

National Academies of Sciences
Impacts on Shipping and Commercial, Tribal, and
Recreational Fisheries from Development of
Renewable Energy on the West Coast

June 24-25, 2025

University of Washington, Seattle

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Outer Continental Shelf (OCS) Energy

OCS Lands Act: "... vital national resource ... expeditious and orderly development ... environmental safeguards"

Energy Policy Act of 2005: "... energy from sources other than oil and gas ..."

Alaska OCS



Pacific OCS



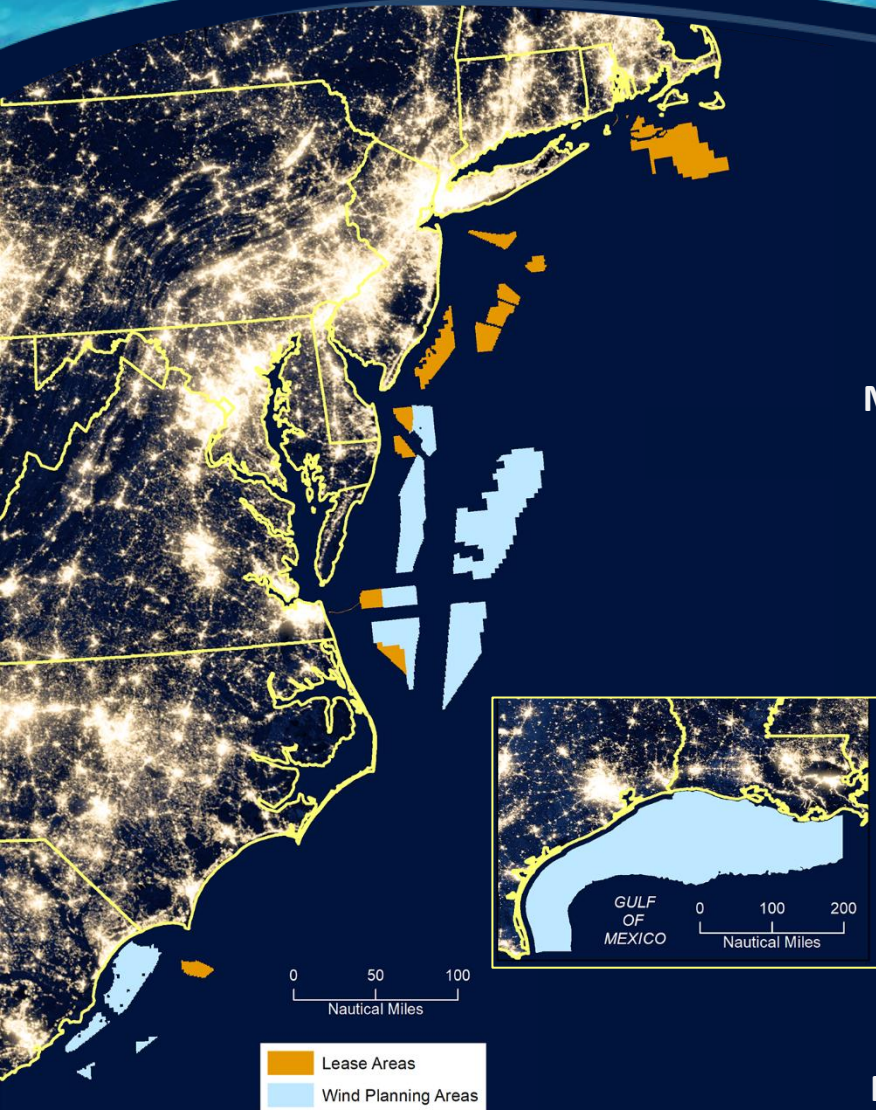
Gulf of Mexico OCS



Atlantic OCS



Atlantic OCS Renewable Energy: State Leadership & Renewable Energy Goals



Renewable Goals

Offshore Wind Goals (MW)

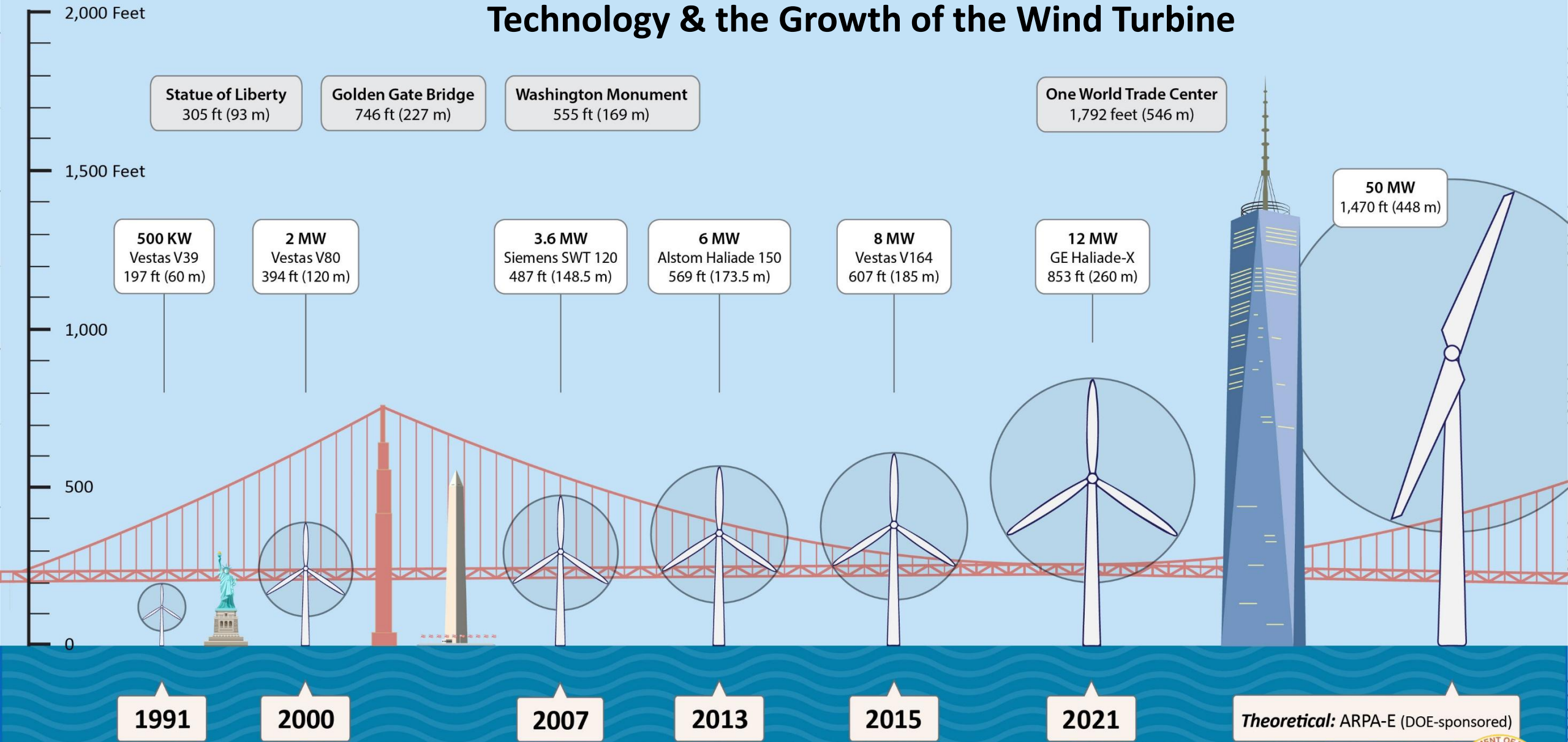
Offshore Wind: "Offtake" Awarded (MW) + Scheduled (MW)

Atlantic OCS Renewable Energy: Renewable Goals

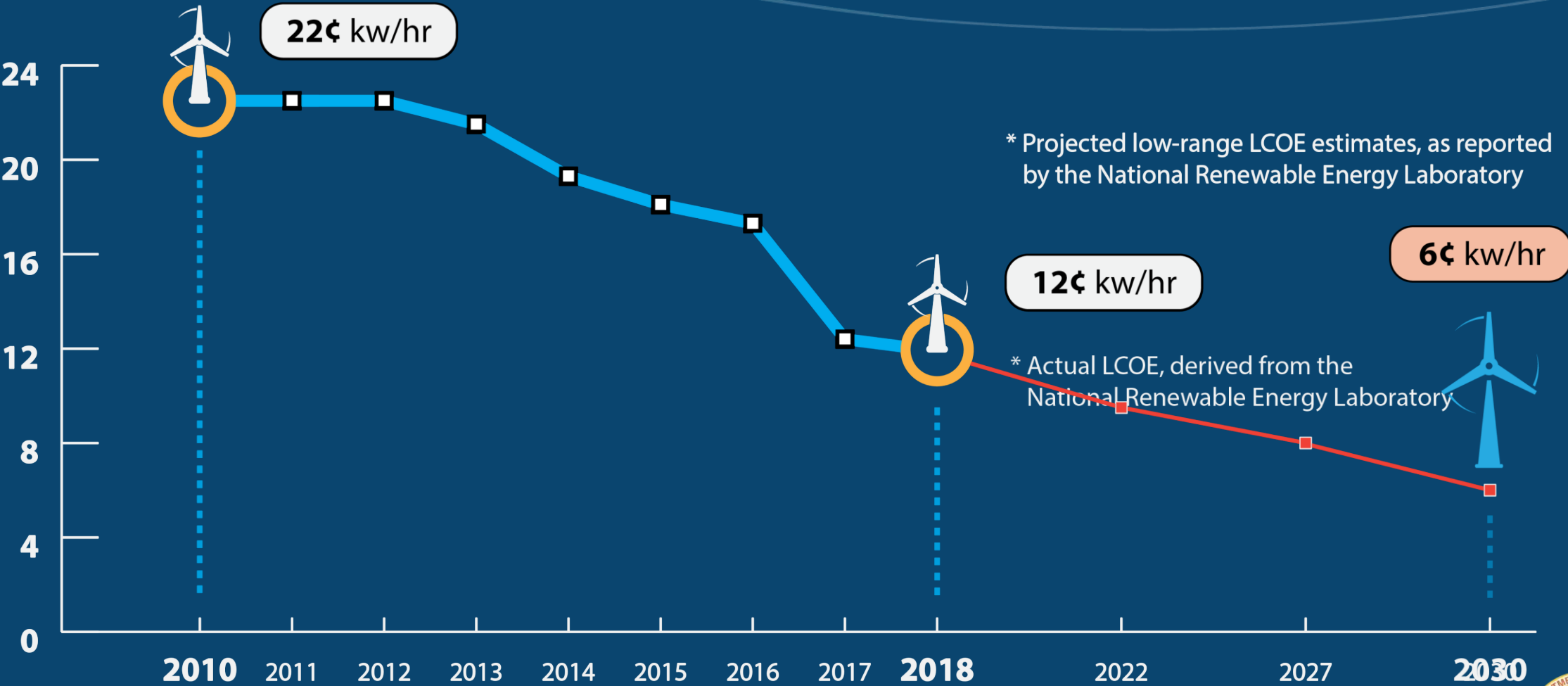
Maine	80% by 2030	144	0	+	0
Massachusetts	35% by 2030	5,600	3,200	+	0
Rhode Island	100% by 2030	unspecified	430	+	600
Connecticut	48% by 2030	2,300	1,108	+	0
New York	70% by 2030	9,000	4,316	+	2,000
New Jersey	50% by 2030	7,500	3,758	+	3,742
Maryland	50% by 2030	1,568	2,023	+	0
Virginia	30% by 2030	5,212	2,652	+	0
North Carolina	unspecified	2,800	0	+	0



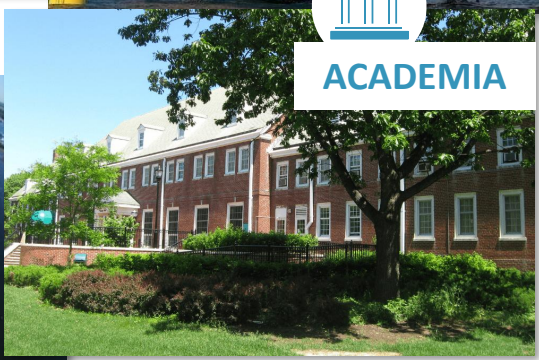
Technology & the Growth of the Wind Turbine



Atlantic OCS Renewable Energy: Levelized Cost of Energy (LCOE)



Atlantic OCS Renewable Energy: Onshore Supply Chain Activities



CFR

Mineral Resources

Parts 200 to 699

Revised as of July 1, 2020

OFFICE OF THE FEDERAL REGISTER



none of the parties to the agreement will be entitled to compensation as a result of expenses or lost revenues that may result from the termination.

PART 585—RENEWABLE ENERGY AND ALTERNATE USES OF EXISTING FACILITIES ON THE OUTER CONTINENTAL SHELF

Subpart A—General Provisions

Sec.

585.100 Authority.

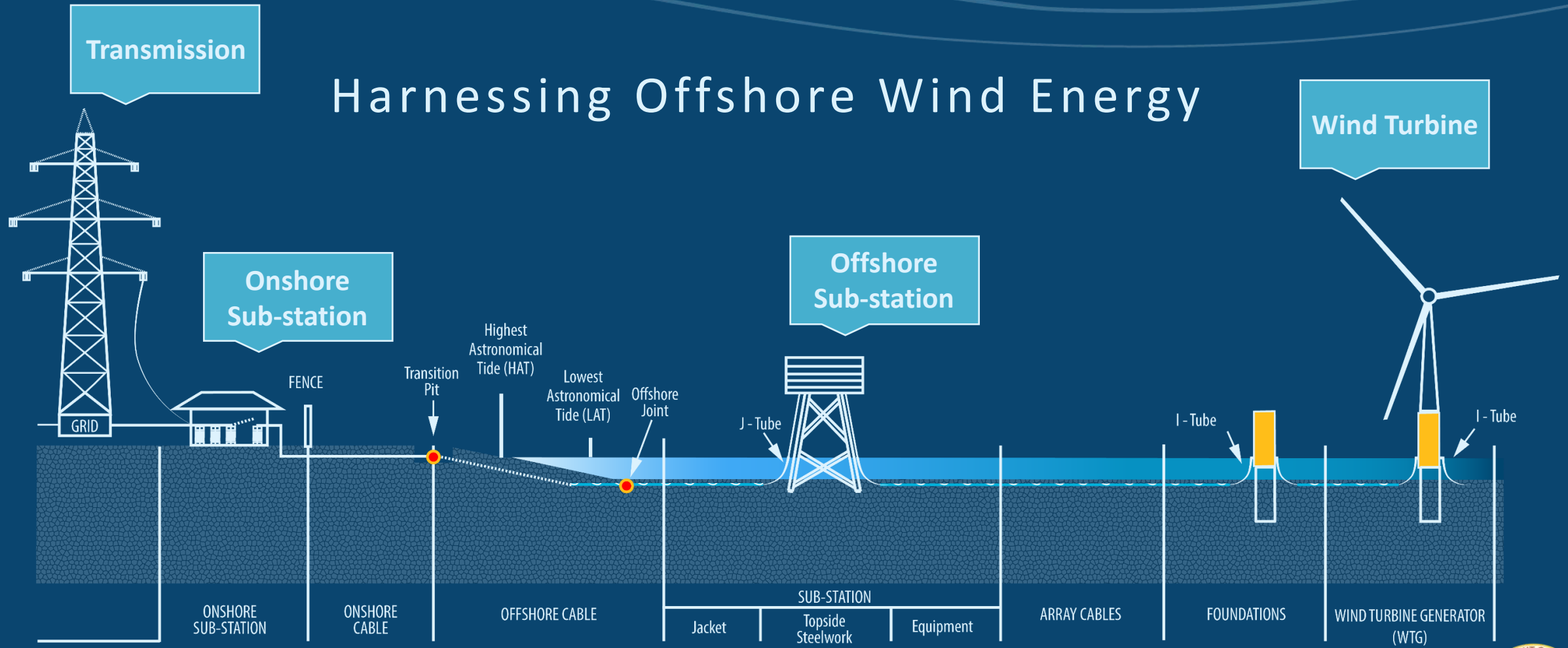
585.101 What is the purpose of this part?

585.102 What are BOEM's responsibilities under this part?

585.103 When may BOEM prescribe or approve departures from these regulations?

585.104 Do I need a BOEM lease or other authorization to produce or support the production of electricity or other energy

Atlantic OCS Renewable Energy: Offshore Wind Energy Transmission



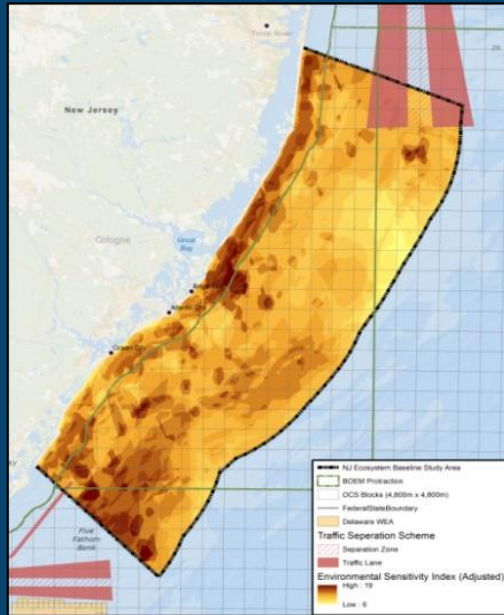
Issues & Opportunities

- Employment
- Industrial Synergies
- Turbine Size
- Transmission
- Radar
- Wildlife
- Visual Effects
- Navigation
- Commercial and Recreational Fishing

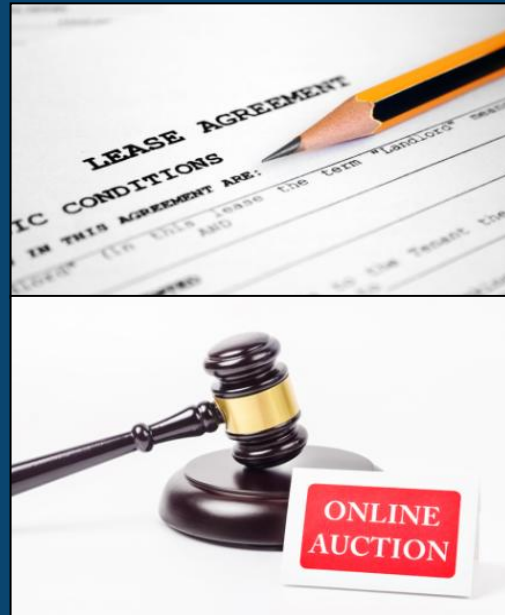


OCS Renewable Energy Authorization Process

Planning
& Analysis



Leasing



Site Assessment



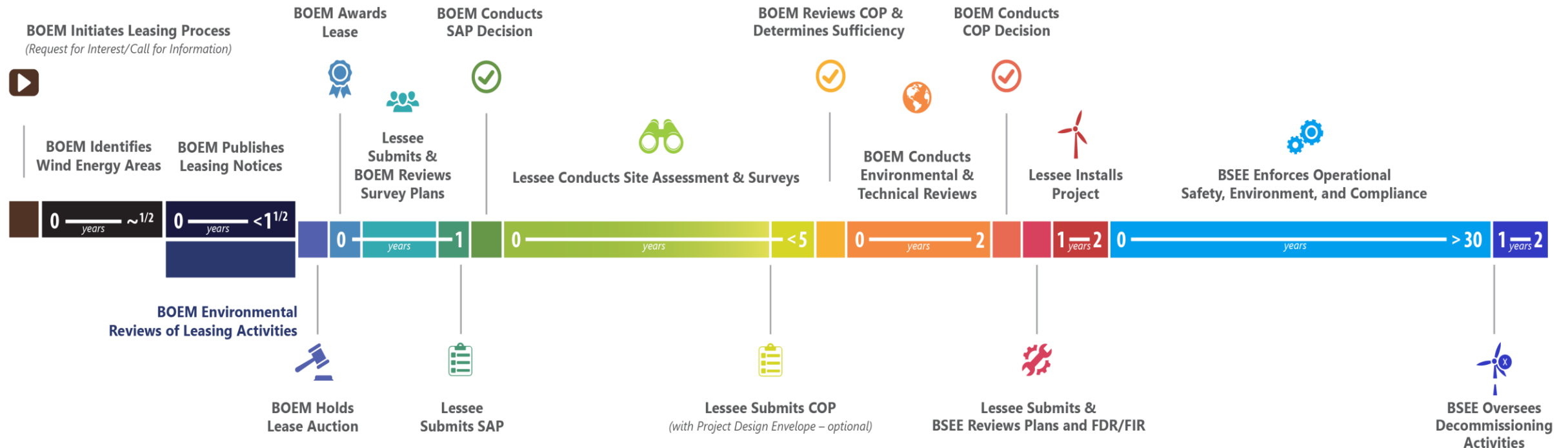
Construction
& Operations



Outer Continental Shelf (OCS) Renewable Energy Timeline

Planning to Decommissioning

Planning & Analysis → Leasing → Site Assessment → Construction → Operations → Decommissioning



Environmental Studies Program

The request for study ideas closes on Dec. 9, 2022

- BOEM solicits study ideas from public every fall/winter.

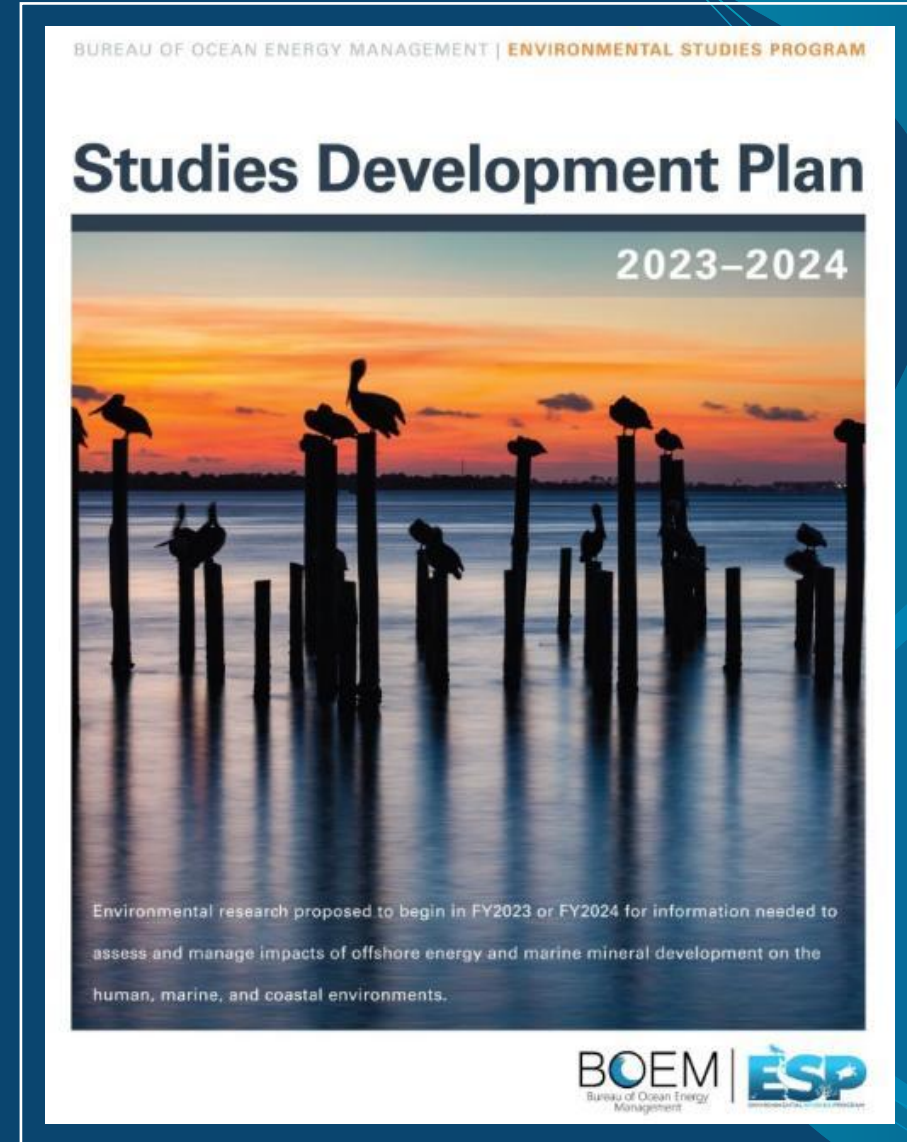


[*Environmental Study Ideas FY 2024 & 2025*](#)

- Study ideas are reviewed by the Standing Committee on Offshore Science and Assessment (COSA) convened under the National Academy of Sciences.
- Results of studies are incorporated into BOEM environmental assessment and decision-making process.
- The FY 2023 studies list can be found here:



[*BOEM FY 2023 Studies List*](#)



Intergovernmental & Stakeholder Engagement

BOEM regularly **coordinates, communicates, and collaborates** with intergovernmental entities including federal agencies, states, tribes, Fishery Management Councils, including:

- **Regional Ocean Partnerships** (i.e., NROC = Northeast Regional Ocean Council; and MACO = Mid-Atlantic Committee on the Ocean)
- **Offshore Wind Permitting Subgroup** (monthly federal agency webinars)
- **Intergovernmental state and regional task forces**
 - Affected state, local and tribal governments and federal agencies
 - **Does not replace consultation under existing federal laws and regulations**
 - Public involvement
 - *Regional collaboration is key*



- 
- A low-angle, close-up photograph of a white wind turbine against a clear blue sky. The turbine's nacelle and parts of its three blades are visible, with the blades extending towards the top right corner. The bottom of the image features a white, wavy graphic element that separates the list from the title.
- Written Submissions/Public Comment Periods
 - Public Hearings
 - Town Hall Meetings
 - Open Houses
 - Workshops
 - Intergovernmental State Task Force Meetings
 - Advisory Committee Meetings
 - Webinars/Virtual Consultations
 - Listening Sessions
 - Panel Presentations

Stakeholder Engagement

Federal Agencies in Offshore Wind Planning and Permitting

- **Bureau of Ocean Energy Management (BOEM)**
- **Bureau of Safety and Environmental Enforcement (BSEE)**
- **U.S. Army Corps of Engineers (USACE)**
- **National Oceanic and Atmospheric Administration (NOAA)**
- **U.S. Fish and Wildlife Service (FWS)**
- **Environmental Protection Agency (EPA)**
- **United States Coast Guard**
- **Federal Aviation Administration (FAA)**
- **Department of Defense (DOD)**
- **Advisory Council on Historic Preservation (ACHP)**
- **Federal Permitting Improvement Steering Council (FPISC)**

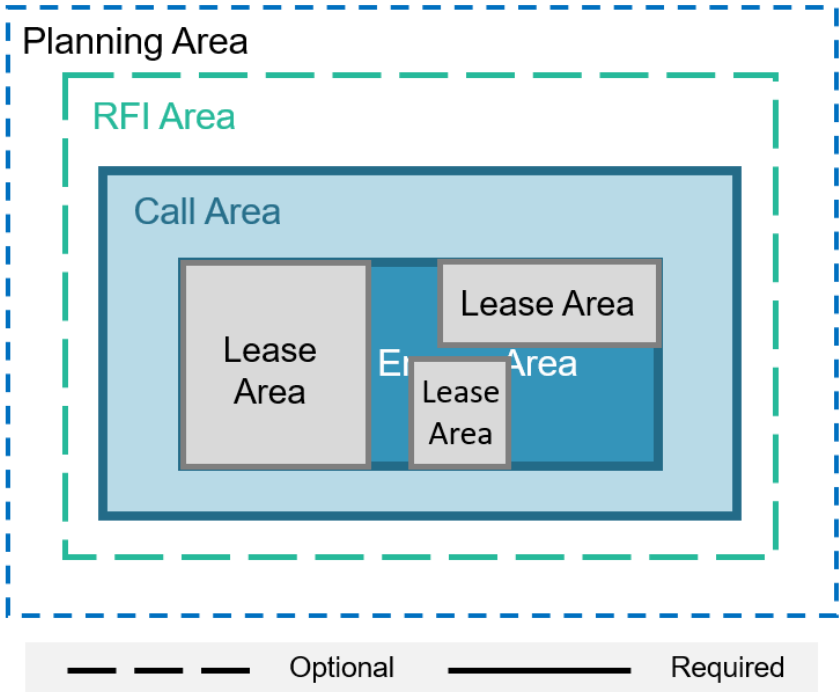
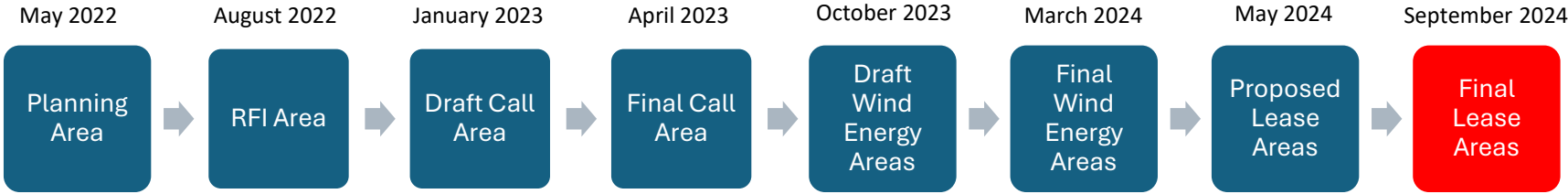
State and Municipal Agencies in Offshore Wind **(New York Example)**

- **New York State Energy Research and Development Authority (NYSERDA)**
- **New York State Department of Environmental Conservation (NYSDEC)**
- **New York State Public Service Commission (PSC)**
- **New York State Department of State (DOS)**
- **Local Municipalities**

Tribal Interests

- **Tribal Consultation**
- **Cultural Resources**
- **Economic Opportunities.**
- **Environmental Concerns**
- **Sovereignty**

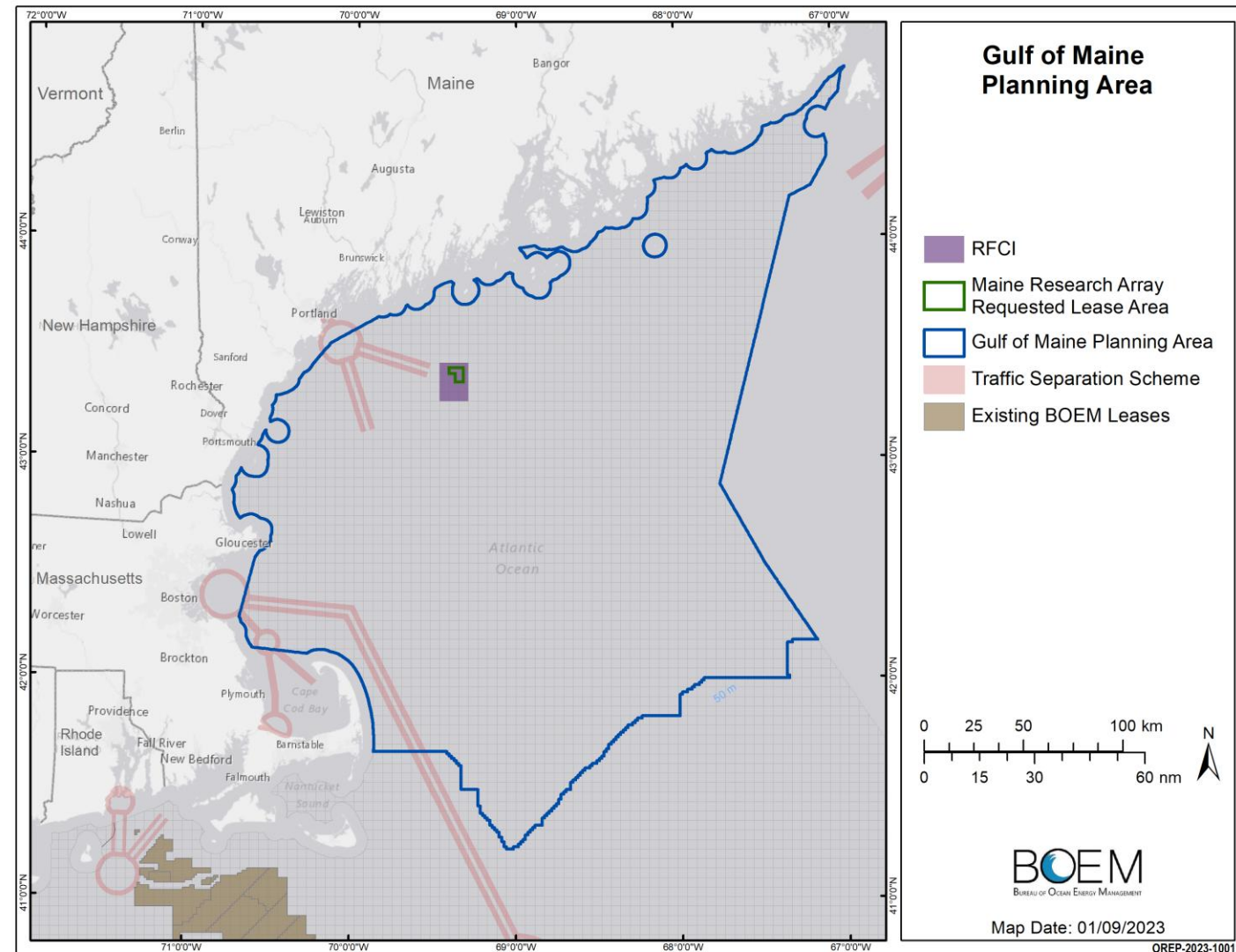
Gulf of Maine Planning & Leasing Process



Planning Area



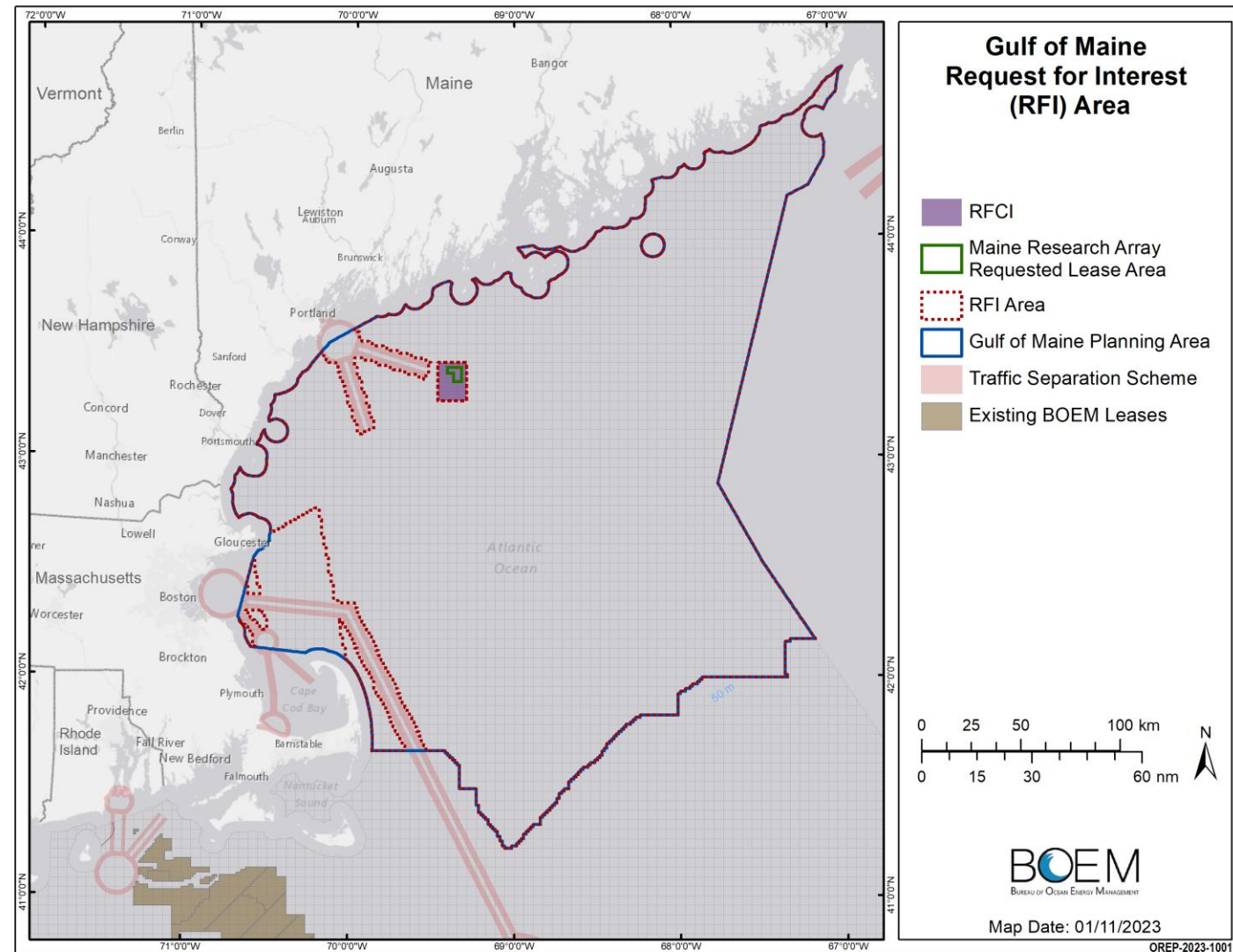
- Preliminary and optional step in the BOEM Planning Process
- Shared Planning Area and Draft RFI Area at the May 2022 Task Force meeting



Request for Interest (RFI) Area



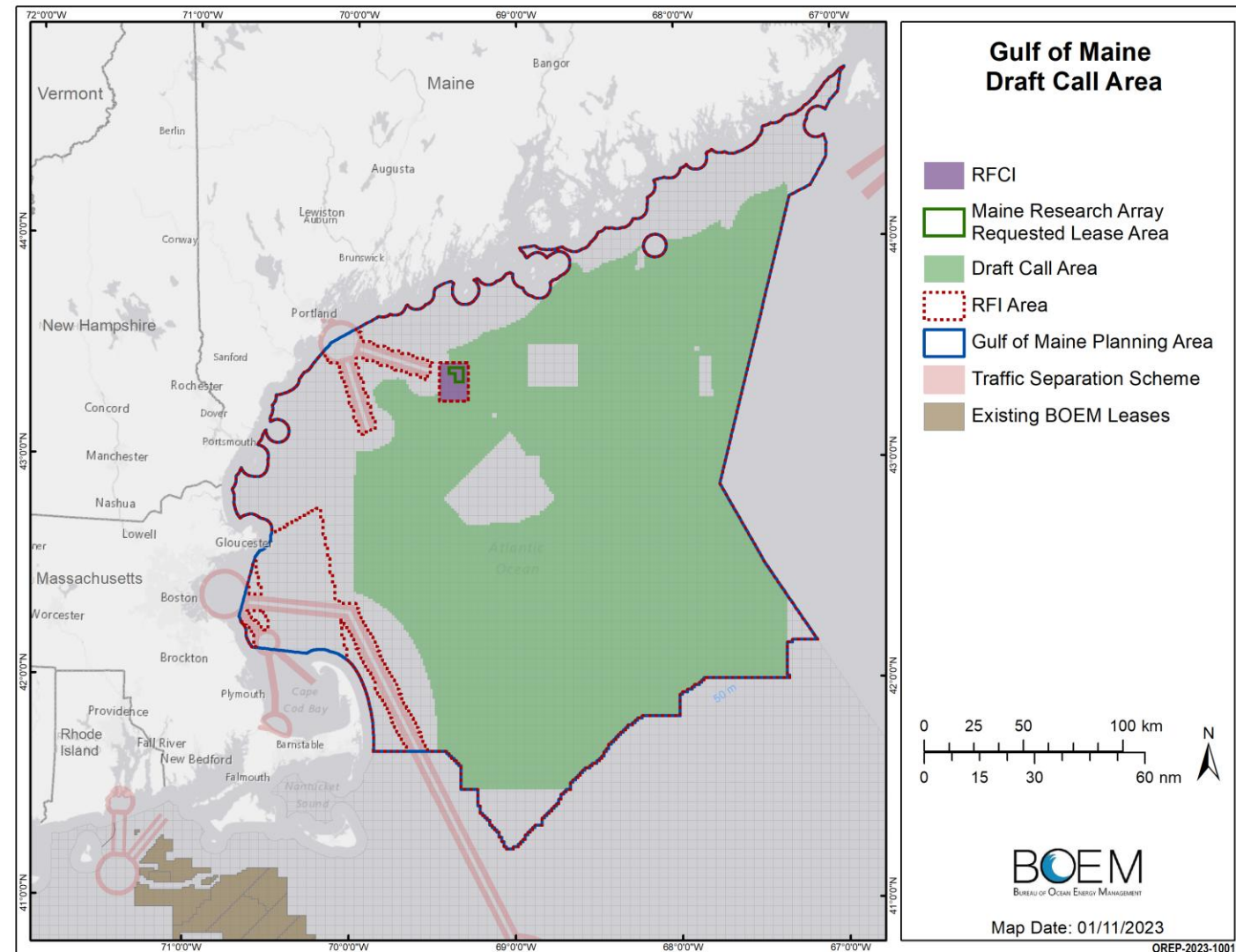
- Published RFI on August 19, 2022
 - 45-day comment period closed October 3, 2022
- RFI Area excluded “incompatible areas”
 - National Park System, National Wildlife Refuge System, National Marine Sanctuary System, or any National Monument (§585.204)
 - Existing Traffic Separation Schemes (TSS), fairways, or other internationally recognized navigation measures
 - Unsolicited lease request areas that are the subject of a separate request for competitive interest



Draft Call Area



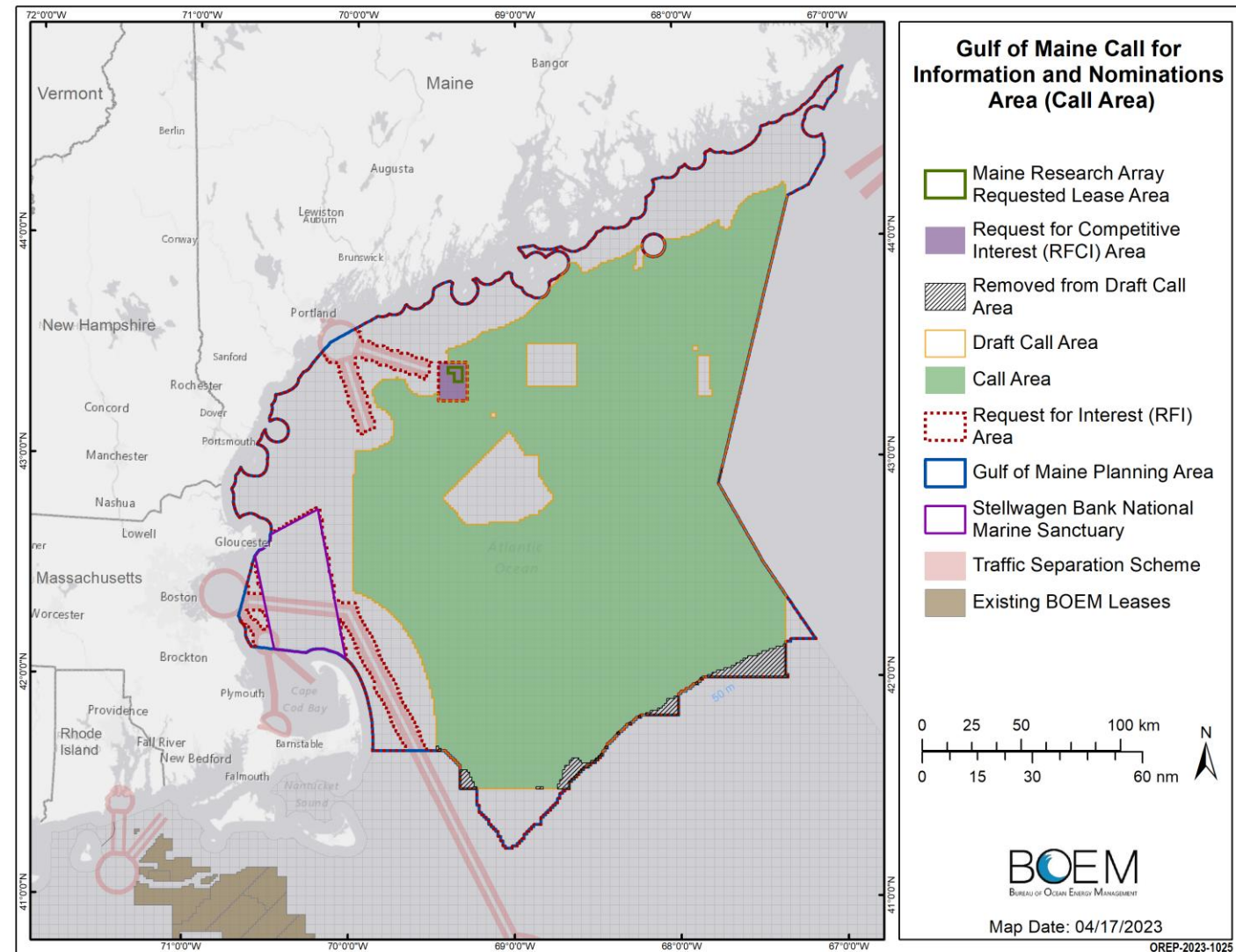
- BOEM reviewed responses to RFI and worked with NOAA NCCOS to conduct spatial analysis to inform Draft Call Area
 - 27% reduction from RFI Area
- BOEM held a series of in-person and virtual meetings.



Final Call Area



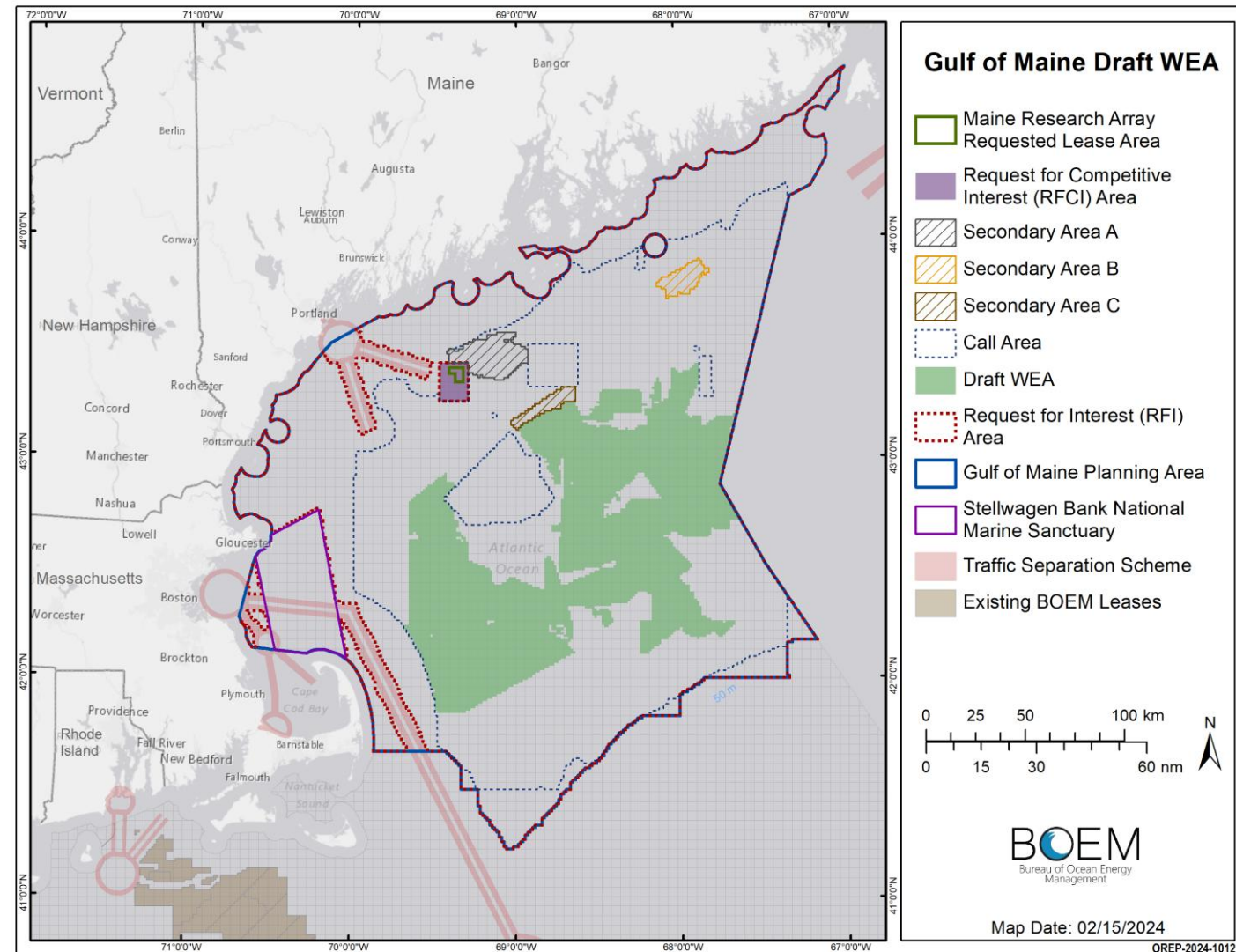
- The Final Call Area was published on April 26, 2023
 - 45-day public comment period (closed June 12, 2023)
- BOEM removed areas from the southern edge of the Call Area to better avoid Georges Bank
- BOEM held a Task Force meeting (May 2023) and invited public comment on, and assessed interest in, possible commercial wind energy development in areas within the Call Area.



Area ID: Step 1 (Draft WEA)



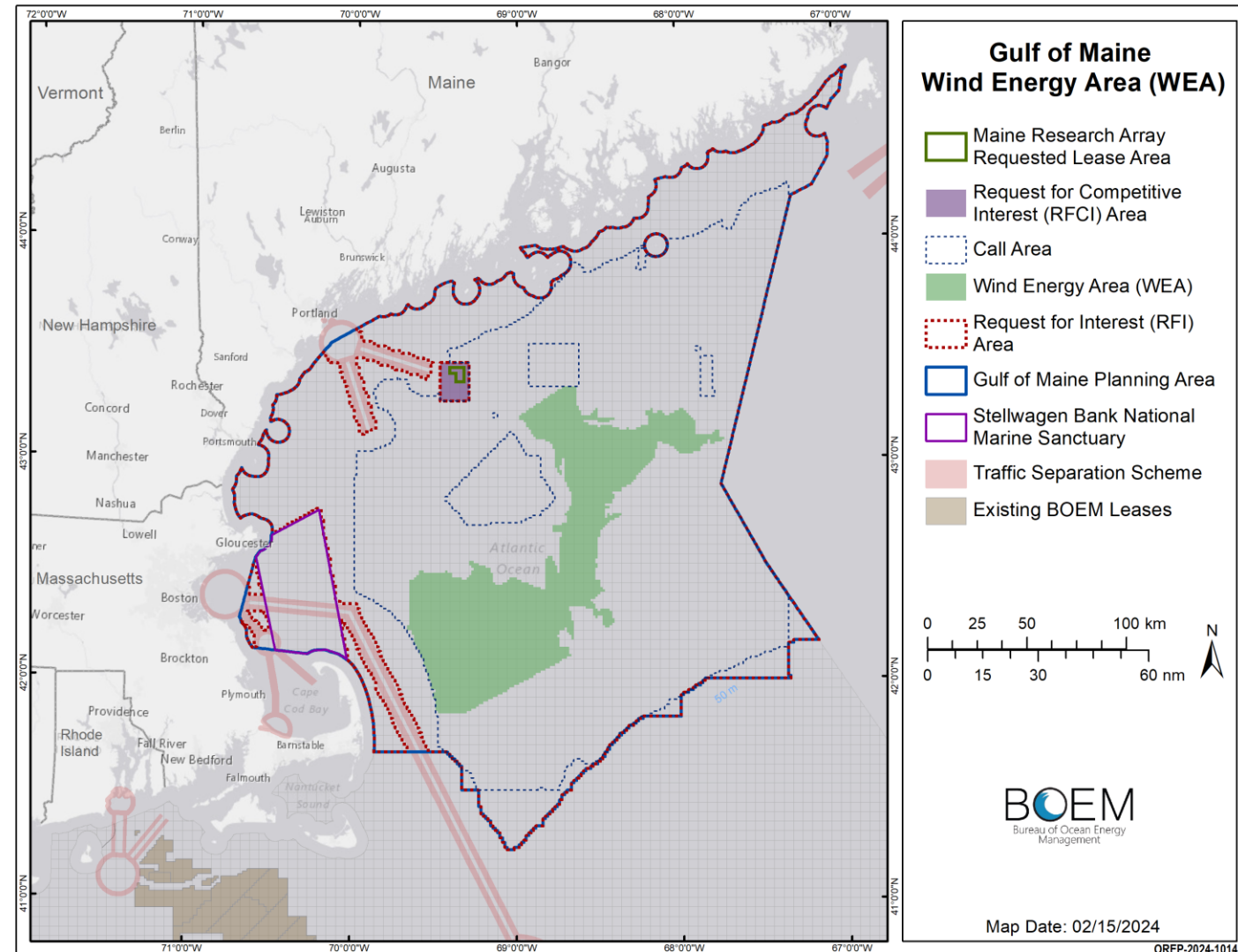
- Draft WEA was published on October 19, 2023—opening a 30-day public comment period (closed November 20, 2023)
- ~3.5 million acres, representing a 64% reduction from the Call.
- Request for Comment
 - Explained the Draft WEA and Secondary Areas
 - Asked questions about:
 - Relative developability of different areas
 - Phased leasing
 - Fishing gear used, migration patterns of fish, protected species
- Draft NCCOS Report: Wind Energy Siting Analysis
 - Modeling methodology
 - Model performance across different resource groups/stakeholder interests
- Public Meetings
 - BOEM held public meetings in [July 2023](#) on the NCCOS model and underlying data, before holding additional meetings in [October 2023](#) on the Draft WEA



Area ID: Step 2 (Final WEA)



- **Area ID Memo: published March 15, 2024**
- **~2 million acres (~80% reduction from Call Area; 43% reduction from Draft WEA)**
 - Combined capacity of 32 gigawatts (4 MW/km²)
 - Exceeds area/capacity needed for regional offshore wind goals (13-18 gigawatts)
 - Area allows for additional deconfliction
 - Could support multiple GoME Lease Sales
- **BOEM worked with NCCOS to run a revised suitability model on the Draft WEA**
 - Removed Secondary Areas A & B, included most of C
 - Constrained
 - Area representing top 10% of revenue for the multispecies groundfish (VTR)
 - 5-mile buffer around Cashes Ledge Groundfish Closure/HMA
- **Geographic diversity**
 - Includes areas that are potentially HVAC compatible (within ~75 mi of a POI) for both MA and ME
 - Avoids several key fishing grounds and important areas of North Atlantic Right Whale Critical Habitat, Tribal fishing grounds



Proposed Sale Notice (PSN)



Area summary:

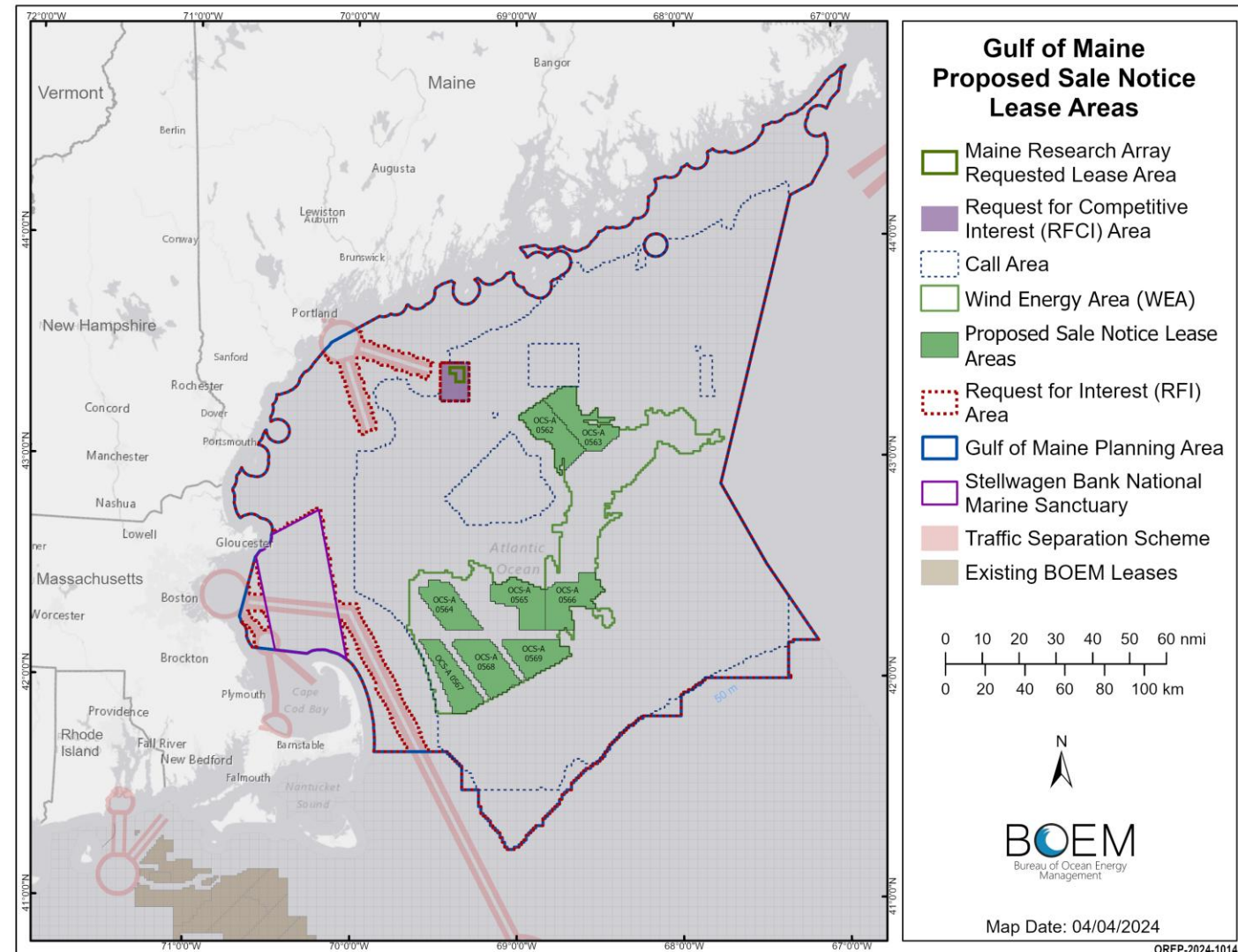
- 8 Leases
- 969,999 acres (944,422 “developable” acres)
- ~50% reduction from the Final WEA;
~90% reduction from the Call Area
- Average lease size: 121,250 acres
- Combined capacity of **15 gigawatts** (4 MW/km²)
- Within range of the regional offshore wind goals (13-18 gigawatts)

Geographic diversity

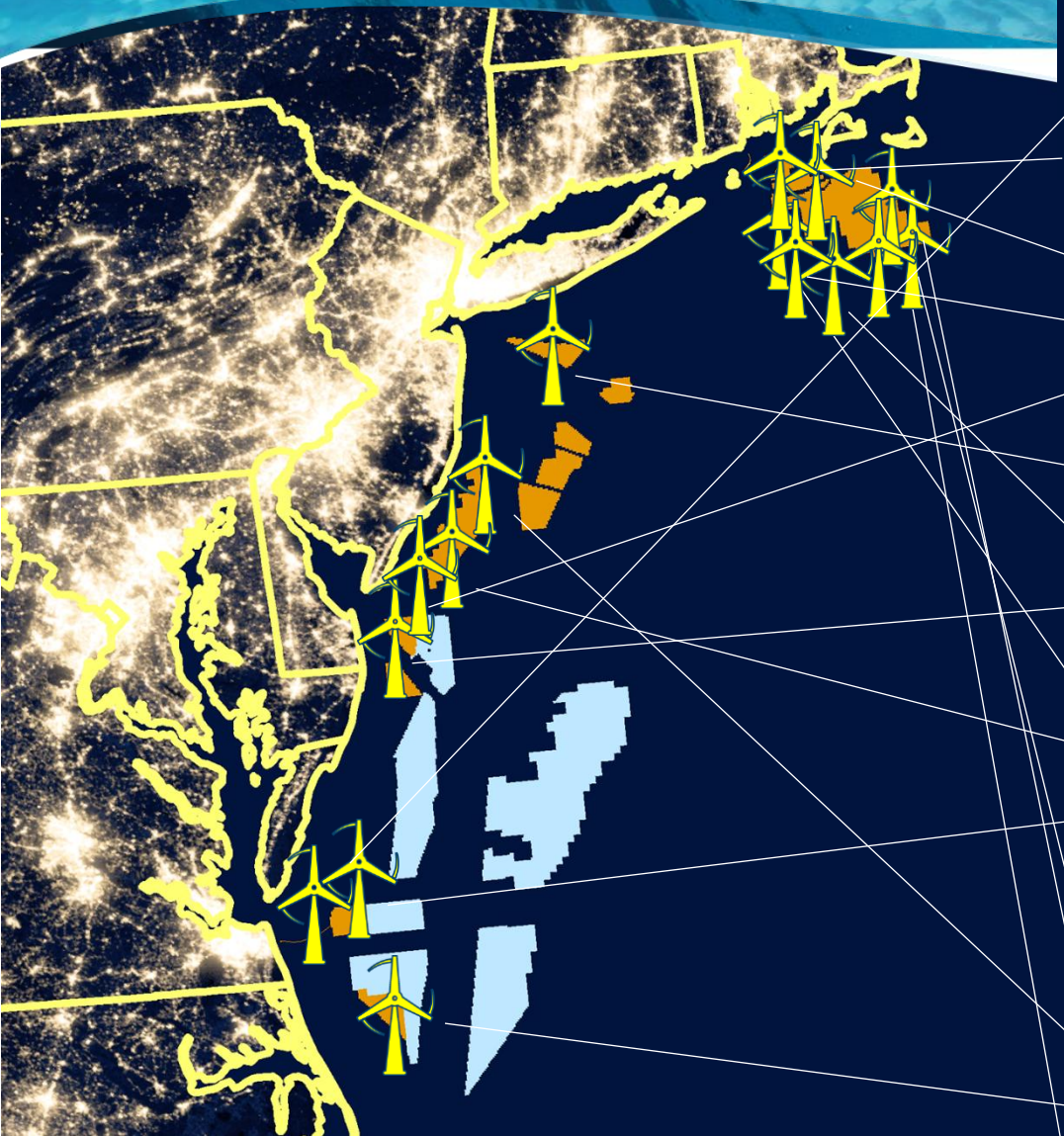
- Includes areas that are potentially HVAC compatible (within ~75 mi of a POI) for both MA and ME

Areas avoided from Final WEA:

- Several heavily utilized areas for groundfish fishery
- 3 transit corridors in southern region of WEA
- Mayo Swell; Rogers Swell (important fishing/habitat areas)
- Areas furthest offshore and likely most expensive to develop



Atlantic OCS Renewable Energy: “Projects in the Pipeline”



	Project	Company
2020	Coastal Virginia Offshore Wind Pilot	  
▼	South Fork	
▼	Vineyard Wind I	
▼	Revolution Wind	
▼	Skipjack Windfarm	 
▼	Empire Wind	
▼	Bay State Wind	
▼	U.S. Wind	
▼	Sunrise Wind	 
▼	Ocean Wind	
▼	Coastal Virginia Offshore Wind Commercial	
▼	New England Wind	
▼	SouthCoast Wind	
▼	Atlantic Shores	
▼	Kitty Hawk	
2030	OCS-A 0522	

STEEL IN THE WATER! Coastal Virginia Offshore Wind Project (CVOW)

- Lessee: Virginia DMME
- Operator: Dominion Energy
- Engineering Contractor: Orsted
 - Construction (May/June 2020)
 - Two 6-MW turbines
 - Staging: Halifax, Hampton Roads, Camp Pendleton
 - Commissioning: 2020



Renewable Energy Project: Massachusetts

Vineyard Wind I (OCS-A 0501)

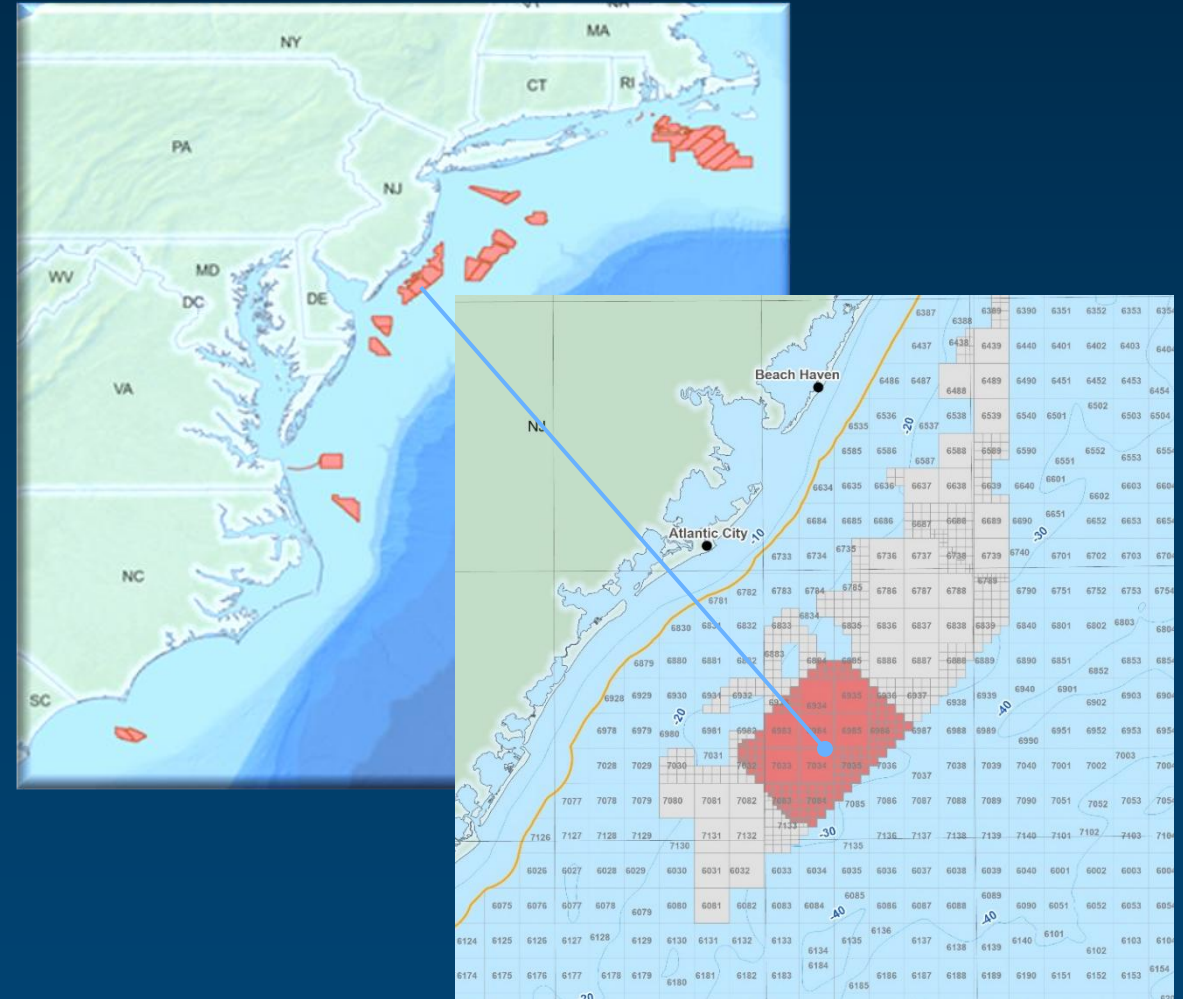
- Lease Issued: April 1, 2015
- Current Stage: **Installation**
- Next Milestone: Facility Design Report (FDR)
Fabrication & Installation Report (FIR)
Review
- Max # of WTG Locations: 62
- Interconnection State: Massachusetts
- Power Purchase Agreement: MA, 800 MW
- Commissioning Date: 2024
- Lessee: Vineyard Wind I, LLC



Renewable Energy Project: New Jersey

Ocean Wind (OCS-A 0498)

- Lease Issued: March 1, 2016
- Current Stage: **Construction and Operations Plan (COP)**
- Next Milestone: Final Environmental Impact Statement (FEIS)
- Max # of WTG Locations: 98
- Interconnection State: New Jersey
- Power Purchase Agreement: NJ, 1,100 MW
- Commissioning Date: 2026
- Lessee: Ocean Wind, LLC



Renewable Energy Project: New York

Empire Wind (OCS-A 0512)

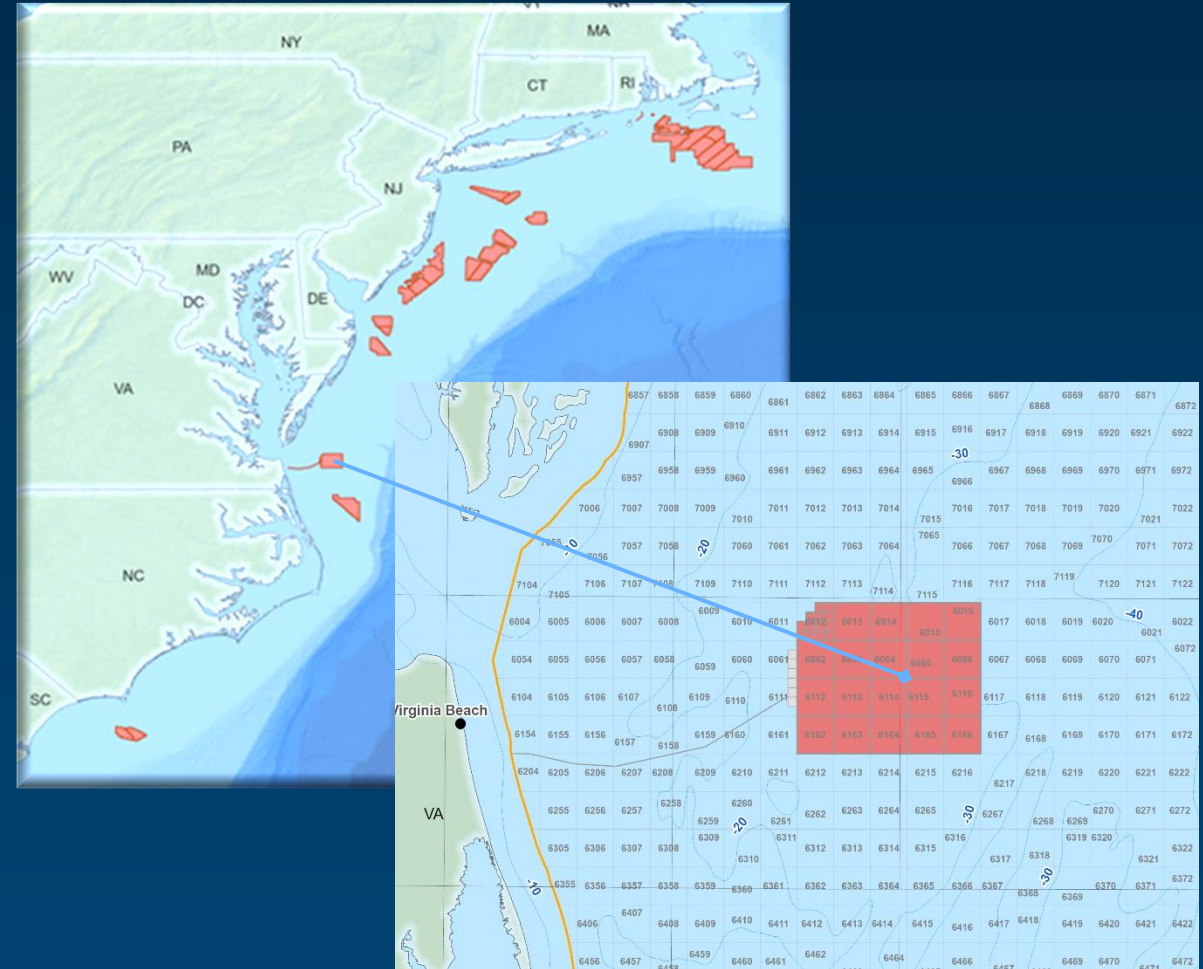
- Lease Issued: April 1, 2017
- Current Stage: **Construction and Operations Plan (COP)**
- Next Milestone: Final Environmental Impact Statement (FEIS)
- Max # of WTG Locations: 174
- Interconnection State: New York
- Power Purchase Agreement: NY, 816 MW (EW 1) and 1,260 MW (EW 2)
- Commissioning Date: 2024 (EW 1) and 2027 (EW 2)
- Lessee: Equinor Wind US LLC



Renewable Energy Project: Virginia

Coastal Virginia Offshore Wind (Commercial; OCS-A 0483)

- Lease Issued: Nov 1, 2013
- Current Stage: **Construction and Operations Plan (COP)**
- Next Milestone: Final Environmental Impact Statement (FEIS)
- Max # of WTG Locations: 202
- Interconnection State: Virginia
- Power Purchase Agreement: Utility Owned
- Commissioning Date: 2024 - 2026
- Lessee: Virginia Electric and Power Company





Thank you!



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