



# GULF OF MAINE Floating Offshore Wind Research Array

**Stakeholder Planning and Knowledge Sharing Workshop**

FEBRUARY 5, 2021 12:30 – 5 PM



GOVERNOR'S  
**Energy  
Office**

Webinar will begin in a few moments.

# Planning Meeting Agenda

- 12:30 pm** **Welcome and Overview**
- 12:50** **Overview of Floating Offshore  
Wind Technology**
- 1:30** **Overall Area of Consideration**
- 2:10** **Introduction to Data Sources**
- 3:00** **Break**
- 3:15** **Thinking About Research  
Approach**
- 4:15** **Next Steps**
- 5:00** **Wrap Up**

# Meeting Reminders

## Zoom reminders:

- Everyone, please MUTE yourself, except when speaking. If you are on the phone, press \*6 to mute/unmute.
- Raise your hand, use the blue "Raise Hand" function in the participants tab. If you are on the phone, press \*9. Or just raise your hand on the screen.
- Use "Chat" function to ask questions as well.

## Navigating our discussion:

- Both questions and comments welcome
- Share the floor: Please be mindful of your time to allow others to speak
- Be direct and respectful: Express your views and let others do the same
- This is only the start of a conversation for the months to come

# Maine's Approach to Offshore Wind



- Offshore wind is part of state's long-term clean energy vision
- Maine supports regional commercial leasing planning effort
- In November 2019, Governor announces multi-turbine research array, commitment to work with stakeholders
- In December, held initial webinars, focus on fishing industry

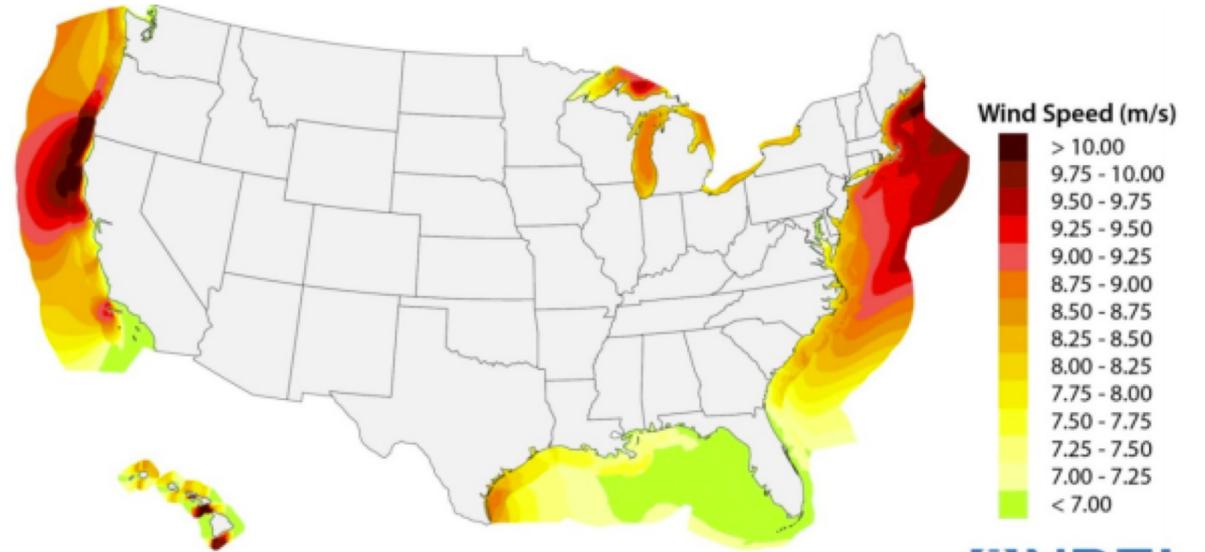
# Listening and Adapting



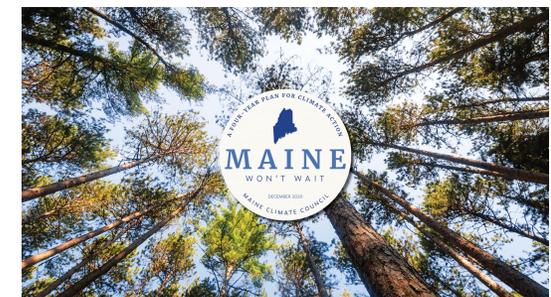
## **In response to fishing industry concerns, Gov. Mills announced the following:**

- Support for 10-year moratorium on new offshore wind in state waters
- Additional time for planning and discussion, prior to lease application
- A review of applicable state laws

# Offshore Wind in Maine



Data Source: AWS Truepower 0-50nm; NREL WIND Toolkit beyond 50nm.



## Offshore Wind Innovation and Cost Trajectory

# Floating Wind Energy Costs Follow Fixed-bottom Offshore Wind Trends

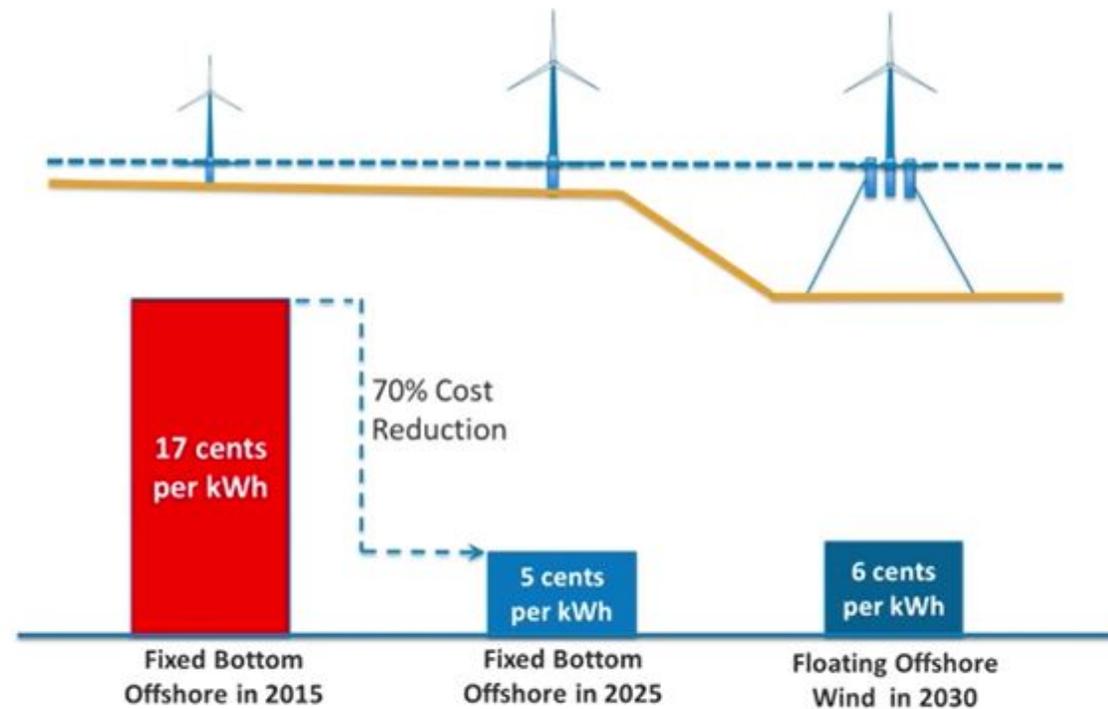
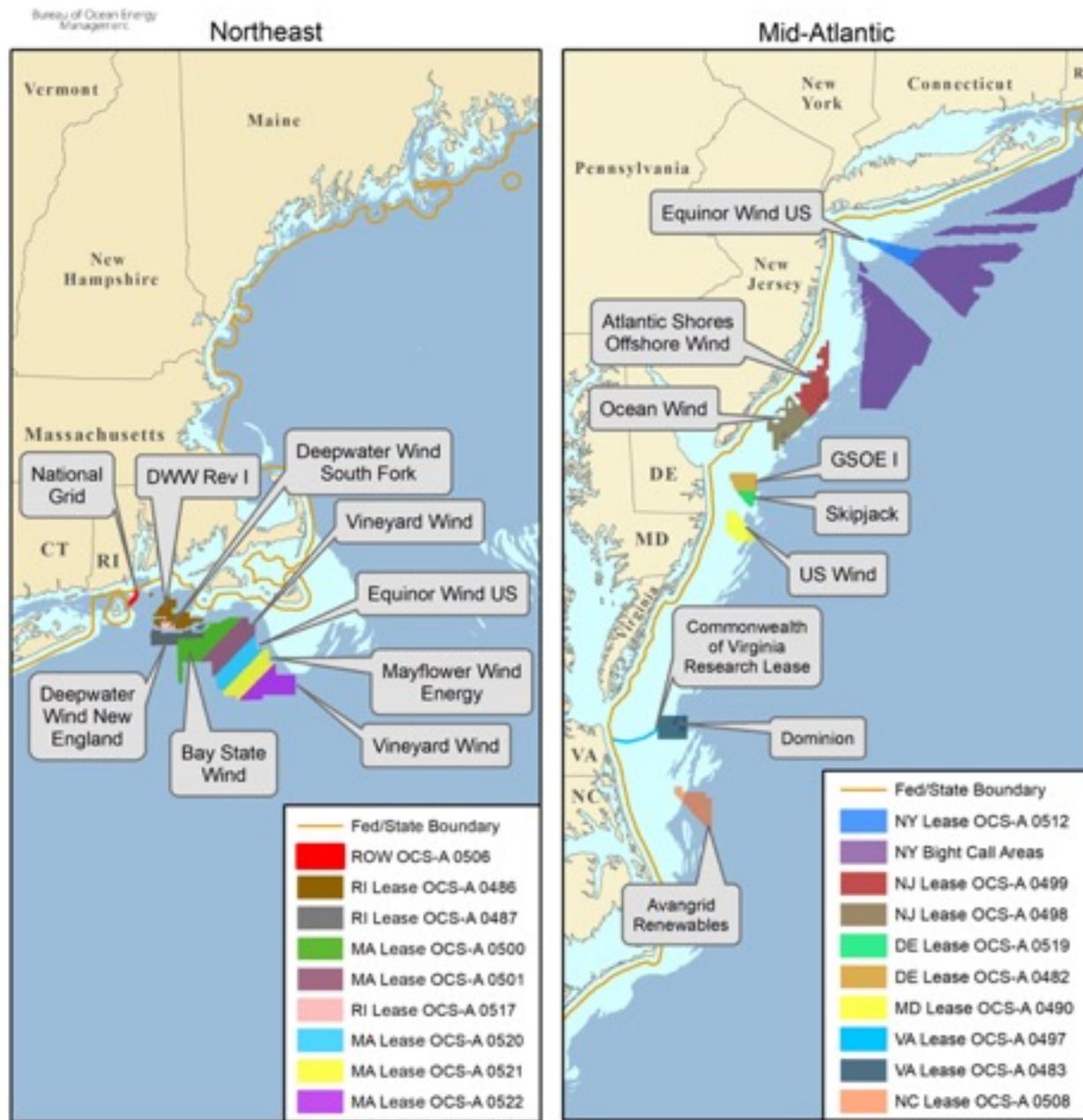


Figure credit: NREL

- Shared supply chains
  - Turbines
  - Array and export cables
  - Regulations
  - Ports and Infrastructure
  - Operations and Maintenance
- Floating cost reductions lag fixed-bottom offshore wind cost by 5 -7 years
- Floating cost are likely to converge with fixed-bottom wind

# Growth of Offshore Wind in the U.S.

	State target (MW)	MW selected (offtake)
Massachusetts	3,200	1,600
Rhode Island	430	430
Connecticut	2,000	1,100
New York	9,000	1,826*
New Jersey	7,500	1,100*
Maryland	1,200	368
Virginia	5,200	2,652
<b>Total</b>	<b>28,530</b>	<b>9,076</b>



## Bathymetry

- Up to 30 meters
- More than 30 meters



# Gulf of Maine Intergovernmental Task Force & BOEM Process

- Federal/Tri-State Task Force (ME, NH, MA) to inform federal offshore decisions
- Maine joined Task Force in 2019
- December 12, 2019 inaugural meeting
- Focus on commercial leasing for one or more large scale leases



# Maine Offshore Wind Initiative

- Pursues strategic opportunities for additive economic activity and innovation across various sectors and regions of Maine
- Maximize compatibility with existing marine uses and fisheries and take a data-driven, inclusive, transparent approach
  - Maine fisheries: \$674M in Maine's commercial fishing landings in 2019 (\$485M in lobster landings alone, most valuable single species fishery in US); 2X commercial fishing trips out of Maine than any other state on the east coast
- Support Maine engagement in BOEM Task Force and regional coordination

# Maine's Floating Offshore Wind Roadmap

October 2020

US EDA Grant: \$2.167 million for a strategic roadmap to develop offshore wind industry in Maine, focusing on:

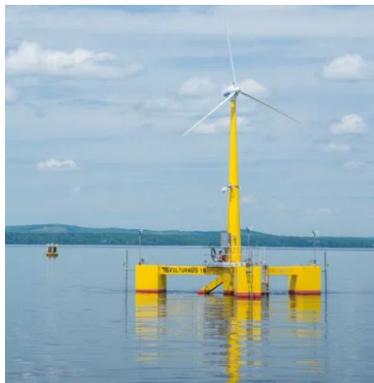
- Ports and infrastructure
- Manufacturing, supply chain, workforce
- Innovation
- Research array and research priorities
- Ocean and environmental data
- Stakeholder engagement



# Maine Offshore Wind Projects

**2013**

1/8 Scale Pilot Project - 1 turbine (Castine - UMaine, Cianbro, MMA)



**2023**

10 MW Demonstration Project - 1 turbine (Monhegan - NEAV LLC, UMaine)



**2025+**

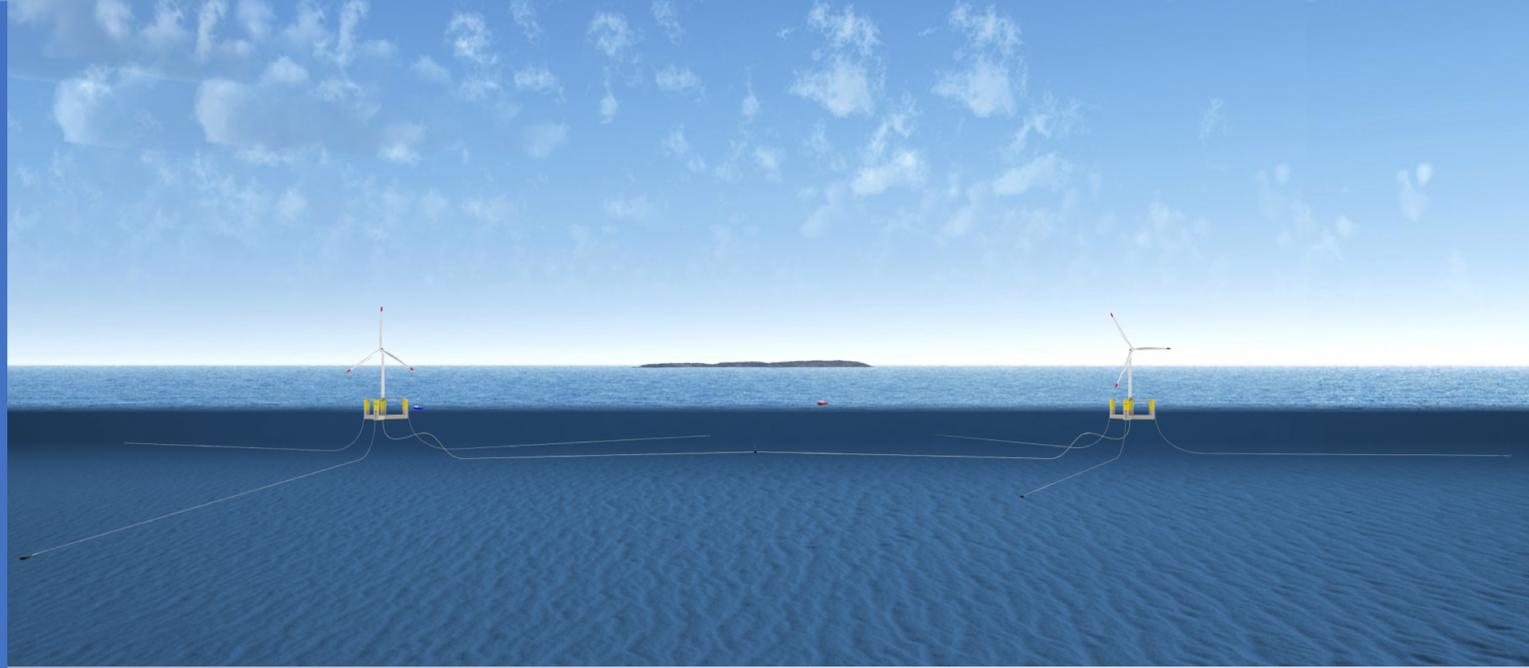
Research Array - 12 turbines or less (State, UMaine, NEAV LLC)



**TBD\***

Commercial Development - BOEM Leasing and Permitting

# Offshore Wind Research Array



## Research Array By the Numbers



**12** floating turbines or fewer

**16** square miles or smaller

# State of Maine

- Governor's Energy Office (lead)
- Department of Marine Resources
- Governor's Office of Policy Innovation and the Future
- Department of Inland Fish and Wildlife
- Department of Environmental Protection
- Department of Economic and Community Development
- Consensus Building Institute (Consultant - Facilitator)

## New England Aqua Ventus

- Diamond Offshore  
Wind/RWE Renewables

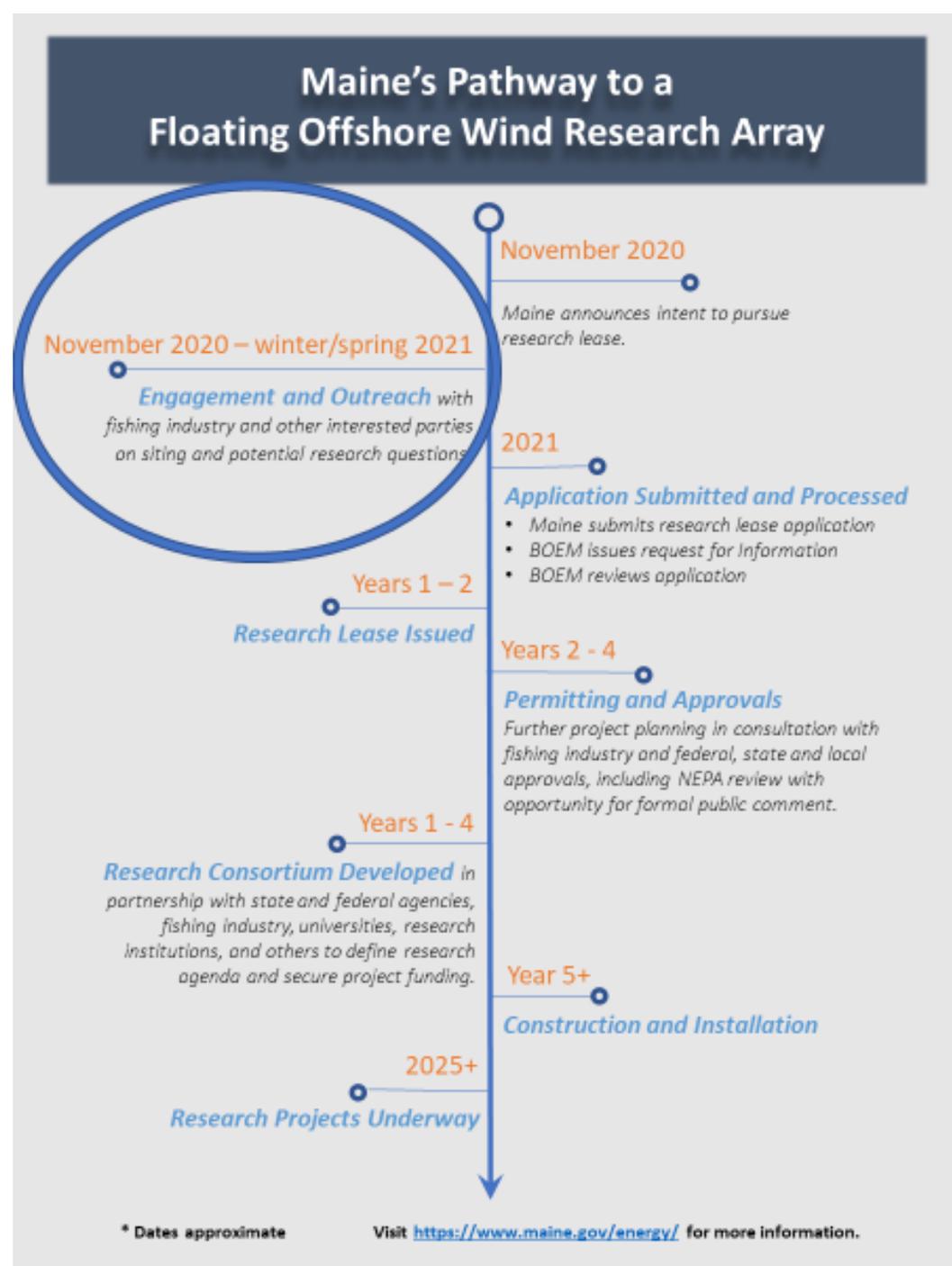
## University of Maine

- Technology

## Federal Agency and MA/NH State Agency Coordination

**Who is Involved?**

# Preliminary Project Timeline



## **Maine's Approach to Offshore Wind**

- **Measured and deliberative**
- **Answering questions and exploring opportunities**
- **Regional coordination and partnerships**
- **Commitment to listen and engage with stakeholders**



A wide-angle photograph of a vast blue ocean under a clear sky. In the foreground, dark, jagged rocks are visible, with white foam from a wave crashing against them. The text "Research Approach" is centered in the middle of the image in a large, white, sans-serif font.

# Research Approach

# Research Approach

- Research is the key driver for the array.
- Research objectives will inform:
  - Siting process and decision
  - Project design, layout and operations

## **Overall research process:**

- Key themes in initial application
- Further develop research approach through roadmap effort
- Stand up formal consortium, with diverse interests at the table
- Seek broad funding opportunities
- Open source data

# Research Approach



- Environment and ecological interactions
- Interactions with fishing activity
- Navigation
- Technology research and demonstration, including mooring systems
- Workforce education and training
- Others?