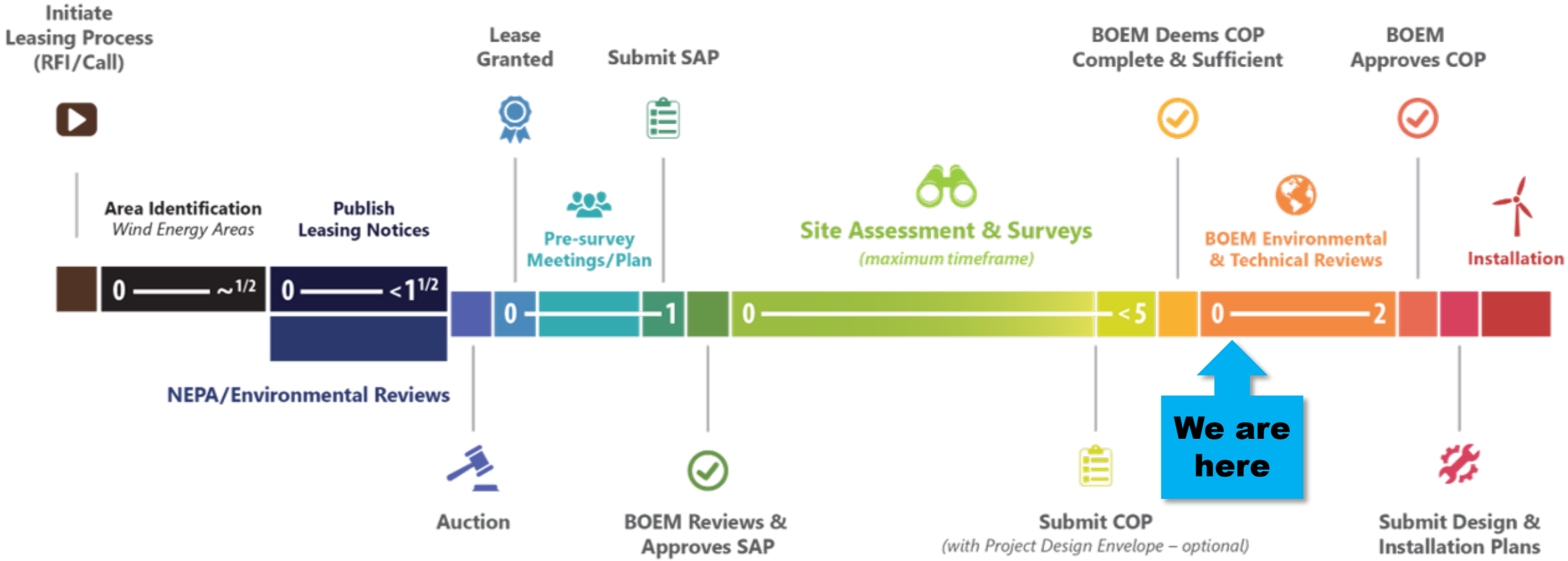
Physical

- Air Quality
- Water Quality
- Safety/Prevention

Socioeconomic

- Aesthetics and Visual Resources
- Commercial and Recreational Fishing
- Cultural Resources
- Military Uses
- Environmental Justice
- Land Use and Coastal Infrastructure
- Tourism and Recreation
- Demographics and Employment

BOEM Leasing and Development Process



Proposed COP NEPA Schedule Overview

- Completeness and sufficiency review
- Develop schedule with cooperating agencies

- Publish Notice of Intent in *Federal Register*
- 30-day public comment period
- Hold public meetings
- Receive input on issues and alternatives

- Prepare with cooperating agencies
- Publish Notice of Availability in *Federal Register*
- 45-day public comment period
- Hold public hearings

- Address public comments with cooperating agencies
- Publish Notice of Availability in *Federal Register*

- Minimum 30-day wait period prior to Record of Decision (ROD)
- All Federal authorizations within 90 days of ROD

Timeline undefined
~ 6 -12 months

~ 12 months

~ 7 months

~ 5 months

2 years or less

Concurrent Environmental Reviews & Consultations

Section 106, National Historic Preservation Act (NHPA)

Magnuson-Stevens Fishery Conservation Act

Endangered Species Act (ESA)

Marine Mammal Protection Act (MMPA)

Coastal Zone Management Act (CZMA)

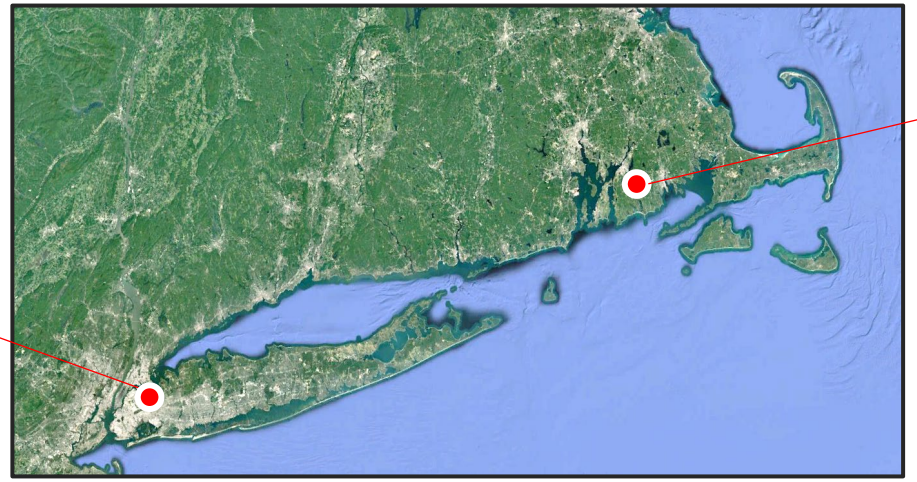
Migratory Bird Treaty Act (MBTA)

Federal Agencies – Cooperating, Participating, and Consulting

State entities and Tribal Nations may also be cooperating agencies under the National Environmental Policy Act.

In-Person Scoping Meetings

Date	Time	Location
Tuesday, July 18, 2023	6:00 PM – 9:00 PM ET	**University of Massachusetts, Dartmouth – The Marketplace (Dining Hall)** 285 Old Westport Road Dartmouth, MA 02747
Thursday, July 20, 2023	6:00 PM – 9:00 PM ET	**Adria Hotel & Conference Center – Ballroom** 221-17 Northern Blvd Queens, NY 11361-3600



Virtual Public Scoping Meetings

Live Virtual Meetings

Date	Time
Thursday, July 13, 2023	11:00 AM – 1:00 PM ET
Wednesday, July 26, 2023	11:00 AM – 1:00 PM ET

Virtual Meeting Room

https://www.boem.gov/renewable-energy/state-activities/beacon-wind-noi-eis-web-virtual-meeting-room

Meeting Information

Display Boards

Presentations

How to Comment

Beacon Wind EIS Schedule

Summer 2024
Publish Draft EIS – (initiates a 45-day public comment period)

Spring 2025
Publish Final EIS

Summer 2025
Conclude consultations and publish Record of Decision

Public Comments on the NOI

Very important element of NEPA

Local expertise and perspective guide environmental analysis = more informed decisions

Types of information BOEM is looking for:

- Significant **issues** to be analyzed in the EIS
- **Sources** of information to include in the EIS
- Data **gaps** and information needs
- Reasonable **alternatives**

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Bonnie Houghton | bonnie.houghton@boem.gov | 703-438-5108

For more information on the Beacon Wind Project, visit:
https://www.boem.gov/renewable-energy/state-activities/beacon-wind