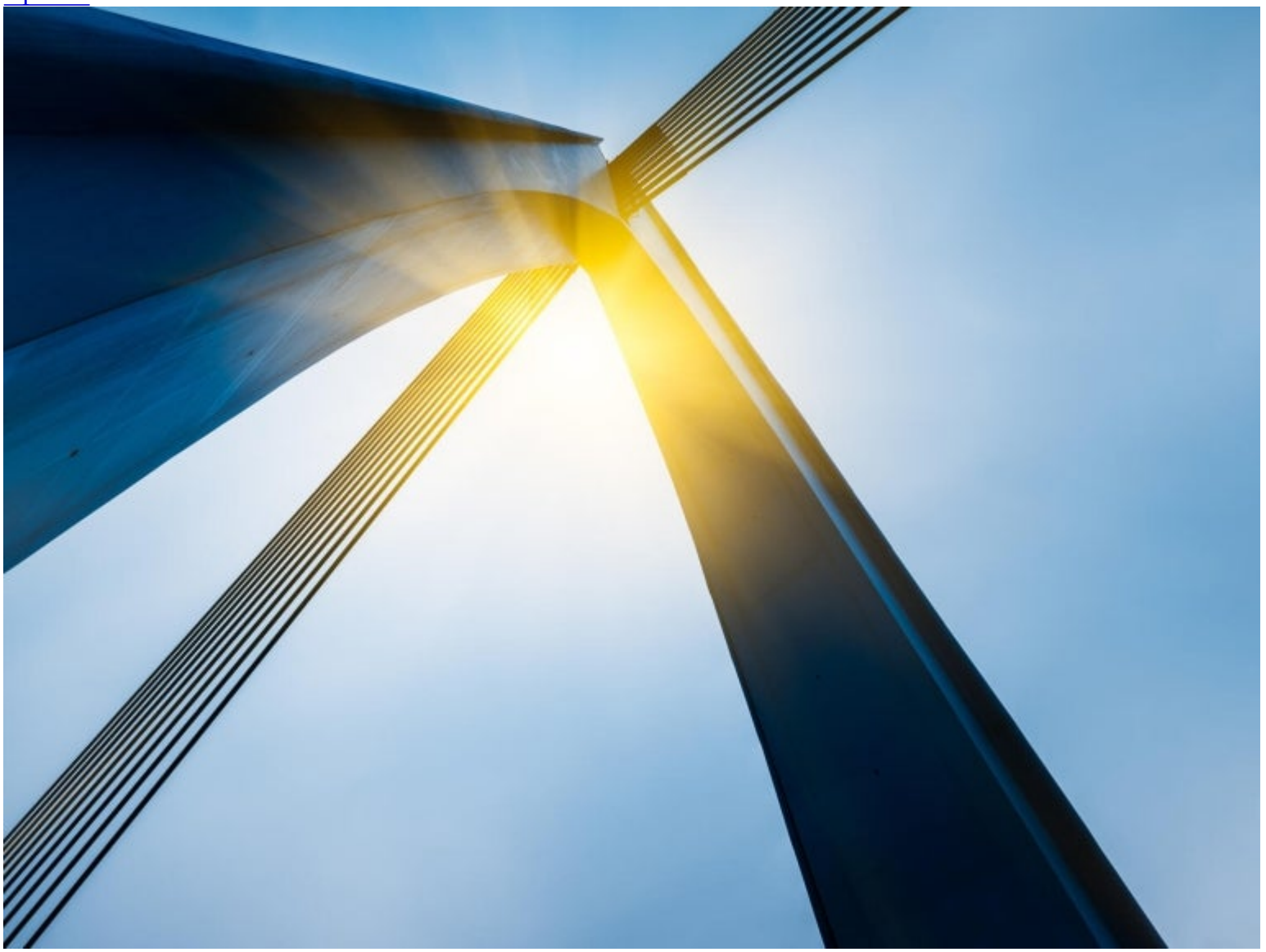
Updates



In support of the Biden administration's goal of 15 gigawatts (GW) of floating wind by 2040 and Oregon's goal of 3 GW of offshore wind by 2030, the Bureau of Ocean Energy Management (BOEM) recently announced its selection of two final Wind Energy Areas (WEAs) for leasing and potential development of floating wind on the Outer Continental Shelf (OCS) offshore Oregon.

[1] BOEM also published its Notice of Intent (NOI) to develop an environmental assessment (EA) regarding potential environmental impacts associated with leasing and site assessment studies in the WEAs.[2] Absent an extension of time, comments on the NOI are due by March 15, 2024.

In this Update, we look at the process BOEM used in identifying the final WEAs and at the areas now excluded, outline the EA scoping process that is now open, and highlight challenges for floating wind on the West Coast that will affect project feasibility assessment, planning, and timing.

The Final Oregon Wind Energy Areas

BOEM issued its draft WEAs on August 15, 2023. To identify the draft WEAs, BOEM coordinated with the state of Oregon and collaborated with the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Coastal Ocean Science (NCCOS) to use an ocean planning model to identify and minimize conflicts. [3] (*See* Figure 1) BOEM used the same model to identify draft and final WEAs for the Gulf of Mexico and the Central Atlantic and draft WEAs in the Gulf of Maine.

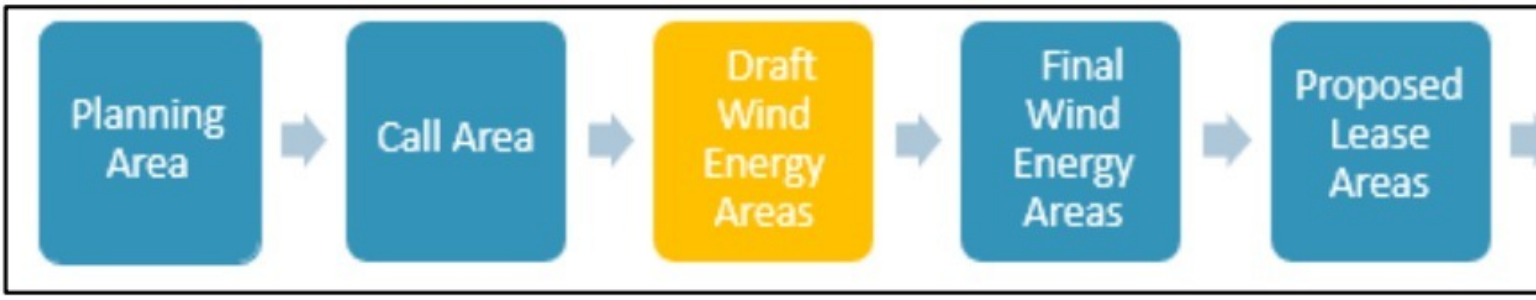


Figure 1. Introduction of draft WEAs into BOEM renewable energy authorization process, highlighted in orange [4]

BOEM arrived at the final WEAs after a series of public outreach opportunities, including a 60-day comment period, in-person public meetings, and active coordination with the state of Oregon and the intergovernmental task force. Area Identification Memorandum at pp. 10-11. BOEM's process in Oregon has involved significant stakeholder engagement since 2020 (including tribes, ocean users, coastal communities, the fishing community, state agencies, and the general public), signaling its continued commitment to identifying and responding to stakeholder concerns early in the process.

The two final WEAs total about 195,000 acres, a 25,000-acre reduction from the draft WEAs that were announced in October 2023, and approximately 17% of the original 1.2 million-acre call areas.[5]

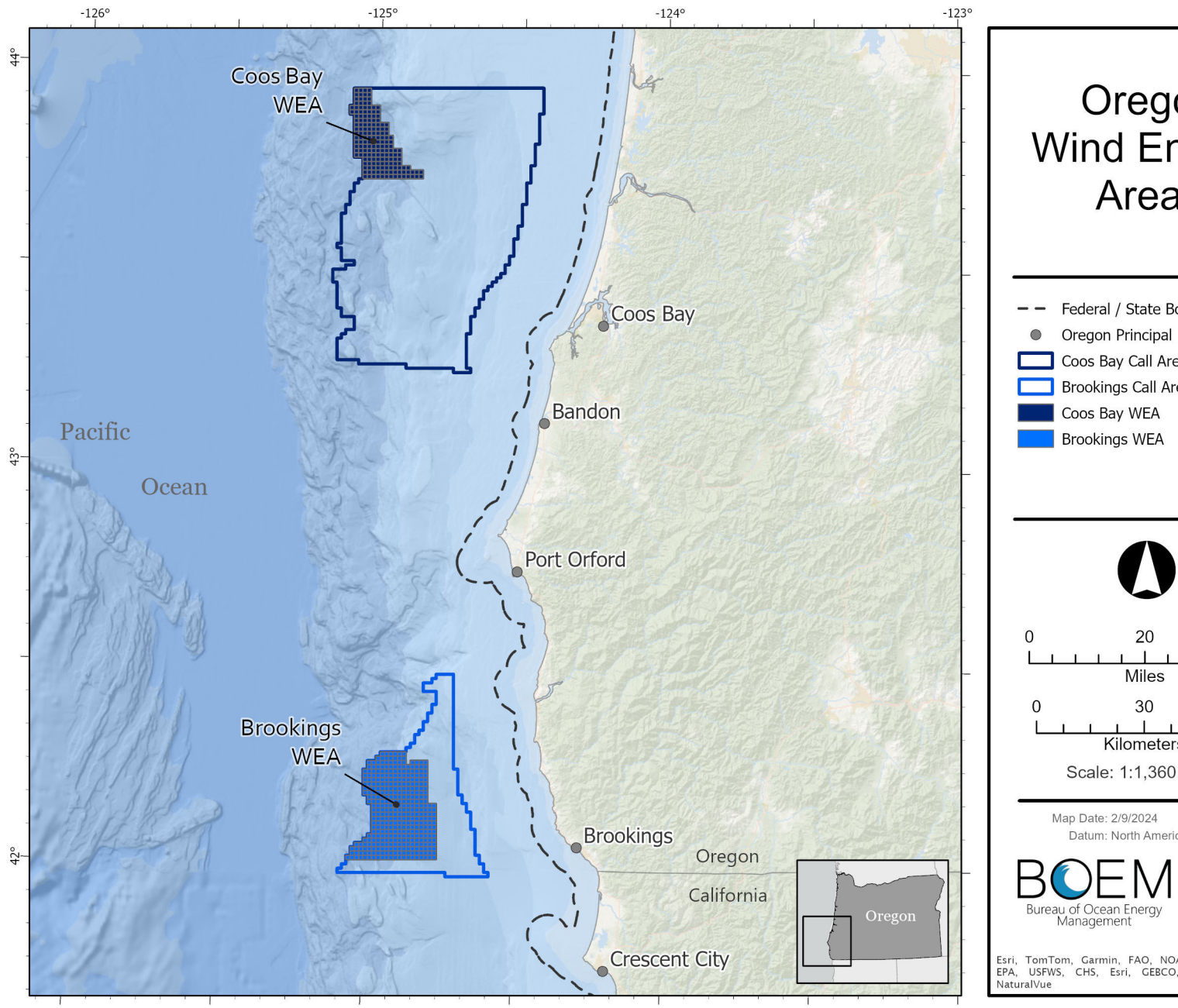


Figure 2. BOEM Oregon WEAs[6]

The Coos Bay WEA, about 32 miles offshore, is 61,204 acres, and the Brookings WEA, about 18 miles offshore, is 133,308 acres. (*See* Figure 2). If fully developed, the WEAs could support 2.4 GW of energy production. (Area Identification Memorandum at p. 60.)

In the designation of the Oregon final WEAs, BOEM made major revisions to address concerns of potential interference with National Marine Fisheries Service (NMFS) scientific surveys that are conducted in corridors that would intersect portions of the WEAs. *Id.* at pp. 2-3, 22. These surveys are used to inform agency fisheries and protected species management decisions and monitor living marine resources, their habitats, and the California current ecosystem. *Id.* at 2. Included among the outcomes of these surveys are forecasts regarding the endangered Pacific salmon harvest and recovery status (which, in turn, affects other protected species that rely

on salmon, such as the south resident killer whales). *Id.* at pp. 2, 59. NMFS, the Pacific Fishery Management Council (PFMC), several tribes (including the Makah Tribe), and the Oregon Department of Fish and Wildlife expressed concerns that offshore wind development could impact these scientific surveys, which could affect fisheries' stock assessments and other data (including climate and ocean change data). *Id.* at pp. 2, 54. Due to those concerns, BOEM removed a portion of the southern boundary of the Brookings WEA. This option allows NMFS to continue to conduct fixed, long-term sampling stations and surveys in these areas. *Id.* at pp. 2, 54.

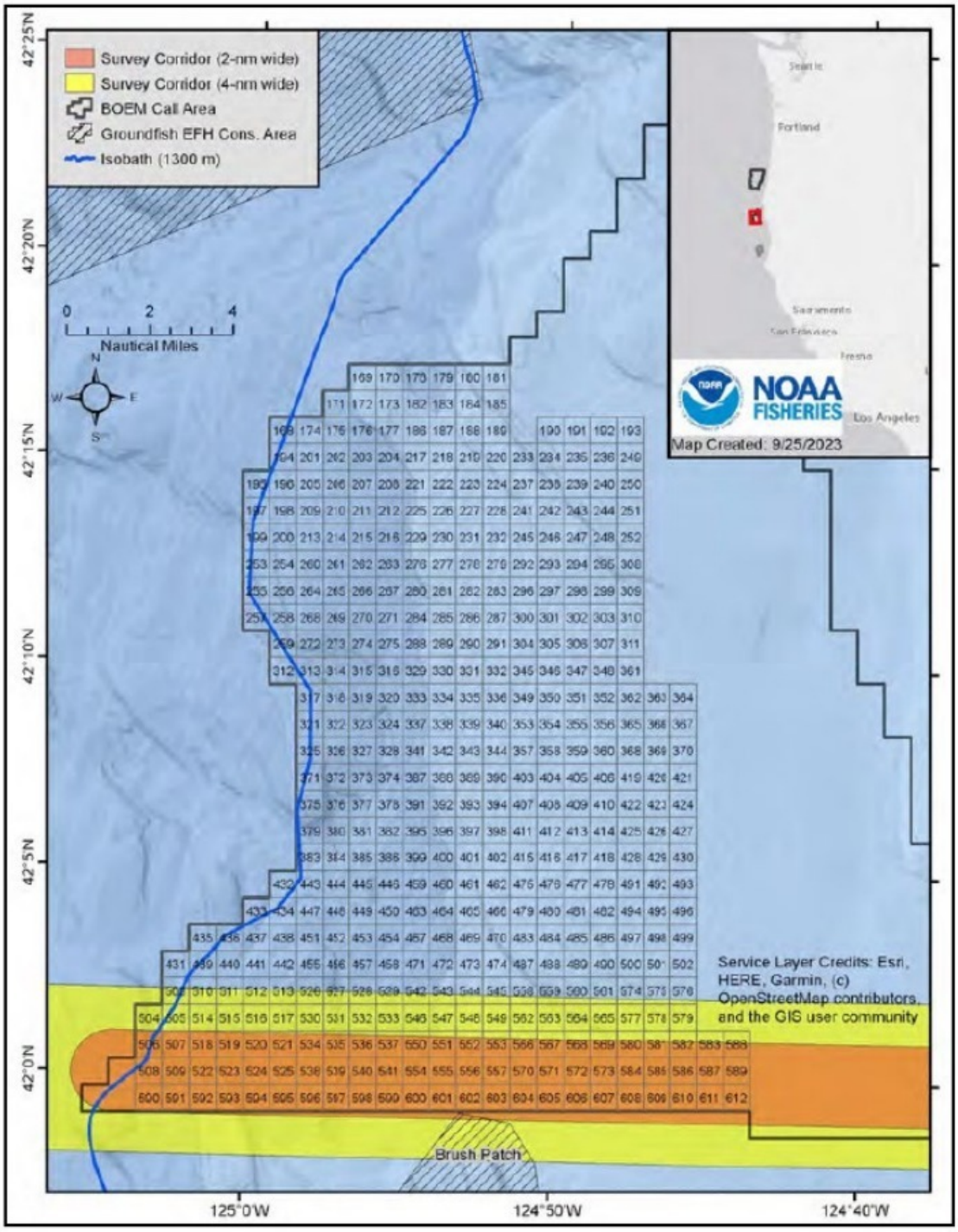


Figure 3. Areas requested by NOAA for removal from the Brooking draft WEA due to scientific surveys.[7]

The location of the final WEAs accounts for national security, navigation and shipping routes, commercial fishing, marine mammals, and seafloor habitat interests, among others. *Id.* at pp. 1-2, 20. These are familiar

considerations used in the task force, comment, and NCCOS modeling to establish the final WEA boundaries. As has been seen in other WEA identification efforts, exclusion areas identified by the U.S. Department of Defense were entirely avoided; here, national security constrained nearly 50% of the initial WEA call areas.[8] Shipping fairways identified by the U.S. Coast Guard studies for port access suitability (constraining 18.1% of the initial WEA call area) were also considered and completely avoided in the final WEA areas.[9]

According to BOEM, the WEAs also avoid 98% of the areas recommended for exclusion due to their importance for commercial fishing. (Area Identification Memorandum at p. 23.) Focusing on seven species that account for about 80% of all West Coast commercial fisheries revenue, NOAA's comment letter to BOEM reflects that the revised areas may affect 0.11% of revenue from these fisheries, as opposed to 2.4% in the initial call area. *Id.* While BOEM has finalized the WEAs, further refinement of the lease areas may occur during the comment process for proposed sale notice (PSN).

Environmental Assessment Scoping for BOEM Leasing Action

With the final WEAs identified, BOEM will now prepare an EA under the National Environmental Policy Act (NEPA) before holding any leasing auctions. The first step in that process is to solicit public and agency input on the scope of issues to be examined in the EA. BOEM anticipates publication of the final EA this summer.

For this environmental review, BOEM's proposed action is issuing wind energy leases in the WEAs offshore Oregon, not the direct development proposals (which are reviewed in a later phase). BOEM's leasing EA will consider (1) project easements and grants for subsea cable corridors associated with leasing, and (2) the potential environmental impacts associated with site characterization surveys (biological, archeological, geological, and geophysical surveys and core samples) and anticipated site assessment activities.[10] In addition to the no-action alternative, other alternatives may be considered, such as exclusion of certain areas.

BOEM initiated the scoping period on February 14, 2024. The published comment period ends March 15, 2024. Information on submitting comments can be found here.

This NEPA and related environmental review period marks the end of the planning and analysis stage in BOEM's process for initiating offshore wind leasing. After issuing a final EA, BOEM may hold a competitive auction for bidding on leases within the identified final WEAs following the comment period on a PSN. Further site assessments, surveys, and NEPA environmental and technical reviews would occur before a lessee is authorized to proceed with construction and operations.

Issues To Watch

The Oregon context presents unique issues that will shape the progress of the offshore wind lease areas and lease sales, and ultimately the feasibility of offshore wind projects in the state. Project developers and interested stakeholders should consider these unique aspects of offshore wind development in Oregon.

- **Floating versus fixed turbines.** Existing offshore wind development proposed and in construction on the Atlantic Coast will utilize fixed turbines in relatively shallow waters. In contrast, development on the West Coast, including the five offshore wind lease areas off the Central and North coasts of California, are in significantly deeper water and will require floating turbines anchored on the seafloor. Pile-driven foundations (e.g., monopile or jacket) into the OCS offshore Oregon or California are infeasible based on current technology. (Area Identification Memorandum at 15.) BOEM determined that the most feasible floating offshore wind projects in Oregon would be located in waters shallower than 1,300 meters to remain competitive with other renewable energy sources. *Id.* The Final WEAs offshore Oregon have water depths ranging from 567 meters to 1,531 meters. The water depths and distance from shore (approximately

18 to 32 miles) will inevitably create technical challenges not yet encountered by wind projects in the United States. Given the difference in floating structures, environmental, fisheries, and other potential impacts will also vary from those projects currently being constructed and studied off the Atlantic Coast. The EA conducted for the California lease sale and studies being conducted for the five lease areas should prove more informative.

- **Port infrastructure.** Unlike fixed structures, floating offshore wind turbines also need to be fabricated, assembled, and transported from an onshore port to the offshore wind site. According to a 2022 BOEM study of the Port of Coos Bay, "existing port infrastructure in Oregon is not adequate to support these activities and significant port investment is required to develop offshore wind port facilities, including staging and integration, manufacturing/fabrication, and operation and maintenance facilities."[11] The required upgrades may take several years but would improve the port's capability to manufacture floating platforms, integrate turbines into the platforms, and tow out larger turbines to their ocean locations.
- **Transmission infrastructure.** Due to the significant distance from shore and water depths, transmitting power from the final WEAs to shore will require substantial cost and risk. Construction and maintenance of floating substations, necessary to facilitate transmission, will also pose technical challenges and significant costs. The National Renewable Energy Laboratory (NREL) published a tool to help calculate potential transmission costs from generation to landfall. For a fixed-turbine project located 31 miles offshore in 34 meters of water, NREL estimated electrical infrastructure would cost nearly $512 million dollars.[12] For a floating project in water about 40 times deeper, costs will necessarily be much greater. The areas landward of the final WEAs in Oregon lack existing adequate connections to the grid, necessitating substantial transmission development.[13] One study on Northern California and Southern Oregon transmission estimated that constructing transmission infrastructure to accommodate roughly 25 GW of offshore generation (including offshore and onshore infrastructure) would cost around $40 billion dollars.[14] Specific to the West Coast, the U.S. Department of Energy (DOE) is now reaching the halfway mark in a 20-month West Coast Offshore Wind Transmission Study (following on its U.S. Atlantic Coast Offshore Wind Transmission Study) to investigate transmission options to support offshore wind development along the nation's West Coast. This study will examine transmission planning and infrastructure needs through 2050. With environmental analysis for upland siting to be conducted in the site assessment environmental review period that *follows* the leasing auction, uncertainty about transmission availability and costs presents significant challenges in assessing the technical and economic feasibility of potential projects. Leasing activities in Oregon may see further delays as agencies and various stakeholders wait to see the results of the DOE transmission study and look for more assurances of public funding from the DOE to support the electrical transmission infrastructure expenses.

Across the United States, offshore wind project developers and interested stakeholders ought to pay attention to the ways in which scientific study and stakeholder processes are being conducted in Oregon. Monitoring and engaging in these early study and comment processes could affect future feasibility of projects. Keeping an eye on how various interests are accounted for in the WEA finalization process can also be useful in future mitigation assessments and collaboration efforts. In the avoid-minimize-mitigate hierarchy, if certain types of environmental impacts were largely avoided or minimized in identification of the WEA, the result should be a narrowing of impact issues to address in later decision-making phases.

Endnotes

[1] U.S. Dep't of Interior, BOEM Regional Director, Pacific Regional Office, Area Identification Memorandum (Area ID Memorandum).

[2] Notice of Intent to Prepare an Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the U.S. Outer Continental Shelf Offshore Oregon, 89 Fed. Reg. 11313 (Feb. 14, 2024).

[3] BOEM reviewed and evaluated a total of 435 region-wide data sets and ultimately identified 30 geospatial data layers developed by various government agencies, nongovernmental organizations (NGOs), and academic institutions.

[4] Area Identification Memorandum at 9.

[5] In comparison, the Central Atlantic final WEAs represent approximately 9.1% of the initial 3,897,388-acre Call Area in that region.

[6] BOEM, Scoping for Oregon Environmental Assessment: Commercial Wind Lease Issuance and Site Assessment Activities on the Continental Shelf Offshore Oregon (Map Date: 1/22/2024) at p. 9.

[7] Area Identification Memorandum at 3 (Source: NOAA comment letter (BOEM-2-23-0033-0508).

[8] *See* A Wind Energy Siting Analysis for the Oregon Call Areas NCCOS Report (August 2023) at p. 39.

[9] The U.S. Coast Guard conducted a Pacific Coast Port Access Route Study (2022) along the western seaboard to identify a draft shipping safety fairway data layer used in BOEM modeling. According to the National Centers for Coastal Ocean Science Report, "this data layer was assigned a score of 0 and moved to the constraints submodel for complete avoidance." *Id.* The combined national security and shipping constraints overlapped with 57.59% of the initial Call Areas. *Id.*

[10] Notice of Intent to Prepare an Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the U.S. Outer Continental Shelf Offshore Oregon, 89 Fed. Reg. 11313 (Feb. 14, 2024). The types of studies anticipated to occur are changing with technology advances. For example, BOEM's proposed action does not include the installation of meteorological towers because buoys have become the preferred meteorological and oceanographic data collection platforms for developers. *Id.*

[11] Trowbridge M, Lim J, Phillips S (Moffatt & Nichol, Long Beach, CA). 2022. Port of Coos Bay, port infrastructure assessment for offshore wind development. U.S. Department of the Interior, Bureau of Ocean Energy Management. 91 p. Report No.: OCS Study BOEM 2022-073. Contract No.: 140M0121D0008; *see also* Oregon Department of Energy, Floating Offshore Wind: Benefits & Challenges for Oregon; Shields, Matt, Aubryn Cooperman, Matilda Kreider, Frank Oteri, Zoe Hemez, Liz Gill, Ashesh Sharma, Kyle Fan, Walt Musial, Matt Trowbridge, Ashley Knipe, Jennifer Lim. 2023. The Impacts of Developing a Port Network for Floating Offshore Wind Energy on the West Coast of the United States. Golden, CO: National Renewable Energy Laboratory. NREL/TP-5000-86864. (providing an extensive analysis of port infrastructure needs for West Coast offshore wind).

[12] National Renewable Energy Laboratory, Electrical Infrastructure Cost Model for Marine Energy Systems (Sept. 2023).

[13] "Per [the Oregon Department of Energy], no single interconnection point on Oregon's coastal grid can accommodate 2 GW and the Bonneville Power Administration notes that southern Oregon existing transmission system, with upgrades, can only accommodate 1 GW before transmission infrastructure." Area Identification Memorandum at pp. 15-16.

[14] Schatz Energy Research Center, et al., Northern California and Southern Oregon Offshore Wind Transmission Study, Vol. 1 (Oct. 2023, rev. Jan. 2024).

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