Briefing on the Floating Offshore Wind Shot and Deployment Goal

September 28, 2022

This webinar is being recorded

Presented By:

Kelly Visconti, Crosscut Team Lead, Office of the Undersecretary for Science and Innovation, U.S. Department of Energy

Jocelyn Brown-Saracino, Offshore Wind Lead, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy

Karen Baker, Chief, Office of Renewable Energy Programs, Bureau of Ocean Energy Management, U.S. Department of the Interior

Webinar Agenda

- **Welcome and Introduction of Speakers**
- **Overview of DOE Energy Earthshots Initiative**
  - Kelly Visconti, Crosscut Team Lead, Office of the Undersecretary for Science and Innovation, DOE
- **Floating Offshore Wind Energy Earthshot**
  - Jocelyn Brown-Saracino, Offshore Wind Lead, Office of Energy Efficiency and Renewable Energy, DOE
- **BOEM Floating Offshore Wind Deployment Goal**
  - Karen Baker, Chief, Office of Renewable Energy Programs, BOEM, DOI
- **Questions and Comments**
  - Questions submitted during registration and via the Q&A function

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Office of the
UNDER SECRETARY
FOR SCIENCE & INNOVATION

Floating Offshore Wind Energy Earthshot

Presented by:

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Energy Earthshots: Necessary and Urgent

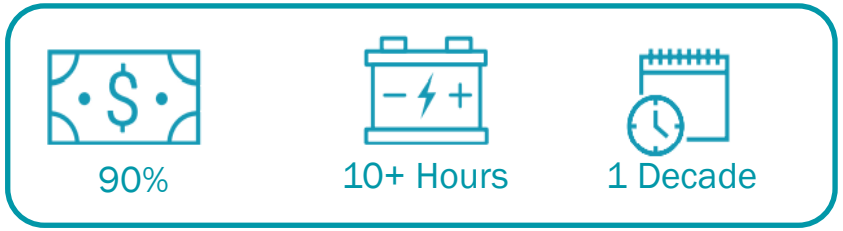
"**All-hands-on-deck**" targeting the **remaining, major RD&D breakthroughs** we know **we must achieve in the next decade** to solve the climate crisis and **achieve the Biden Administration's goals of 100% clean electricity by 2035 and a net-zero carbon economy by 2050.**

- Make a major impact to reduce emissions
- Address the hardest technology barriers
- Set highly ambitious targets
- Are compelling, bold, and inspirational
- Significantly engage stakeholders

Energy Earthshots Portfolio

ENERGY earthshots U.S. DEPARTMENT OF ENERGY | Hydrogen

ENERGY earthshots U.S. DEPARTMENT OF ENERGY | Storage™



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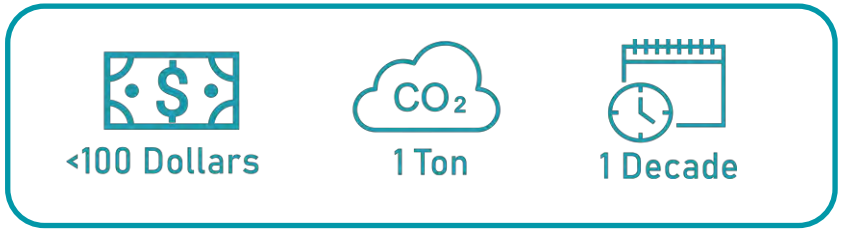

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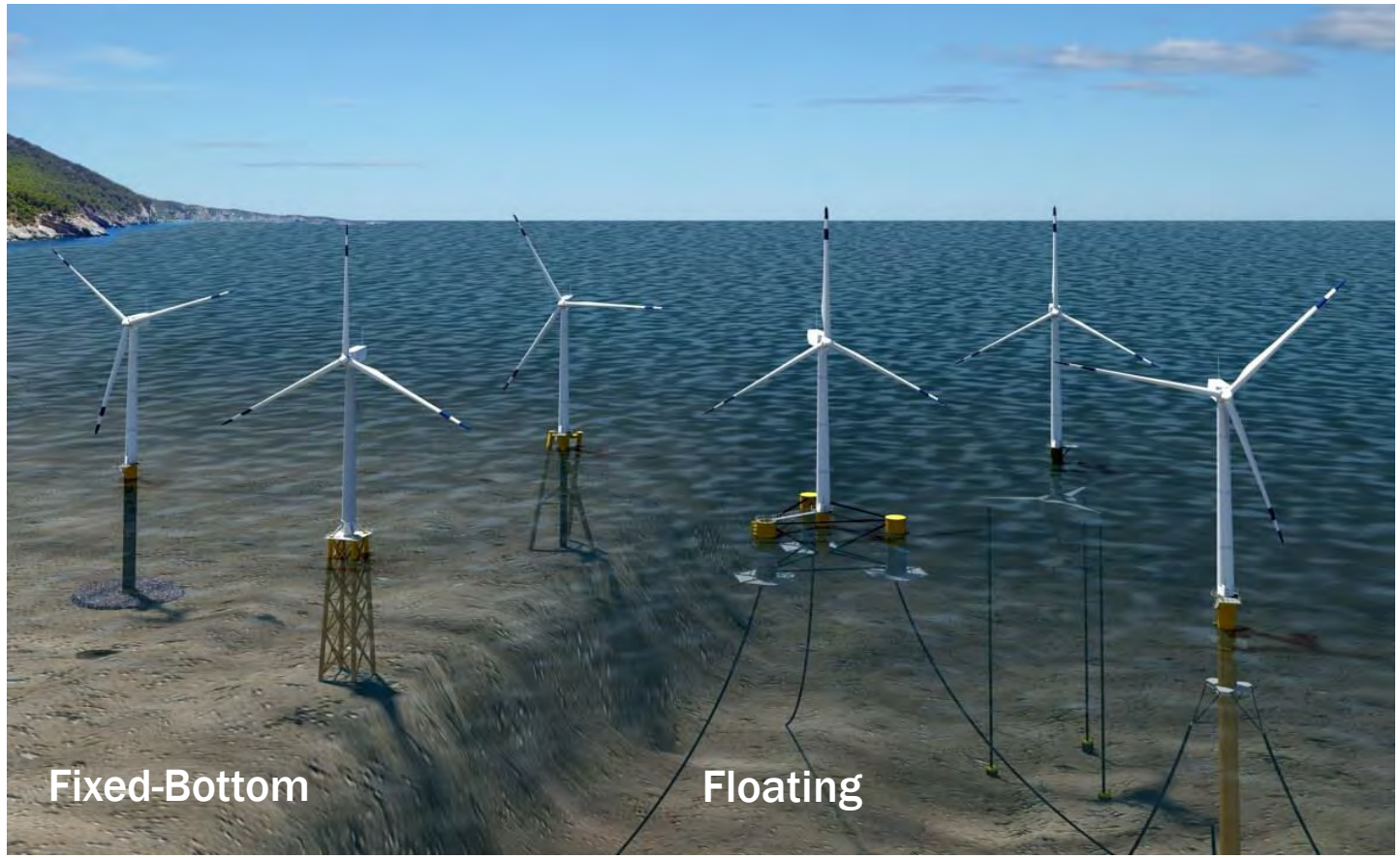
Floating Offshore Wind™

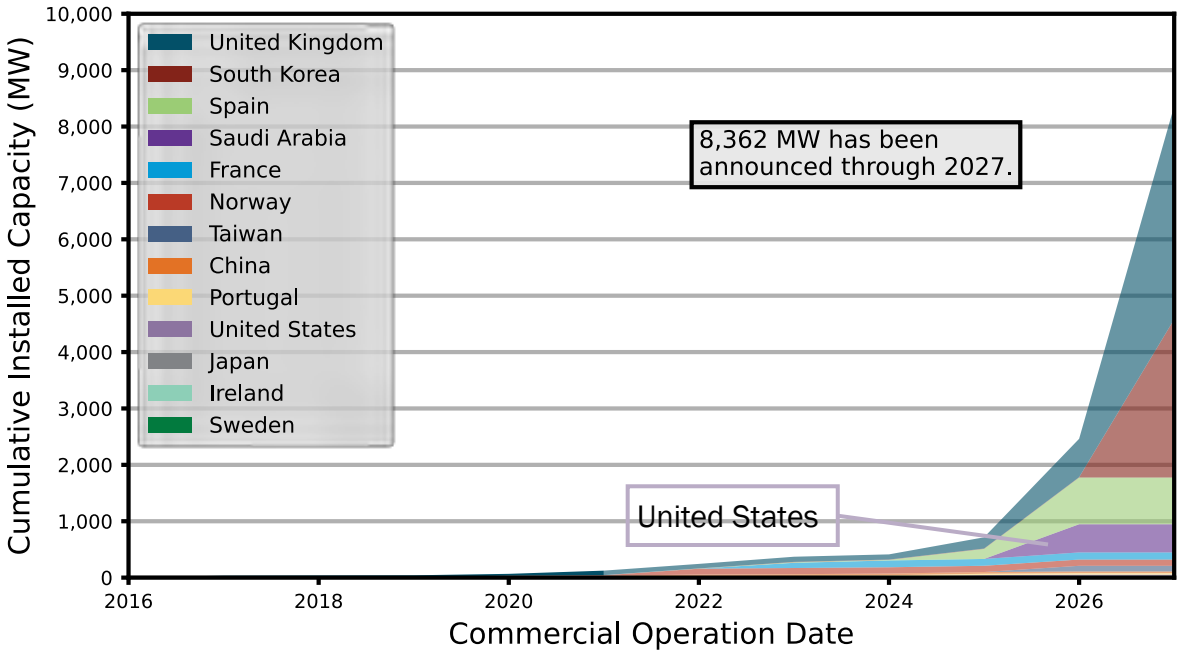
Floating offshore wind energy uses turbines mounted on floating platforms to capture wind resources over deep waters



Source: NREL

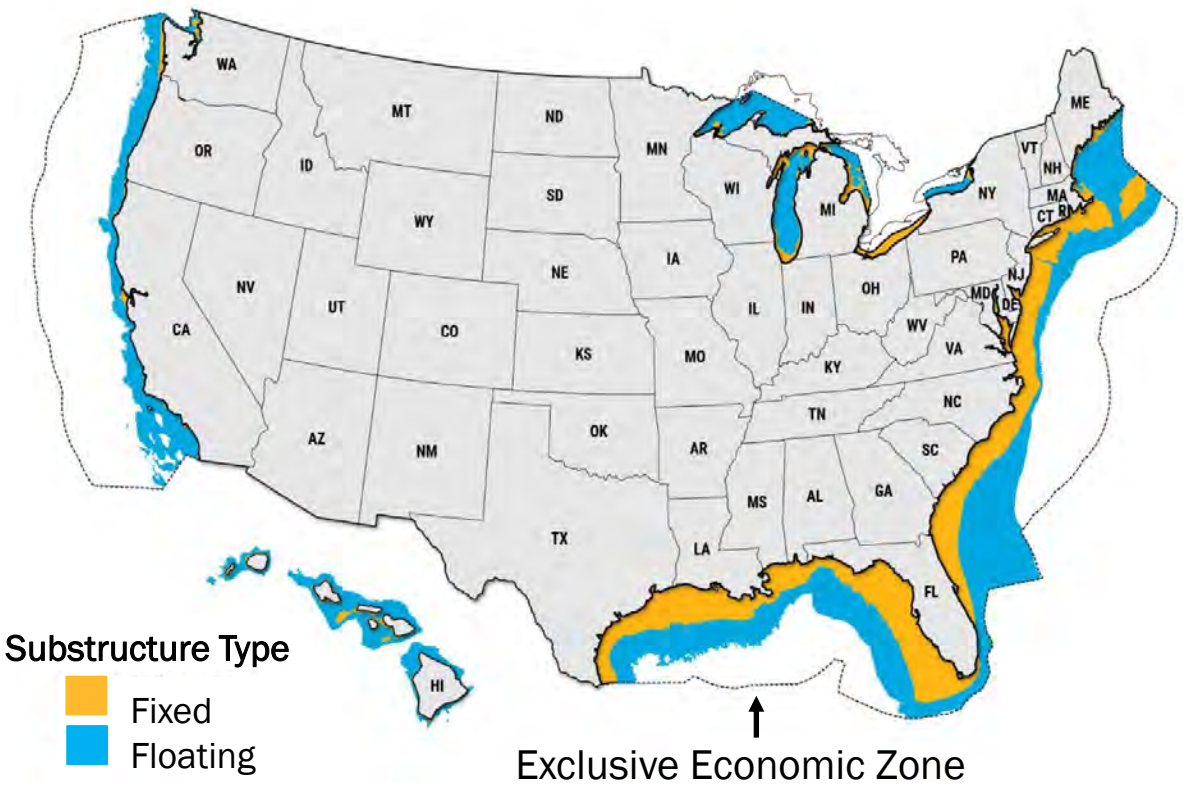
Global Floating Offshore Wind Deployment and U.S. Potential

Rapid growth of the floating global pipeline



Source: Offshore Wind Market Report: 2022 Edition

2/3 of U.S. wind resource is over deep waters



Source: NREL

Floating Offshore Wind – The Opportunity

Why Floating Offshore Wind?

- 2/3 of US offshore wind resource
- Regional & economy-wide decarbonization
- Coastal and national economies
- Potential for U.S. innovation & leadership

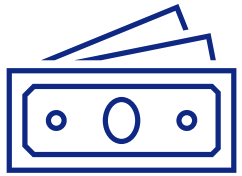
Why Now?

- Cusp of commercialization
- Rapid period of growth around the world

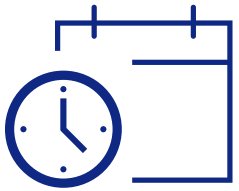
ENERGY earthshots U.S. DEPARTMENT OF ENERGY | Floating Offshore Wind™

The ***Floating Offshore Wind Shot*** will drive U.S. leadership in floating offshore wind design, manufacturing, and deployment to decarbonize our economy and revitalize our coastal economies

Reduce the cost of floating offshore wind electricity by >70% in deep waters by 2035*



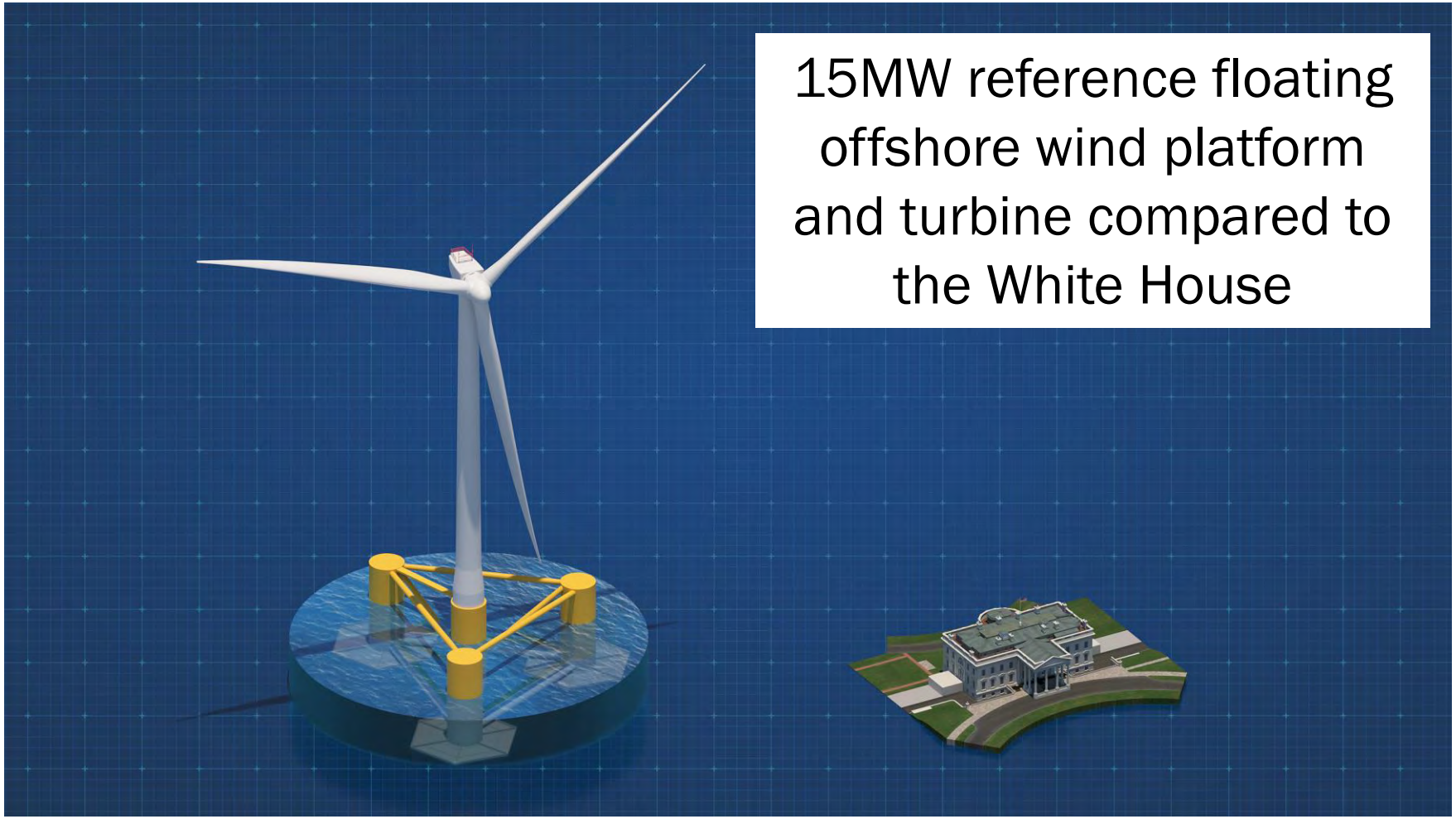
>70% Reduction



2035

*70% cost reduction to $45 per megawatt hour (MWh).

Scale of Floating Offshore Wind Systems



Source: NREL

Key Needs for Floating Offshore Wind Development

- Cost Reductions
- Expanded, Just, and Sustainable Deployment
- Domestic Supply Chains, Including Ports
- Transmission Development
- Co-Generation Applications

Interagency Partners

Technical R&D Contributions to Achieve the Target

Serial Manufacturing and Integrated Designs

– Serial manufacturing of hundreds of turbine systems and platforms per year

Develop Larger Turbines with Higher Generation Capacity

– Component scaling with optimized systems and advanced controls

Systems Engineering & Co-Design

– Optimization including controls, mooring, anchoring & supply chain

Increase Operational Reliability

– Predictive and remote maintenance capabilities

– Circular economy and lifetime extension practices

Photo: Harland and Wolff Heavy Ind.


Photo: Siemens

Alignment of DOE Resources

Wind Energy Technologies Office

RD&D in technology innovations, environmental research, community engagement, grid integration and co-generation technologies

Office of Electricity

Transmission and grid integration

Advanced Manufacturing Office

Manufacturing advancements for the US supply chain

Loan Programs Office

Financing for projects, vessels, and supply chain development

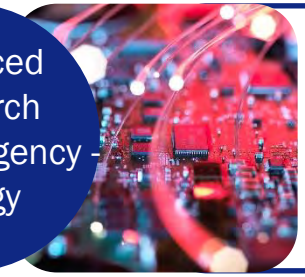
Office of Economic Impact and Diversity

Community engagement and energy justice priorities

Office of Science

Meteorological and ocean model characterization; materials RD&D

Advanced Research Projects Agency – Energy



RD&D in technology innovations

Hydrogen and Fuel Cell Technologies Office

RD&D in hydrogen co-generation

Office of Clean Energy Demonstrations

Demonstration projects at scale

~$50 million in new R&D funding

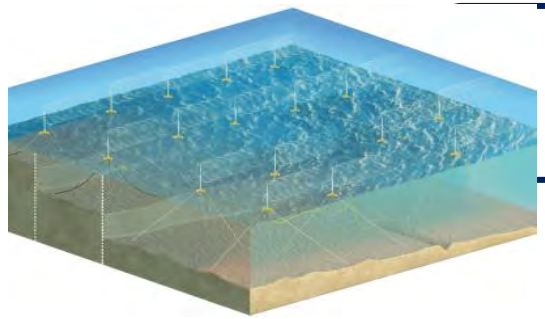
ATLANTIS Phase II

West Coast Port Strategy Study

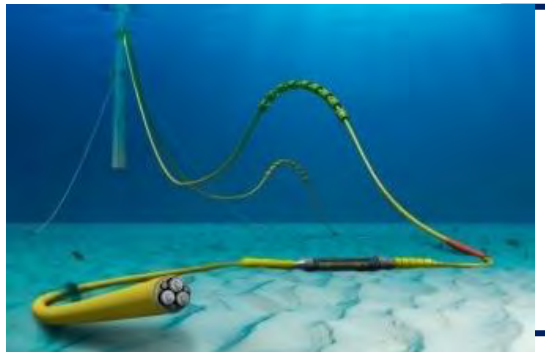
NOWRDC Ocean Co-Use and Transmission Research Awards

FLoating Offshore Wind ReadINess (FLOWIN) Prize

Environmental Research Award: West Coast Bat Monitoring Project



Floating Offshore Wind Array Design Project



West Coast Offshore Wind Transmission Literature Review and Gaps Analysis

Alignment with Broader DOE Research & Resources

Broad RD&D portfolio

Floating turbine and platform technology, environmental research, ocean co-use research, and demonstration projects

Building a Better Grid Initiative

More than $20 billion from the Bipartisan Infrastructure Law, Inflation Reduction Act, and existing DOE programs

Supply Chain Development

National Supply Chain Roadmap, National Offshore Wind Workforce Roadmap, and Loan Programs Office financing

Next Step:
***Floating Offshore Wind Energy Earthshot* Summit**
(early 2023)

BOEM
Bureau of Ocean Energy Management

Outer Continental Shelf (OCS) Renewable Energy

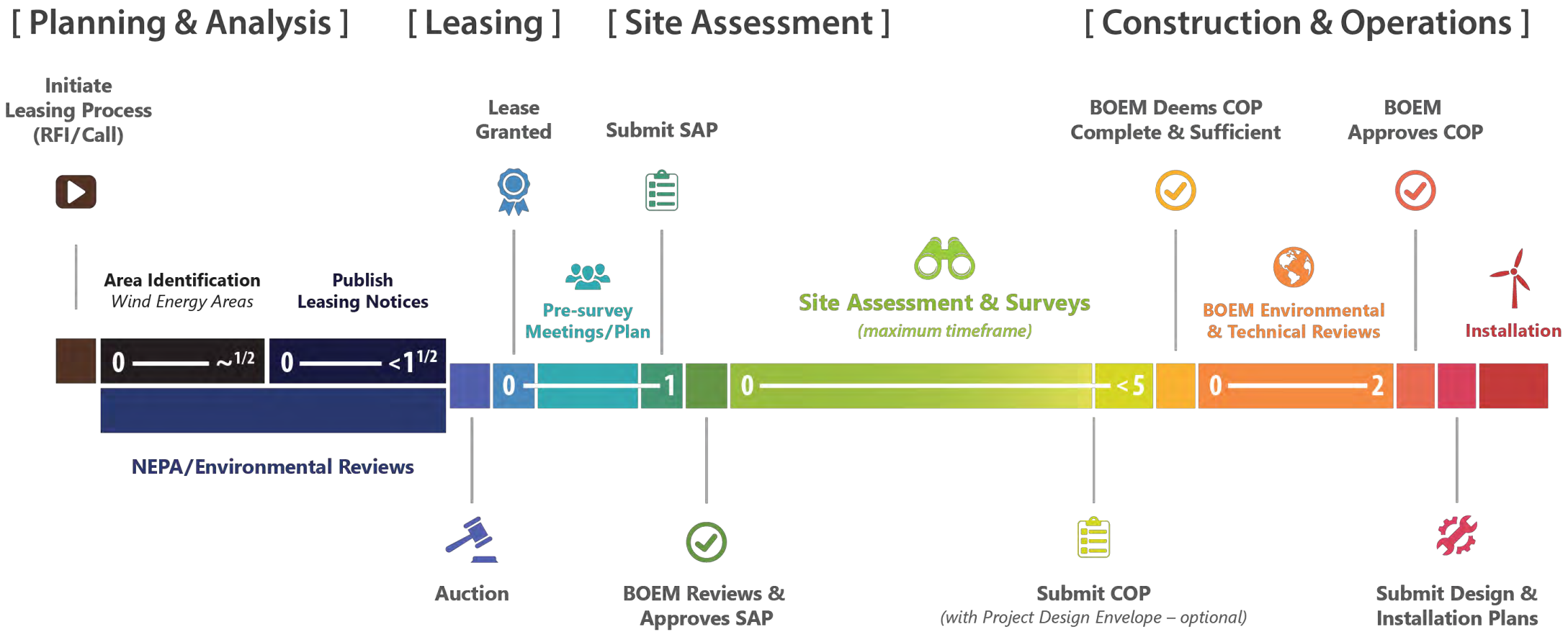
Karen Baker

Office of Renewable Energy Programs Chief

U.S. Offshore Wind Update: Floating Offshore Wind Deployment Goal

September 28, 2022 – Virtual

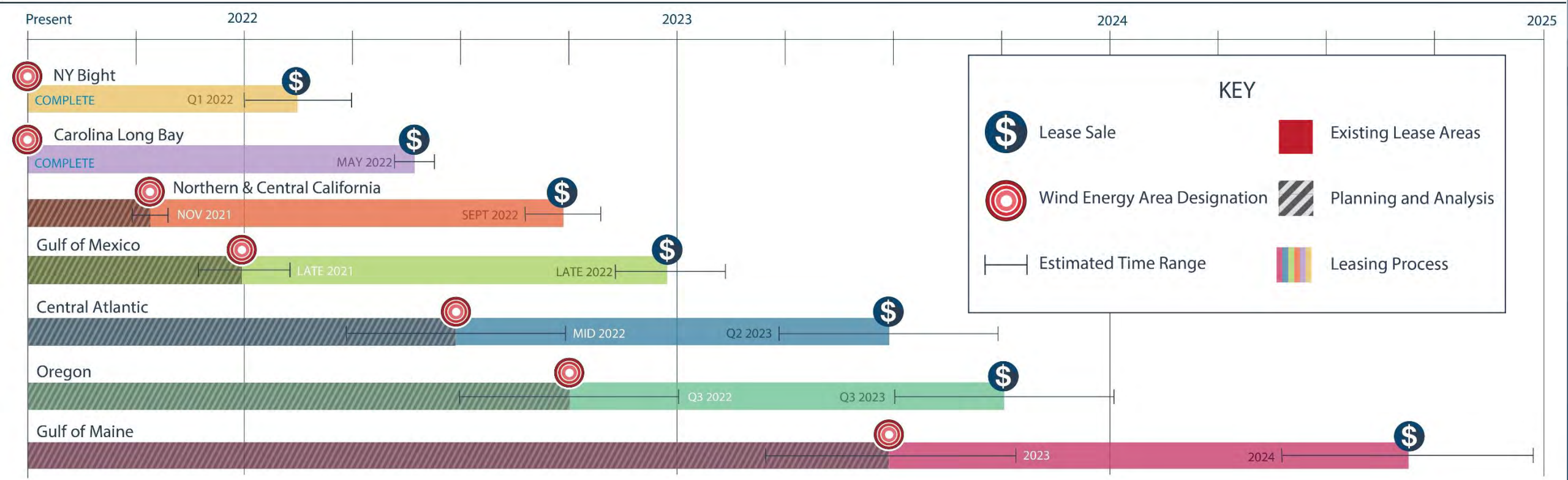
Renewable Energy Leasing Process: From RFI/Call to Operation



Renewable Energy Program by the Numbers

Competitive Lease Sales Completed:	10
Active Commercial Offshore Leases Issued:	27
Active Research Offshore Leases Issued:	2
Site Assessment Plans (SAPs) Approved:	15
General Activities Plans Approved:	1
Construction and Operations Plans (COPs):	
• Approved Since 2021	2
• NEPA Process Underway	10
• Other COPs Submitted	6
• Anticipated Within Next 12 Months	1
Guidance:	11
Leasing Under Consideration:	5
Steel in the Federal Waters:	2020

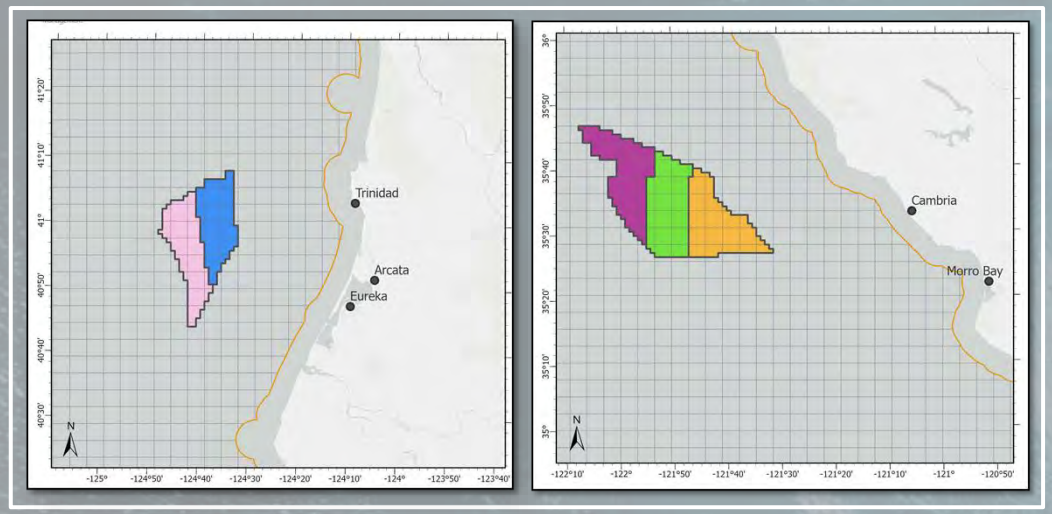
BOEM Offshore Wind Leasing Path Forward 2021-2025



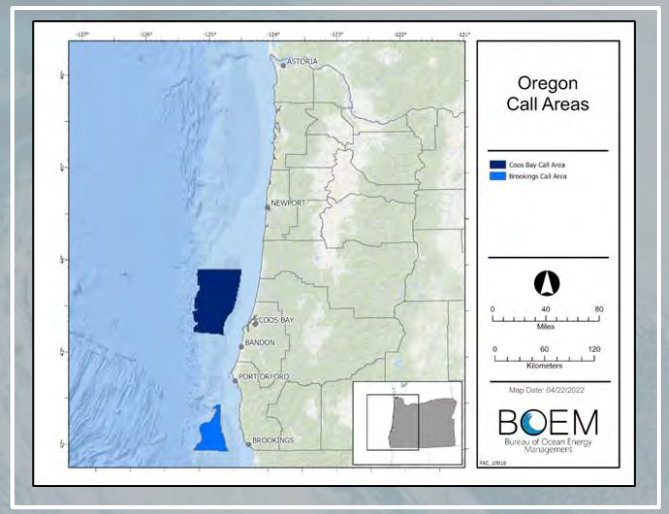
Our path forward will help achieve the first-ever **national offshore wind goal** to deploy **30 gigawatts of offshore wind by 2030,** which would support nearly **80,000 jobs**

Renewable Energy Planning: Deep Water

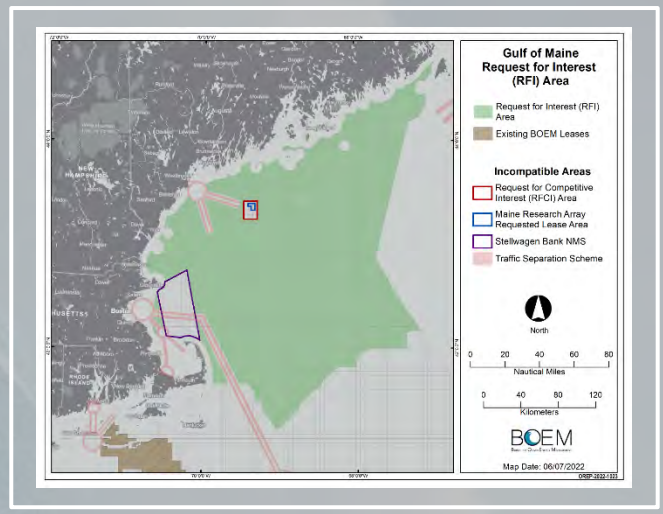
California Proposed Lease Areas



Oregon Call Areas



Gulf of Maine RFI Areas



Wind Turbine Foundations: Shallow & Deep Water

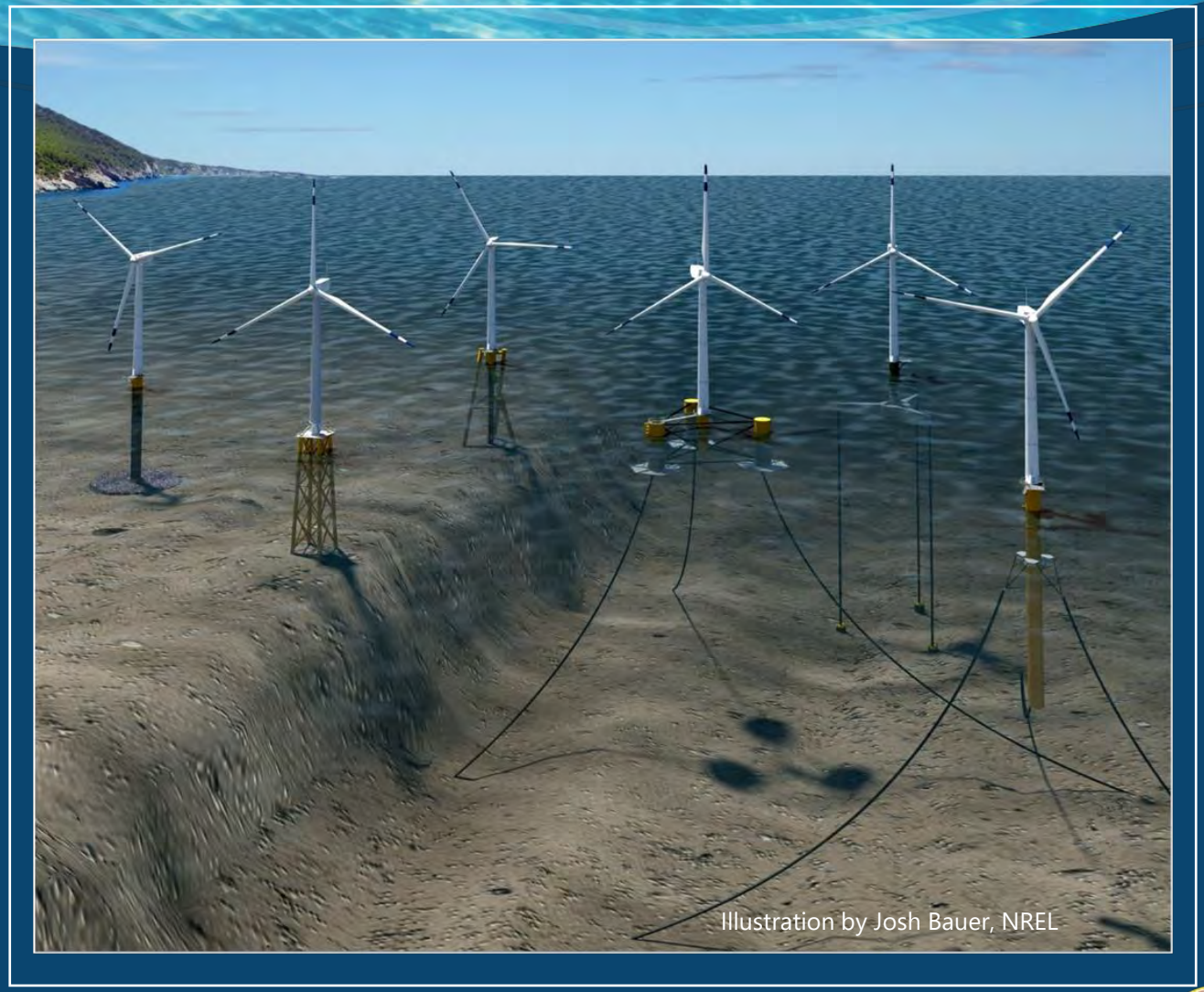
Monopiles & Jackets

- Shallow Water (< 60m)

Floating Platforms

- Deep Water (> 60m)

Floating Wind Deployment Goal
15 GW by 2035



Bureau of Ocean Energy Management

U.S. Department of the Interior

BOEM.gov

Karen Baker, karen.baker@boem.gov

Question and Comment Period

- Please submit all questions to the Q&A Box

For additional information on these efforts please visit:

DOE Floating Offshore Wind Shot Homepage: https://www.energy.gov/eere/wind/floating-offshore-wind-shot

DOE Floating Offshore Wind Shot Factsheet: https://www.energy.gov/sites/default/files/2022-09/floating-offshore-wind-shot-fact-sheet.pdf

WETO Newsletter: https://www.energy.gov/eere/wind/wind-rd-newsletter

White House Factsheet: https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/15/fact-sheet-biden-harris-administration-announces-new-actions-to-expand-u-s-offshore-wind-energy/#:~:text=DOE%20and%20the%20National%20Science%20Foundation%20will%20also,than%2070%25%2C%20to%20%2445%20per%20megawatt-hour%20by%202035.