

# Renewable Energy Leasing Overview and Update

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Oregon Ocean Policy Advisory Council  
October 21, 2019 | Newport, Oregon

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BOEM Pacific OCS Office



# Agenda

- **Overview: BOEM & Renewable Energy Authorization Process**
- **Snapshot of BOEM Nationwide Renewable Energy Activities**
- **BOEM Oregon OCS Renewable Energy Task Force**
- **Unsolicited Lease Requests in Oregon: PacWave South & WindFloat Pacific Pilot Project**
- **Oregon Offshore Wind: Technology & Cost Overview**
- **BOEM Planning Phase: Opportunity for Offshore Wind Planning with Task Force**
- **September 27, 2019 Task Force Meeting Summary**



# BOEM Overview

- **Bureau within the U.S. Department of Interior**
- **Mission & Authority**
  - Manage development of U.S. Outer Continental Shelf (OCS) energy and mineral resources in an environmentally and economically responsible way
  - Outer Continental Shelf Lands Act of 1953 as amended, including amendments per Energy Policy Act of 2005
- **OCS Jurisdiction in the Pacific**
  - Federal waters: Beyond 3 nautical miles (nm) from shore to 200 nm
  - Does not include: National Marine Sanctuaries, Parks, Wildlife Refuges, or Monuments
- **Renewable Energy Leases**
  - Commercial, limited and research leases
  - Competitive and non-competitive processes
- **Environmental: Science & Analysis**
  - Studies to inform policy decisions on energy development
  - National Environmental Policy Act (NEPA) documents



# BOEM Pacific OCS Environmental Studies

BOEM develops, funds, and manages scientific research to inform policy decisions on the development of energy and mineral resources on the OCS.

## Research Areas

Physical Oceanography  
Atmospheric Sciences  
Biology  
Protected Species  
Social Sciences & Economics  
Submerged Cultural Resources  
Environmental Fates & Effects

## All Pacific Studies

1973 – 2019  
> 330 Studies Completed > \$150 M  
28 Ongoing Studies \$22.4 M  
16 Renewable Energy \$13.7 M  
5 Conventional Energy \$2.8 M  
7 Both Energy Programs \$5.9 M

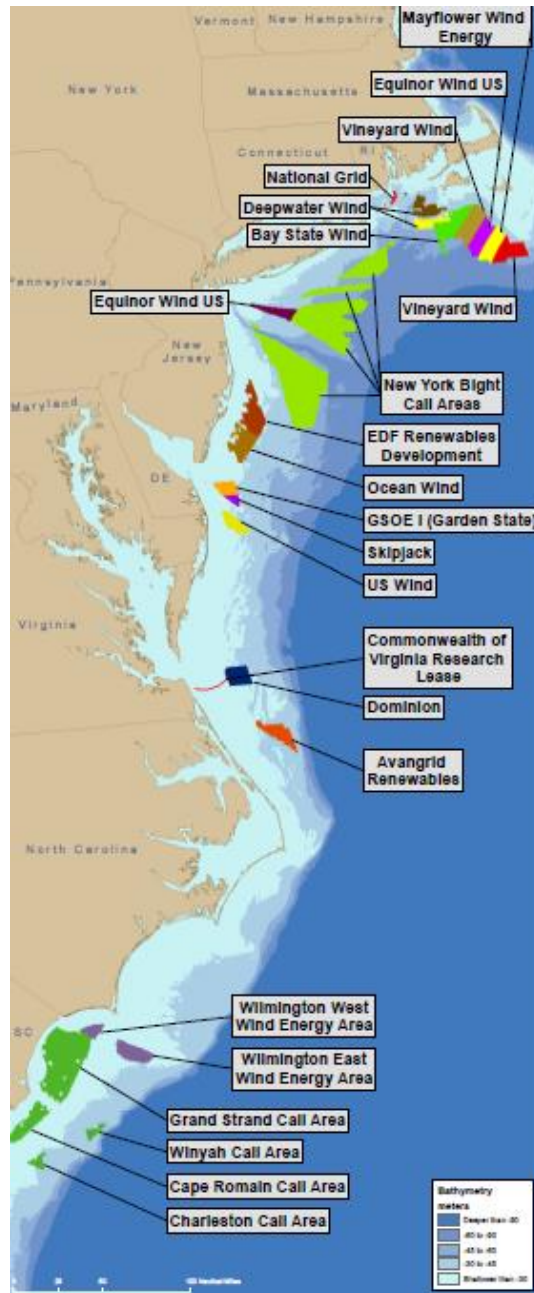
## Ongoing Pacific Studies

### Conducting Organizations

USGS (10 studies)	32%
Universities (10 studies)	32%
NOAA (6 studies)	19%
DOE (2 studies)	7%
USFWS (1 study)	3%
In-house (1 study)	3%
Other (1 study)	3%

Some studies conducted by multiple organizations.  
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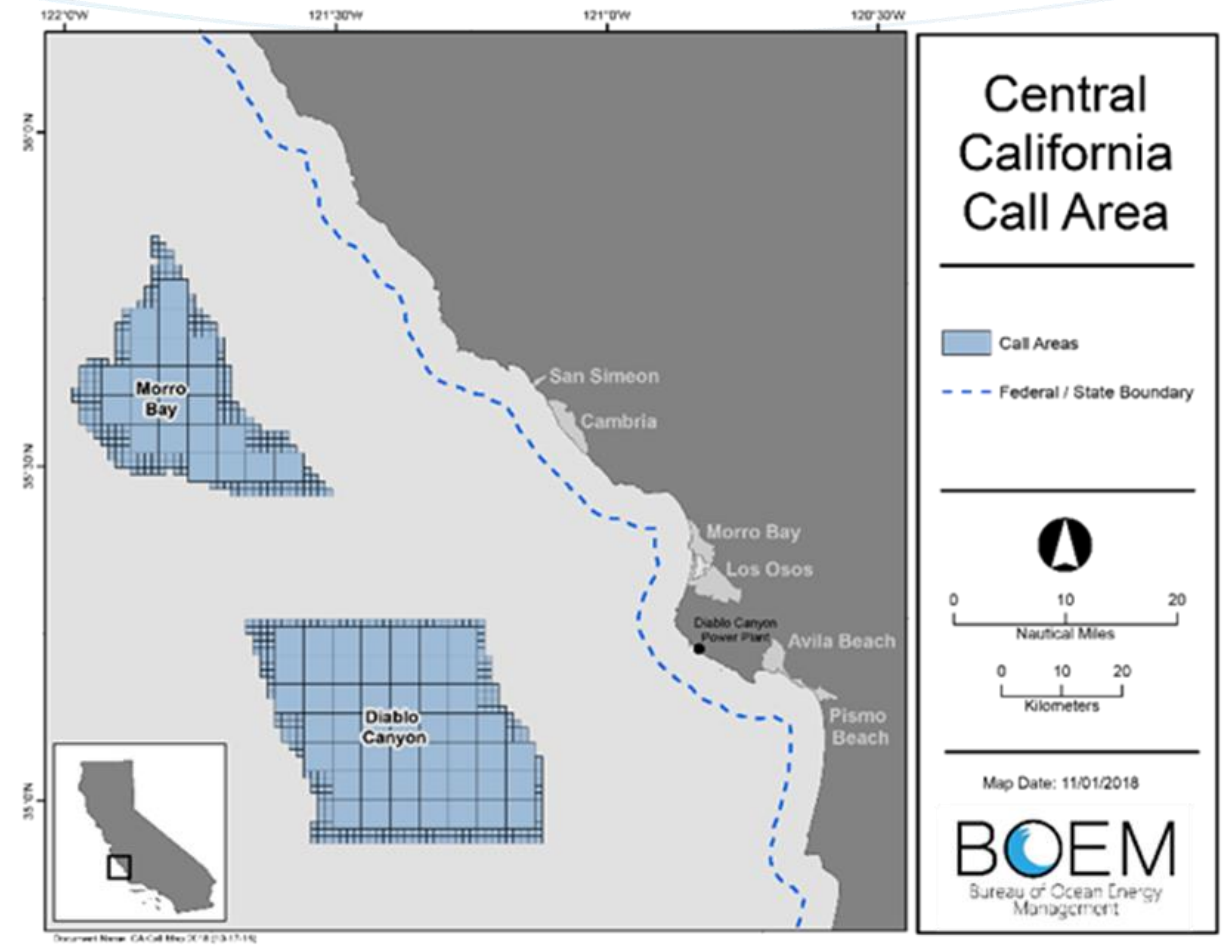
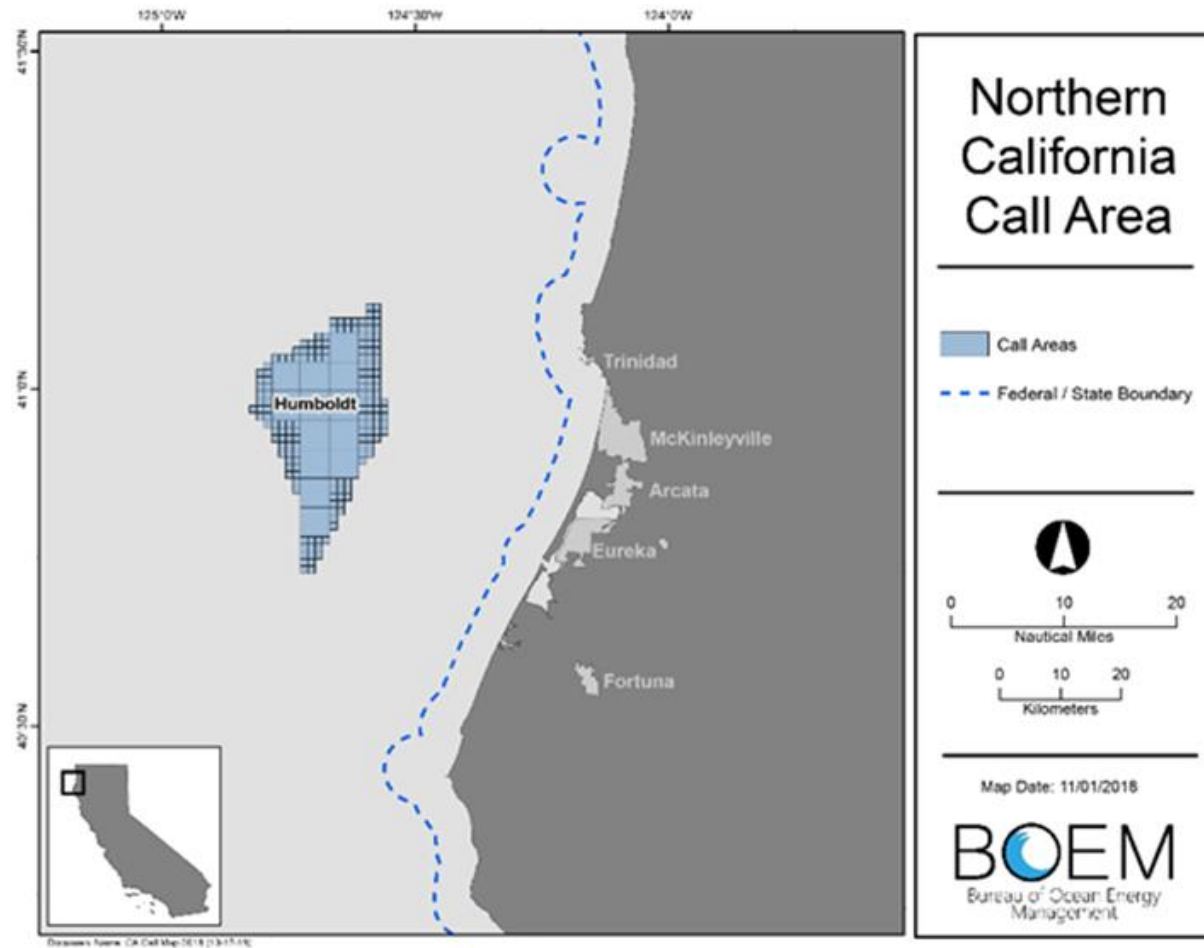
Selected Oregon Research: <https://www.boem.gov/Selected-BOEM-Research-Renewable-OR/>



# BOEM Nationwide Renewable Energy Activities (Atlantic and Pacific OCS)

- **Task Forces**
  - CA, DE, FL, HI, MA, MD, ME, NC, NJ, OR, RI, SC
- **Planning**
  - Activities in CA, HI, NC, NY Bight, SC
- **Leasing**
  - 15 Commercial wind energy leases in Atlantic
- **Site Assessment Plans (SAP)**
  - 7 Approved
- **Construction and Operations Plans (COP)**
  - 4 Processing
  - 5 Expected within next 12 months

# California Wind Energy Call Areas



# 14 Companies Submitted Nominations of Interest

Algonquin Power  
Fund (America),  
Inc.

Wpd Offshore  
Alpha LLC

Avangrid  
Renewables, LLC

Castle Wind, LLC

Cierco  
Corporation

EDF Renewables  
Development,  
Inc.

EDP Renewables  
North America,  
LLC

EC&R (eON)  
Development,  
LLC

Equinor Wind US  
LLC

Mission Floating  
Wind, LLC

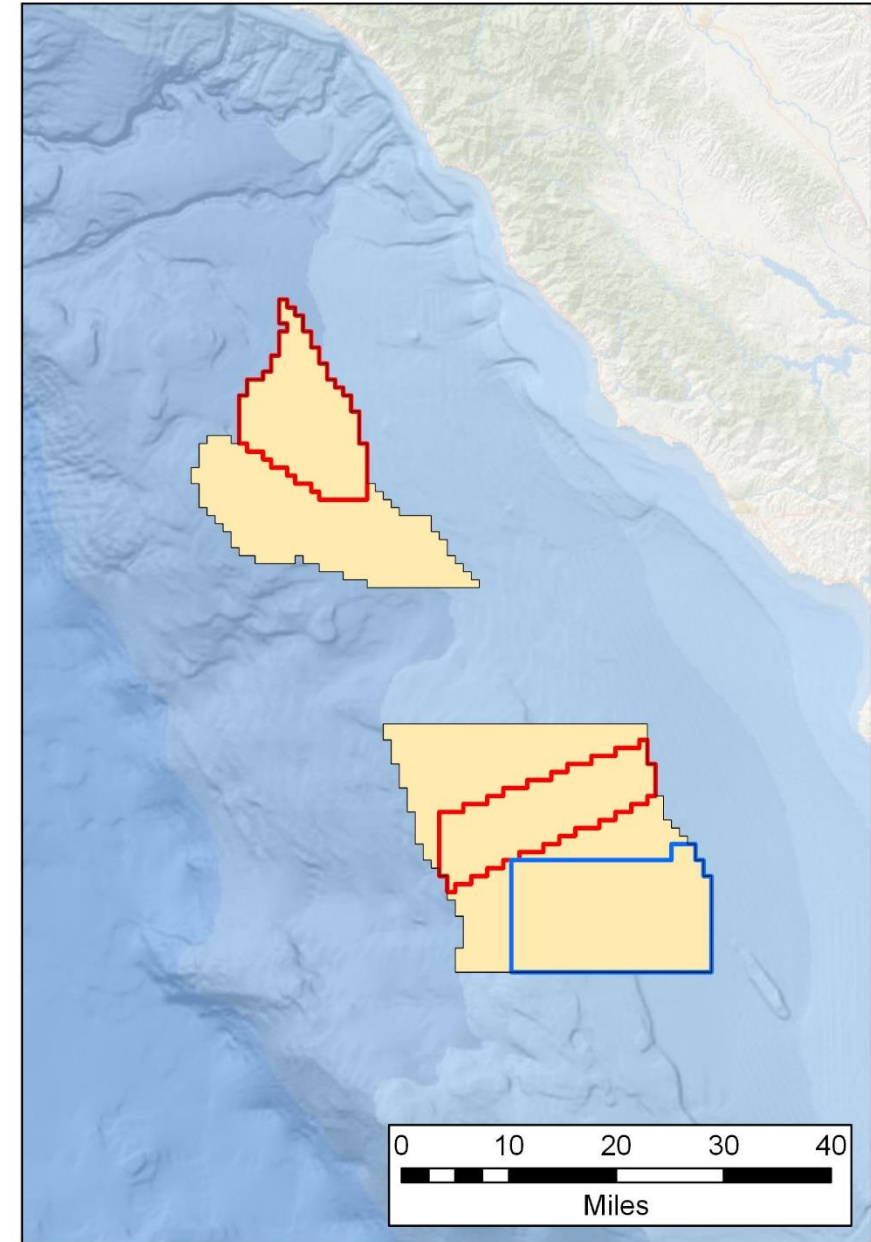
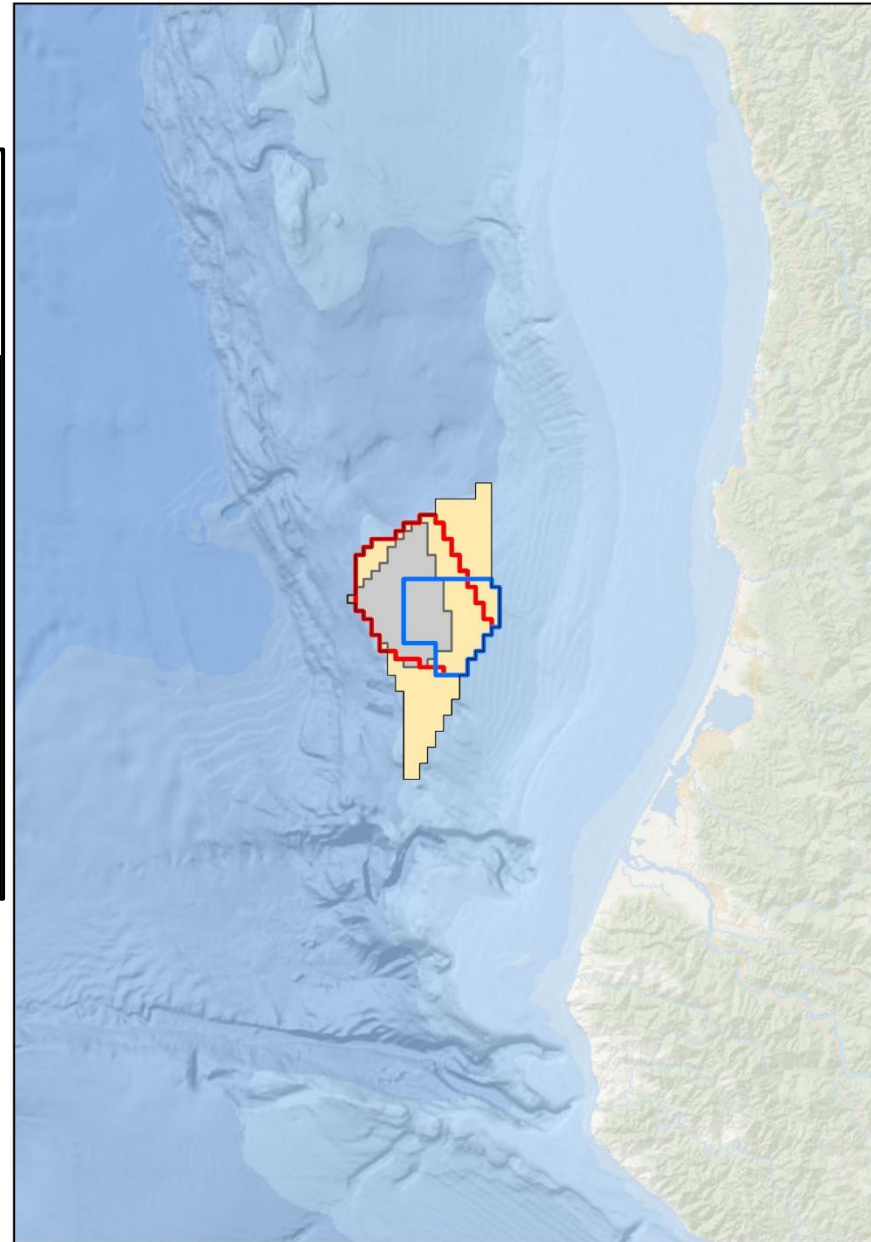
Northcoast  
Floating Wind,  
LLC

Northland Power  
America, Inc.

Redwood Coast  
Energy Authority  
(RCEA)

US Mainstream  
Renewable  
Power, Inc.

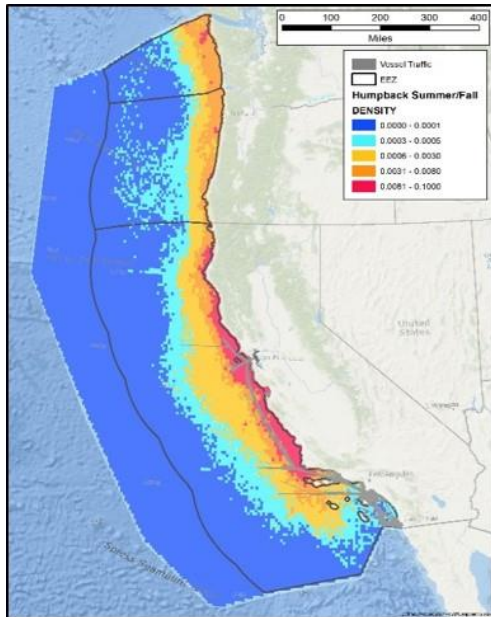
#	Company	Humboldt	Morro Bay	Diablo Canyon
1	Algonquin Power Fund (America)			
2	wpd Offshore Alpha, LLC			
3	Avangrid Renewables, LLC			
4	Castle Wind, LLC			
5	Cierco Corporation			
6	EDF Renewables Development, Inc			
7	EDP Renewables North America, LLC			
8	EC&R (eON) Development, LLC			
9	Equinor Wind US, LLC			
10	Mission Floating Wind, LLC			
11	Northcoast Floating Wind, LLC			
12	Northland Power America, Inc.			
13	Redwood Coast Energy Authority (RCEA)			
14	US Mainstream Renewable Power, Inc			



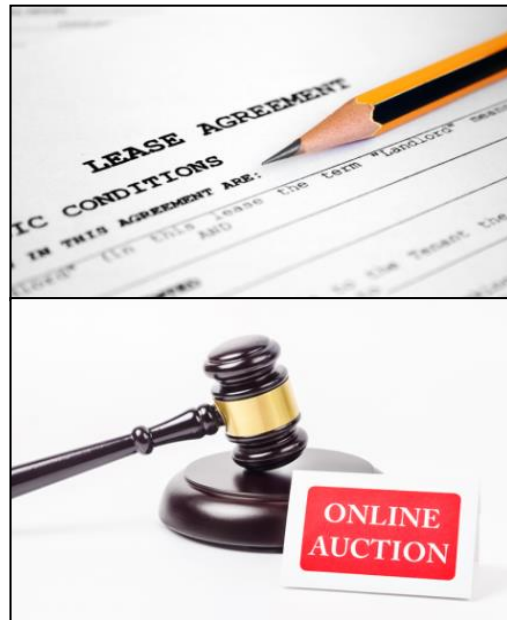
# OCS Renewable Energy Authorization Process

Multi-year Process

Planning  
& Analysis



Leasing



Site Assessment



Construction  
& Operations



# BOEM Oregon OCS Renewable Energy Task Force

## Overview

- Established in 2011 per request from former Governor Kulongoski
- Six meetings held from 2011 through 2014
  - Meeting Seven held September 2019
- Provides coordination with federal, state, local and tribal governments
- Provides input to BOEM renewable energy leasing decisions

## Charter

- Share information
- Coordinate approval and review processes for OCS renewable energy projects
- Identify information needs
- Discuss and identify opportunities

## Federal Advisory Committee Act (FACA)

- Task Force is not chartered under FACA
- Membership is restricted to federal, state, local and tribal governmental bodies

## Logistics

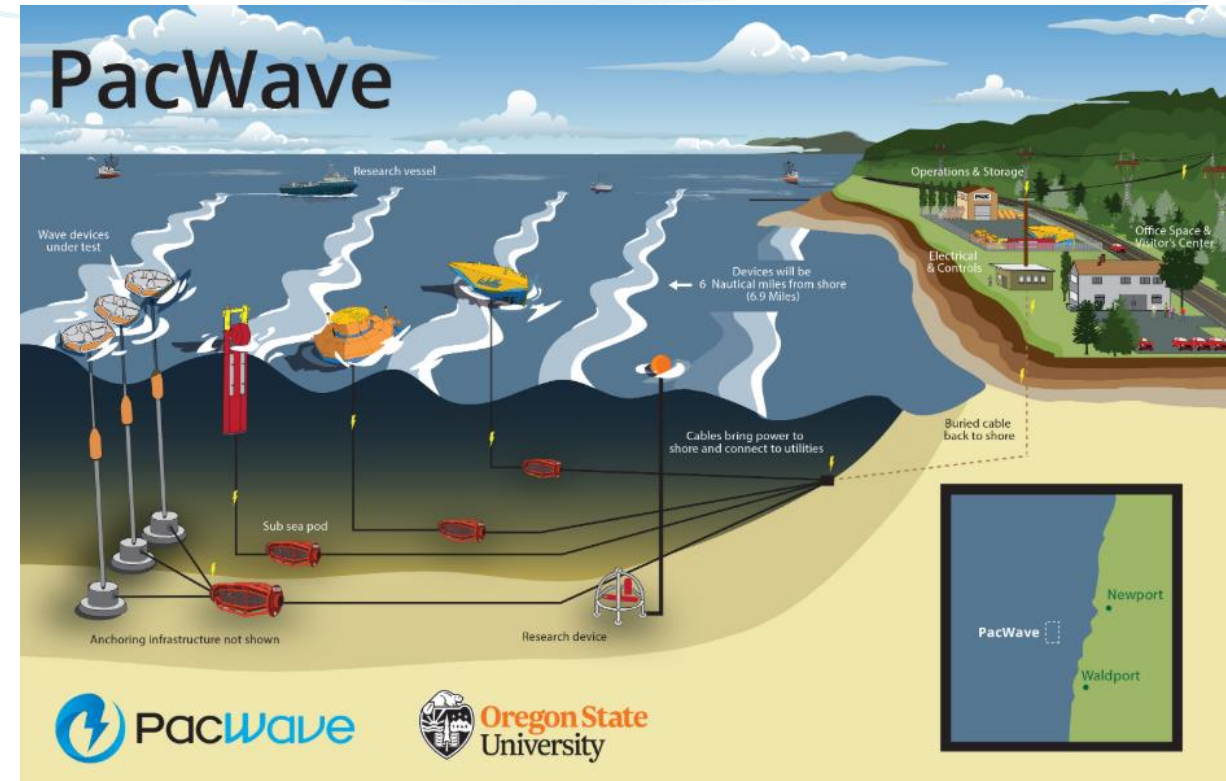
- Meetings are open to the public
- Task Force membership and meeting agenda, attendees and materials are online:  
[www.boem.gov/Oregon/](http://www.boem.gov/Oregon/)
- Suggest posting membership list & charter to webpage and livestream future meetings
- Suggest holding future meetings along the coast



# Oregon Marine Hydrokinetic (MHK) Energy Project

## Oregon State University (OSU) PacWave South Proposed Project

- Grid-connected test facility for up to 20 wave energy converters
- Power generation up to 20 megawatts (MW)
- Four subsea transmission cables and one auxiliary cable
- Approximately 2.65 square miles and 6 nm offshore Newport
- Timeline:
  - Commence construction in Spring 2020
  - Commence operations in 2022



# MHK Shared Federal Responsibility for Permitting and Leasing

## Federal Energy Regulatory Commission (FERC)

### Issues license for construction & operation

- **June 2014** – FERC approved use of Alternative Licensing Process
- **February 2017** – BOEM is cooperating agency for NEPA documents
- **May 2019** – FERC received Final License Application
- **August 29, 2019** – FERC Notice:
  - Accepted application for filing
  - Public comment period through September 30, 2019
- **October 15, 2019** – OSU replied to comments
- **Information in FERC eLibrary, Docket P-14616**

## BOEM

### Issues lease for site area

- **June 2013** – Received unsolicited request for research lease
- **June 2014** – Issued Determination of No Competitive Interest (DNCI)
- **July 2019** – OSU provided BOEM updated request on lease area size

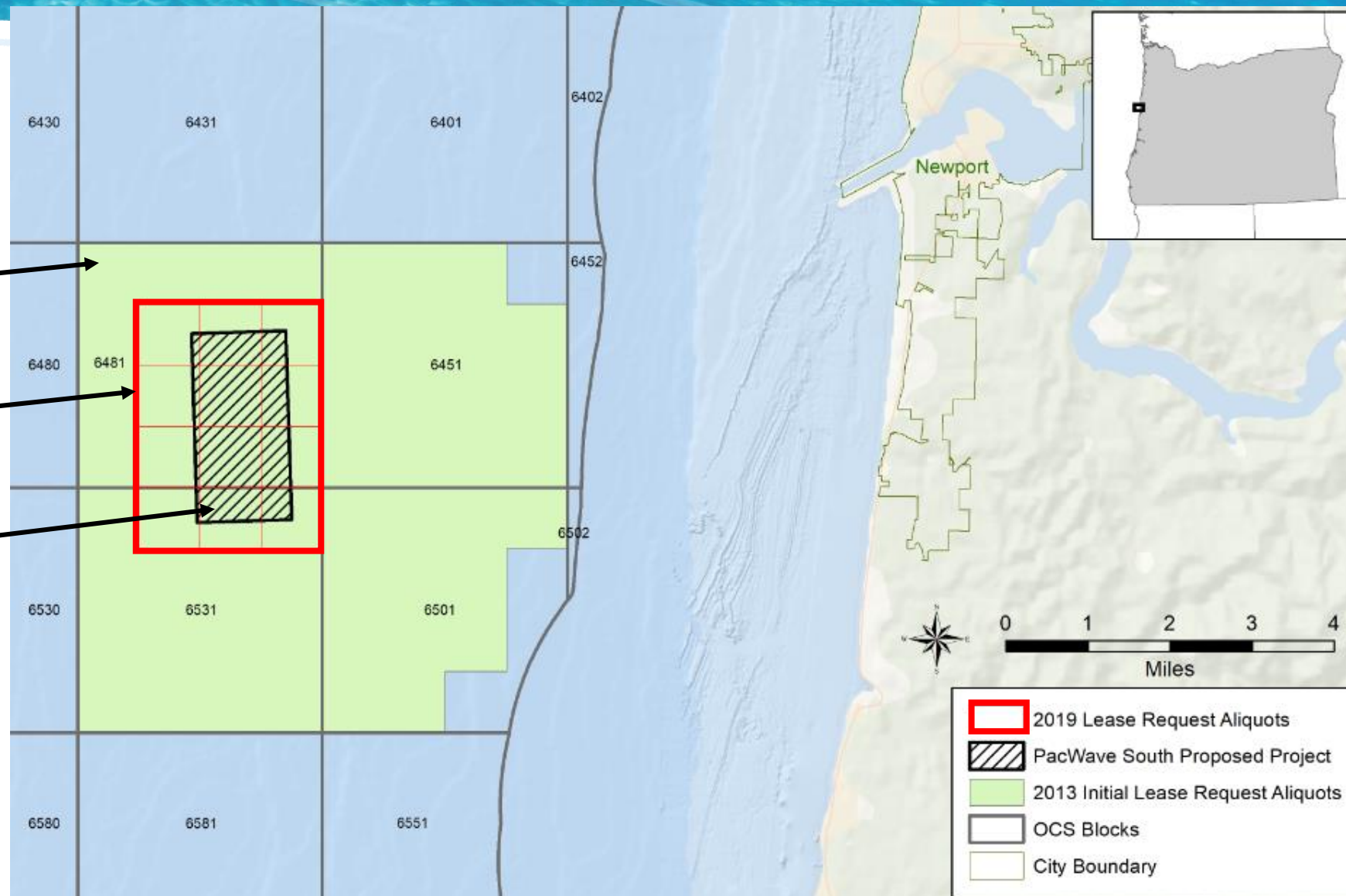


# PacWave South: Requested Lease Area & Proposed Project Site

Initial Lease Request  
Area (2013)

Updated Lease Request  
Area (2019)

Proposed Project Area  
(2019)



# Oregon Offshore Wind Project

## Historical: WindFloat Pacific Pilot Project

- **2013** – Principle Power Inc. (PPI) submitted an unsolicited lease request to BOEM
- **2014** –
  - BOEM issued DNCI
  - BOEM issued Notice of Intent (NOI) to prepare an Environmental Assessment
  - BOEM initiated outreach with commercial fishing
- **2015** – PPI was unable to secure a Power Purchase Agreement with Oregon utilities
- **2016** – U.S. Department of Energy (DOE) closes out demonstration project award funding
- **2018** – BOEM determined the DNCI was no longer valid; no BOEM lease issued



PPI WindFloat prototype towed in Portugal

# Floating Offshore Wind in Oregon: Potential Technology

## Oregon:

- 97% of Oregon's offshore wind resource is in water depths > 60 m, suggesting floating offshore wind as primary technology

(NREL Technical Report: Oregon Offshore Wind Site Feasibility and Cost Study, 2019)



30 MW Hywind Scotland Floating Wind Farm (Equinor)



## Globally:

- 8 floating offshore wind projects (approximately 46 MW) installed
- 14 projects (200 MW) under construction, having achieved financial close or regulatory approval

(DOE Report: Offshore Wind Technologies Market Report, 2019)

# Oregon Offshore Wind Cost Study

- BOEM funded the National Renewable Energy Laboratory (NREL) to analyze floating offshore wind cost at 5 sites where commercial-scale projects are technically viable
- Geographically dispersed sites used for modeling costs; not a product of stakeholder engagement or marine spatial planning
- Modeled costs at Oregon study sites ranged from \$53/MWh (5.3¢/kWh) to \$74/MWh (7.4¢/kWh) for floating offshore wind technology by 2032
  - MWh = megawatt-hour, kWh = kilowatt-hour
- Cost declines due to recent commercial and technological improvements
- Levelized cost of energy: Full-scale commercial project costs were 3 X lower than 24 MW PPI WindFloat Pacific Pilot Project
- Report available at: [www.boem.gov/BOEM-2019-046/](http://www.boem.gov/BOEM-2019-046/)

**By 2032:**

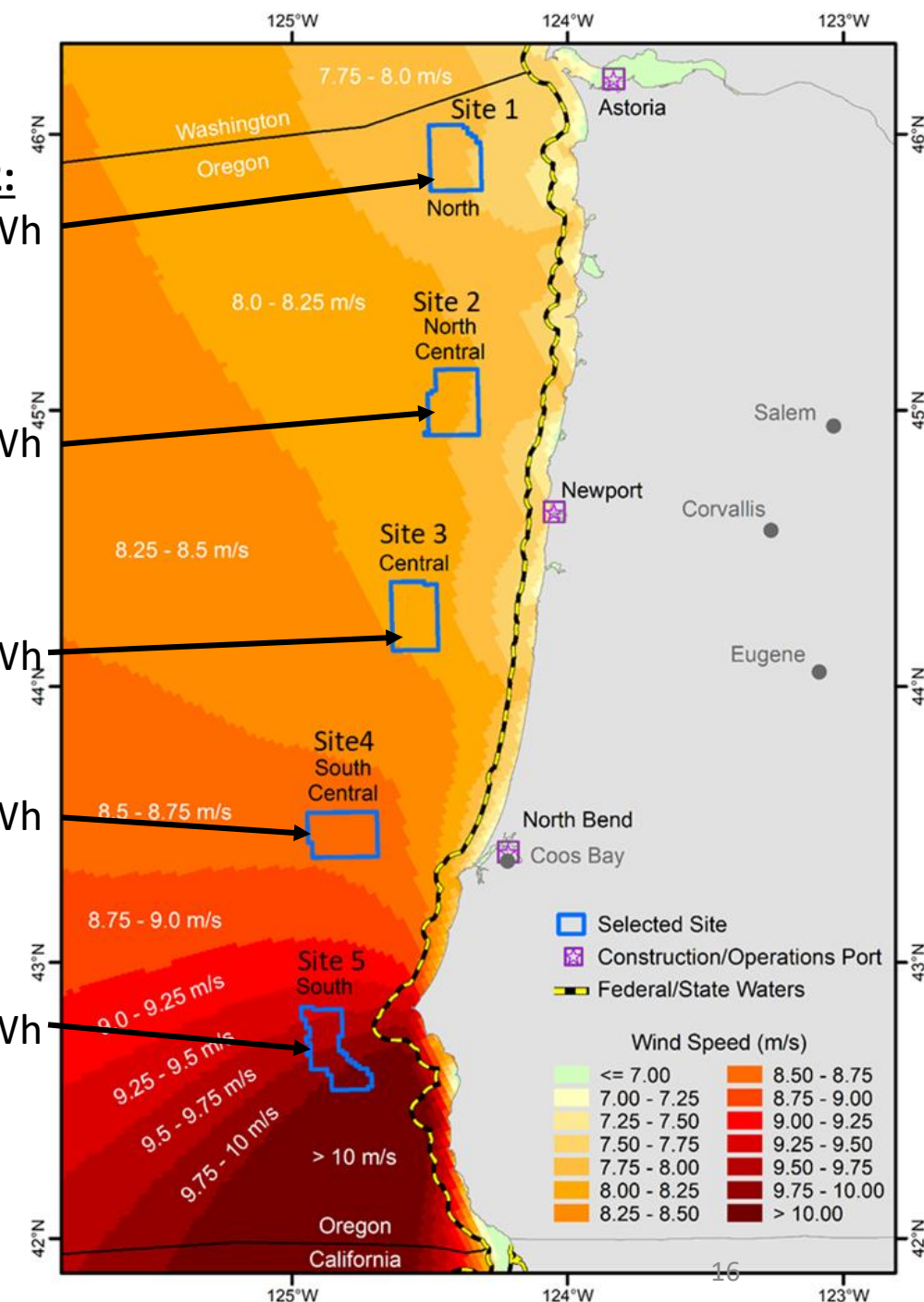
\$74/MWh

\$70/MWh

\$67/MWh

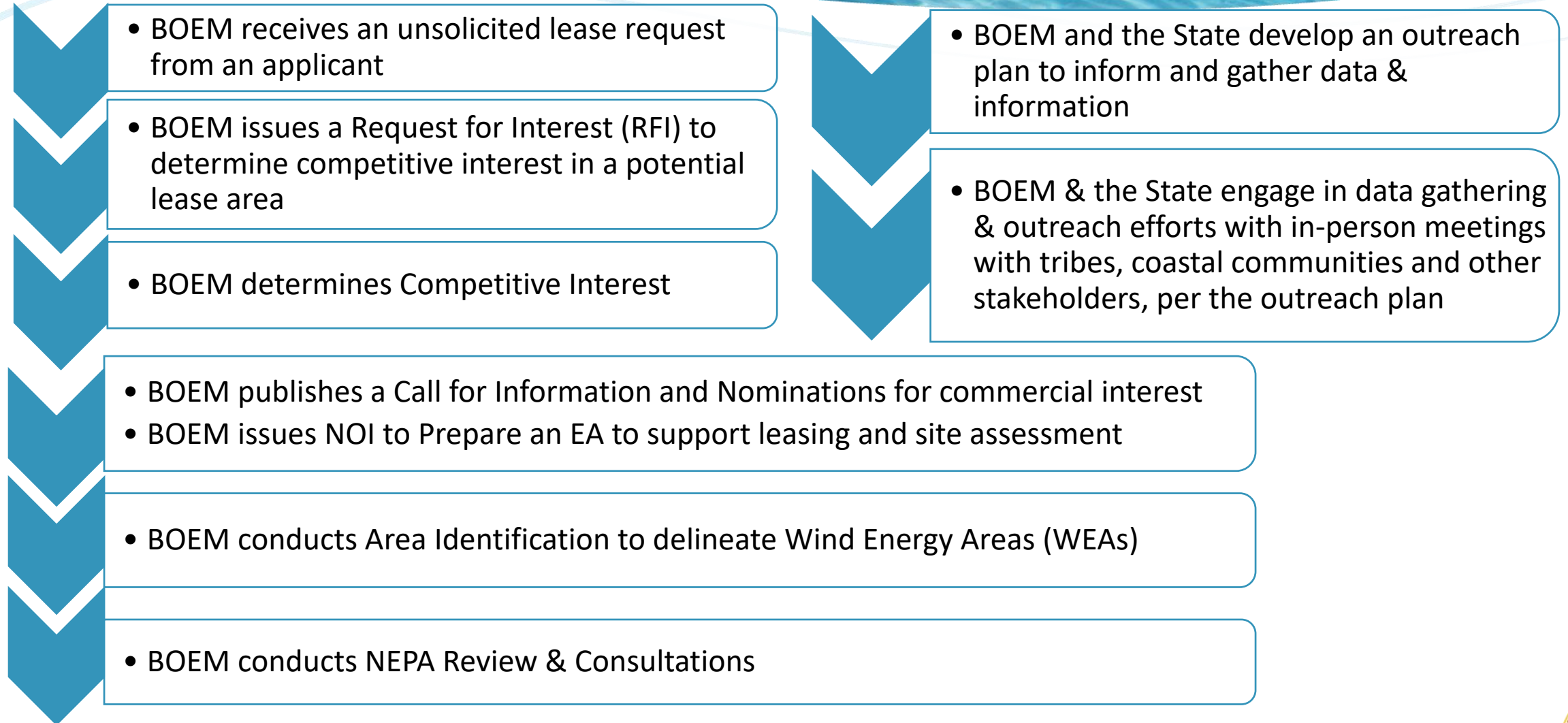
\$63/MWh

\$53/MWh



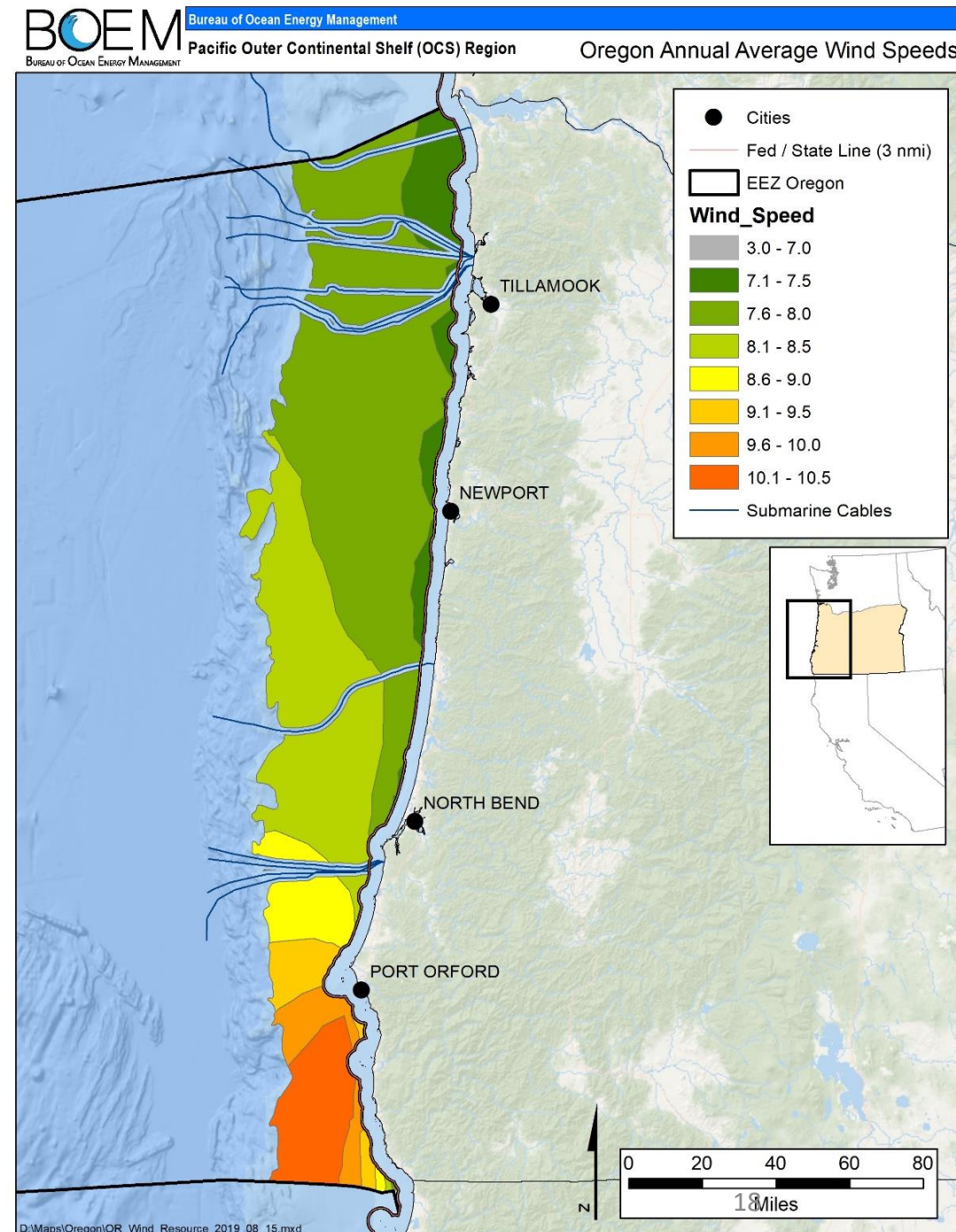
# Planning & Analysis:

## Example Process for Competitive Commercial Offshore Wind Project



# Task Force Meeting Seven

- Held on September 27, 2019 in Portland
- Attendees:
  - 56 Federal, state, local and Tribal representatives
  - 61 Members of the public and media
- Materials available at: <https://www.boem.gov/Task-Force-Meeting-7/>
- Began the conversation for offshore wind planning approach in Oregon
- Next steps:
  - BOEM and Department of Land Conservation & Development will draft an outreach and engagement plan for the Task Force to review and comment.
  - The plan will include key topics, interested parties, methods and materials for outreach.





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