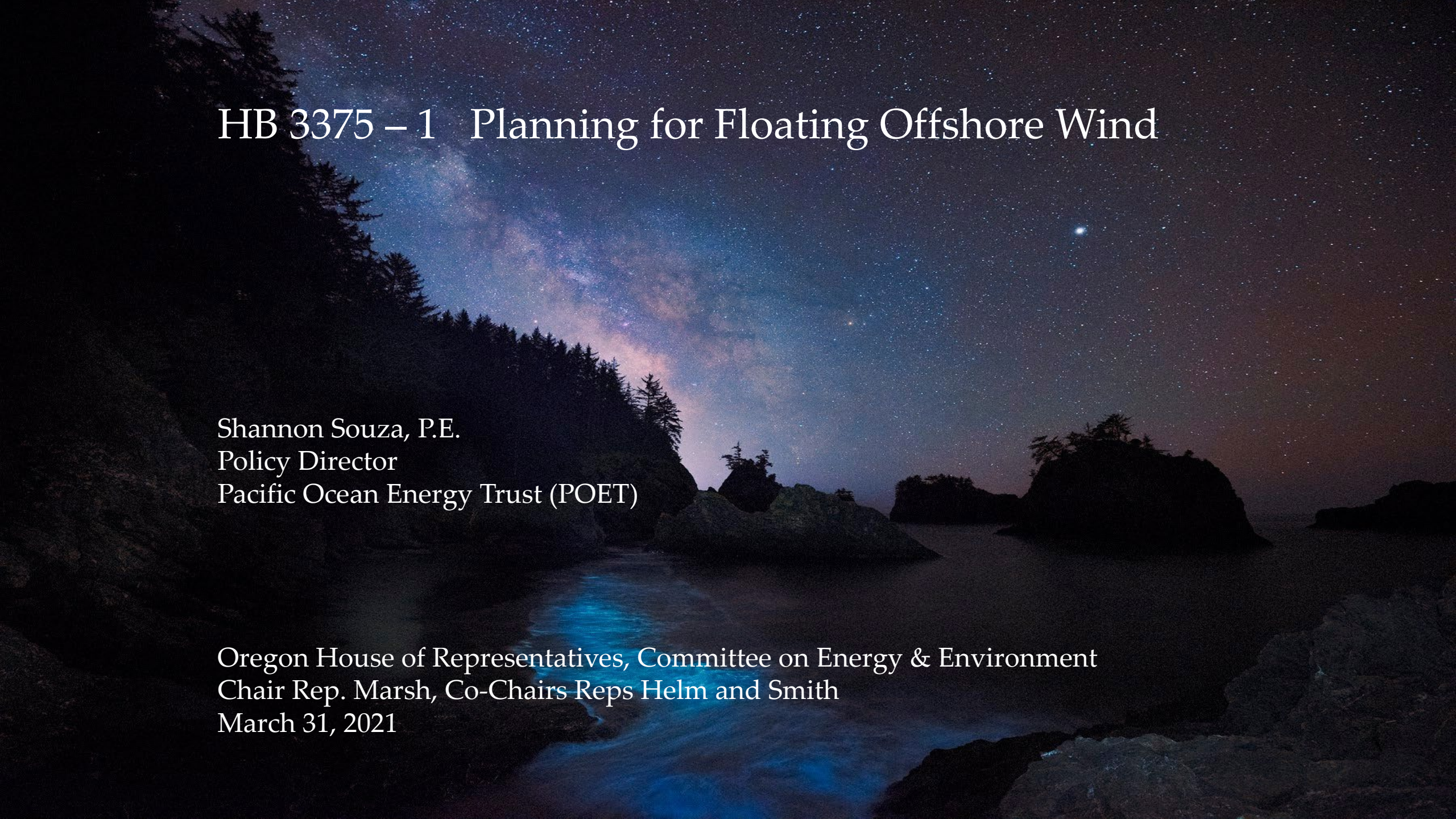


HB 3375 – 1 Planning for Floating Offshore Wind

Shannon Souza, P.E.
Policy Director
Pacific Ocean Energy Trust (POET)

Oregon House of Representatives, Committee on Energy & Environment
Chair Rep. Marsh, Co-Chairs Reps Helm and Smith
March 31, 2021

poet
PACIFIC OCEAN ENERGY TRUST

Pacific Ocean Energy Trust (POET)

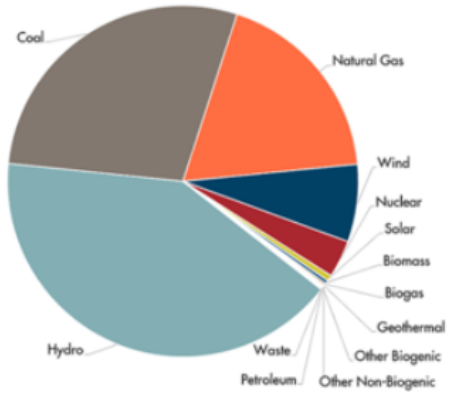
Committed to the responsible development of marine renewable energy in the Pacific Region.

OWET RESEARCH

OWET funds research intended to reduce barriers to getting ocean energy projects into the water.

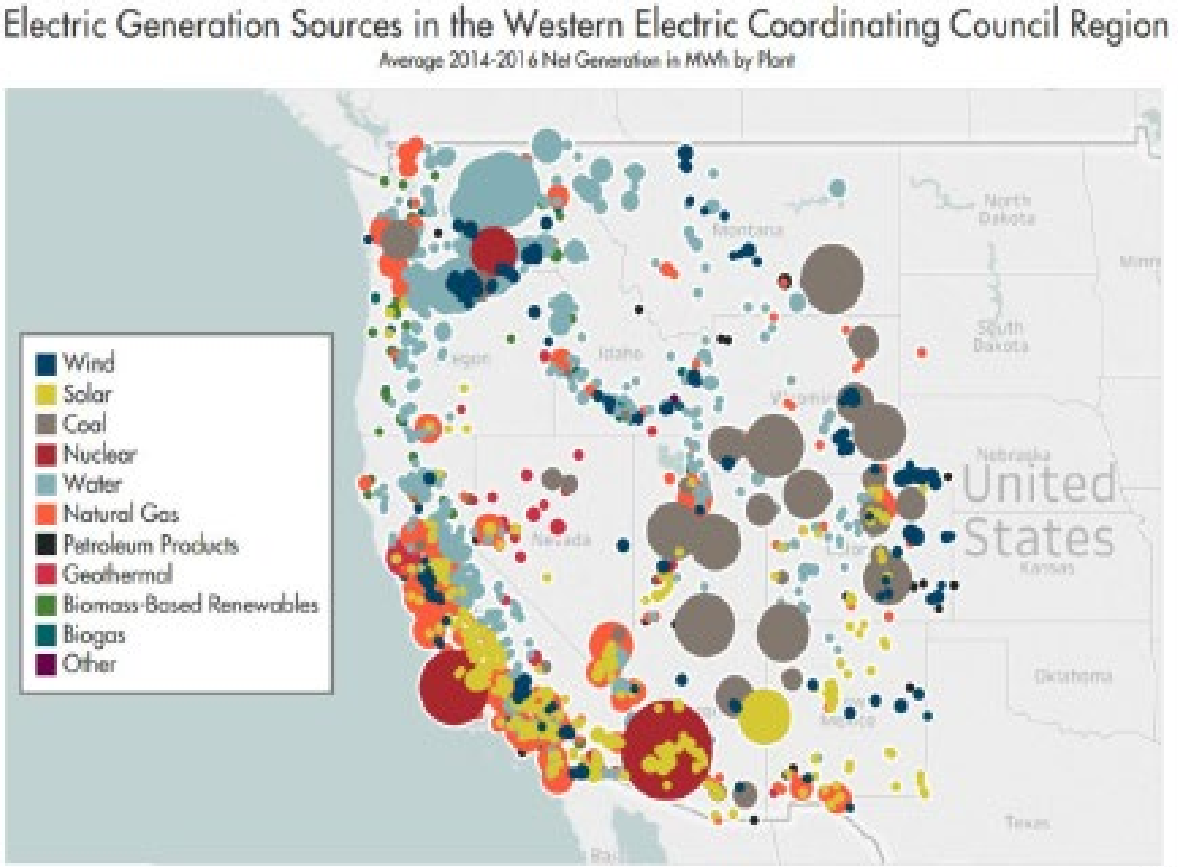
Oregon is an Energy Importer

Electricity



41.1% Hydropower
28.4% Coal
18.5% Natural Gas
7.1% Wind
3.4% Nuclear
.54% Solar
.33% Biomass
.16% Biogas
.12% Geothermal

Where Oregon's Electricity Comes From



OREGON DEPARTMENT OF ENERGY

almost half of which is from non-renewable generation capacity

(100% Clean to the North (Washington) and South (California))

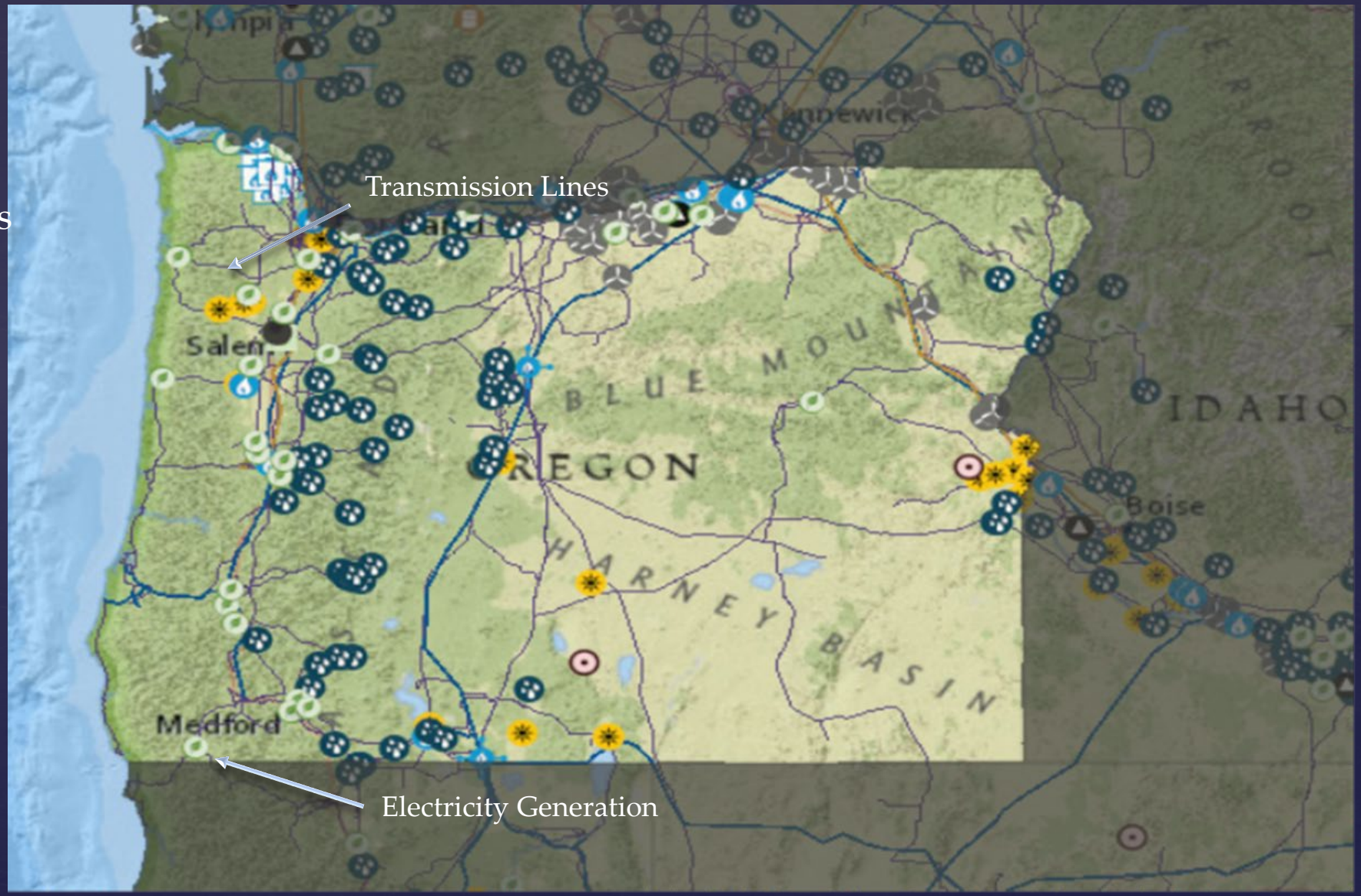
Oregon's Coastal Communities
rely on Imported Energy to meet our most basic needs

via

Constrained Transmission Lines

through

Catastrophe Prone Routes



Oregon Coastal Communities are Being Hit First and Hardest by Climate Change

Oregon's Coastal Communities will be without energy for 3-6 months
(or longer if the I-5 Corridor populations are impacted) after a Cascadia 9.0 event

Bureau of Ocean Energy Management (BOEM)
Manages the development of the U.S. Outer Continental Shelf energy and mineral resources

U.S. DEPARTMENT OF THE INTERIOR

Search the site...

BOEM
Bureau of Ocean Energy Management

OPERATING STATUS | CONTACT US | EMPLOYMENT | CORONAVIRUS UPDATES

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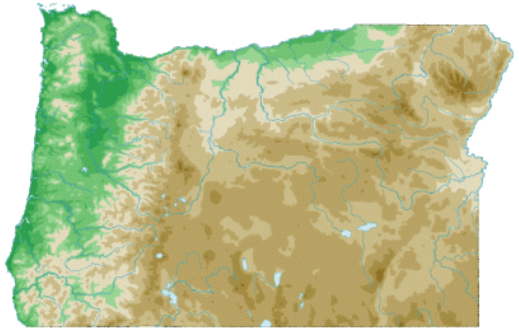
HOME

Oregon Activities

What's New?



- March 11, 2021 - OROWindMap Introductory Webinar
- February 16, 2021 – BOEM Issues Lease to Oregon State University for the PacWave South Project, the First Wave Energy Research Project in Federal Waters Offshore the U.S. West Coast.
- January 19, 2021 – BOEM issued a Finding of No Significant Impact and offered a Marine Hydrokinetic Research Lease to Oregon State University for the PacWave South Project
- November 17, 2020 - Oregon Offshore Wind Mapping Tool (OROWindMap)
- June 4, 2020 - BOEM Oregon Intergovernmental Renewable Energy Task Force webinar
- May 13, 2020 - Understanding Potential Effects of West Coast Offshore Renewable Energy Development on Marine Mammals. Presenter: Desray Reeb, Marine Biologist, BOEM.
- An Introduction to Floating Offshore Wind webinar hosted by the National Renewable Energy Laboratory (NREL) on February 26, 2020.
- March 11, 2020 - West Coast Science Exchange Webinar Series: Understanding the Potential Effects of Offshore Wind Development to Fishes, Essential Fish Habitat and Fisheries | Presenter: Donna Schroeder, Marine Ecologist, BOEM
- December 9, 2019 - Invitation for Stakeholder Input & Study Ideas for BOEM-Funded Research in Pacific OCS (offshore California, Oregon, Washington, Hawaii) FISCAL YEAR 2021
- September 27, 2019 - Intergovernmental Renewable Energy Task Force Meeting

Projects

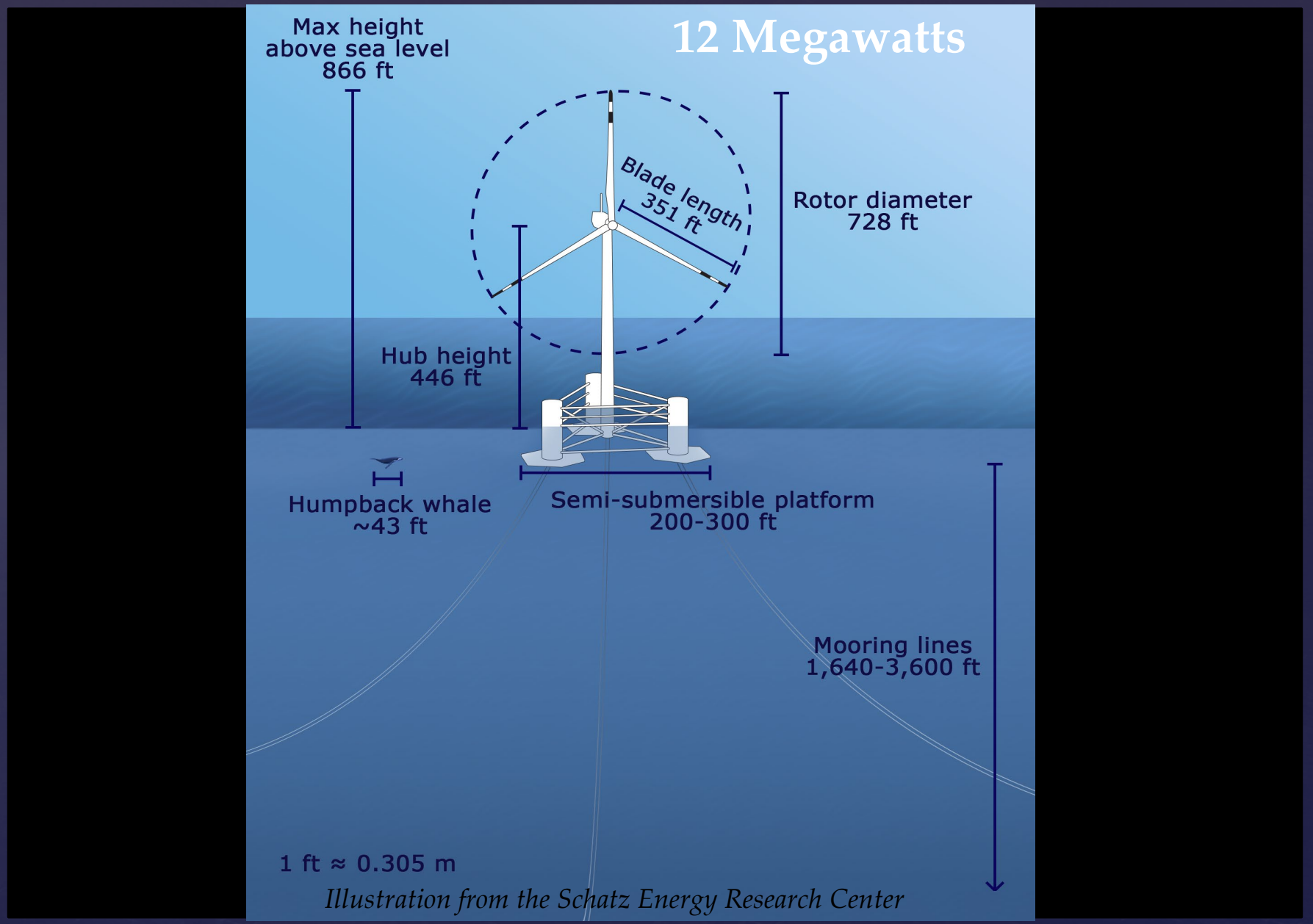
- PacWave South Project (formerly known as the Pacific Marine Energy Center - South Energy Test Site (PMEC-SETS) Project
- WindFloat Pacific - Offshore Wind Pilot Project - BOEM is no longer processing this lease request.

OROWindMap

BOEM-Oregon Offshore Wind Planning

BOEM's Oregon Task Force is identifying areas suitable for Floating Offshore Wind (FOW) Turbines.

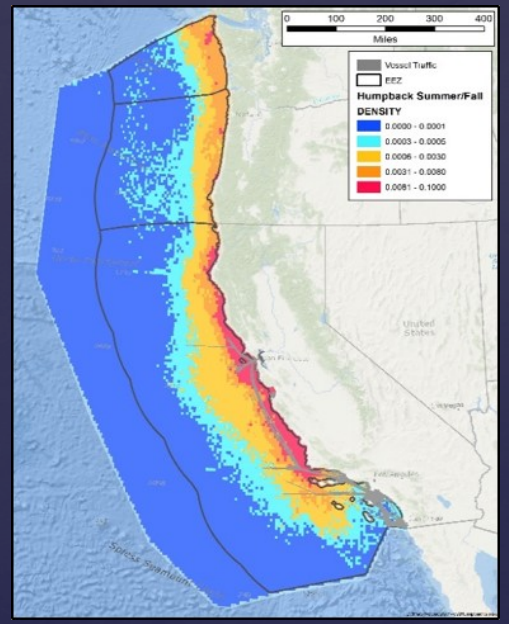
FOW can operate in deeper waters and located to minimize conflicts with shipping, fishing & viewsheds.



OCS Renewable Energy Authorization Process

Multi-year Process

Planning & Analysis

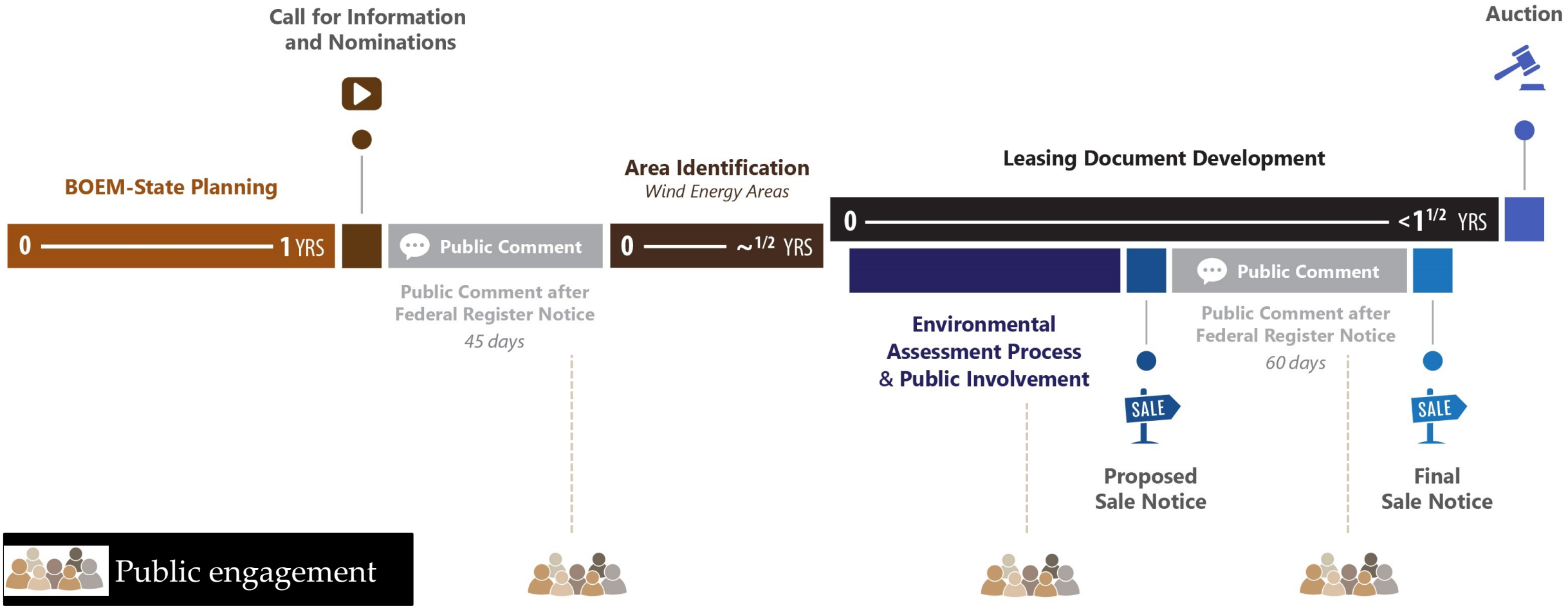


Leasing

Site Assessment

Construction & Operations

Oregon Planning and Public Input Opportunities Prior to a Lease Auction



*A lease provides the lessee the right to submit a Site Assessment Plan (SAP) and a Construction and Operations Plan (COP) for technical and environmental review and approval. A lease does not, by itself, authorize any activity within the leased area.

OCEAN is a non-profit formed in 2020 by coastal citizens to expedite and influence the inquiry into the opportunities and challenges of Floating OSW.

OCEAN
Oregon Coast Energy Alliance Network

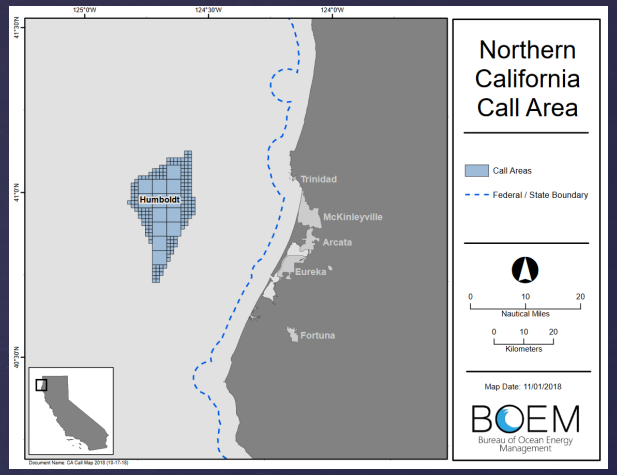
OCEAN's purpose is to maximize and multiply the benefits and minimize the conflicts of FOW and other Advanced Energy Technologies for Oregon's Coastal Communities.

Port, Climate Action, Tribes, Maritime Commerce, Resilience, Manufacturing, Sustainable Development, Conservation, Economic, Workforce & Supply Chain Development, Labor, Public & Investment Interests

Opportunity: S. Oregon and N. California Coasts access world class wind resource
California is ahead of Oregon in the process but facing Beneficial Use and Transmission barriers

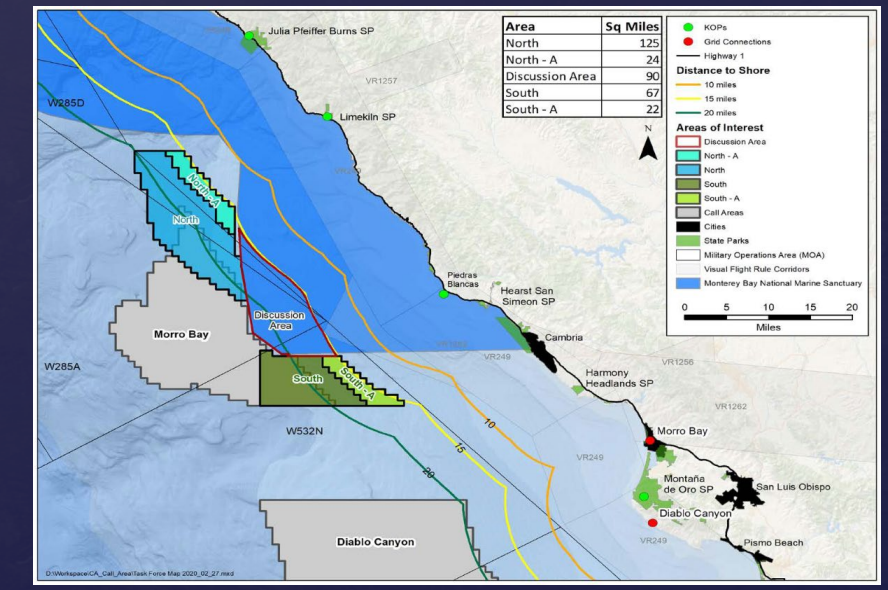
Northern California Call Area:

- Limited transmission network capacity
- Electrically isolated from market



Central California Call Area:

- Close to Market
- Beneficial Use Conflicts:
  - Department of Defense,
  - Marine Sanctuary
  - Commercial Fisheries



Opportunity:
Oregon's Existing Transmission can Accommodate 2-3 GW of floating wind electricity

"Over 2 gigawatts of offshore wind can be carried by current transmission to

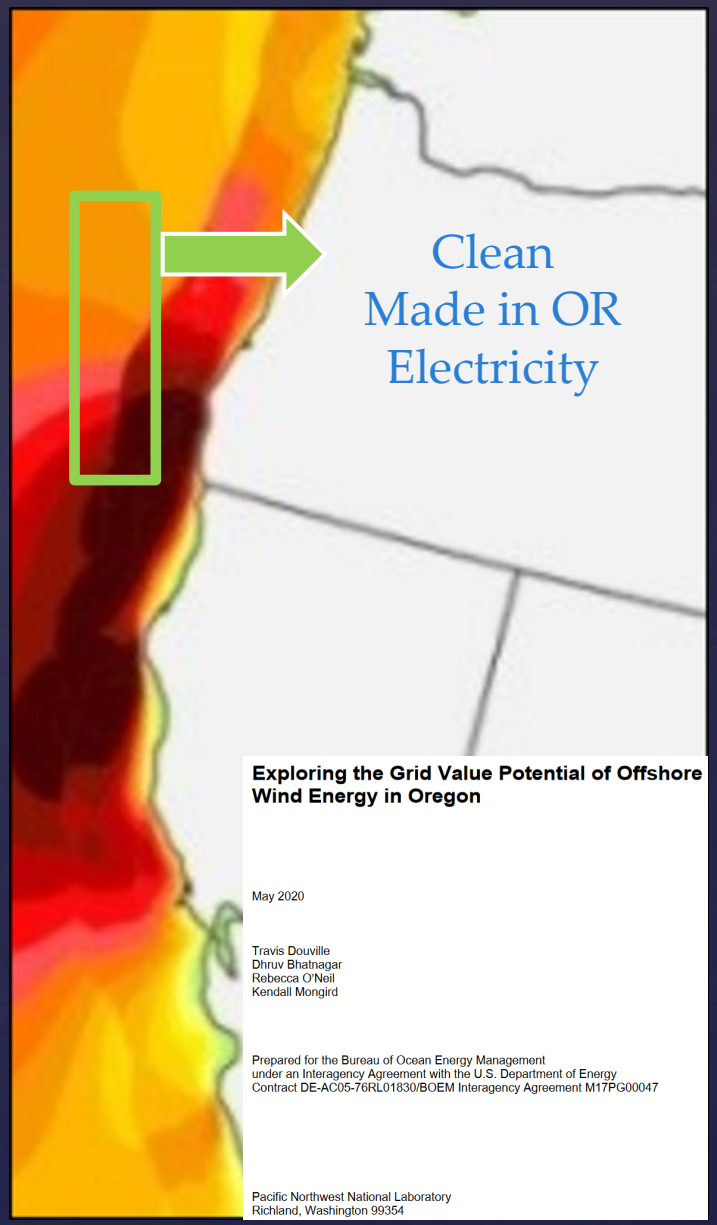
strengthen coastal grids,

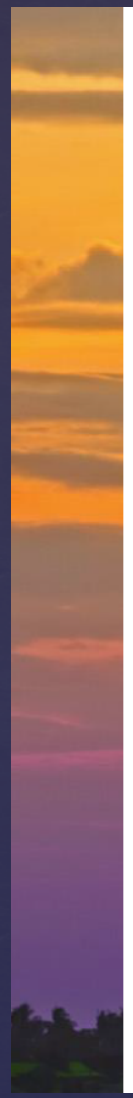
allow for additional renewable energy integration from the east,

and reduce power flows into Oregon

without exporting significant power. "

https://www.boem.gov/sites/default/files/documents/regions/pacific-ocs-region/environmental-analysis/BOEM-2020-026.pdf





Pacific Northwest NATIONAL LABORATORY

Summary

OSW complements regional clean energy sources

- Consistency of OSW speeds in late summer may benefit constrained hydropower
- OSW could help hydropower balance Gorge wind (and vice versa)
- OSW shows moderate complementarity with solar in winter when loads peak
- OSW indicates similar generation ramp rates to northwest “terrestrial” wind, smoother than WY wind

OSW naturally complements loads better than Northwest onshore wind

- Load complementarity is on par with solar in the winter, particularly for northern OSW locations
- Modest complementarity in the spring and summer
- OSW is largely uncorrelated with loads in the fall

Oregon Offshore Wind Grid Integration Analysis:

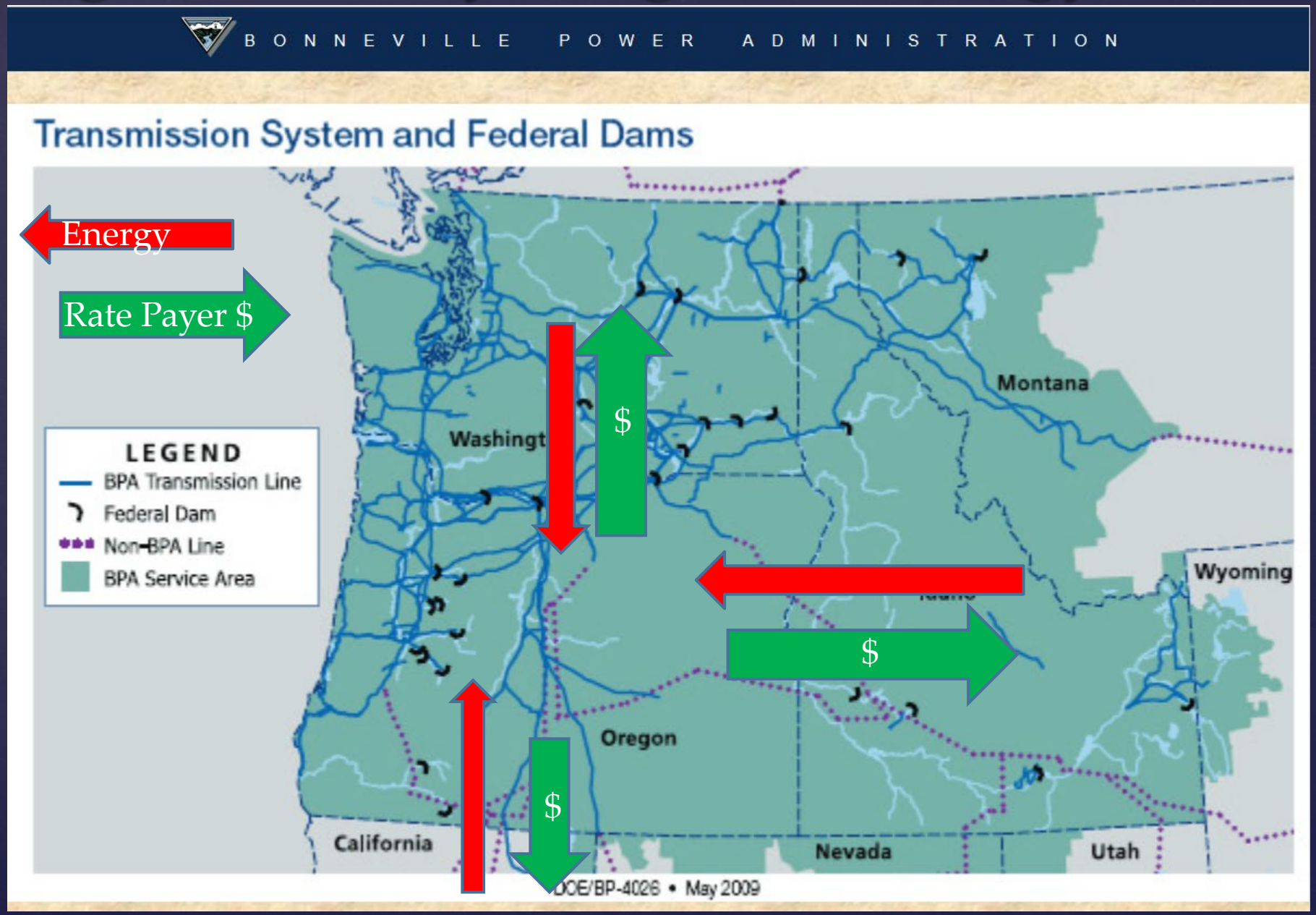
U.S. Department of Energy/National Renewable Energy Laboratory (NREL) will comprehensively assess the potential value of offshore wind energy to the Oregon power system, specifically as a possible non-wires alternative for the electric grid.

(1) develop scenarios for potential offshore wind deployment in the context of the Oregon power generation and transmission landscape,

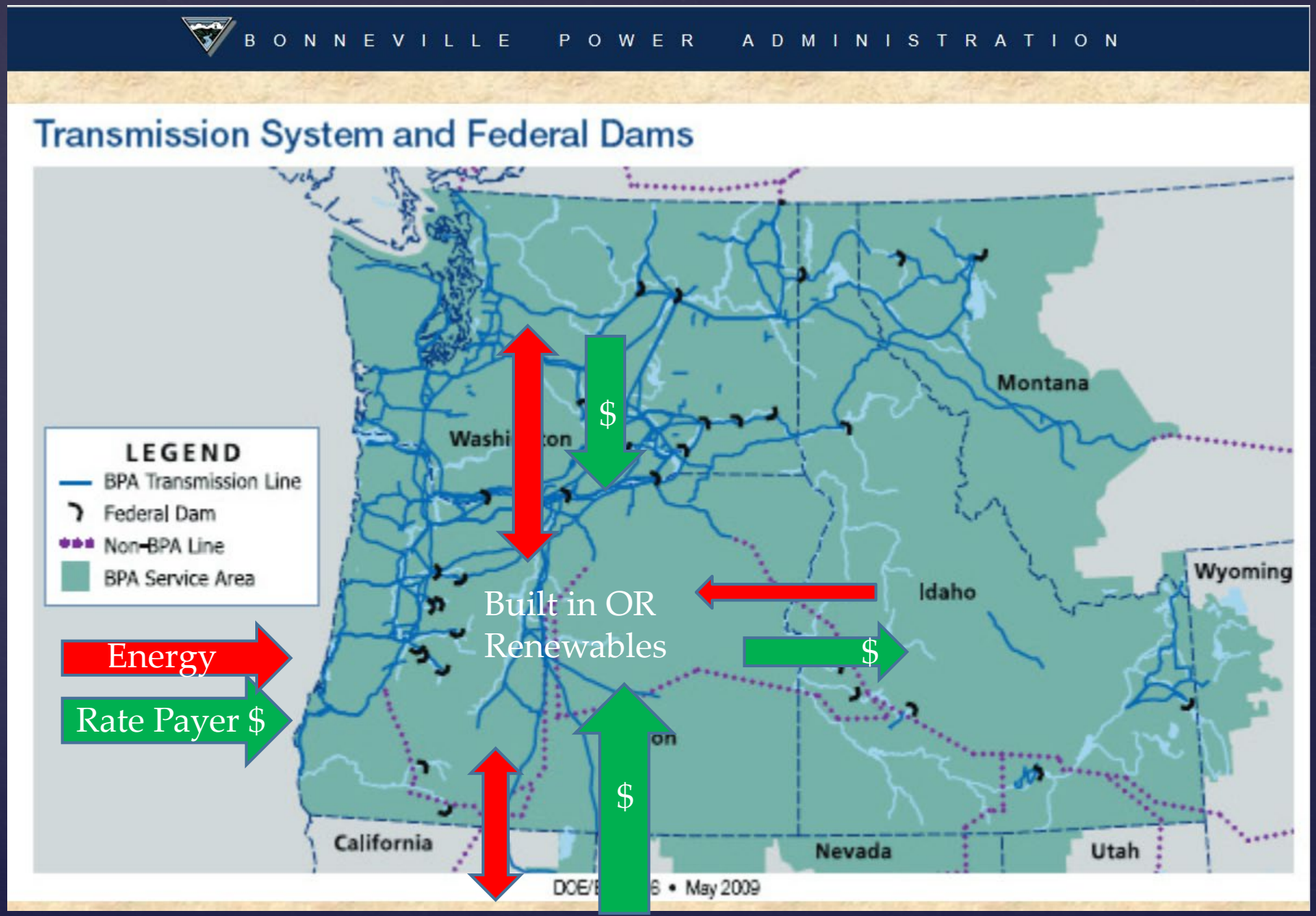
(2) model offshore wind power generation at high spatial and temporal resolution, and

(3) assess key potential grid benefits and challenges for the deployment scenarios via NREL's production cost models.

Oregon in today's regional energy market:

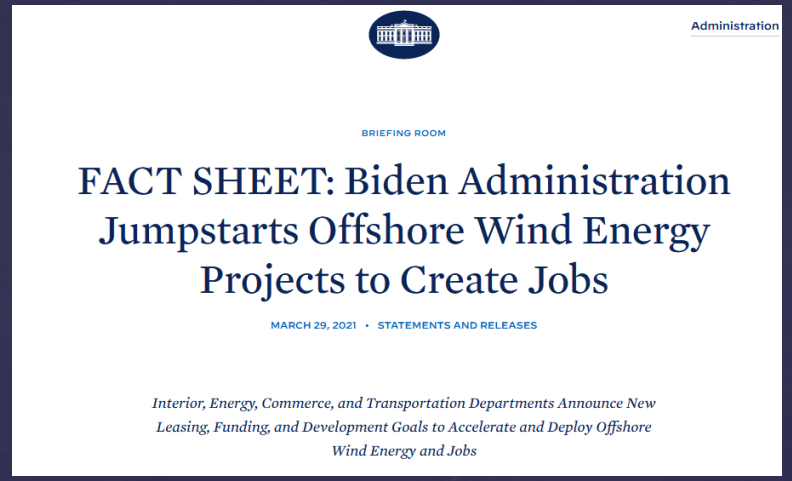


Oregon's OSW opportunity for tomorrow's regional energy market:



Opportunity: Federal Support for OSW Development

2020 Stimulus Bill creates stand alone OSW Investment Tax Credit:
30% for any projects where construction begins before 2026
(spending 5% of the total cost of project) and is not subject to any phase down.



Administration

BRIEFING ROOM

FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs

MARCH 29, 2021 • STATEMENTS AND RELEASES

Interior, Energy, Commerce, and Transportation Departments Announce New Leasing, Funding, and Development Goals to Accelerate and Deploy Offshore Wind Energy and Jobs

- Investing in American infrastructure to strengthen the domestic supply chain and deploy offshore wind energy
  - Supporting critical research and development and data-sharing
  - Build next generation industries in distressed communities

Biden American Jobs Plan:

- Advance ambitious wind energy projects to create good-paying, union jobs

Opportunity:

Voluntary, existing & emerging off-taker markets +

Federal investment tax credit +

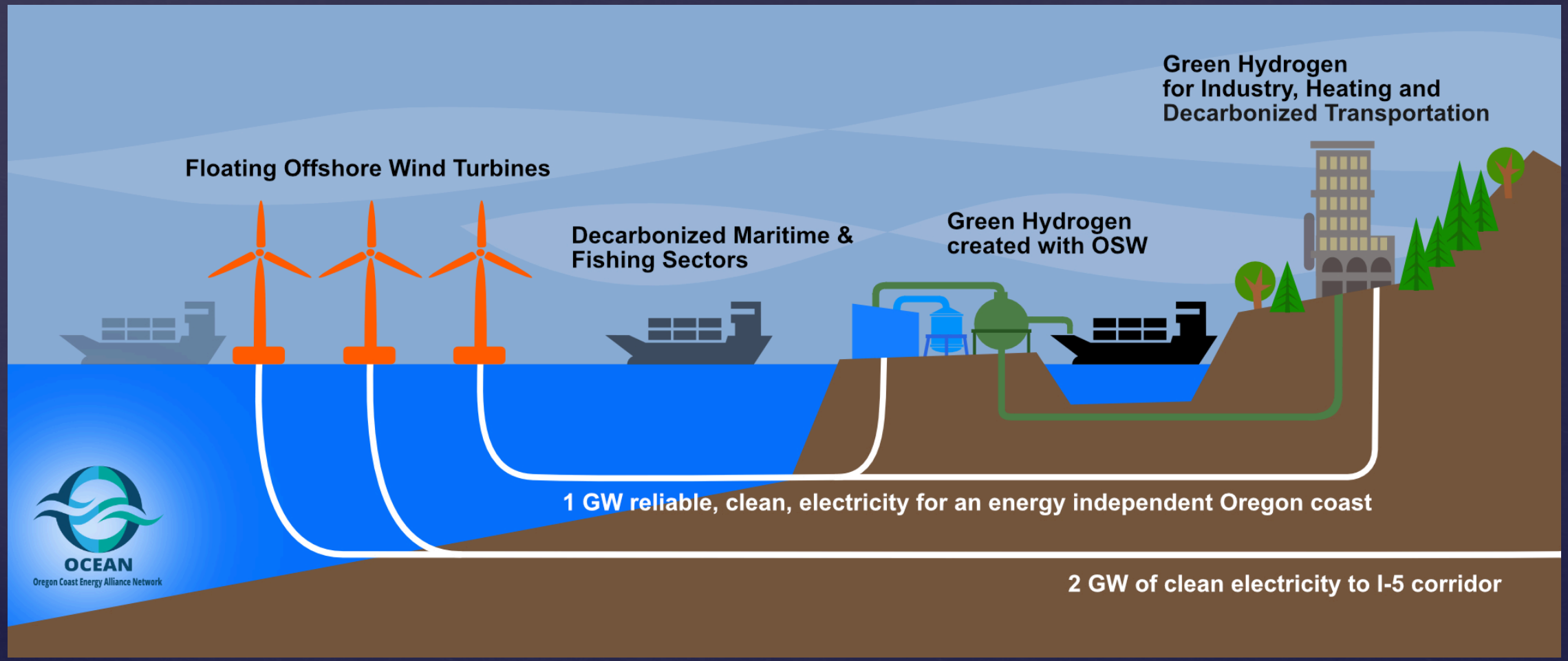
technological advancements =

Floating Offshore Wind is on track to be affordable for Oregonians in time for West coast development

Surplus Floating OSW, *when used to generate clean Renewable Hydrogen*,

supports the decarbonization of the transportation and maritime sectors and

poises Oregon for greater energy independence and clean economic diversity



Opportunity: Oregon Ports Poised to Supply, Assemble and/or Service West Coast OSW

Foreign-Trade Zone (FTZ)

Rural Renewal Energy Development Zones (RRED)

3 GW of OSW development would infuse $9 - $21 Billion Dollars into Oregon's economy

Potential Barriers to Oregon OSW Development:

Compatibility with other Beneficial Users:
Fishers
Shippers
Wildlife

Long term High Voltage Deep Sea transmission to California market

Potential Barriers to Oregon OSW Development:

Energy Sector Planning Processes Underway that may otherwise NOT be incorporating OSW

- Clean Energy Road Maps
- State Resource Adequacy
- Transmission Planning
- Decarbonization Strategies (Electricity and Fuels)
- Coastal Infrastructure Investments
- Northwest Power & Conservation Council NW Power Plan 2021
  - Regional Resource Adequacy

HB 3375 -1

Compliments ongoing ecosystem impact assessments through BOEM funding.

Recognizes the benefits of planning for the benefit of Oregonians
(rate payers, fishers, tribes, labor & ecosystems).

Acknowledges the active role of DLCD in facilitating coexistence with other Ocean users.

Identifies the values of Oregon stakeholder inclusion in early planning.

Signals immediate Federal and Private investment in Oregon renewable energy, supply chain and workforce development.

Poises Oregon for responsible, beneficial participation in a clean western energy market.

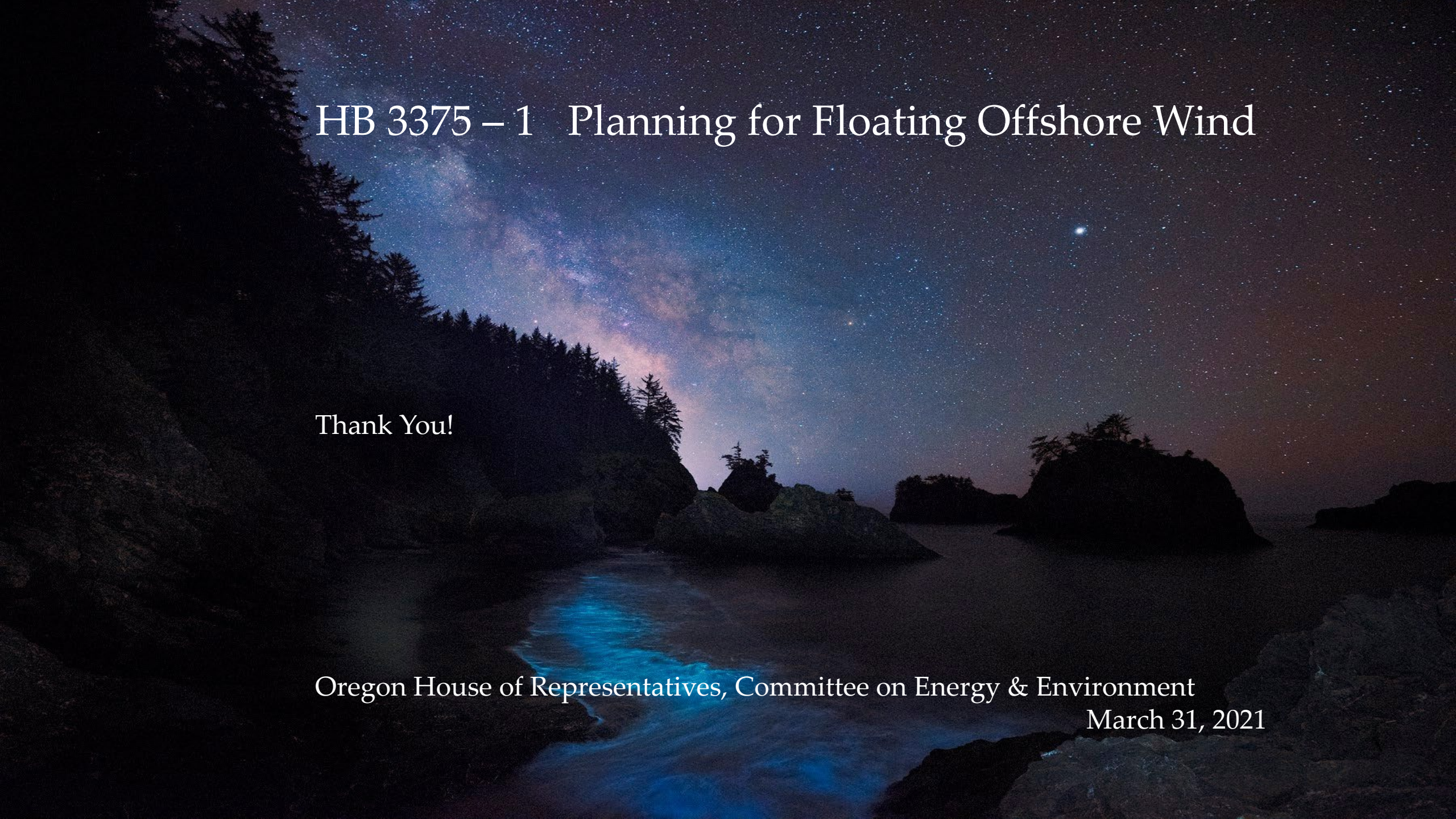
Provides Legislators with a timely update on Oregon's OSW opportunity to inform next steps.

HB 3375 -1

HB 3375 establishes a "goal of this state to plan for the development of up to 3 GW of floating offshore wind energy projects within the federal waters off the Oregon coast by 2030…in a manner that will maximize benefits to this state while minimizing conflicts between floating offshore wind energy, the ocean ecosystem and ocean users."

The bill directs Oregon's Department of Energy to:

1. Conduct a literature review on the benefits and challenges of integrating up to 3 GW of offshore wind into Oregon's electric grid by 2030.
2. Consult with other state, regional and national entities to gather input on the effects, including benefits and challenges, of integrating up to 3 GW of offshore wind on reliability, state renewable energy goals, jobs, equity, and resilience.
3. Hold public meetings with interested stakeholders to provide summary findings and to gather feedback on the benefits and challenges of integrating up to 3GW of offshore wind.
4. Provide a summary of key findings, including opportunities for future study and engagement, to Oregon's Legislative Body by September 2022.



HB 3375 – 1 Planning for Floating Offshore Wind

Thank You!

Oregon House of Representatives, Committee on Energy & Environment

March 31, 2021