Oregon Offshore Wind Energy Roadmap

Appendices

February 2026

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Note: This public review draft is also undergoing review by Oregon state agency partners and is subject to change.

APPENDIX A

ENFORCEABLE POLICY ASSESSMENT

Appendix A Enforceable Policy Assessment

A.1 Introduction

As part of fulfilling the requirements of House Bill 4080 Section 4, Oregon Department of Land Conservation and Development (DLCD) conducted an "assessment of the state Enforceable Policies that may be used in the Federal Consistency review of offshore wind energy leasing decisions and any other actions related to offshore wind energy development off of the Oregon coast."

The purpose of the Enforceable Policy Assessment (or Policy Assessment) is twofold:

1. To identify existing state policies relevant to the development and approval of future offshore wind energy projects (This information may be informative to prospective offshore wind energy developers, project applicants, or federal agencies); and
2. To identify gaps in existing policies or potential new policies that the state may wish to address through new rulemaking or legislative action prior to conducting a potential future offshore wind energy project review.

This Policy Assessment includes in-depth discussion of offshore wind energy effects of concern and interest, benefits communities want to capture through policy, a state policies overview relative to the Roadmap objectives, and a policy gap analysis table.

A.2 Policy Assessment Process

The Policy Assessment was led by DLCD and refined through conversations with the Offshore Wind Energy Roadmap Roundtable, a core team of state agencies, Oregon's Ocean Policy Advisory Council working group, local government staff, participants of three coastal public meetings, fishing industry representatives, tribal representatives, and community focus group.[1] In addition, DLCD consulted the Environmental Law Institute to review the list and identify key policy gaps and provide feedback.[2]

Note: This public review draft, including this Policy Assessment, is also undergoing review by Oregon state agency partners and is subject to change based on their specific authorities or expertise

[1] For a list of participating state agencies, see Appendix B. The OPAC working group information can be found here: https://www.oregon.gov/lcd/ocmp/pages/opac.aspx. Regarding local government staff, between November 2024 and May 2025, DLCD staff met with coastal communities that included 7 counties and 22 cities. The meetings were conducted in conjunction with the capacity assessment. To see a full list of local county and city governments that participated in the Policy Assessment, see Appendix B, which focuses on the Government Capacity Assessment.
[2] https://www.eli.org/

The Policy Assessment is based in key coastal effects to coastal resources and uses that are reasonably anticipated to be evaluated as part of a future review (see Table A-1 Callout Box).[3]

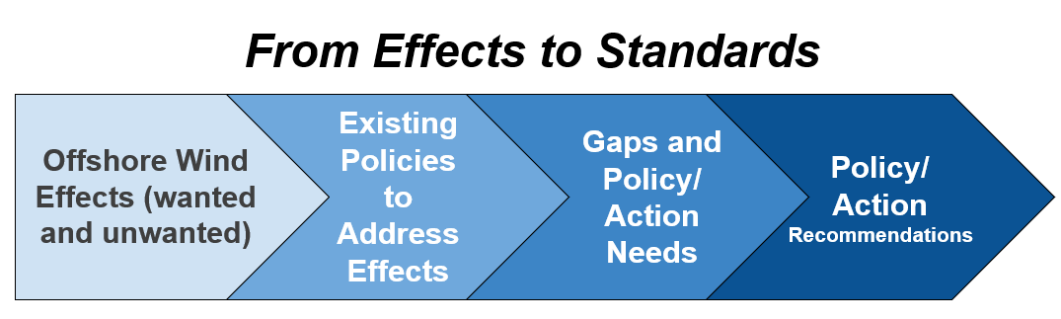
Table A-1. Callout: Coastal Effects in the context of state offshore wind energy review authority

Callout: Coastal Effects in the context of state offshore wind energy review authority

The term "coastal effects" has a specific meaning and significance under the state's Federal Consistency review authority for offshore wind energy federal leasing and permitting actions. Under the Federal Consistency regulations, coastal effects include impacts in five major categories: natural resources, cultural resources, coastal economies, aesthetics, and recreation/public access.[4] The review includes evaluation of direct and indirect impacts, including consideration of cumulative (impacts that add up) and secondary (impacts that occur later in time or farther removed in distance) impacts in or outside of the coastal zone that have 'reasonably foreseeable effects' on coastal resources or uses.[5]

From coastal effects to enforceable policies

Federal Consistency review outcomes must be based on the "Enforceable Policies" of the state that have been approved by the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management.[6] A state may not object to a project that has unacceptable coastal effects if there is not a corresponding Enforceable Policy that addresses the effect. An important step in the Policy Assessment in this Roadmap was to identify all reasonably foreseeable effects of interest so they could be compared to existing Enforceable Policies of the state. Effects not covered by an existing Enforceable Policy represent "gaps" that the state should consider addressing through formal policy amendments. Additionally, one of the key factors in the decision by NOAA to approve a state policy as an Enforceable Policy that may be used in Federal Consistency reviews depends on whether the policy in question relates to an effect on state coastal resources or uses.



[3] During Roadmap development, identification of effects focused on potential effects of interest or concern without an assessment of their likelihood to occur based on the current state of knowledge. This approach was intended to identify community interests and concerns and gather all possible areas where a standard might be needed, regardless of whether the related effect is realized. The assessment of likelihood of an effect would occur during formal project reviews.

[4] eCFR :: 15 CFR Part 930 -- Federal Consistency with Approved Coastal Management Programs

[5] https://www.ecfr.gov/current/title-15/subtitle-B/chapter-IX/subchapter-B/part-930

[6] https://www.oregon.gov/lcd/ocmp/pages/enforceable-policies.aspx

The full Policy Assessment can be found below in Table A-1, with a summary of the identified gaps and opportunities found in Section 5.2 of the Roadmap. The list of effects was developed from the following sources:

- Effects identified during the PacWave permit scoping process (with amendments to be applicable to offshore wind energy instead of wave energy devices).[7]
- Effects identified in public and agency comments during the 2024 Federal Consistency review of proposed BOEM offshore wind energy leases.[8]
- Section 3 of the informal Offshore Wind Energy Roadmap Considerations document (2023).[9]
- Responses to the Roadmap Roundtable online survey conducted in December 2024.
- Individual staff conversations and research into potential offshore wind energy effects from other projects on the East Coast and internationally, in support of future Federal Consistency reviews.
- Interviews with local government planning staff and state agencies.

The list of effects was reviewed and refined over the course of one year through conversations with the Policy Assessment participants. DLCD staff compared these effects against existing Enforceable Policies of the Oregon Coastal Management Program and identified areas where policy gaps may exist to address those gaps in future offshore wind energy permit reviews.

A.3 Key Effects and Interests

The key effects and interests that informed the gap assessment are organized around objectives identified in House Bill 4080. The gaps and interests represent topic areas where there is either: A) an effect of concern that should be addressed by a state protective policy; or B) a key challenge, need, or benefit the state should attempt to capture related to the successful pursuit of offshore wind energy, which could potentially be addressed by new or amended state policies.

A.3.1 Achieving State Energy and Climate Goals

Oregon is one of seven states in the Western US that has committed to achieving 100 percent clean electricity by 2040, on top of which recent demand forecasts predict that Oregon will need to double its current total energy generation by 2050 to meet rising demand. To participate in the clean energy transition, Oregon and the surrounding region need new renewable resources to supplement existing energy sources (e.g., wind, solar, hydroelectric, geothermal) and meet increasing power needs. Offshore wind (OSW) energy is one potential pathway to new renewable energy generation.

Following the 2024 BOEM Final Sale Notice for the Oregon Wind Energy Areas, four of the five eligible bidders signaled that they no longer wanted to participate in a lease sale process, which was a leading

[7] https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20140916-5198&optimized=false
[8] https://www.oregon.gov/lcd/OCMP/FCDocuments/OSW-FC-Public-Comments_COMPLETE.pdf
[9] https://oregonconsensus.org/wp-content/uploads/2024/04/Considerations_Oregon-FOSW-Roadmap-with-Exit-Ramps_04262024_final.pdf

contributor to BOEM's decision to postpone the lease sale for Oregon.[10] During development of this Roadmap, representatives of the offshore wind energy industry expressed that several aspects of the situation in Oregon posed a risk for investing in offshore wind energy development as outlined below. As described in the ODOE Floating Offshore Wind Study (2022), and through discussions supporting the development of this Roadmap, a number of specific benefits and challenges will need to be addressed through policies, investments, and actions in order to create an environment that can attract offshore wind energy investment in the future.[11]

A.3.1.1 Access to Regional Markets and Grid Capacity

Currently, the market for buying and selling power in the Pacific Northwest is divided among 38 "balancing authorities" that face regulatory and economic barriers preventing open buying and selling of electricity across the region.[12] One former representative of the offshore wind energy industry likened the situation of trying to sell large amounts of power from an offshore wind energy facility in Oregon to "selling a paper route," with multiple smaller customers who have individual needs rather than a larger buyer that can provide relative cost and demand stability and reduce investment risk. The fragmented market also presents challenges for intermittent resources like wind and solar that can lead to smaller grid areas having too much or not enough power at a given time and lead to imbalances in supply and demand that prevent renewable energy facilities from producing at their full potential or selling power at reliable rates. Renewable energy policy advocates have envisioned the creation of a regional energy market that is "bigger than the weather" or impressive enough that allows power to be sold across the region from the places that produce it to the places that need it – and can afford it.

Access to transmission grid capacity was also identified as a major barrier, with most of the transmission along the coast and between states owned by the Bonneville Power Administration, which is already facing challenges to connect new electricity sources.[13]

During Roadmap development conversations, the topic of out-of-state power purchasers came up frequently. Because Oregon has traditionally benefited from relatively lower electricity costs through the Pacific Northwest hydropower system, concerns were expressed about the potential for offshore wind energy to result in higher ratepayer costs if included in the mix offered by Oregon utilities. If offshore wind energy cannot be affordably sold in Oregon, future power may be purchased by ratepayers in other states under a regional market system. Under this scenario, the actual energy produced would be consumed at its nearest connection point, assumed to be the Oregon coastal grid, though the cost would appear on power bills elsewhere. Discussion around this scenario revealed a number of perspectives and considerations:

- There is no guarantee that the coastal power grid would receive any direct power, resiliency or reliability benefits from offshore wind energy. Potential benefits of an offshore wind energy

[10] https://www.boem.gov/newsroom/press-releases/boem-postpones-oregon-offshore-wind-energy-auction
[11] https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Floating-Offshore-Wind-Report.pdf
[12] Balancing Authority: "A balancing authority ensures that power system demand and supply are always balanced, which maintains safe and reliable operation of the power system." (Source: https://www.energy.gov/sites/default/files/2023-08/Balancing%20Authority%20Backgrounder_2022-Formatted_041723_508.pdf)
[13] https://www.opb.org/article/2025/05/12/oregon-washington-green-energy-bonneville/

support industry for Oregon coastal communities might include improving the resiliency or reliability of the coastal power transmission grid. However, building an offshore wind energy support industry might not be possible without an eligible in-state power purchaser available and willing to invest in an offshore wind energy project that would be economically feasible to operate.

- Without a policy requiring that wind power produced off the Oregon coast enters the West Coast power grid in Oregon, it remains possible that offshore wind energy developed off Oregon could be transmitted directly to California or Washington by subsea cable.
- If offshore wind energy is sold to another state, it is unclear whether this generation would count toward Oregon's non-greenhouse gas-emitting electricity goals under House Bill 2021 (2021), or whether Oregon would still need to dedicate other space and resources to producing additional renewable energy for its own needs.[14]
- Coastal communities may derive some economic benefit from "wheeling" charges or franchise fees paid for the use of local grid infrastructure and rights-of-way to transmit power outside the state.[15] However, during the Roadmap process, representatives from local utilities expressed concern that these benefits may be relatively minor compared to potential losses in other existing coastal economic sectors.
- Some participants in the Roadmap process expressed a value that Oregon's coastal resources, uses, and community well-being should not bear adverse effects for the sake of meeting the energy demands of other states.

A.3.1.2 Offshore Wind Energy Industry Needs and Perspectives

At a Roadmap Roundtable meeting in February 2025, renewable energy advocates and offshore wind energy industry representatives expressed the following priority needs for Oregon to reduce the risks to new generation projects[16]:

- **A state energy procurement strategy that includes:**
  - Clear Signals from the state that emerging renewable technologies such as offshore wind energy are desired.
  - A regional power market that addresses fragmented procurement.
  - Amended policies that facilitate longer-range rate case planning than the 2-year horizon currently used in Public Utility Commission (PUC) review of utility resource plans.
  - Procurement mandates from the state, similar to the California mandate for 25 gigawatts (GW) of offshore wind energy by 2040.
  - Consider combining procurement and supply chain investment pledges.
  - Identification and facilitation of stable purchasers of power, such as large industries, data centers, or other large power consumers.

[14] https://www.oregon.gov/deq/ghgp/Pages/Clean-Energy-Targets.aspx#:~:text=In%202021%20Oregon%20State%20Legislature,with%20the%20electricity%20they%20provide

[15] Wheeling: The transmission of electricity over a third-party's grid from a generator to a purchaser who is not the grid owner. It allows a generator and consumer in different locations to transact power through an existing transmission network, typically for a fee, which facilitates the purchase of power from sources like renewable energy projects to remote end-users. (Source: https://www.eia.gov/tools/glossary/index.php)

[16] See Offshore Wind Roadmap Roundtable February 2025 Meeting Notes: https://www.oregon.gov/lcd/OCMP/Documents/OSW-Roundtable_April-MeetingMats.pdf

    - Affirmative policy conditions required to make projects financeable and competitive, such as power procurement certainty, port development strategy, transmission readiness, or coordinated state investment signals.
- **Community acceptance for offshore wind energy, characterized as**
    - Support for offshore wind energy for its own sake – clean, reliable, resilient – without requiring that it solve other problems such as housing or healthcare shortages (but also not create other problems such as short-term rent increases).
    - A willingness to build trust and invite offshore wind energy developers to the table.
    - Clear communication of the significant workforce, supply chain, and economic development that can benefit Oregon and coastal communities beyond negotiated community benefit agreements.
- **Regulatory Stability** includes clear, stable standards and clearly communicated information needs for state and local permitting processes.
- **Transmission Capabilities** to deliver offshore wind energy to the coastal grid and across the coast range to access additional markets in the state and region.
    - Responsibility for permitting, investing in, and constructing transmission infrastructure is typically beyond the scope of individual project developers and requires coordinated action involving utilities, communities, and state and federal entities.
    - Further study is needed to identify the transmission expansion necessary to deliver quantifiable energy resiliency and reliability benefits.
    - Regional collaboration with neighboring states to proactively plan and design offshore transmission configurations and onshore transmission expansion to accommodate future energy needs of Oregon and other western states. This includes coordination with NorthernGrid, BPA, PacifiCorp, California, and potentially other transmission planning regions.

A.3.2 Protecting the Environment and Species

Oregon's offshore waters host incredibly rich marine ecosystems that are part of the California Current Large Marine Ecosystem (CCLME) – one of the planet's four "eastern boundary upwelling systems" that comprise just four percent of the Earth's oceans but account for 20 percent of its productivity.[17] Birds, fish, and wildlife are drawn across the Pacific to forage in Oregon's productive waters as they transit the length of the CCLME. Some species of high concern include leatherback sea turtles, short-tailed albatross, green sturgeon, Southern Resident killer whales, and humpback whales.[18]

Offshore wind energy represents a relatively new human use of the ocean that is still evolving, and the effects are uncertain. Efforts are underway globally to study offshore wind energy installations – including those floating arrays already in existence – to better understand how they affect/impact the environment. While some effects of potential concern are becoming better understood, many remain unclear. It is also true that not all scientific findings associated with these studies are relevant to the

[17] https://oregonconsensus.org/wp-content/uploads/2024/04/Considerations_Oregon-FOSW-Roadmap-with-Exit-Ramps_04262024_final.pdf
[18] https://oregonconsensus.org/wp-content/uploads/2024/04/Considerations_Oregon-OSW-Roadmap-with-Exit-Ramps_04262024_final.pdf

eastern boundary zone of the CCLME and the specific species and habitats of this region.[19] Effects of concern mentioned in the Roadmap process include animal behavioral/physiological impacts from noise and vibrations, changes to benthic and pelagic habitats, food web alterations, primary productivity effects from changes in upwelling, risk of marine mammal collision from increased vessel traffic, risk of bird collisions from turbines (blade strike), release of contaminants from disturbance of seabed sediments, and invasive species introduction from vessels and imported components. Concerns were also raised during the Roadmap process regarding shoreside and estuary effects that may result from the development of wind energy support facilities and infrastructure at coastal ports, upgrades in transmission lines or the onshore grid, and the modification of navigation channels to accommodate large vessels and structures.

Responsible development of offshore wind energy for Oregon should account for and protect the resources in the ocean and coastal environment and the people who rely on them for their many economic, cultural, spiritual, and aesthetic values. Protecting the environment means conserving wildlife (e.g., birds, fish, invertebrates, corals, marine mammals, etc.), their habitats (e.g., sand, reefs, essential fish habitats, etc.), and the ocean processes that are fundamental to food webs. Conservation means following a precautionary approach and the mitigation hierarchy, starting with its foremost principle of avoiding harm and then being well prepared to minimize, rectify, reduce or eliminate, and compensate for any remaining unavoidable impacts over time. Successful mitigation also involves sufficient monitoring to identify and understand the effects of human actions in the environment and respond to unexpected change.[20, 21]

The ocean is currently facing a number of stressors that threaten its ecological future as well as existing industries that rely upon it (i.e., seafood). Many of these stressors are driven by climate change and its root causes, which include ocean acidification, hypoxia, and marine heat waves.[22] There is also substantial uncertainty involved with developing the size and scale of proposed offshore wind energy in areas of the ocean that have not had permanent structures of this size and complexity before or at the depths considered off Oregon. There needs to be holistic planning, and consideration of cumulative impacts, not just within a single proposed offshore wind energy array but encompassing all reasonably expected wind energy developments within the CCLME.

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[19] https://tethys.pnnl.gov/; https://tethys.pnnl.gov/us-offshore-wind-synthesis-environmental-effects-research-seer

[20] Precautionary approach: https://www.oregon.gov/lcd/OCMP/Documents/TSP_Part5_PublicationVersion_correctedEPs_01172023.pdf (see Definitions and Terms)

[21] Mitigation hierarchy: https://oregon.public.law/rules/oar_635-415-0005; https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=2989; https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=350; https://www.oregon.gov/lcd/OCMP/Documents/TSP_Part5_PublicationVersion_correctedEPs_01172023.pdf; https://www.oregon.gov/lcd/OCMP/Documents/TSP%20Part%20Four%20-%20Uses%20of%20the%20Seafloor%20.pdf

[22] https://www.oregonocean.info/index.php/doclink/oah-2024-legislative-report-final-with-appendices/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJvYWgtMjAyNC1sZWdpc2xhdGl2ZS1yZXBvcnQtZmluYWwtd2l0aC1hcHBlbmRpY2VzIiwiaWF0IjoxNzI5MDE3MzE2LCJleHAiOjE3MjkxMDM3MTZ9.VC7EQc-53PsjS8c-jqMJ35Jt0Zw3vzTpjliEx0NWaTE

A.3.2.1 Shoreside Portions of Offshore Wind Energy Facility Development

Based on some of the offshore wind energy Construction and Operations Plans (COP) approved on the east coast, the onshore components of a project reviewed by BOEM typically include a cable landing under the shore, an onshore transmission cable, and an onshore interconnection cable to connect to an existing electrical substation. The Sunrise Wind project, for example, included 17.5 miles of onshore transmission cable (6-inch diameter) buried to a depth of 6 feet. Similar components for a project in Oregon would need to obtain all necessary state and local permits and authorizations prior to approval of a COP.

Any other onshore support facilities or infrastructure necessary to support an offshore wind energy installation but are not included in a Construction and Operations Plans for an offshore wind energy facility (e.g., port staging and integration facilities, navigation channel modifications, manufacturing or fabrication facilities, or operations and maintenance facilities) would not be subject to same Federal Consistency review of an offshore wind energy Construction and Operations Plan. These other components, if developed in Oregon, would undergo separate state and local permitting and review that may trigger Federal Consistency review depending on whether a federal permit is also required. These related components of an offshore wind energy presence may occur years apart from a decision to build an offshore wind energy array.

Participants in the Roadmap process expressed an interest in integrating the reviews of offshore wind energy facilities and onshore related support facilities as a single "decision package" for the state to consider. The purpose of this would be to account for all related system effects of offshore wind energy together, to consolidate community agreements, or to avoid taking actions with potentially significant environmental effects (such as estuary modification) before it is known if the purpose and need for a new onshore facility is fully realized. The practical timing and regulatory complications described above may hinder the ability to integrate these separate actions in a formal manner.

A.3.3 Protecting Tribal Cultural Resources and Other Interests of Tribes

The ocean is a source of life and subsistence for tribes, and the ocean represents creation for many tribal people. DLCD recognizes and respects that Oregon Tribal Nations are each separate and sovereign nations with deep cultural and historical connections to the Oregon Coast. The development of offshore wind energy has the potential to affect the interests of tribes in myriad ways, and HB 4080 specifically directs this Roadmap to define standards for offshore wind energy that would accomplish, "Protection of tribal cultural and archaeological resources, culturally significant viewsheds and other interests of Indian tribes."

In discussions with tribal representatives, several interests were raised related to the potential for offshore wind energy development in Oregon. These issues apply to both the offshore and onshore aspects of development and are summarized below:

- **Preserving Culturally Significant Coastal Viewsheds** from significant effects resulting from the presence of offshore wind turbines.
- **Protection of Natural Resources as Cultural Resources**. The State of Oregon respects that tribes have a deep ongoing cultural and historical connection to the natural resources that have been an integral part of lifeways since time immemorial and are still important and relevant for tribes today. Natural resources should be protected for their cultural value as well as their intrinsic and

economic value. Natural resources may include species, habitats, or other environments of natural value, including natural resources of cultural significance that are not harvested for human use by Oregon Tribal Nations (e.g., whales).

- **Protection of Archaeological Resources, including Underwater Villages**. The State of Oregon considers archaeological sites and their contents to be irreplaceable, finite, and non-renewable resources that are part of Oregon's heritage. Tribal archaeological and burial sites are not simply pieces of the tribe's cultural past - they are considered sacred and represent a continuing connection with their ancestors. The people of Oregon, and state agencies acting on their behalf, are stewards with a public trust responsibility towards these sites and their contents.
- **Protection of Areas Used for Cultural Practices**. Cultural resources are distinct from archaeological resources under Oregon laws and policies. Archaeological resource sites may be generally defined as those areas in the state that yield historical artifacts, whereas cultural resources may be broadly defined as places where tribes engage or historically engaged in traditional activities such as food gathering but which may not leave behind a physical signature such as artifacts.
- **Protection of Tribal Subsistence, Ceremonial, and Commercial Fishing** including from fishing area exclusion, concentration of fishing pressure, and effects to species from loss of habitat or effects to anadromous species like salmon or lamprey.
- **Use Indigenous and Traditional Knowledge in State Decision-Making.** Tribes have knowledge of the Oregon coastal and ocean environment that dates back to time immemorial. This knowledge can be an asset to the state in combination with new scientific research to better understand and value the potential effects of offshore wind energy development and the species and habitats that may be affected.
- **Include Tribes at Each Stage of Offshore Wind Energy Decisions** throughout the entire process of siting, exploring, permitting, operating, and decommissioning an offshore wind energy project. Tribes emphasized that BOEM has a federal responsibility for government-to-government communication with tribes as part of its tribal trust responsibilities, and this responsibility should not be delegated to private leaseholders.
- **Tribal Mitigation Agreements.** Tribes have expressed an interest in negotiated agreements to address potential effects to tribal community well-being or access to usual and accustomed places or resources of cultural significance. Tribal benefits are separate from other community benefits, and offshore wind energy developers must engage with tribes independently and separately from other communities. However, there may be opportunities to combine efforts while considering the unique interests of tribes. A challenge was recognized that it is difficult to discuss tribal mitigation agreements when impacts are not yet understood or disclosed at the leasing stage.
- **Opportunities for Co-Stewardship and Business Partnership.** Governor Kotek expressed in a March 2025 letter to tribes an interest in strengthening the state's efforts to provide support for tribal enterprises, including emerging industries such as renewable energy, sustainable tourism, and advanced manufacturing to support long-term economic resilience of tribes. Tribes have expressed interest in being included in business partnership opportunities related to the many types of manufacturing, environmental, scientific, and other work that may arrive alongside any

future offshore wind energy development. Opportunities for co-stewardship of resources and habitats are also of interest.

- **Data Collection, Monitoring, and Access.** There is strong interest from tribes and members of the public to have access to the data and information supporting offshore wind energy permitting decisions, both to safeguard against bias in information collection and to allow independent assessment of potential effects from a proposed project. There was also interest expressed in tribes that have data sovereignty regarding information that is shared (i.e., that tribes have the ability to host data themselves and privately evaluate it relative to their own sensitive historical or cultural information). A perspective was shared that when data has been collected on tribal resources, tribes should have independent access to that information for their own purposes. The state shares an interest in transparent decision-making and providing access to data and information whenever possible. At the same time, the state acknowledges that some information may be proprietary in nature and not accessible due to existing legal protections for some information.
- **State Role in Sovereign Communications between Tribes and Federal Government.** The tribes, State of Oregon, and federal government (or the "three sovereigns") all have varying sovereign interests in the uses and resources of the coastal zone. While the offshore wind energy leasing and permitting process is federally led, there are phases and aspects of the process for which a "three sovereigns" approach to coordination and communication would support the respective interests of the different governments.
- **Tri-Party Communication with Tribes, State, and Energy Developers**. There is an interest from tribes in greater alignment with both the state and offshore wind energy developers regarding expectations for project design, survey activities, and project effects. This direct coordination should occur in the multi-year long period after the leasing stage before a Construction and Operations Plan has been submitted for BOEM review, as well as during the state's Federal Consistency review of the Construction and Operations Plan.
- **Protection of Tribal People During Implementation of Offshore Wind-Related Projects**. The California Assembly Bill 525 Strategic Plan reported that, "Consultation with tribes and review of relevant research indicates a sharp increase of violence and missing tribal peoples during an influx of nonlocal workforce supporting the development of a new industry.[23] Typically, the nonlocal workers are housed in areas called "man-camps," which can overburden local communities' public safety personnel and put Native American people at risk for sexual and gender-based violence. Additional research is necessary to fully understand if the increase of the offshore wind energy workforce in local communities will increase the MMIP crisis." The Strategic Plan, "Encourage[s] project proponents to continue to study and develop public safety measures to reduce violent crime and sexual and gender-based violence particularly against Native American and other vulnerable populations." A 2024 report by the Natural Resources Defense Council reported that in June 2023, the Yurok Tribal Court published a report outlining

[23] https://efiling.energy.ca.gov/GetDocument.aspx?tn=257404

recommendations for preventing MMIP in Humboldt and Del Norte Counties as a result of offshore wind energy development. [24, 25]

- **Tribal Capacity Needs to Support Offshore Wind Energy Engagement**. In order to participate fully in an ongoing engagement process for offshore wind energy planning and development, there is a recognized need for increased tribal staff capacity at multiple phases of an offshore wind energy development lifecycle. For more information on the government capacity assessment, see Appendix B.

A.3.4 Supporting Coastal and Regional Communities

Offshore wind energy development in Oregon presents both opportunities for coastal community benefit and concerns about potential unwanted effects. Offshore wind energy development should create opportunities and benefits that build on the existing strengths of coastal communities. Supporting communities means:

- Taking the time to understand existing socioeconomic context and to find solutions that do not overburden or overtax local resources, community culture, or the local economy.
- Not pre-supposing that what is good for other communities or state goals is also a benefit for Oregon's small coastal towns.
- Communicating forthrightly about potential impacts as well as benefits and supporting coastal communities to have the opportunity for autonomy and input on decisions that shape their future.
- Recognizing the need to communicate in ways that coastal communities can have meaningful input and be partners in shaping if and how offshore wind energy will be incorporated into the existing community fabric.

While state oversight is essential, local governments remain the first point of contact for land-use, public safety, coastal access, infrastructure failures, and dealing with any unintended consequences. Strengthening coordination in these areas will help ensure that Oregon's transition to offshore wind energy is orderly, sustainable, and broadly supported.

Throughout the Roadmap process, several topics were raised, including:

- **Travel Oregon reported that nearly $950 million in earnings per year come to the Oregon Coast via tourism, with $200** million per year coming to the south coast. On an average day, the overnight visitor population increases the coastal population by 22 percent more than the number of residents in the area (68 percent of overnight visitors stay in hotels, motels, or short-term rentals). The tourism economy supports 26,500 jobs on the coast, with 8,000 of those jobs coming in the last 20 years. The majority of those jobs are in the accommodation and food service sectors, but tourism also supports arts/entertainment, recreation, retail spaces like groceries and gasoline,

[24] https://www.nrdc.org/sites/default/files/2025-05/CA_Offshore_Wind_R_25-05-A_06_locked.pdf
[25] https://lostcoastoutpost.com/loco-media/loco-media/blog/post/37499/How%2Bto%2BPrevent%2BMMIP%2Band%2BProtect%2BNative%2BWomen%2BGirls%2Band%2BPeople%2Bin%2BHumboldt%2B%2BDel%2BNorte%2BCounty%2Bas%2BMajor%2BDevelopment%2BProjects%2BCome%2BInto%2Bthe%2BRegion27%2B%2528002%2529.pdf

and others. The reported revenue represents only the direct dollars from tourism, but there are secondary effects throughout a coastal community's economy tied to tourism.

- **Travel Oregon reported that 96 percent of people surveyed who travel to the coast were motivated by the natural beauty of coastal environments**, and 97 percent responded that they were highly satisfied with their experience of coastal scenery. Concerns were expressed around the potential effects to natural beauty and tourism if turbines were visible or if a turbine experienced failure and had parts wash up on shore.
- **The lack of affordable, available housing availability** to meet the needs of workers and their families was raised consistently in communities up and down the coast. There is a challenge meeting current demand for housing and providing affordable housing for the teachers and other essential positions for communities. A specific concern included that if hotels or other temporary rentals were converted to long-term lodging for workers, those rooms would no longer be available to support the tourism industry, which could have ripple effects through the tourism economy. Converted long-term accommodations are not subject to lodging taxes, which could lead to decreased local government lodging tax revenue. For example, Coos Bay retains 61 percent of lodging taxes for local community general funds. If new housing is built to accommodate an increased workforce, it is important that it be quality construction that can be used by the community for years to come. Community members expressed concern about the creation of "man camps" like has occurred historically in other boom towns.
- **Communities face aging and current gaps in critical infrastructure** such as water availability, water and wastewater infrastructure, electricity and grid infrastructure, and available land. This challenge is already a concern for new housing and economic development and could be exacerbated by an increased demand for new housing.[26]
- **Clear enforceable accountability measures need to be established in the event that mishaps or unexpected harms result from offshore wind energy** installation activities or from failures of turbines during the full operational life of a project. Community members cited a recent blade failure during installation of a project on the east coast that led to fiberglass and foam blade fragments washing up on local beaches as an example of a situation where an offshore wind energy developer should have a firm responsibility to communicate early, clean up messes, and compensate local businesses that might be affected by lost access and economic opportunity that results.[27]
- **There is an interest in the positive community effects that could come from jobs and economic development related to offshore wind energy**. Offshore wind energy development could raise revenue and economic development for coastal and statewide communities, such as state, county, and local revenue from building ports, transporting supplies and materials critical to offshore wind energy, and building and constructing turbines off Oregon's ports. Additional state, county, and local revenue could be raised from property taxes or system development

[26] The City of North Bend also had a unique charter that limited raising utility rates and thus making their wastewater reserve fund insolvent in just a few years. Meanwhile, numerous infrastructure improvements are necessary especially with housing and economic production goals. Through the passage of SB 1062A, however, city council can establish new rates by a simple majority vote. (Source: https://www.northbendoregon.gov/news/8088)

[27] https://nantucketcurrent.com/news/one-year-later-vineyard-wind-blade-failure-still-unfolding

charges tied to new construction or rates tied to using infrastructure. There may also be benefits to local tourism and business spending from an influx of workers and families to coastal areas.

- **There is potential energy resilience** that could be realized from a reliable energy source that does not have to cross the Coast Range on limited transmission lines that might be subject to disruption from events like winter storms or wildfires. Community members expressed concern that offshore wind energy may not be cost-competitive and could lead to higher local power bills. Several community members also stated that if offshore wind energy is located off the Oregon Coast, the power should land within the state and benefit the coastal grid rather than be routed offshore directly to other states like California.
- **In 2024, Coos and Curry counties each passed ballot measures advising county officials that voters want them to oppose offshore wind turbine projects in their areas.**[28] The measures were approved by 60 percent and 80 percent, respectively. While local ballot measures can't be used in state review processes as a basis to object to a project, they signal significant opposition to offshore wind energy among voters.
- **The continued ecological health of estuaries, species, habitats, and other natural places in their local vicinity is important,** and community members did not want offshore wind energy development to irreparably harm these natural environments.
- **Ports and fishing represent the heart of many coastal communities and contribute to local economies, culture, and tourism.** Adverse effects to the various fishing communities from offshore wind energy development would have wide-ranging effects on community well-being.
- **Coos Bay has past experience with proposed industrial projects promising economic uplift but failing to communicate and collaborate early** to understand the needs, infrastructure constraints, and questions of the community. These past experiences have eroded trust in private industries and government and led to broken relationships within the community whose effects lasted after the new industry eventually gave up and withdrew. Community members expressed a desire for thoughtful development, especially concerning housing needs and effects on existing economic drivers, and a meaningful engagement process that brings good information and resources well before it is time to make decisions about leasing or permitting for projects.

A.3.5 Protecting and Maintaining Oregon's Fisheries Uses

Recreational and commercial fisheries, subsistence fisheries, seafood processors, portside services, and other seafood industry businesses form the heart of many coastal communities. Oregon fisheries also contribute to food security in Oregon and beyond by providing sustainable seafood proteins. The development of offshore wind energy in Oregon would need to sustain the economy, culture, and character of the Oregon coastal fishing communities, as well as the long-term sustainability of Oregon fisheries.

[28] Coos County Measure 6-219 (https://www.co.coos.or.us/media/46921) and Curry County Measure 8-116 (https://sos.oregon.gov/admin/Documents/local_measures/2024_G_8-116.pdf).

Table A- 2. Callout: Fishery Types

Callout: Fishery Types

Fishery – An activity leading to harvesting of fish; typically, a unit defined in terms of people involved, species or type of fish, area, fishing method, gear, class of boats, and/or purpose (NOAA 2005).

Commercial fishing refers to the whole process of catching and marketing fish and shellfish for sale (NOAA 2025).

Recreational fisheries refers to non-commercial activities of fishermen who fish for sport or pleasure, as set out in the MSA definition of recreational fishing, whether retaining (e.g., consuming, sharing) or releasing their catches, as well as the businesses and industries (e.g., the for-hire fleets, bait and tackle businesses, tournaments) which support them (NOAA 2015).

Subsistence fishing – A fishery where the fish caught are shared and consumed directly by the families and kin of the fishers rather than being sold at the next larger market (NOAA 2005).

Source: NMFS, 2024. Socioeconomic Characterization of West Coast Fisheries in Relation to Offshore Wind Energy Development

Many fishing and seafood industry jobs are intergenerational jobs that require niche skill sets, with career opportunities that are distinct from energy related jobs. The fishing sector is supported by a number of secondary industries, including wholesalers, processors, markets, refrigerated warehouses, shipbuilding and boat repair establishments, heavy construction industries, and marine transportation services.

Oregon commercial and recreational fisheries are important contributors to the State's economy. Total Oregon marine commercial and recreational economic contribution was $288 million in income, an estimated $625 million in output, and supported approximately 4,120 jobs at the statewide economy level in 2021.[29, 30]

The most important (highest harvest revenue generating) nearshore commercial fisheries are Dungeness crab, salmon troll, and nearshore groundfish. The coastwide total harvest value for nearshore fisheries was $128.5 million in 2021 which was 63 percent of the coastwide total of all commercial fisheries. In 2021, 123 buyers (e.g., processing plants, restaurants, and similar entities) each purchased at least $10,000 worth of Oregon commercial fishery landings. The economic value added from processing was estimated at $138 million.[31]

The West Coast commercial fishery landings in 2021 were 144,000 metric tons, representing $205 million in revenue. The top three ports–in terms of both commercial landed weight and revenue in 2021–on the West Coast were Westport in Washington, and Astoria and Newport in Oregon (NMFS 2022b).

Additionally, in 2021, recreational ocean finfish fishing effort included approximately 98 thousand angler days targeting salmon (often combined with bottomfishing trips) and 111 thousand angler days targeting non-salmon species such as tuna, halibut, and bottomfish. This activity generated $50.9 million in trip

[29] https://www.dfw.state.or.us/agency/docs/TRG%20Oregon%20fishing%20industry%202020-2021%20ES.pdf
[30] https://www.dfw.state.or.us/agency/docs/TRG%20Oregon%20fishing%20industry%202020-2021%20Report.pdf
[31] Ibid.

spending, resulting in $17 million in income, an estimated $46 million in output, and supported approximately 310 jobs at the coastwide economy level.

Conversations with fishing community members during the development of this Roadmap revealed a number of topics including:

- **The potential risk to current fishermen and ocean health may not be worth the potential benefit of offshore wind energy development** that could disrupt ocean systems for years to come. The state needs to carefully consider tradeoffs holistically.
- **How might extraction of wind energy from the California Current Large Marine Ecosystem affect natural upwelling processes** and the corresponding primary productivity that supports the marine food web off the Pacific coast. Effects of offshore wind energy development could combine with changing ocean conditions (e.g., fish migration, acidification, hypoxia, marine heat waves) to affect available catch.
- **Concern about direct exclusion of certain types of fishing vessels from offshore wind energy project areas.** While BOEM has stated that they would not explicitly restrict vessel movement within offshore wind energy arrays, it is not clear whether the Coast Guard would establish navigational exclusion areas for safety or national security purposes. Even if offshore wind energy project areas were not restricted, fishing community members expressed concern about the presence of mooring lines and intra-array electrical cables in the water column interfering with mid-water and bottom trawling operations. Others also expressed concern that vessel insurance companies may restrict navigation through offshore wind energy array areas due to increased risk and liability. There may also be secondary effects to processing and support economies resulting from reduced catch efficiency or relocation of fishing effort away from restricted areas.
- **Offshore wind energy arrays could act as "fish attraction devices" that draw more fish from unrestricted areas into an array area.** There is concern that this may create a compound effect on catch efficiency if fishing is restricted from an array area and more fish are attracted into that restricted area.
- **If there is less area to fish, current vessels may be concentrated in ways that could increase conflict and reduce catch efficiency.** Catch efficiency, and safety at sea, could also be affected by the need to transit around offshore wind energy array areas. If offshore wind energy arrays are sited in lower-risk bycatch areas, fishing may be moved to areas with higher bycatch risk.
- **Wind energy arrays could interfere with vessel radar near those arrays affecting safety at sea and nearby rescue operations.**
- **Placement of offshore wind energy arrays within historical stock assessment sampling locations may affect the scientific accuracy of annual quotas for species catch.**
- **Entanglement with offshore wind energy equipment could lead to fishing gear loss or vessel damage.**
- **There could be more competition for Oregon port space between Oregon and visiting fishing fleets and offshore wind energy installation or maintenance vessels.**
- **Offshore wind energy development could impact protected species in a way that further restricts fishing.** For example, if offshore wind energy arrays lead to whale migratory patterns moving further inshore, there could be increased potential for interactions with fishing vessels. If

offshore wind energy results in some incidental harm of protected species (e.g., the short-tailed albatross), would it result in additional restrictions on incidental harm for fishing and other ocean users?

- **New electromagnetic fields could affect certain crustacean species at different life stages.**
- **The BOEM-led spatial planning process that identified the Oregon WEAs in 2024 may not have accounted for all areas important to fishing, such as spawning grounds for certain species.**
- **Fishing is a livelihood that is passed on through generations.** Offshore wind energy development could have cumulative or multi-generational effects related to the loss of livelihoods, or effects on national food security provided by fisheries.

During the Roadmap process, fishing community members routinely expressed they did not feel BOEM had heeded their recommendations to avoid siting Wind Energy Areas in areas important to fishing or the species fishermen rely on (e.g., spawning grounds for Dover Sole within the Coos Bay WEA). For those fishing community members, fishing effort datasets used by BOEM in the siting process did not adequately account for certain types of fishery uses, most notably the recreational fishing fleet. Furthermore, the lack of a cumulative impact assessment during the leasing phase meant that uncertainties regarding the cumulative effects of species location changes, fishing area squeeze, and regional industry effects were not adequately considered.

A.3.6 Create Economic Opportunity and Sustain Existing Economies

Offshore wind energy development and generation include economic opportunities from manufacturing components and vessels, providing maintenance and operations offshore, portside services, and supporting power and utility operations onshore. To capitalize on these opportunities responsibly, Oregon should thoughtfully plan for the additional investments in infrastructure, housing, and social services that will be required in Oregon's coastal communities to support a new responsibly developed offshore wind energy industry.

A.3.7 Develop Oregon's Offshore Wind Energy Workforce

Achieving Oregon's clean energy mandates requires a skilled and trained statewide workforce, ready to meet the full spectrum of needs in this rapidly growing sector. This is particularly true in the offshore wind energy industry, where Oregon workers could be involved in everything from the manufacturing, fabrication, and installation of platforms, turbines, transmission lines, and other components, as well as their repair, maintenance, decommissioning, and replacement.

Along with achieving Oregon's climate goals, the State has a responsibility to set standards for these historic public investments and support the sharing of economic benefits broadly across Oregon. This requires a comprehensive plan for developing and supporting the clean energy workforce, including the infrastructure, housing, and social services in Oregon's coastal communities that this future workforce will require. This step is critical for the transition to clean energy to create good jobs and lasting community benefits, particularly for Oregon's most impacted communities. During the development of this Roadmap a number of topics were identified including:

- **Construction, Operations/Maintenance, and supply chain jobs should create family – specifically union – wage careers for coastal communities and Oregonians.** Holistically,

approaches to blue- and white-collar careers for coastal and stateside Oregonians in offshore wind energy should lead to 1) tuition-free or debt-free apprenticeship training, 2) Apprenticeship training that leads to a job with living wages and family health and retirement, 3) and on-going workforce protection and worker-to-worker union support.

- **An offshore wind energy workforce would need to be properly trained** with apprenticeship opportunities to sustain an ongoing level of opportunity and expertise. This workforce preparation requires years of planning and coordination with local communities, training programs through local and regional education institutions, and a reliable pipeline of work post-training.
- **The growth of an offshore wind energy workforce would require community and social services** such as housing, healthcare, childcare, transportation, public safety, and other essential services.
- **An offshore wind energy workforce would need to be supported by enforceable project labor agreements that uphold a living wage, equitable hiring practices, and good benefits.**

A.4 Key Existing Policies and Procedures

The State of Oregon recognizes the need to address and protect coastal values of land and water, through the Oregon Coastal Management Program. The Program is made up of 41 partners at the county and city level and 11 state agency partners. Each local entity has documents governing how they operate and guiding how they administer land use in their community. Each state agency has chapters of statutes guiding operations and helping them administer state law. These documents include comprehensive plans and land use regulations, state statutes, and statewide planning goals. This section identifies key existing Enforceable Policies as they relate to offshore wind energy development. Other existing state policies may also be relevant to aspects of offshore wind energy development, such as energy or labor policy and are referenced here where appropriate.

A.4.1 Geographic Location Description

The state obtained a "Geographic Location Description" (GLD) in 2015 applicable to marine renewable energy projects in federal waters, which granted the state automatic Federal Consistency review of any federal actions or authorizations related to offshore wind energy out to a depth of 500 fathoms (3,000 feet).[32] When conducting this Federal Consistency review under its Coastal Zone Management Act authority, the state is able to apply its Enforceable Policies to that action, even in federal waters. The DLCD Oregon Coastal Management Program plans to apply to the NOAA Office for Coastal Management requesting to extend the outward boundary of the GLD beyond 500 fathoms to the currently expected technological extent of potential offshore wind energy development (1,300 meters).

[32] https://www.oregon.gov/lcd/ocmp/pages/where-fc-applies.aspx

Table A-3. Callout: What are Enforceable Policies?

Callout: What are Enforceable Policies?

The Oregon Coastal Management Program (Program) is made up of 41 partners at the county and city level and 11 state agency partners. Each entity has documents governing how they operate and guiding how they administer their authorities. These documents include comprehensive plans and land use regulations, state statutes, and statewide planning goals.

Within the various statutes, goals, plans, and ordinances only certain elements meet the criteria to be used for Federal Consistency review. These special policies are called Enforceable Policies. A legal definition of Enforceable Policies is available in the federal regulations. Enforceable Policies are the parts of the Program that are legally binding and can be enforced. Enforceable policies are used during the Federal Consistency review process. The federal activity (e.g., offshore lease or federal permit) is compared to the Enforceable Policies that apply to it. This review determines whether a project is consistent with the Enforceable Policies of the management program.

A.4.2 Meaningful Public Engagement

A.4.2.1 Statewide Planning Goal 1: Citizen Involvement

The foundation of the statewide program for land use planning in Oregon is the 19 Statewide Land Use Planning Goals, with citizen involvement being integral in land use planning in Oregon. This requirement is one of the things that make Oregon's land use planning program unique. The requirement for public participation is written in the first goal in the statewide land use planning system. Goal 1 calls for "the opportunity for citizens to be involved in all phases of the planning process." It requires each city and county to have a citizen involvement program that addresses:

1. Opportunities for widespread public involvement.
2. Effective two-way communication with the public.
3. The ability for the public to be involved in all phases of the planning process.
4. Making technical information easy to understand.
5. Feedback mechanisms for policymakers to respond to public input.
6. Adequate financial support for public involvement efforts.

There have been changes in population and diversity as well as substantial shifts in public engagement since its 1988 adoption. Goal 1 is not always effectively implemented in fostering meaningful public engagement. Establishing relevant engagement standards that reflect the needs of the citizens of Oregon and Oregon tribes is important.

A.4.2.2 Oregon Public Review Process

For general permits issued by Department of State Lands (DSL) that is for a project within waters of the state, OAR 141-093-110 regulates the public review process. Regulatory agencies such as DSL implement this process when a public comment period opens for a project.

A.4.2.3 Territorial Sea Plan, Parts Four and Five

In both Part Four and Part Five of the Territorial Sea Plan (TSP), the Joint Agency Review Team (JART), is in place to facilitate coordination and communication between state agencies and representatives of

other affected jurisdictions throughout the pre-application and application process for a marine renewable energy project. Oregon Department of State Lands is the convenor of the JART and if a project is associated with a renewable energy facility, such as offshore wind energy, the JART convened under TSP Part Five shall also serve as the JART for purposes of Part Four coordination. In addition, DSL may convene the JART as necessary for follow-up meetings. Notwithstanding the existing JART process, the components and procedures of the JART could be reviewed to improve, expand, or clarify aspects of the process (e.g., timing, number of meetings, etc.). This includes expanding the JART composition to include all nine federally recognized tribes in Oregon.

A.4.2.4 Federal Consistency Regulations and Procedures

The federal regulations governing Federal Consistency review by states under the Coastal Zone Management Act require timely public notice of a proposed federal action for areas of the coastal zone with reasonably foreseeable effects from the proposed activity.[33] At the discretion of the State agency, public participation may include one or more public hearings. States are advised to restrict the period of public notice, receipt of comments, hearing proceedings and final decision-making to the minimum time necessary to reasonably inform the public, obtain sufficient comment, and develop a decision on the matter. Beyond these requirements, states have discretion regarding additional public participation measures they undertake before, during, and after a Federal Consistency review.

A.4.3 Oregon Statewide Planning Goals

The statewide land use planning program in Oregon is deeply established with its 19 Statewide Land Use Planning Goals.[34] Most goals are accompanied by guidelines, which are suggestions about how a goal may be applied. Oregon's Statewide Planning Goals are operationalized through city and county comprehensive plans, and the zoning and land-division ordinances needed to put a comprehensive plan into effect. Elements of local comprehensive plans and regulations are recognized as state Enforceable Policies. Any comments or concerns raised by local jurisdictions have been noted and are identified in the expanded gaps analysis found in Table A-1. In the coastal zone, local government jurisdiction is limited to those areas landward of the coastal shore, making all goals applicable except Statewide Planning Goal 19, Ocean Resources, which is implemented by the state.

Multiple Statewide Planning Goals and their local implementations may play a significant role in the review of offshore wind energy facilities and related shoreside development. The Goals are summarized below (Goal 1 is described in Section A.4.1) and in other parts of Appendix A where they may be especially relevant to one of the key objective areas of the Roadmap.

Goal 2: Land Use Planning. Goal 2 requires each local government in Oregon to have and follow a comprehensive land use plan and implementing regulations. Cities and counties must build their comprehensive plans on a factual basis and follow their plan when making decisions on appropriate zoning. City and county plans must be consistent with one another.

Goal 3: Agricultural Lands. Goal 3 protects farmland for continued production of food and fiber.

[33] See 15 CFR 930.42 and 930.61.

[34] https://www.oregon.gov/lcd/op/pages/goals.aspx

Goal 4: Forest Lands. Goal 4 protects working forest land around the state, preserving it for commercial forestry while recognizing its value for fish and wildlife habitat, recreation, and protection of air and water quality.

Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces. Goal 5 is a broad Statewide Planning Goal that covers more than a dozen resources. The resources range from wildlife habitat to historic places, and gravel mines. To protect and plan for them, local governments are asked to create a number of inventories.

Goal 6: Air, Water and Land Resources Quality. Goal 6 instructs local governments to consider protection of air, water, and land resources from pollution and pollutants when developing comprehensive plans. The pollutants addressed in Goal 6 include solid waste, water waste, noise and thermal pollution, air pollution, and industry-related contaminants.

Goal 7: Areas Subject to Natural Hazards. Goal 7 requires local comprehensive plans to address Oregon's natural hazards. Protecting people and property from natural hazards requires knowledge, planning, coordination, and education. Goal 7 is primarily a process-based goal supported by guidance rather than rules.

Goal 8: Recreational Needs. Goal 8 requires local governments to plan for the recreation needs of their residents and visitors. The goal places priority on non-motorized forms of recreation, and recreation areas that serve high-density populations with limited transportation options and limited financial resources. It also places priority on recreation areas that are free or available at a low cost to the public.

Goal 9: Economic Development. The purpose of Goal 9 planning is to make sure cities and counties have enough land available to realize economic growth and development opportunities.

Goal 10: Housing. Goal 10 planning, at a local level, asks that cities inventory their "buildable lands", this refers to land inside an urban growth boundary that is suitable and available for residential use.

Goal 11: Public Facilities and Services. Goal 11 addresses planning for basic public facilities including water and sewer services, police and fire protection, health services, recreation facilities, energy and communication services, and services provided by the local government like building permitting or public works.

Goal 12: Transportation. Goal 12 requires cities, counties, and the state to create a transportation system plan that considers all relevant modes of transportation including mass transit, air, water, rail, highway, bicycle, and pedestrian.

Goal 13: Energy Conservation. Goal 13 encourages communities to look within existing urban neighborhoods for areas of potential redevelopment before looking to expand, to "recycle and re-use vacant land". The goal also directs cities and counties to have systems and incentives in place for recycling programs. Goal 13 was not written to govern or direct the production of energy, but rather its conservation.

Goal 16: Estuarine Resources. Goal 16 provides the principal guidance for the planning and management of Oregon's estuaries. The overall objective of Goal 16 is to "to recognize and protect the unique environmental, economic and social values of each estuary and associated wetlands; and to protect,

maintain, where appropriate develop, and where appropriate restore the long term environmental, economic and social values, diversity and benefits of Oregon's estuaries".

Goal 17: Coastal Shorelands. Goal 17 outlines planning and management requirements for the lands bordering estuaries as well lands bordering the ocean shore and coastal lakes. In general, the requirements of Goal 17 apply in combination with other planning goals to direct the appropriate use of shoreland areas with a focus on the protection and management of resources unique to shoreland areas. However, clarifying the specific types of shoreland areas that are protected by the goal may strengthen this policy.

Goal 18: Beaches and Dunes. Goal 18 focuses on conserving and protecting Oregon's beach and dune resources, and on recognizing and reducing exposure to hazards in this dynamic, sometime quickly changing environment.

Goal 19: Ocean Resources. The Pacific Ocean offers both commercial and recreational opportunity and has a profound impact on Oregon's identity. Goal 19 addresses matters related to open ocean resources and aims "to conserve the long-term values, benefits, and natural resources of the nearshore ocean and the continental shelf." Goal 19 is implemented under the jurisdiction of the state, not local government.

A.4.4 State Energy and Climate Objectives

A.4.4.1 Regulation of Energy Facilities (related or supporting facilities) – ORS 469; OAR 345

The Energy Facility Siting Council reviews applications for large energy facilities by using a set of standards designed to protect natural resources and ensure public health and safety. The siting standards for energy facilities do not apply in the Territorial Sea, including subsea cables associated with the facility, but they would apply to any transmission line on land greater than 230kV and longer than ten miles. Oregon Revised Statutes (ORS) Chapter 469 focuses on energy conservation programs and energy facilities. It establishes policies to promote the efficient use of energy resources and develop sustainable energy options. The Oregon Coastal Management Program relies on the 1987 edition of ORS chapter 469 and includes policies that have since been replaced or codified, highlighting a need to regularly update and maintain Oregon's Enforceable Policies through the NOAA Office for Coastal Management.

Oregon Administrative Rule (OAR) 345, Energy Facility Siting Standards, outlines the standards for siting energy facilities in Oregon, including requirements for compliance with state statutes and administrative rules. No provisions of OAR Chapter 345 are included in the Oregon Coastal Management Program, but it is identified as a policy gap to include it within the state's Enforceable Policies.

A.4.4.2 HB 2021 – Oregon 100 Percent Clean Electricity Law

Oregon's "100 percent Clean Electricity Law" is an existing state energy law and program under the Oregon Public Utility Commission's (OPUC) authority that relates to offshore wind energy. Oregon HB 2021(2021) established a clean energy program overseen by OPUC and in part by Oregon Department of Environmental Quality (DEQ). This law requires Oregon's largest investor-owned utilities (Portland General Electric (PGE) and PacifiCorp), and power suppliers for some large energy users to reduce greenhouse gas emissions associated with the generation of electricity sold in Oregon. Greenhouse gas

emissions must be reduced, relative to baseline emissions levels established by DEQ, 80 percent by 2030, 90 percent by 2035, and 100 percent by 2040.

The law requires PGE and PacifiCorp to develop Clean Energy Plans, which OPUC must review and acknowledge. These plans are included in the utilities' Integrated Resource Plans and must:

- Include annual goals/actions that make progress towards the clean energy targets
- Examine costs and opportunities of offsetting energy generated from fossil fuels with community-based renewable energy
- Include an examination of resiliency opportunities based on industry resiliency standards and guidelines established by the OPUC
- Result in an affordable, reliable, and clean electric system

A.4.5 Protection of the Environment and Species

The State of Oregon has policies to protect species and habitats offshore, onshore, and within rivers and estuaries that give the state a broad ability to object to or place conditions on a project if it has reasonably foreseeable effects to natural and ecological resources inconsistent with the policies. This includes effects to anadromous species like salmon and lamprey, resident and migratory whales, and other species, plus effects to their critical habitats offshore and within estuaries.

A.4.5.1 Statewide Planning Goal 16: Estuarine Resources

Goal 16 provides the principal guidance for the planning and management of Oregon's estuaries. To implement this Goal, local governments develop Estuary Management Plans that establish areas designated for development, conservation, or natural uses (i.e., zoning in the water), as well as development restrictions or requirements appropriate to these designations. While not likely to be as significant to the review of an offshore wind energy facility's Construction and Operation Plan or US Army Corps of Engineers permit, Goal 16 and its local embodiments would likely be instrumental in the review of separate port developments or estuary alterations (e.g., dredging and material placement) associated with offshore wind energy industry support facilities that are onshore. For example, modification of the navigation channel in Coos Bay would require an exception to Goal 16 that meets the criteria in Statewide Planning Goal 2 and other local estuary plan requirements.

A.4.5.2 Statewide Planning Goal 17: Coastal Shorelands

Goal 17 outlines planning and management requirements for the lands bordering estuaries as well as lands bordering the ocean shore and coastal lakes. In general, the requirements of Goal 17 apply in combination with other planning goals to direct the appropriate use of shoreland areas with a focus on the protection and management of resources unique to shoreland areas.

A.4.5.3 Statewide Planning Goal 18: Beaches and Dunes

Goal 18 focuses on conserving and protecting Oregon's beach and dune resources, and on recognizing and reducing exposure to hazards in this dynamic, sometimes quickly changing environment.

A.4.5.4 Statewide Planning Goal 19: Ocean Resources

Goal 19 is a key Enforceable Policy for the review of offshore renewable energy activities within the Territorial Sea and in federal waters out to a depth of 500 fathoms. Goal 19 addresses matters related to

open ocean resources and aims "to conserve the long-term values, benefits, and natural resources of the nearshore ocean and the continental shelf." Key Goal 19 policy includes:

> *State and federal agencies shall carry out actions that are reasonably likely to affect ocean resources and uses of the Oregon territorial sea in such a manner as to:*
> *a. maintain and, where appropriate, restore the long-term benefits derived from renewable marine resources;*
> *b. protect:*
> *1. renewable marine resources— i.e., living marine organisms from adverse effects of development of non-renewable resources, uses of the ocean floor, or other actions;*
> *2. the biological diversity of marine life and the functional integrity of the marine ecosystem;*
> *3. important marine habitat, including estuarine habitat [see policy for full list];*
> *4. areas important to fisheries [see policy for full list]*

A.4.5.5 Territorial Sea Plan, Parts Four and Five

Regarding undersea cables, TSP Part Four has the following policy:

> *An applicant for a project or development action within or affecting the Oregon Territorial Sea shall:*
>
> *Design and site projects and infrastructure responsibly such that proposed seafloor development actions will maintain and protect to the maximum extent practicable, natural resources, ecosystem integrity, marine habitat, and areas important to fisheries, navigation, recreation, and aesthetic enjoyment from adverse effects that may be caused by said development actions. For purposes of this section, 'Maintain and protect' requires mitigation, in order of priority [Avoid, Minimize, Rectify, Reduce or eliminate over time, Compensate].*

TSP Part Five has numerous policies for renewable energy facilities including the “Special Resources and Use Review Standards” found under Policy B.4.g, which states,

> *The state shall protect living marine organisms, the biological diversity of marine life, the functional integrity of the marine ecosystem, important marine habitat and associated biological communities by using the following ecological resource protection standards to evaluate marine renewable energy project proposals.*

In addition, potential renewable energy facilities, “shall have no significant adverse effect on ecological resources of concern.” The definition of “significant adverse effects” can be derived from the Adverse Effect for Ecological Resource Protection Standards, which means,

> *…degradation in ecosystem function and integrity (including but not limited to direct habitat damage, burial of habitat, habitat erosion, reduction in biological diversity) or degradation of living marine organisms (including but not limited to abundance, individual growth, density, species diversity, species behavior).*

Part Five also addresses cumulative effects of potential renewable energy projects, analyzing biological, ecological, physical, and socioeconomic effects when evaluating, “the shoreland component, in

conjunction with effects of any prior phases of the project, past projects, other current projects, and probable future projects."

Some deficiencies have been noted in TSP Parts Four and Five and are identified in the gaps and opportunities Table A-1.

A.4.5.6 Wildlife Policy, ORS 496.012

Oregon Revised Statutes 496.012, known as the Wildlife Policy, states, "Wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state."

A.4.5.7 Fish and Wildlife Habitat Mitigation Policy, OAR 635-415

Oregon Administrative Rule 635-415 addresses habitat mitigation, including the following provision:

> *It is the fish and wildlife habitat mitigation policy of the Oregon Department of Fish and Wildlife to require or recommend, depending upon the habitat protection and mitigation opportunities provided by specific statutes, mitigation for losses of fish and wildlife habitat resulting from development actions. Priority for mitigation actions shall be given to habitat for native fish and wildlife species. Mitigation actions for nonnative fish and wildlife species may not adversely affect habitat for native fish and wildlife.*

A.4.5.8 Removal-Fill Policy, ORS 196

Oregon's removal-fill law, found in ORS 196, protects wetlands and waters by requiring a permit for most projects that add, remove, or move more than 50 cubic yards of material. Any amount of removal-fill greater than zero requires a permit for activities related to an ocean renewable energy facility within the Territorial Sea.[35] Some protected areas require permits for activities that add or remove any amount of material.

A.4.5.9 State Lands, OAR 141

The following policies, found in OAR 141 are used for reviewing effects of a project:

- Rules for granting proprietary authorization for fiber optic and other cables on state-owned submerged and submersible land within the Territorial Sea, OAR 141-083
- Administrative rules governing the issuance and enforcement of removal-fill authorizations within waters of Oregon, including wetlands, OAR 141-085
- Oregon essential anadromous salmonid habitat, OAR 141-102
- Authorizing special uses on state-owned land, OAR 141-125
- Rules governing the placement of ocean energy conversion devices on, in or over state-owned land within the Territorial Sea, OAR 141-140

A.4.5.10 Water Quality, ORS 468b and OAR 340

Policies related to water quality, ORS 468b and OAR 340, can be used for reviewing effects of a project but it also depends on the geographic location of the project work (disturbance and development), such

[35] https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=238571

as in the territorial sea, waters of the state, or federal waters and the type of federal permitting nexus (e.g., CWA 404 or other). Applicable policies include:

- Prevention of pollution, ORS 468b.020
- Entry of oil into waters of state, ORS 468b.305
- Oil spill continency plan, ORS 468b.345
- Turbidity, OAR 340-041-0036
- Oil Spills, OAR 340-141
- Ballast Water Management, OAR 340-143

A.4.5.11 Information Requirements and Uncertainty Management

In addition to the protection standards, state policies include comprehensive information requirements identifying potential effects of a project that should be reasonably well understood. Goal 19, Ocean Resources, requires an information and effects assessment that, "shall assess the reasonably foreseeable adverse effects of the action as required in the Oregon Territorial Sea Plan. The effects assessment shall also address reasonably foreseeable adverse effects on Oregon's estuaries and shorelands as required by Statewide Planning Goal 16, Estuarine Resources; Goal 17, Coastal Shorelands; and Goal 18, Beaches and Dunes."

The Territorial Sea Plan further specifies numerous information requirements, including:

- Information regarding the development, placement, operation, maintenance, and decommissioning of the project
- Location and description of all affected areas
- Physical and chemical conditions
- Bathymetry (bottom topography) and Shoreline Topography
- Geologic structure
- Biological features, including habitats and species stocks
- Cultural, economic, and social uses affected by the renewable energy facility
- Significant historical, cultural or archeological resources
- Other data that the regulating agencies determine to be necessary and appropriate to evaluate the effects of the proposed project

In addition to the inventory information listed above, a permit for an offshore wind energy facility would need to provide a written evaluation of, "all the reasonably foreseeable adverse effects associated with the development, placement, operation, and decommissioning of the proposed renewable energy facility." This includes effects to:

- Biological and ecological effects
- Current uses
- Natural and other hazards
- Cumulative effects, including other past, current, or potential future projects; confounding effects from other existing and future human activities; and regional effects of climate change.

The Territorial Sea Plan further requires the development of an **Adaptive Management Plan** and requires the project developer to monitor and evaluate the project at each subsequent phase to,

"account for variable conditions in the marine environment, the changeable status of resources and individual or cumulative effects of uses" in their management plan. The intent of such evaluation is to inform the design, installation, and operation of successive phases. The Territorial Sea Plan also requires a **Contingency Plan, Inspection Plan, Monitoring Plan, Decommissioning Plan, and Financial Assurance Plan.**

A.4.5.12 State Ability to Require Sufficient Information

Under the state's Federal Consistency authority, the state may object to a federal authorization or permit that does not demonstrate consistency with the above information requirements. The state expects that the above requirements in Part Five of the Territorial Sea Plan take effect after site characterization surveys are complete when data are used to develop an energy project proposal (i.e., after a lease area is assessed and before finalization of a Construction and Operations Plan).

Federal Consistency reviews at the permit review stage (approximately 5 years after leasing) may be extended indefinitely until sufficient information to establish consistency is obtained, or the state may object based on insufficient information to establish coastal effects and/or consistency with a policy standard that relies on the information.

The Federal Consistency regulations in 15 CFR 930.58 state:

> *(c)* ***A State agency objection may be based upon a determination that the applicant has failed, following a written State agency request, to supply the information required pursuant to § 930.58 or other information necessary for the State agency to determine consistency.*** *If the State agency objects on the grounds of insufficient information, the objection shall describe the nature of the information requested and the necessity of having such information to determine the consistency of the activity with the management program.*

A notable example of a state Federal Consistency objection based on insufficient information was the proposed Jordan Cove Liquid Natural Gas Export facility in Coos Bay.[36] The state's objection was appealed to the US Secretary of Commerce, who upheld the state's objection in February 2021 on the basis that the applicant had failed to provide sufficient information to establish coastal effects relative to the state Enforceable Policies or the national interest.[37]

The Federal Consistency provisions are a powerful tool to obtain the necessary information to make responsible decisions, either prior to a permit decision or after a decision through monitoring and adaptive management. The most efficient way to protect state interests and meet information needs without project delays is for offshore wind energy developers to learn about Oregon inventory and policy requirements before conducting surveys and site assessment activities. In the 2024 BOEM leasing Federal Consistency review, the state was able to secure multiple conditions to include state agency staff early in the information collection process, to enhance offshore wind energy developers' understanding

[36] https://www.oregon.gov/lcd/ocmp/pages/jordan-cove-energy-project.aspx
[37] https://www.oregon.gov/lcd/OCMP/FCDocuments/APPEAL-DECISION_Final_Jordan%20Cove%20Decision_2.8.21.pdf

of the information needs the state will have during its Federal Consistency review of a Construction and Operations Plan, years after a lease is issued.

One area of concern has been the question of how much information must be known before leasing may proceed. In the state's 2024 Federal Consistency decision for offshore wind energy leasing, it was reasoned that the issuance and exploration of a lease is an action that may be taken wholly at the risk of the project developer, with no guarantee that a lease will result in approval of a project application in a later review. It is at BOEM's discretion whether to offer an exclusive right, via a lease, to conduct survey activities for site characterization and site assessment, as it is within the voluntary discretion of project developers to bid on lease offerings at the risk that a project may never materialize or may ultimately be found inconsistent with state Enforceable Policies. Therefore, the state found that the scope of the effects of a full offshore wind energy project is not committed by the issuance of a lease and decided that allowing leases to proceed at the developer's risk, absent full knowledge of an offshore wind energy project at the time of leasing, was consistent with Enforceable Policies. The completion of project studies and site characterization activities following the lease were also expected to contribute valuable data and information to support future permitting decisions.

Section 6 of the Roadmap identifies some potential actions that may be taken to improve the knowledge base prior to any need to consider future leasing.

A.4.6 Protection of Archaeological and Cultural Resources and Other Interests of Tribes

The excavation, destruction, or alteration of any known archaeological site or collection of archaeological objects located on public or private land without the issuance of a state archaeological permit is prohibited (Oregon Revised Statutes, ORS 358.920 and ORS 390.235). Destruction or damage to any human burial site, human remains, or Native American sacred or special objects associated with those burial sites is also prohibited (ORS 97.745). There may be criminal penalties for violating these laws.

A.4.6.1 Statewide Planning Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces

Regarding the protection of culturally significant areas, Goal 5 requires the inventorying of "cultural areas." In addition, procedures and requirements for complying with Goal 5 are set forth in OAR 660-023, which require cities and counties to follow prescribed procedural steps and standards when developing programs to protect resource categories outlined in Goal 5. A rule specific to cultural areas is expected to be added to OAR 660-023 in 2026. When filed, the rules in OAR 660-023 would require local governments to provide notice to tribes for ground disturbing and other applications and require cities and counties to follow procedural steps and standards prescribed in rule when asked to add culturally specific landscape features to a local Goal 5 inventory. Under this new rule, the following definitions are included:

- Cultural Areas: "archaeological sites, landscape features of cultural interest, and sites where both are present. Also referred to as "cultural resource site.'"
- Potentially Significant Cultural Landscape Feature: "a landscape feature that is: integral to a tribe's history, legends, traditions, and stories; traditionally used for wayfinding; traditionally

used for gathering first foods and materials; integral to ongoing tribal cultural practices; traditional trails; …"

These definitions and the associated rules would provide a means to consider and adopt protection measures for landscape areas of cultural significance.

A.4.6.2 Local Regulations

Statewide Planning Goal 5 is implemented through acknowledged comprehensive plans and other land use regulations in local coastal communities. Policy 18 within the Coos County Estuary Management Plan is an example of an Enforceable Policy that is used to protect cultural resources.[38] Policy 18 requires that, "Local government shall provide protection to historical, cultural and archaeological sites and shall continue to refrain from widespread dissemination of site-specific information about identified archaeological sites." This policy is accomplished by reviewing all development proposals involving a cultural, archaeological, or historical site to determine whether the project, as proposed, would protect the cultural, archaeological, and historical values of the site. Tribes have the right to submit a written statement to the local government within 30 days of receipt of a notification about a project in a cultural site, "stating whether the project as proposed would protect the cultural, historical, and archaeological values of the site or, if not, whether the project could be modified by appropriate measures to protect those values."

A.4.6.3 Indian Graves and Protected Objects, ORS 97

The State of Oregon protects archaeological resources within state jurisdiction via ORS 97, which includes the following:

- Recognition of duties relating to the disturbance of Native American cairns or burials
- Complement to the Native American Graves Protection and Repatriation Act (NAGPRA) by increasing visibility regarding requirements on state and private lands
- Documentation of process for notification of tribes, State Historic Preservation Officer, Commission on Indian Services, and Oregon State Police in the event of discovery of human remains

A.4.6.4 Public Records Conditionally Exempt from Disclosure, ORS 192.345

Establishes the responsibilities of applicants regarding the disposition of potentially sensitive information.

A.4.6.5 Archaeological Objects and Sites, ORS 358

Documents the State of Oregon's policy and responsibilities in the protection of cultural and archaeological resources including:

- Further detail on the applicability and intent of ORS 390.235
- Procedures for notification following discovery of sacred objects
- A requirement to coordinate with tribes as a condition of an archaeological permit

[38] https://www.co.coos.or.us/community-dev/page/coos-bay-estuary-managment-plan

A.4.6.6 Archaeological Permits, OAR 736-051

Provides administrative basis for permits required under ORS 390.235 and clarifies requirements and thresholds for archaeological permits on private versus public lands. In the context of offshore wind energy, the state would apply archaeological protection policies for both offshore turbines, cables, and any onshore support facilities or port development projects that may be subject to separate reviews.

A.4.6.7 Ocean Shores, ORS 390

Oregon Revised Statutes 390.235, under the authority of Oregon Parks and Recreation Department, is a policy protecting archaeological sites that restricts excavation or alteration of an archaeological site on public lands without first obtaining a state-issued permit by OPRD.

A.4.6.8 Protection of Tribal Fishing

To protect the interests and optimal use of the ocean for food fish harvest, the state has a combination of protection policies and coordination agreements. See Section A.4.7. below on State Fisheries Protection Standards for more information on these policies.

A.4.6.9 Culturally Significant Views

The state Territorial Sea Plan identifies high value visual resources and includes strong protection policies that would be applicable to offshore wind energy. However, these policies do not explicitly mention culturally significant views to tribes or establish separate criteria that would guide decisions affecting these views. While specific viewing locations of cultural significance to tribes are not explicitly included in the Territorial Sea Plan, it is expected that many of the viewpoints inventoried by the state in the highest quality (Class 1) would be similar to, or overlap with, some if not all sites of historical or cultural importance to tribes.

The viewshed classes designated in state policies were mapped using an approximate device height based on wave energy devices, which are significantly shorter than floating offshore wind energy infrastructure (9 ft high vs. ~500 ft high at a turbine hub). BOEM provided visual simulations of hypothetical wind arrays for the Coos Bay Wind Energy Area (WEA) 32 miles offshore and Brookings WEA 18 miles offshore, which indicated that turbines would be visible at certain times of day in clear conditions.[39] The simulations also showed that the aircraft lighting from turbine hubs may be visible at night. Additionally, a DLCD staff GIS exercise conducted in support of the Roadmap effort estimated that if the viewshed classification areas were to be expanded consistently with taller offshore wind energy structures. The results indicated that nearly all areas that are currently technically viable for offshore wind energy development would likely fall within the most stringent Class I Viewshed criteria if within viewing range of Special Area Viewsheds. Other high value viewpoints outside of special areas would likely fall in Class II for objects on the horizon considered to be in the background. **As a result, under this premise, offshore wind energy may not be allowed purely for visual purposes only.** The visual standards in Part Five do include project-specific contrast criteria to assist in determining whether the proposed project meets the standards defined for each Class of viewshed, but these contrast criteria were similarly developed in the context of wave energy, and it is not clear whether there is an

[39] link to timelapse videos of large-scale offshore wind development in the two Oregon WEAs: https://www.boem.gov/renewable-energy/state-activities/oregon-offshore-wind-visual-simulation

interpretation of the contrast criteria that would allow an offshore wind energy array within a Class I viewshed. There is value in revisiting Part Five visual classification modeling and criteria to clarify for the public and potential future offshore wind energy developers how the state's visual protection criteria would apply to offshore wind energy.

A.4.6.10 Protection of Natural Resources as Cultural Resources

The State of Oregon recognizes the need to protect natural resources for their many values, including intrinsic, economic, recreational, aesthetic, spiritual, and cultural values. The state also recognizes that natural resources are cultural resources to tribes. Natural resources may include species, habitats, or other environments of natural value, including natural resources of cultural significance that are not harvested for human use by Oregon tribes (e.g., whales).

The state already has several strong policies to protect species and habitats offshore, onshore, and within rivers and estuaries. See Section A.4.4. for a more detailed discussion.

A.4.7 Support Coastal and Regional Communities

A.4.7.1 Local Regulations Implementing the Statewide Planning Goals

The Oregon Coastal Management Program consists of a network of partners with authority in the coastal zone. There are 7 oceanfront counties and 33 cities in the Coastal Zone, and all are coastal program partners.

Under ORS Chapter 197, all offshore wind energy onshore facilities must be subject to local land-use approval and the acknowledged comprehensive plan, and State agencies shall issue concurrences or certifications only after host local governments have formally affirmed that all local standards have been met. If a project obtains local authorizations and obtains the necessary state and federal permits to proceed with implementation, counties and cities would have the ability to issue stop-work orders, penalties, or enforcement actions, within the bounds of their jurisdictional authority, to uphold community safety and compliance.

Local jurisdiction does not apply in the ocean and would only be applicable to land-side aspects of offshore wind energy development such as shoreside support facilities, cable landing sites, and onshore transmission. Policies related to offshore visual resource standards are within state jurisdiction under Goal 19 and the Oregon Territorial Sea Plan, but local jurisdictions may include policies addressing the visual standards for landside development or activities.

Many of the local regulations, too many to identify here, are Enforceable Policies. Some deficiencies have been noted and are identified in the gaps and opportunities Table A-1. A summary of these policy gaps and opportunities is also found in Table 4 of Section 5.2 of the Roadmap.

It is worth noting that in 2024, Curry County and Coos County passed ballot measures advising their respective county commissions to oppose offshore wind energy leasing.[40] Both measures passed with

[40] https://ballotpedia.org/Curry_County,_Oregon,_Measure_8-116,_BOEM_Offshore_Wind_Turbine_Project_Advisory_Question_(November_2024); https://ballotpedia.org/Coos_County,_Oregon,_Measure_6-219,_BOEM_Offshore_Wind_Turbine_Project_Advisory_Question_(November_2024)

sizeable support (80% and 60%, respectively). However, these voter initiatives would not qualify as Enforceable Policies that could provide a valid basis for a state objection to leasing in a Federal Consistency review because they do not establish specific standards governing the public use of land or resources and because they discriminate against a single type of use. Yet the state recognizes the sentiment expressed by these measures. Questions remain as to whether a local community's opposition to an offshore wind energy project might change in the future as more information about costs and benefits of development are known. Additionally, a concept discussed in the Roadmap to potentially establish a net-benefit policy for communities potentially affected by offshore wind energy development may provide an additional avenue for local participation in the permitting process through Community Agreements and community cost-benefit evaluations that would inform the state's review (See Section 5.5.4 of the Roadmap).

A.4.8 State Fisheries Protection Standards and Policies

To protect the use of the ocean for food fish harvest, the state has a combination of protection policies and coordination agreements. Any offshore wind energy development needs to be consistent with Oregon policies for protecting areas important to commercial, cultural, and recreational fisheries and for food fish species management goals. Any potential impact to fishing should also consider impacts to secondary and support industries, such as seafood processing and commercial fishing suppliers.

A.4.8.1 Statewide Planning Goal 19: Ocean Resources and Territorial Sea Plan, Part Five

TSP Part Five contains Fisheries Use Protection Policies in its implementation of Statewide Planning Goal 19, Ocean Resources. These fishery protection policies include a general fisheries use protection standard and additional standards specific to geographically identified areas within the state's territorial sea boundary. The area-specific standards would not be applicable in federal waters as currently written. Generally speaking, the state would expect to apply the General Fisheries Use Protection Standard for an offshore wind energy project in federal waters:

> ***Fisheries Use Protection Standards*** *The regulating agencies shall protect areas important to fisheries using the following use protection standards to evaluate the impact an individual renewable energy facility would have on fisheries use.*
>
> ***(b) General Fisheries Use Protection Standard***
>
> *The following standards must be considered in determining the possible adverse effects a renewable energy facility might have on fisheries use, and are applicable to applications in all resource and use areas unless otherwise designated by the plan:*
>
> *i. Minimize the displacement of fishers from traditional fishing areas, and the related impact on the travel distance and routing required to fish in alternative areas;*
> *ii. Minimize the compaction of fishing effort caused by the reduction in the areas normally accessible to fishers;*
> *iii. Minimize the economic impact resulting from the reduction in area available for commercial and recreational fishing for the affected sectors and ports.*
> *iv. Mitigate possible hazards to navigation and provide practicable opportunities for vessel transit at the project location.*

v. *Limit the number and size of projects that are located in an area to minimize the impact on a particular port or sector of the fishing industry. Consider the distribution of projects and their cumulative effects based on the criteria listed in (i) through (iv).*

The geographically specific "Area Designation Fisheries Use Protection Standards" apply within state waters in certain locations and place additional requirements on projects. Most notably, projects in areas known as Resources and Uses Conservation Areas are presumptively excluded unless, "To overcome the presumptive exclusion, an applicant must demonstrate and the regulating agency must concur that the project will have no reasonably foreseeable adverse effect on areas important to fisheries and there is no practicable alternative site."

A.4.8.2 Food Fish Management Policy, ORS 506.109

In addition to the Territorial Sea Plan and Goal 19, the state may also use ORS 506.109, Food Fish Management Policy, during the review of offshore wind energy projects. This policy is broad in scope and establishes that, "food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits for present and future generations of the citizens of this state." The policy includes additional specific management goals such as:

(1) *To maintain all species of food fish at optimum levels in all suitable waters of the state and prevent the extinction of any indigenous species.*
(2) *To develop and manage the lands and waters of this state in a manner that will optimize the production, utilization and public enjoyment of food fish.*
(3) *To permit an optimum and equitable utilization of available food fish.*
(4) *To develop and maintain access to the lands and waters of the state and the food fish resources thereon.*
(5) *To regulate food fish populations and the utilization and public enjoyment of food fish in a manner that is compatible with other uses of the lands and waters of the state and provides optimum commercial and public recreational benefits.*
(6) *To preserve the economic contribution of the sports and commercial fishing industries in a manner consistent with sound food fish management practices.*
(7) *To develop and implement a program for optimizing the return of Oregon food fish for Oregon's recreational and commercial fisheries.*

A.4.8.3 Conditions on State Concurrence

Through its Federal Consistency review authority, the state has the ability to require a federal agency to place conditions on the issuance of an authorization or permit as a way to avoid, reduce, or mitigate potential adverse effects from the project. In the case of fishing interests, potential conditions for the state to explore may include the following, in coordination with fishing communities, depending on the specific details of any future offshore wind energy project proposals:

- Establishing transit corridors through offshore wind energy arrays to support safety at sea and catch effort efficiency.
- Setting maximum spatial extent or design limitations for any given offshore wind energy array to minimize effects to species, habitats, or at-sea vessel operations.

- Requiring that developers establish and maintain 24-hr hotlines or other communication methods for fishing vessel owner/operators to report problems or lost gear.
- Other measures identified by fishing communities or other ocean users during project review.
- Requiring reports from independent monitors of species interactions or take from offshore wind energy at-sea operations, entanglement detection and reporting, and other data transparency and reporting measures.

A.4.8.4 Use of Fisheries Agreements

The Territorial Sea Plan Part Five includes a section focused on agreements with traditional ocean users. The requirement states:

> *Agreements: Applicants shall communicate with traditional ocean users and stakeholders with an interest in the area of the proposed project to address issues of concern. Applicants are encouraged to memorialize agreements with those ocean users and stakeholders on specific actions, including conducting the adaptive management and monitoring plan, that the applicant is required to perform.*

Policies of the Department of State Lands similarly require coordination with ocean users for actions taking place on state submerged lands:

> *The Department of State Lands rule on Pre-Application Requirements, OAR 141-083-0840, provides: "Before submitting an application to the Department, a person wanting to install, construct, operate, maintain or remove ocean energy monitoring equipment or an ocean energy conversion facility for a research project, demonstration project or commercial operation shall meet with: "(a) Department staff to discuss the proposed project; and "(b) Affected ocean users and other government agencies having jurisdiction in the Territorial Sea to discuss possible use conflicts, impacts on habitat, and other issues related to the proposed use of an authorized area for the installation, construction, operation, maintenance or removal of ocean energy monitoring equipment or an ocean energy facility."*

These policies do not allow the state to strictly require the existence of an agreement between affected ocean users and developers, but absent an agreement the state may be in a position to find that there is not sufficient evidence to determine whether the fisheries protection policies in the Territorial Sea Plan and Goal 19 have been satisfied.

One recent example of a fisheries agreement comes from the PacWave wave energy testing facility operated by Oregon State University. Oregon State negotiated an agreement with representatives of the local fishing industry to address lost gear or other damage that may result from interactions with the project. This agreement was submitted to the state as evidence of coordination and resolution of key potential conflicts. Oregon also has a long history of agreements between cable operators and the fishing industry through the Oregon Fisherman Cable Committee.[41] Although limited to cables, these agreements have a long successful history since 1998 and satisfy the DSL requirements. The state would

[41] https://www.ofcc.com/

highly encourage developers to seek similar agreements with multiple fishing communities as part of any future project review.

A.4.8.5 Fisheries Compensatory Agreements

As has been the case in east coast states that consented to offshore wind energy projects, as well as the 7C Fisheries Working Group currently underway in California, it is expected that the State of Oregon may use its Goal 19 and TSP fisheries protection policies as a legal basis to require compensatory agreements (i.e., financial compensation or other mitigation measures) between affected fisheries users and offshore wind energy developers, as evidence that the project would not result in unmitigated effects to the fishing users that would be inconsistent with fisheries protection policies.[42] Oregon has never had occasion to require compensatory agreements of this nature but is learning from examples in other states and would expect to follow best practices in the negotiation and evaluation of such agreements.

In Oregon, fishing communities have clearly expressed that they are not interested in being "bought out" of a multi-generational way of life. Effects to secondary industries such as seafood processing are also likely not suitable for compensation because of the millions of dollars invested over many years to establish the infrastructure, improvements, and markets of their current business structure.

A.4.9 Economic Opportunity and Sustainment

Enforceable Policies related to creation of new economic opportunities and sustaining existing economies are incorporated into local comprehensive plans, Statewide Planning Goals and policies within the Oregon Territorial Sea Plan related to protection of fisheries uses, recreation, visual resources, and agreements with existing ocean users. The labor provisions in HB 4080 also relate to creation of new economic opportunities by establishing standards for a future workforce serving the offshore wind energy industry and related construction activities. No other relevant policies have been identified.

A.4.10 Offshore Wind Energy Workforce

The labor provisions in HB 4080 relate to creation of new economic opportunities by establishing standards for a future workforce serving the offshore wind energy industry and related construction activities. The HB 4080 and HB 2021 labor provisions aim to ensure, as much as feasible, that future developers and contractors at all levels offer Oregonians:

- Registered apprenticeship programs
- Workforce opportunities for frontline communities, including women, indigenous, and people of color
- Prevailing wages
- Family health and retirement benefits
- Responsible contractor history that demonstrates a history of compliance of state and federal laws
- Workforce Agreements that include both a project labor agreement and a labor peace agreement

[42] https://www.californiafishermensresiliencyassociation.com/7c-fishermen-s-working-group

While these standards are not currently Enforceable Policies of the state coastal program, the gaps and recommendations table and recommended actions in Section 5 of the Roadmap provide further detail on methods to implement the HB 4080 provisions in the state.

A.5 Conclusion

Oregon's existing Enforceable Policies provide good protection for its ocean resources and current against adverse effects of offshore wind energy development. These policies, at times, are duplicative, overlapping, and complementary, which ultimately provide at least some level of protection for most of the coastal resources, uses, and potential impacts of concern to Oregon. Despite this strong foundation, there's a chance that even Oregon's comprehensive set of policies might not cover every possible effect of offshore wind energy development. By making some minor updates and targeted policy changes, Oregon can strengthen its ability to influence decisions regarding siting, design, operation, and management of offshore wind energy. This will help determine how, when, and where such development could affect Oregon's coastal ecosystems and communities.

A.6 Policy Assessment Tables

The policy assessment table is shown below in Table A-1. This table includes key effects of interest, details for those effects, corresponding policies and the most applicable excerpt of the policy and notes that indicate where policies have issues or gaps. Please note that several effects and their gaps overlap key topical areas. The information in Table A-1 was then distilled and simplified to establish the summary of the potential policy gaps found in Section 5.2, Table 4, of the Roadmap.

Table A-4.Offshore Wind Energy Enforceable Policy Assessment

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
ENVIRONMENTAL PROTECTION - Protection of the environment and species (marine, terrestrial, estuarine, freshwater)				
Aquatic Geology - Effects on **geology** and soils of Project presence, installation, and removal activities.	> Impacts of cables on seafloor, anchor chain sweep, shoreline, reef (if fixed). > Related effects to terrestrial resources, including cultural resources, are addressed elsewhere in this table.	**Statewide Planning (SP) Goals 16, 17, 18, 19** **Territorial Sea Plan (TSP) Parts 2, 3, 4, 5** **ORS 273** – State Lands Generally **ORS 274** – Submersible and Submerged Lands **ORS 196** – Removal-Fill **OAR 141-083** – Rules for Granting Easements for Fiber Optic and Other Cables on State-Owned Submerged and Submersible Land within the Territorial Sea **OAR 141-085** - Administrative Rules Governing the Issuance and Enforcement of Removal-Fill Authorizations Within Waters of Oregon, Including Wetlands **OAR 141-125** – Authorizing Special Uses on State-Owned Land **OAR 141-140** – Rules Governing the Placement of Ocean Energy Conversion Devices On, In Or Over State-Owned Land within the Territorial Sea **Local Plans and Codes** (primarily related to SP Goals 17, 18)	**TSP Part 3**, Rocky Habitat Management Strategy > **Policy 6.b.B** Protection of rocky habitat resources (i.e. living marine organisms and their habitat) shall be prioritized over development of non-renewable ocean resource uses. **TSP Part 4**, Uses of the Seafloor > **Policy D.4.3.2** (information requirement) Geologic structure, including, but not limited to: * **4.3.2.1** Geophysical imaging and geotechnical investigation of full planned HDD routes across the shoreline sufficient to characterize subsurface geotechnical properties and plan HDD construction in a way that avoids drill pipe breakage, inadvertent return, surface settlement, and other complications. * **4.3.2.2** Geologic hazards, such as faults or landslides; Page 9 | 19 4.3.2.3 Mineral deposits; and 4.3.2.4 Seafloor substrate type **Dept. of State Lands** > Acts through the State Land Board > Application process for removal-fill permit and undersea cables easement authorization within the territorial sea > Short-term access authorization for geological or other type of survey > Decommissioning requirements for undersea cables > Requirement to include the Resource and Use Inventory and Effects Evaluation, as well as the Operation Plan under the JART review **Local plans and codes** may require geotechnical reports and include geophysical hazard polices, primarily related to SP Goals 17 and 18 and any overlap with Goal 7, Hazards. Development in hazardous areas is discouraged or restricted under Goals 7, 17 and 18.	**GAP** > DSL - Authority to charge fees and compensation rates for the easement (Legislation Session 2025 SB 793 regarding undersea cables will hopefully address this issue). DSL did not have the authority to establish fees and compensation rates for easements in the Territorial Sea before. There was only one time application fee of $ 5,000 established by the statute in 1999, and the company received authorization to use the seabed for 20 years. SB 793 (2025) passed the Oregon Senate and House in June 2025. > ORS 273 (DSL) - Could be an appropriate action to amend and add a section about renewable energy facilities/structures on state lands. > DSL - Decommissioning and removal of cables together with the Emergency Response Plan requirements. DSL does not have a single Emergency Response Plan requirement at this time. As part of the application package, DSL may require a Drill Break Avoidance and Response Plan and a Site-Specific Geologic Assessment. DSL could use having a single plan that covers both man-made and natural hazards and their response actions in case of an emergency. This would also align with the updated TSP Parts 4 and 5 and JART support. > DSL - Separation standards between cables. DSL policy does not include a minimum width/separation established in OAR 141-083. It was not an issue in 1999 with just a few cables in Oregon. Current easements have a broad range of widths. 15 feet is the standard minimum width for other easements issued by DSL on land. DSL will need to make it clear and include a minimum width for the cables in the Territorial Sea in their updated Division 83. This information should be revised later on after the Division 83 rulemaking. **STRENGTHEN** > Policy around decommissioning and major repair with added scrutiny before equipment is installed that it is feasible equipment can be successfully removed and decommissioned (reuse, recycle or disposal), if required (there are additional decommissioning or removal effects identified in this table) > Engage local governments and state agencies regarding the effects and potential gaps resulting from 1) construction, 2) natural disaster, 3) failure, 4) decommissioning of offshore and onshore components, and 5) waste management. Some policies may be better addressed at the state level, while onshore components may warrant local government policies to address impacts. Local governments are concerned about construction impacts (lights, transportation, frac-out, drilling fluids and waste), natural disaster or failure waste, decommission waste, waste disposal site limitations or nonexistent (trucked out), recycling of materials, response plan and clean up, and inaccessible beach due to emergency events. Therefore, it will be beneficial to work with local governments to identify and amend policy gaps in their compatibility standards applicable to onshore components of an offshore energy project.

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
Aquatic Geology - Effects on **geology** of sediment transport processes (erosion, accretion, scour) of Project.	> Sediment transport impacts in riverine, riparian, wetland, estuarine and marine areas	**SP Goals 16, 17, 18** **TSP Part 4** **OAR 635-415** – Fish and Wildlife Habitat Mitigation Policy **Local Plans and Codes** (related to SP Goals 16, 17, 18)	**SP Goal 16,** Estuarine Resources, requires proposed actions to be, "consistent with the resource capabilities of the area and the purposes of [the applicable] management unit." **TSP Part 4**, Uses of the Seafloor > **Policy D.4.2** (information requirement) Location and description of all affected areas, including, but not limited to: * **4.2.1** Proposed route of the cable, pipeline, or other utility; and * **4.2.2** Onshore facilities. Additionally for pipelines or other utilities or fixtures: (a) Adjacent areas that may be affected by physical changes in currents and waves caused by the project or development action; > **Policy D.4.3** (information requirement) Physical and chemical conditions including, but not limited to: * **4.3.1** Bathymetry (bottom topography) and Shoreline Topography, including profile of water depth along the route; Additionally for pipelines or other utilities or fixtures: (a) wave regime; (b) typical and maximum current velocities; and (c) dispersal characteristics. **OAR 635-415**: It is the fish and wildlife habitat mitigation policy of the Oregon Department of Fish and Wildlife to require or recommend, depending upon the habitat protection and mitigation opportunities provided by specific statutes, mitigation for losses of fish and wildlife habitat resulting from development actions. Priority for mitigation actions shall be given to habitats for native fish and wildlife species. Mitigation actions for nonnative fish and wildlife species may not adversely affect habitat for native fish and wildlife.	**GAP** > ODFW has an existing Habitat Mitigation Policy (OAR 635-415) for effects of development on habitat with a long history of application onshore, but the existing policy is difficult to fully apply in the marine environment." **ISSUE/NEED** > Mitigating and Operating procedures should consider fish/wildlife seasonal/temporal impacts > When does sediment transport effect become an issue that interacts with a policy? Habitat effects? Property effects? > Additional refinement needed to identify all potential policy connections (e.g., Ocean Shores, DOGAMI policies, etc.) depending on location and type of effect.
Water Quality - Effects to **water quality** from a variety of Project-related activities or development including surveys, facility development, activities in estuaries, seafloor anchor placement, cable installation, or other work, including sediment suspension. This also includes effects of anchor chain sweep (specific to water quality).	> Release of elements (naturally occurring or otherwise) from sea floor > Destruction of benthic habitat is addressed later in this table	**SP Goal 19** **TSP Parts 2, 4, 5** **ORS 468b, OAR 340** – Water Quality > **340-041-0036** Turbidity	**TSP Part 4**, Uses of the Seafloor **> Policy D.4.3** Inventory Content, Biological and ecological features affected by the project or development action, including, but not limited to: *** 4.3.3.3** Benthic flora and fauna that may be affected by the project or development action; and *** 4.3.3.4** Other ecosystem elements that may be affected by the project or development action. > See policies related to benthic community effects. > See policies related to aquatic species effects. **TSP Part 5**, Uses of the Territorial Sea (Appendix C) **> Policy B.4.d** Inventory Content. Subsections 3 and 6 **3.)** Physical and chemical conditions including but not limited to... **6.)** Biological features, including, but not limited to... **ORS 468b, OAR 340**, Water Quality. Policies can be used for reviewing this effect but regulating this effect depends on the geographic location of the work/disturbance/development (e.g., territorial sea, waters of the state, waters of the US) and type of federal permitting nexus (e.g., CWA 404 or other). **OAR 340-041-0036**, Turbidity Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted: **(1)** Emergency activities: Approval coordinated by the Department with the Oregon Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare; **(2)** Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 14l-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate. **OAR 340-041-0004**, Antidegradation (only applicable to nearshore aspects of an offshore wind energy project that fall within the waters of the state)	**GAP** > TSP Parts 2, 4, 5 - Information requirements do not specify water quality effects unless they have an ecological effect. Develop standards that apply to survey activity (requiring a survey plan). > SP Goal 19 - Does not specify water quality unless it is related to ecological effects. **ISSUE/NEED** > DEQ/DSL - Support and establish a stand-alone state-based water quality standards and permit that would evaluate compliance with water quality standards and laws in a manner similar to CWA Section 401, but be applicable in absence of any Federal permit. It would be nice to have a 401-like certification that would look at the overall project (similar to how DEQ can use the FERC license process for wave energy). Currently the 401 cert is based on the USACE 404 scope and DEQ may only see pieces of a larger project and not the whole project. There may be some legal issue with the idea because the project is out in the ocean, but [maybe] the case could be made that the state wants to look at the impact of the entirety of the project. > DEQ - Look at Hydroelectric standards, ORS 543A for ideas to incorporate into offshore wind. Hydroelectric Application Review Team (HART) regulations are currently in Rule related to how OWRD, DEQ, ODFW work together when looking at a hydro project. ORS 543 (new hydro) and ORS 543A (relicensure hydro), https://www.oregonlegislature.gov/bills_laws/ors/ors543.html. There is extensive process with permits and it might be something to consider creating for offshore wind energy review process. Currently ORS 543A-013 is not applicable to ocean projects if in territorial sea or in an estuary. When a 401 cert for a hydroelectric project is issued, DEQ will look at 1) water quality, and 2) other water related requirements of state law. This allows the concept of beneficial uses to come into evaluation with how water is there to support fish use, for example, which allows a hook for ODFW to require a fish passage.

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
			(1) Purpose. The purpose of the Antidegradation Policy is to guide decisions that affect water quality to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 (Statewide Narrative Criteria) through 340-041-0350 (The Three Basin Rule: Clackamas, McKenzie (above RM 15) & the North Santiam) supplement the Antidegradation Policy. Note: **OAR 340-041-0002**, Definitions. "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction.	
Water Quality - Effects to **water quality** from construction, including dredging, and operation and maintenance. This includes effects of accidental spills of fuel, lubricants, marine debris, PFOAs, bisphenols (BPA), and hydraulic oil on water quality in event of release and effects of toxins introduced by the Project (e.g., antifouling paint or coatings) on water quality.	> Includes ballast water, inadvertent spills, in estuarine and open sea, temperature changes from water used in cooling structures > Changes to species composition from altered water quality parameters, temperature in particular.	**SP Goals 16, 19** **TSP Part 5** **ORS 465** – Hazardous Waste **ORS 468b, OAR 340** – Water Quality **ORS 496** – Wildlife Policy **ORS 783** – Ballast Water **OAR 340-141** - Oil Spills **OAR 340-143** – Ballast Water Management **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) (?) > **345-022-120** - Waste Minimization **Local Plans and Codes** (related to SP Goal 16)	**SP Goal 16**, Estuarine Resources **SP Goal 19**, Ocean Resources > **Policy 1**, Uses of Ocean Resources **TSP Part 4**, Uses of the Seafloor > **Policy D.4.1** Inventory Content. Information to be provided by applicants about the proposed project or development action within the Oregon Territorial Sea: (f) Physical and chemical properties of materials, if any, to be used or produced (e.g., chemicals used in horizontal directional drilling (HDD), materials which may be transported by a pipeline, etc.)... **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.g.3**, Ecological Resources Protection Standards [in designated areas]: Renewable energy facilities shall have no significant adverse effect on ecological resources of concern. > **Policy B.4.g,** Special Resources and Uses Review Standards. **1.)** The following siting and development requirements apply to the construction, deployment or maintenance of a renewable energy facility: **(a)** Consider practicable alternative deployment and placement of structures in proximity to the Project area that would have less impact on identified resources and uses. **(b)** Minimize construction and installation activities during critical time periods for the resources and uses as identified by appropriate regulatory agencies. **(c)** Minimize disturbance to the identified resources and uses during construction and installation of the renewable energy facility and other structures.... **2.)** Fisheries Use Protection Standards. **(b)** General Fisheries Use Protection Standard. iii. Minimize the economic impact resulting from the reduction in area available for commercial and recreational fishing for the effected sectors and ports. iv. Mitigate possible hazards to navigation and, provide practicable opportunities for vessel transit, at the project location. **3.)** The state shall protect living marine organisms, the biological diversity of marine life, the functional integrity of the marine ecosystem, important marine habitat and associated biological communities by using the following ecological resource protection standards to evaluate marine renewable energy project proposals. **ORS 468b, OAR 340**, Water Quality. Policies can be used for reviewing this effect but regulating this effect depends on the geographic location of the work/disturbance/development (e.g., territorial sea, waters of the state, waters of the US) and type of federal permitting nexus (e.g., CWA 404 or other).	**GAP** > Potential gap - Biofouling organisms on vessels > TSP Part 5 * The ecological resource standards are spatially limited. TSP Part 5 could be amended to make these standards broadly applicable to the resource rather than the location. * Does not have a general "avoid or mitigate effects" standard that applies anywhere in the ocean. This may include ecological resource standards. * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) > Combine (beyond existing language) the zoning and resource standards regardless of location or zone (?) > ORS 465 - Enforceable Policies needs to be updated (?) > ORS 783 - Specific Enforceable Policies need to be identified and added for Federal Consistency > OAR 340-141 - Has a 10k gallon limit to be a "facility" and may not consider multiple smaller turbines as a facility (also ORS 468b). Some ambiguity in standard. Rules may need updating. Renewable hydraulic oil has a lower threshold "or any other renewable product". A collective oil spill may require a response, but it is unclear what could be done about it. In addition, are oil spill policies applicable in federal waters through the GLD? OAR 340-141 is currently not a listed Enforceable Policy. *"Facility" means a pipeline or any structure, group of structures, equipment or device, other than a vessel located on or near navigable waters of a state, that is used for producing, storing, handling, transferring, processing or transporting oil in bulk and that is capable of storing or transporting 10,000 or more gallons of oil per day.* *"Offshore Facility" means any facility located in, on or under any of the navigable waters of the state.* > OAR 340-143 - Ballast Water - Currently not a listed Enforceable Policy. > OAR 345 - Energy Facility Siting Standards (related or supporting facilities), not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components?

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
			ORS 468B.020, Prevention of pollution. **(1)** Pollution of any of the waters of the state is declared to be not a reasonable or natural use of such waters and to be contrary to the public policy of the State of Oregon, as set forth in ORS 468B.015. **(2)** In order to carry out the public policy set forth in ORS 468B.015, the Department of Environmental Quality shall take such action as is necessary for the prevention of new pollution and the abatement of existing pollution by: (a) Fostering and encouraging the cooperation of the people, industry, cities and counties, in order to prevent, control and reduce pollution of the waters of the state; and (b) Requiring the use of all available and reasonable methods necessary to achieve the purposes of ORS 468B.015 and to conform to the standards of water quality and purity established under ORS 468B.048. [Formerly 449.095 and then 468.715] **ORS 468B.305**, Entry of oil into waters of state. **(1)** It shall be unlawful for oil to enter the waters of the state from any ship or high hazard train route or from any fixed or mobile facility or installation located offshore or onshore, whether publicly or privately operated, regardless of the cause of the entry or the fault of the person having control over the oil, or regardless of whether the entry is the result of intentional or negligent conduct, accident or other cause. Such entry constitutes pollution of the waters of the state. **ORS 468B.345**, Oil spill contingency plan requirement. **(1)** Unless an oil spill prevention and emergency response plan (see OAR 340-141) has been approved by the Department of Environmental Quality and has been properly implemented, no person shall: **(a)** Cause or permit the operation of an onshore facility in the state; **(b)** Cause or permit the operation of an offshore facility in the state; or **(c)** Cause or permit the operation of a covered vessel within the navigable waters of the state. **ORS 783.620,** Discharge of ballast in navigable waters. Except as provided in ORS 783.635, a person may not discharge the ballast of any vessel into the navigable portions or channels of any of the bays, harbors or rivers of this state, or within the jurisdiction of this state, so as to injuriously affect such portions or channels of such bays, harbors or rivers, or to obstruct navigation thereof. **OAR 340-041-0004**, Antidegradation (only applicable to nearshore aspects of an offshore wind energy project that fall within the waters of the state) (1) Purpose. The purpose of the Antidegradation Policy is to guide decisions that affect water quality to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 (Statewide Narrative Criteria) through 340-041-0350 (The Three Basin Rule: Clackamas, McKenzie (above RM 15) & the North Santiam) supplement the Antidegradation Policy. Note: OAR 340-041-0002, Definitions. "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction.	**ISSUE/NEED** > DEQ/DSL - Establish state water quality standards and permit as listed above. > DEQ - Look at Hydroelectric standards ORS 543A for ideas to incorporate into offshore wind. See previous comments.

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Aquatic Living - Effects to the **benthic community** or alteration of **benthic habitat** from marine survey, installation or removal activities and presence of Project structures on or in the seafloor (e.g., anchors, cable).	> Disturbance, alteration, conversion or destruction of seafloor habitats from boring/coring surveys, anchor installations, movement or mooring chains, cable placement, etc. > Benefits may include nature inclusive design, research platforms, and fish population increase. However, as studied elsewhere, platforms in open water attract fish, which attract recreational fishing - this could lead to high traffic areas and an increased risk of accidents.	**SP Goal 19** **TSP Parts 2, 3, 4, 5** **ORS 273** – State Lands Generally **ORS 274** – Submersible and Submerged Lands **ORS 196** – Removal-Fill **OAR 141** - State Lands > **141-083** – Rules for Granting Easements for Fiber Optic and Other Cables on State-Owned Submerged and Submersible Land within the Territorial Sea > **141-085** – Rules Governing the Issuance and Enforcement of Removal-Fill Authorizations Within Waters of Oregon Including Wetlands (including 141-085-0565 Considerations in Evaluating Individual Permit Applications) > **141-125** – Authorizing Special Uses on State-Owned Land > **141-140** – Rules Governing the Placement of Ocean Energy Conversion Devices On, in or Over State-Owned Land Within the Territorial Sea **OAR 635-415** - Habitat Mitigation Policy	**SP Goal 19, Ocean Resources** > **Policy 1**, Uses of Ocean Resources. Policies to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy > **Policy A**. Consistent with Statewide Land Use Planning Goal 19, actions that are likely to affect rocky habitats shall be developed and conducted to conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social values benefits. > **Policy B**. Protection of rocky habitat resources (i.e. living marine organisms and their habitat) > **Policy G**. Managing agencies shall administer regulations, permits and other agreements in a way that considers the long-term conservation of rocky habitats and organisms. **TSP Part 4**, Uses of the Seafloor > **Policy 4.C**. An applicant for a project or development action within or affecting the Oregon Territorial Sea shall: Design and site projects and infrastructure responsibly such that proposed seafloor development actions will maintain and protect to the maximum extent practicable, natural resources, ecosystem integrity, marine habitat, and areas important to fisheries, navigation, recreation, and aesthetic enjoyment from adverse effects that may be caused by said development actions. For purposes of this section, 'Maintain and protect' requires mitigation, in order of priority (Avoid, Minimize, Rectify, Reduce or eliminate over time, Compensate). **> Policy 4.D.4.** Routing and Landing. DSL shall not grant easements through marine reserves, marine protected areas, rocky habitats designated as a Marine Research Area, Marine Garden, or Marine Conservation Area under Part Three, and shall not grant easements on rocky habitat areas within the state territorial sea. **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.g.3.** Ecological Resources Protection Standards. **3.)** The state shall protect living marine organisms, the biological diversity of marine life, the functional integrity of the marine ecosystem, important marine habitat and associated biological communities by using the following ecological resource protection standards to evaluate marine renewable energy project proposals. Also, [in specified areas], renewable energy facilities shall have no significant adverse effect on ecological resources of concern. Refer to definition of "Significant Adverse Effect" and standards for "Important, Sensitive, or Unique Areas (ISU) including application of buffer to account both for rock reef species foraging and disturbance from development. **ORS 196.825, General Policy on Removal-Fill**. No authorization to place fill or remove material from the waters of this state may: (a) Be inconsistent with the protection, preservation and best use of the water resources of this state; and (b) Interfere with the paramount policy of this state to preserve the use of its waters for navigation, fishing and public recreation uses **OAR 141-083-0810(4)**, Easements for cables shall be located so as to: **(a)** Protect the public trust values of commerce (including fiber optic and other cable transmissions), navigation, fishing, and recreation; **(b)** Conserve living marine and other seabed resources; and **(c)** Avoid or reduce conflicts with other ocean users and industries. **(d)** Comply with all applicable local, state, and federal laws including Statewide Planning Goal 19. **(7)** regarding burial of all cables, see also. **OAR 141-083-0850(6)** If determined necessary by the Division in consultation with the easement holder and other interested parties, and if permitted by the applicable federal agency(ies) regulating the cable, the easement holder shall remove the cable from the state-owned submerged and submersible land within one (1) year following the termination of use of the cable or expiration of the easement. **(8)** Easement holders shall inspect cables to ensure that they remain both within the area authorized by the easement and buried. **OAR 141-125-0170(10)** The holder of a lease for a renewable energy project must remove any or all developments as directed by the Department within one year of the date of the	**GAP** > State mechanism to consider cumulative effects of multiple projects including projects across state waters. > Considering introducing language into Enforceable Policies for multiple steps of impact to different species, for example. > TSP (generally) - Definition clarification or expansion of "renewable marine resources" terminology. Terminology should be consistent throughout. > TSP Part 5 (potential) - * Vessel operation impacts (e.g., collisions, strikes, noise). * Ecological resource standards are spatially limited and could be revised to be generally applicable to resources regardless of location. * Seasonal considerations (e.g., in water work periods in ocean considering species presence or fisheries uses) * Define “Adverse Effect for Ecological Resource Protection” and role of mitigation on the effect of significance. * There are numerous important policy statements but they are not currently worded in a way to be an Enforceable Policies and/or may require new policies to be enforceable (e.g. phased development, cumulative impacts, ecological resources protection standards, etc.). * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) > State Lands Generally (DSL). This information should be revised later on after the Division 83 rulemaking. * DSL authority to charge fees and compensation rates for the easement (Legislation Session 2025 SB 793 regarding undersea cables will hopefully address this issue; see related notes in this table). * ORS 273 - Could be an appropriate action to amend and add a section about renewable energy facilities/structures on state lands under this statute * Decommissioning and removal of cables together with the Emergency Response Plan (see related notes in this table). * Mooring lines should be added/addressed in terms of regulation and requirements. * Separation standards between cables (see related notes in this table). **STRENGTHEN** > State policy to identify benthic habitats (e.g. coral habitat, methane seep sites) to be avoided early on > ODFW - The State Wildlife Action Plan (SWAP) is a non-regulatory plan that highlights species of greatest conservation need, key habitats, and key conservation issues to guide agencies, partners, and stakeholders in identifying ways to address the most pressing threats to Oregon’s fish and wildlife and the habitats they depend on. Consider how these conservation objectives might guide our thinking in identifying ways to strengthen policies to address potential impacts from offshore wind. > Add TSP Part 3 Policy J to TSP Part 2A, Mandatory Policies section. *"Marine development activities, ~~not currently managed by a specific part of the Territorial Sea Plan~~, that cause significant adverse effects or permanent impacts to the form or function of submerged rocky habitats, or the fisheries dependent upon them, are prohibited."* **ISSUE/NEED** > DEQ/DSL - Establish state water quality standards and permit as listed above. > DEQ - Look at Hydroelectric standards ORS 543A for ideas to incorporate into offshore wind. See previous comments. > Potential protective standards could include design requirements of equipment and mooring to minimize interactions such as biofouling, perching, and haul-out; or

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
			expiration or termination of the authorization. The holder of a special use authorization must conduct all operations within the authorized area in a manner that conserves fish and wildlife habitat; protects water quality; and does not contribute to insect or animal infestation, soil erosion or the growth of noxious plants. **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140** Termination. Lessee is required to: "Remove ocean energy monitoring equipment, ocean energy facilities and any other material, substance or related or supporting structure from the authorized area as directed by the Department within a period of time to be established by the Department as a condition of the authorization. If the holder of the temporary use authorization or lessee fails or refuses to remove such equipment, facility or other material, substance or related or supporting structure, the Department may remove them or cause them to be removed, and the holder of the authorization or lessee shall be liable for all costs incurred by the State of Oregon for such removal." **OAR 635-415**, Habitat Mitigation Policy, for effects to benthic habitat from survey, installation or removal activities.	requirements to minimize the benthic footprint of components (e.g., anchors, mooring lines).
Aquatic Living - Effects of changes to **marine community composition** at the Project site or affected areas beyond the Project site (e.g., use patterns, attraction, and aversion). *Note: this is a broad effect category that would need additional specification when developing research agenda questions or evaluating consistency with broad policies.*	> Potential of cumulative effects involving multiple projects across multiple states > Potential impact to a broad range of species > Potential changes in the distribution and abundance of predators and prey species > Changes to foraging, migratory routes, or navigation of species including changes to the food chain for local and migratory species > Changes in the presence of fouling organisms > Pinniped haulout or seabird perching > Changes to species interactions or patterns resulting from attraction to or avoidance of the Project area > Trophic system changes to local species as well as migratory species (e.g., whales/turtles) > Invasive Species establishment on hard structures > International important biodiversity concerns > Southern resident killer whale/orcas > Beneficial effects may include nature inclusive design, research platforms, fish population increase	**SP Goal 19** **TSP Part 5** **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy	**SP Goal 19**, Ocean Resources > **Policy 1**, Uses of Ocean Resources. Policies to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.g.3,** Ecological Resources Protection Standards. **3.)** The state shall protect living marine organisms, the biological diversity of marine life, the functional integrity of the marine ecosystem, important marine habitat and associated biological communities by using the following ecological resource protection standards to evaluate marine renewable energy project proposals. Also, [in specified areas], renewable energy facilities shall have no significant adverse effect on ecological resources of concern. Definition of "Significant Adverse Effect": degradation in ecosystem function and integrity (including but not limited to direct habitat damage, burial of habitat, habitat erosion, reduction in biological diversity) or degradation of living marine organisms (including but not limited to abundance, individual growth, density, species diversity, species behavior) **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state. In furtherance of this policy, the State Fish and Wildlife Commission shall represent the public interest of the State of Oregon and implement the following coequal goals of wildlife management: **(1)** To maintain all species of wildlife at optimum levels. **(2)** To develop and manage the lands and waters of this state in a manner that will enhance the production and public enjoyment of wildlife. **(3) - (7)** etc. **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits for present and future generations of the citizens of this state. In furtherance of this policy, the goals of food fish management are: **(1)** To maintain all species of food fish at optimum levels in all suitable waters of the state and prevent the extinction of any indigenous species. **(2)** To develop and manage the lands and waters of this state in a manner that will optimize the production, utilization and public enjoyment of food fish. **(3) - (7)** etc.	**GAP** > State mechanism to consider cumulative effects of multiple projects including projects across state waters. > Considering introducing language into Enforceable Policies for multiple steps of impact to different species, for example. > TSP (generally) - Definition clarification or expansion of "renewable marine resources" terminology. Terminology should be consistent throughout. > TSP Part 5 * The ecological resource standards in Part 5 protect species composition but are spatially limited. Part 5 could be amended to make these standards broadly applicable to the resource rather than the location. * Similar to the fisheries use protection standards in Part Five, the Ecological Resources Protection Standards establish a "presumptive exclusion" from marine renewable energy development in areas within the Territorial Sea identified as "Important, Sensitive, or Unique", areas or areas designated as "Resources and Uses Conservation Areas". The standard as currently written may be interpreted as being geographically limited to being used only in state waters, but if the language were broadened to focus on the quality of the resource rather than its pre-designated location, it may be more generally applicable in federal waters also using the state's Geographic Location Description. * Fish/wildlife and habitat references are vague and could benefit from more details/standards as well as a requirement to conduct mitigation (including restoration and compensatory payments for losses before and during operation) as well as adaptive management. * *Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon* found, "The absence of enforceable mechanisms in the TSP [Part Five] for lifecycle project evaluation significantly impairs the effectiveness of informed, adaptive management planning. The gap of enforceable mechanisms in the TSP is likely to result in insufficient data on environmental and community impacts throughout projects lifespan within the Federal Consistency review window, weakening the foundation for a robust environmental monitoring plan. .... The TSP should include enforceable requirements for lifecycle analysis of proposed offshore wind projects, which can be utilized to support informed long-term environmental monitoring requirements and clearly defined adaptive management thresholds. To achieve this, new environmental and community impact data may be required." (Baldinger, et. al., 2025) * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) > Should policies be differentiated by a broad range of species? How would standards

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
				differ? **Note**: The decommissioning requirements in TSP Part 5 and OAR 141- 141 imply a preference for natural and native habitats to artificial habitats. **ISSUE/NEED** > Potential protective standard could include requiring the use of antifouling measures such as specialized coatings or paints or frequent cleaning on hard surfaces or require vessels installing or servicing the devices should be from the local area or undergo cleaning. > Develop and Pursue a Research Agenda for Oregon/ Establish a Research Collaborative to build Oregon-specific scientific consensus and coordinate with other west coast states
Aquatic Living - Effects to anadromous **fish species** (salmon, sturgeon, eulachon, & lamprey) migration in the ocean and coastal rivers	> Marine equipment can generate EMFs that may interfere with the sensory systems of anadromous fish, affecting navigation or orientation, especially if installed in estuaries or near river mouths with anadromy. > Relationship between changes to estuarine refugia and altered predation during in/out migration > Each species has some unique sensitivities. > Consideration of fish passage and screening requirements for structures installed in riverine systems	**SP Goal 19** **TSP Part 5** **ORS 496** – Wildlife Policy **ORS 498** - Fish Screening **ORS 506.109** – Food Fish Policy **OAR 635-412** – Fish Passage and Mitigation Criteria	*Applicable policies are the same as for marine community composition effects (above and noted here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 5**, Uses of the Territorial Sea, **Policy B.4.g.3,** Ecological Resources Protection Standards. **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits...	**GAP** > TSP Part 5 * The ISU and ecological resource standards protect ecological resources of concern (e.g., species composition) but are spatially limited. TSP Part 5 could be amended to make these standards broadly applicable to the resource rather than the location. * Fish/wildlife and habitat references are vague and could benefit from more details/standards as well as a requirement to conduct mitigation (including restoration and compensatory payments for losses before and during operation) as well as adaptive management. * *Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon* found, "The absence of enforceable mechanisms in the TSP [Part Five] for lifecycle project evaluation significantly impairs the effectiveness of informed, adaptive management planning. The gap of enforceable mechanisms in the TSP is likely to result in insufficient data on environmental and community impacts throughout projects lifespan within the Federal Consistency review window, weakening the foundation for a robust environmental monitoring plan. .... The TSP should include enforceable requirements for lifecycle analysis of proposed offshore wind projects, which can be utilized to support informed long-term environmental monitoring requirements and clearly defined adaptive management thresholds. To achieve this, new environmental and community impact data may be required." (Baldinger, et. al., 2025) * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. (ELI) **ISSUE/NEED** > Develop and Pursue a Research Agenda for Oregon/ Establish a Research Collaborative to build Oregon-specific scientific consensus and coordinate with other west coast states
Aquatic Living - Effects on **marine mammals, fish, sea turtles, and seabirds** by <u>underwater noise/vibration</u> from survey, construction, operation and monitoring activities. This [should] include both operations of the turbine, anchors/tethers, and transmission lines/infrastructure.	> Acoustic effects that could disturb or disorient fish, lead to fish avoidance or alter migration > Masking, impacts to communication and perception > Changes to bird behavior, whale foraging behavior, and migratory routes > Potential changes to predator-prey interactions > Crabs and lobster may also be impacted > Invertebrates, shellfish as it comes closer to shore (e.g., sand dollars, D crab)	**SP Goal 19** **TSP Parts 3, 4, 5** **ORS 196** - Removal-Fill **ORS 469** - Regulation of Energy Facilities (related or supporting facilities) **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) **OAR 635-100** – Threatened or Endangered Species (Southern Resident Orca Endangered Species Management Plan)	*Applicable policies are the same as for marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies **A, B, G** **TSP Part 4**, Uses of the Seafloor, Policies **4.C** and **4.D.4** **TSP Part 5**, Uses of the Territorial Sea, Policy **B.4.g.3** **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits ... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and **(7)** burial of all cables **OAR 141-083-0850(6)**, Removal of cables and **(8)** cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination.	**GAP** > TSP Part 5 * *Applicable gaps are the same as those listed above.* * Other potential gaps include enforcement of abandonment of buoy anchors (e.g., railroad wheels and other buoy anchors) and materials used for surveying and meteorological information during surveying process. * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) > ORS 469 - Regulation of Energy Facilities (related or supporting facilities), Enforceable Policies need to be updated, if applicable. > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? **ISSUE/NEED** > Establish protective or management standards to avoid acoustic impacts and could include establishing a specific schedule for installation when sensitive species are unlikely to be present; require using underwater sound attenuation measures such as bubble curtains during installation to decrease sound propagation, if pile driving is required; or

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				require modeling and monitoring for noise levels and sound propagation during installation and operation.
Aquatic Living - Effects or risk of collision or entanglement with Project structures, entangled gear, or service vessels to **marine species**. Consider the opposing effects to Project structures and the need for fish screening, or entrainment in a device structure.	> Concerns about the potential risk of collision, entanglement, or entrapment to marine species, in addition to birds and bats.	**SP Goal 19** **TSP Part 5** **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy	*Applicable policies are the same as for marine community composition effects (above and noted here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 5**, Uses of the Territorial Sea, **Policy B.4.g.3,** Ecological Resources Protection Standards [in designated areas]: Renewable energy facilities shall have no significant adverse effect on ecological resources of concern. **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits...	**GAP** *> Applicable gaps of TSP Part 5 are the same as those listed above.* **ISSUE/NEED** > To avoid collision, entrainment, impingement, and entrapment, establish design standards for equipment in order to minimizing the area influenced by moving parts; establish adequate entering and exiting and escape pathways; and establish design standards such as different color patterns, acoustic deterrents, or other deterrence methods, such as acoustic pingers and electromagnetic protective fields that could improve detectability and avoidance. > ORS 498, Fish Screening, and OAR 635-412, Fish Passage, are not applicable here. Marine installations are not considered obstacles to fish passage at this time (given what we know about the physical characteristics of potential developments). The subject of screening in the marine environment remains unresolved and needs further future discussion between NMFS and ODFW outside of the Roadmap planning process.
Aquatic Living - Effects to **seabirds and marine species** of Project marker and vessel lighting .	> Lighting may attract seabirds (especially nocturnal phototactic species) to structures, increasing risk of collision > Lighting may attract forage species and their predators increasing the opportunity for interaction with in- water structures near the ocean surface > "Fallout" attraction of birds to anthropogenic light sources can lead to mortality > Lights can also attract and aggregate prey, potentially attract predators to areas of higher risk of collision/ entanglement/impact? > Lighting can disrupt	**SP Goal 19** **TSP Part 5** **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy	*Applicable policies are the same as for marine community composition effects (above and noted here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 5**, Uses of the Territorial Sea, **Policy B.4.g.3,** Ecological Resources Protection Standards. **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits...	**GAP** *> Applicable gaps of TSP Part 5 are the same as those listed above*. **ISSUE/NEED** > Lighting is under the US Coast Guard jurisdiction. Oregon may make recommendations to minimize impacts. > Coordinate with Coast Guard to establish aids to navigational hazards that may need to be installed near deployment sites (e.g., navigational marker buoys that may include sound and lighting).

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	circadian rhythms which can potentially impact survivorship of birds and other wildlife. > Lighting is under the US Coast Guard jurisdiction. Oregon may make recommendations to minimize impacts.			
Aquatic Living - Effects to [marine] **species** from marine debris, hydraulic fluids, PFOAs, bisphenols (BPA), and oil contamination from ocean-based wind equipment or support vessels releasing into the ocean environment	> Ingestion, bioaccumulation	**SP Goal 19** **TSP Part 5** **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 340-141** - Oil Spills	*Applicable policies are the same as for marine community composition effects (above and noted here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 5**, Uses of the Territorial Sea, **Policy B.4.g.3,** Ecological Resources Protection Standards. **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits...	**GAP** *> Applicable gaps of TSP Part 5 are the same as those listed above.* > OAR 340-141 - Has a 10k gallon limit to be a "facility" and may not consider multiple smaller turbines as a facility (also ORS 468b). Some ambiguity in standard. Rules may need updating. Renewable hydraulic oil has a lower threshold "or any other renewable product". A collective oil spill may require a response, but it is unclear what could be done about it. In addition, are oil spill policies applicable in federal waters through the GLD? OAR 340-141 is currently not a listed Enforceable Policy. *"Facility" means a pipeline or any structure, group of structures, equipment or device, other than a vessel located on or near navigable waters of a state, that is used for producing, storing, handling, transferring, processing or transporting oil in bulk and that is capable of storing or transporting 10,000 or more gallons of oil per day.* *"Offshore Facility" means any facility located in, on or under any of the navigable waters of the state.* **STRENGTHEN** > ODFW - In Oregon's State Wildlife Action Plan (SWAP), Key Conservation Issues (KCIs) identify and address major challenges impacting species of greatest conservation need and their habitats, such as water quality and pollution. KCIs offer a framework for understanding the root causes of habitat degradation and species decline.

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Aquatic Living - Effects of **rocky reef and nearshore ecosystem** from Project development and cables.	> Potential upwelling changes to reef productivity > Direct interactions caused by infrastructure location > Downstream effects of anchors and impacts to sediment movement seasonally > Consideration of cable routes to achieve burial to max extent practicable by siting away from hard substrate	**SP Goal** 19 **TSP Parts 3, 4, 5** **ORS 196** - Removal-Fill **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands	*Applicable policies are the same as for marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies **A, B, G** **TSP Part 4**, Uses of the Seafloor, Policies **4.C** and **4.D.4** **TSP Part 5**, Uses of the Territorial Sea, Policy **B.4.g.3** **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits ... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and **(7)** burial of all cables **OAR 141-083-0850(6)**, Removal of cables and **(8)** cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination.	**GAP** *> Applicable gaps of TSP Part 5 are the same as those listed above.* **ISSUE/NEED** > DEQ/DSL - Establish state water quality standards and permit as listed above. > DEQ - Look at Hydroelectric standards ORS 543A for ideas to incorporate into offshore wind. See previous comments. > Considering introducing language into Enforceable Policies for multiple steps of impact to different species, for example.
Aquatic Living - Cumulative effects to **marine food** webs	> Combined noted effects in this table on marine species abundance, behavior, and migration, both near the Project and regionally	**SP Goal** 19 **TSP Parts 3, 4, 5** **ORS 196** - Removal-Fill **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands	*Applicable policies are the same as for marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies **A, B, G** **TSP Part 4**, Uses of the Seafloor, Policies **4.C** and **4.D.4** **TSP Part 5**, Uses of the Territorial Sea, Policy **B.4.g.3**, in addition to > **B.4.e 4)** Cumulative Effects. Evaluate the cumulative effects of a project, including the shoreland component, in conjunction with effects of any prior phases of the project, past projects, other current projects, and probable future projects. The evaluation shall analyze the biological, ecological, physical, and socioeconomic effects of the renewable energy facility development and of other renewable energy facility projects along the Oregon coast, while also taking into account the effects of existing and future human activities and the regional effects of global climate change. **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits ... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and **(7)** burial of all cables **OAR 141-083-0850(6)**, Removal of cables and **(8)** cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination.	**GAP** *> Applicable gaps of TSP Part 5 are the same as those listed above.*
Aquatic Living - Effects from changing ocean conditions, together with offshore wind development, on aquatic living resources	> Combined effects of development and changing future conditions on mitigation, foraging, or changes in species distribution at multiple trophic scales.	**SP Goal** 19 **TSP Parts 3, 4, 5** **ORS 196** - Removal-Fill **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands	*Applicable policies are the same as for marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies **A, B, G** **TSP Part 4**, Uses of the Seafloor, Policies **4.C** and **4.D.4** **TSP Part 5**, Uses of the Territorial Sea, Policy **B.4.g.3**, in addition to > **B.4.e 4)** Cumulative Effects. Evaluate the cumulative effects of a project, including the shoreland component, in conjunction with effects of any prior phases of the project, past	**GAP** *> Applicable gaps of TSP Part 5 are the same as those listed above.* **STRENGTHEN** > ODFW - In Oregon's State Wildlife Action Plan (SWAP), Key Conservation Issues (KCIs) identify and address major challenges impacting species of greatest conservation need and their habitats, such as changing ocean conditions. KCIs offer a framework for understanding the root causes of habitat degradation and species decline.

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			projects, other current projects, and probable future projects. The evaluation shall analyze the biological, ecological, physical, and socioeconomic effects of the renewable energy facility development and of other renewable energy facility projects along the Oregon coast, while also taking into account the effects of existing and future human activities and the regional effects of global climate change. > **D.3.d**. Adaptive Management Plan. An adaptive management plan to provide a mechanism for incorporating new findings and new technologies into the operation and management of the project. The adaptive management plan shall include performance standards that are based on results of the resource inventory and effects evaluation and incorporated in the study design of the monitoring plan as described in paragraph C.3.c (Monitoring Plan). **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits ... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and **(7)** burial of all cables **OAR 141-083-0850(6)**, Removal of cables and **(8)** cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination.	
Aquatic Living - Effects of changes in wave energy on neritic/seafloor, littoral and shoreline **habitat**	> Assumption that extraction of wind energy changes wave size/energy at the surface and in subsurface waves.	**SP Goal 19** **TSP Parts 3, 4, 5** **ORS 196** - Removal-Fill **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands **OAR 635-415** – Fish and Wildlife Habitat Mitigation Policy	*Applicable policies are the same as for marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, **Policy 1** to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies **A, B, G** **TSP Part 4**, Uses of the Seafloor, Policies **4.C** and **4.D.4** **TSP Part 5**, Uses of the Territorial Sea, Policy **B.4.g.3** **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits ... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and **(7)** burial of all cables **OAR 141-083-0850(6)**, Removal of cables and **(8)** cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination.	**STRENGTHEN** > ODFW - The State Wildlife Action Plan (SWAP) is a non-regulatory plan that highlights species of greatest conservation need, key habitats, and key conservation issues to guide agencies, partners, and stakeholders in identifying ways to address the most pressing threats to Oregon's fish and wildlife and the habitats they depend on. Consider how these conservation objectives might guide our thinking in identifying ways to strengthen policies to address potential impacts from offshore wind. **ISSUE/NEED** > DEQ/DSL - Establish state water quality standards and permit as listed above. > DEQ - Look at Hydroelectric standards ORS 543A for ideas to incorporate into offshore wind. See previous comments.

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Aquatic Living - Effects of changes to electromagnetic fields (EMFs) on **species** sensitive to EMF	> Effects to navigation, orientation, or prey detection; especially if installed in estuaries or near river mouths with anadromy. > Dynamic electrified cable and its effect on ecosystem as they move through waters.	**SP Goal 19** **TSP Part 5** **ORS 496** – Wildlife Policy > **496.171 – 496.192** – Threatened or Endangered Species **ORS 506.109** – Food Fish Policy	*Applicable policies are the same as for marine community composition effects (above and noted here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. (see note below under ORS 496) **TSP Part 5**, Uses of the Territorial Sea, **Policy B.4.g.3,** Ecological Resources Protection Standards. **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... > **496.171 – 496.192**, Threatened or Endangered Species, is applicable because of EMF sensitive species that are state listed (e.g., salmonids) > ORS 496 and Goal 19, together, protect ecosystems to get at elasmobranchs and sturgeon that are EMF sensitive **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits...	**GAP** > TSP Part 5 - The ecological resource standards in Part 5 should be amended to be broadly applicable to the resource rather than the location. **ISSUE/NEED** > Potential protective measures could include requiring protection/shielding around cables or require using existing offshore infrastructure or structures (e.g., pipelines) for routing transmission cables. Reference report: "Collaboratively advancing our understanding of electromagnetic fields: what do you need to know" (https://research-repository.st-andrews.ac.uk/handle/10023/32368)
Aquatic Living - Effects to **estuaries** from Project development and cables	> Pollution from biofouling, ballast water, spills > Changes to hydrodynamics and species and habitats from dredging > Potential shoreline development impacts > Potential loss of eel grass habitat related to port development > Channel deepening for port facilities and the potential influence it may have on species behavior > Impact migratory shorebird and waterfowl use of estuaries through habitat loss or degradation	**SP Goals 16, 17** **TSP Parts 4, 5 (?)** **ORS 196** – Removal-Fill **ORS 273/274** – State Lands **ORS 783** – Ballast Water **ORS 496.012** – Wildlife Policy **OAR 141** - State Lands **OAR 340-143** – Ballast Water Management **OAR 635-415** – Fish and Wildlife Habitat Mitigation Policy **Local Plans and Codes** (related to SP Goals 16, 17)	**SP Goal 16**, Estuarine Resources, requires proposed actions to be, "consistent with the resource capabilities of the area and the purposes of [any] management unit." The following uses may be allowed: pipelines, cables and utility crossings, including incidental dredging necessary for their installation **SP Goal 17**, Coastal Shorelands. General priorities for the overall use of coastal shorelands (from highest to lowest) shall be to: 1. Promote uses which maintain the integrity of estuaries and coastal waters; 2. Provide for water- dependent uses; 3. Provide for water-related uses; 4. Provide for nondependent, nonrelated uses which retain flexibility of future use and do not prematurely or inalterably commit shorelands to more intensive uses; 5. Provide for development, including nondependent, nonrelated uses, in urban areas compatible with existing or committed uses; 6. Permit nondependent, nonrelated uses which cause a permanent or long-term change in the features of coastal shorelands only upon a demonstration of public need. **ORS 196.825**, General Policy on Removal-Fill (noted above) **ORS 783.620,** Discharge of ballast in navigable waters (noted above) **OAR 141-083-0810(4),** Cable easements locations (noted above) **OAR 340**, Water Quality. Policies can be used for reviewing this effect but regulating this effect depends on the geographic location of the work/disturbance/development (e.g., territorial sea, waters of the state, waters of the US) and type of federal permitting nexus (e.g., CWA 404 or other). **OAR 635-415-0010**, Fish and Wildlife Habitat Mitigation Policy. It is the fish and wildlife habitat mitigation policy of the Oregon Department of Fish and Wildlife to require or recommend, depending upon the habitat protection and mitigation opportunities provided by specific statutes, mitigation for losses of fish and wildlife habitat resulting from development actions. Priority for mitigation actions shall be given to habitats for native fish and wildlife species. Mitigation actions for nonnative fish and wildlife species may not adversely affect habitat for native fish and wildlife. **Local plans and codes** address development and other projects within the estuarine resource (Goal 16) and coastal shoreland (Goal 17) areas. This includes addressing ecologically sensitive areas and habitats.	**GAP** > ODFW has existing mitigation hierarchy for land-based energy, but not for offshore wind. The existing tools do not address the scale of marine renewable energy. > OAR 340-143 - Ballast Water - Currently not a listed Enforceable Policy. > ORS 141-093-0275 – Regulation governing placement of fill from maintenance dredging could be amended to establish a process for beneficial use of dredging material, then incorporated as an Enforceable Policy. **STRENGTHEN** > ODFW - In Oregon's State Wildlife Action Plan (SWAP), Key Conservation Issues (KCIs) identify and address major challenges impacting species of greatest conservation need and their habitats, such as water quality and pollution. KCIs offer a framework for understanding the root causes of habitat degradation and species decline. **ISSUE/NEED** > TSP Parts 4, 5 - Unclear whether these parts apply in estuaries, including ecological resource protection standards. SP Goal 19 does not apply in estuaries. > Considering introducing language into Enforceable Policies for multiple steps of impact to different species, for example. > Mitigating and Operating procedures should consider fish/wildlife seasonal/temporal impacts > DEQ/DSL - Establish state water quality standards and permit as listed above. > DEQ - Look at Hydroelectric standards ORS 543A for ideas to incorporate into offshore wind. See previous comments. > Local - Estuary zoning varies in some communities and offshore wind energy components would be not compatible. In addition, some local plans have not been updated in several decades. Some communities are in the process of updating. > Local - Cable landing concerns and issues include 1) some local plans do not have provisions for cable landings, 2) establishing and prioritizing location of landings, including creating criteria on how to choose those landing spots, and 3) whether to regulations around separating or co-locating cable landings (potential cost savings to have multiple cables land in one area).

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Protected Species - Effects on **federally or state listed species (threatened and endangered)** in the Project area, including multiple marine, aquatic and terrestrial species of mammals, fish, birds and reptiles. Also included are effects on federally **designated Critical Habitat (CH)** and **Essential Fish Habitat**.	> Combined effects note in this table on marine species abundance, behavior, and migration, both near the Project and regionally	**SP Goals 5, 16, 17, 18, 19** **TSP Parts 3, 4, 5** **ORS 496** – Wildlife Policy > 4**96.171 – 496.192** – Threatened or Endangered Species **ORS 506.10**9 – Food Fish Policy Additional policies for onshore species (TBD consult with ODFW) **OAR 141-102**- Oregon Essential Indigenous Anadromous Salmonid Habitat **OAR 34**5 - Energy Facility Siting Standards (related or supporting facilities) > **345-022-0070** - Threatened and Endangered Species **OAR 635-100** - Threatened and Endangered Species **Local Plans and Codes** (related to SP Goals 5, 16, 17, 18)	*Applicable policies may include those identified under state identified special-status or strategy species (noted in this table)* **TSP Part 4**, Uses of the Seafloor > **Policy D.3.5.1.3**, Biological and Ecological Effects: Maintaining populations of threatened, endangered, or sensitive species; > **Policy D.4.3.3.1**, Biological and ecological features affected by the project or development action, including, but not limited to: All habitats along the proposed route, specifically including critical marine habitats (see Part 4 Appx A) **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.g.3**, Ecological Resources Protection Standards. The state shall protect living marine organisms, the biological diversity of marine life, the functional integrity of the marine ecosystem, important marine habitat and associated biological communities by using the following ecological resource protection standards to evaluate marine renewable energy project proposals. **OAR 141-102** - ESH >**141-102-0010**, Consultation and cooperation with ODFW; Public review and comment opportunity (a) Consult with ODFW concerning the status of salmonid species (b) Identify ESH in consultation with ODFW and other affected parties (e) Coordinate with other natural resource agencies to promote awareness of ESH >**141-102-003**0, Designation of Essential Salmon Habitat (ESH) and mapping **OAR 635-100-0130**, Requirement for Survival Guidelines. **(1)** Before a state agency takes, authorizes, or provides direct financial assistance for any action on land owned or leased by the state, or for which the state holds a recorded easement, the state agency shall consult with the department to determine whether the action is consistent with the survival guidelines established by the commission. **(3)** If a state agency fails to adopt the recommendations made by the department under section (2) of this rule, it shall consult with the department and demonstrate in writing that: (a) The potential public benefits of the proposed action outweigh the potential harm from failure to adopt the recommendations; and (b) Reasonable mitigation and enhancement measures shall be taken, to the extent practicable, to minimize the adverse impact of the action on the affected species. **Local plans and codes** include development and compatibility standards for projects within sensitive fish and wildlife areas.	**GAP** > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > Data - Identifying upwelled areas. If we don't know where the areas are, it is hard to apply the standard. **STRENGTHEN** > ODFW - The State Wildlife Action Plan (SWAP) is a non-regulatory plan that highlights species of greatest conservation need, key habitats, and key conservation issues to guide agencies, partners, and stakeholders in identifying ways to address the most pressing threats to Oregon's fish and wildlife and the habitats they depend on. Consider how these conservation objectives might guide our thinking in identifying ways to strengthen policies to address potential impacts from offshore wind. **WISHLIST** > OAR 635-100-0040 - Oregon's Sensitive Species Rule > OAR 635-100-0125 - Oregon's Threatened and Endangered Species List

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
Protected Species - Effects on **state-listed** (Oregon ESA), **special-status** or SWAP Species of Greatest Conservation Need not protected under the federal ESA of Project <u>construction, operation and maintenance.</u>	> Effects to protected species movement, foraging, habitat > Addressing effects on marine, aquatic, and terrestrial species.	**SP Goals 5, 16, 17, 18, 19** **TSP Parts 3, 4, 5** **ORS 196** - Removal-Fill **ORS 469** - Regulation of Energy Facilities (related or supporting facilities) **ORS 496** - Wildlife Policy > **496.171** – Wildlife Management authority for Threatened/Endangered species **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands **OAR 635-100** – Threatened or Endangered Species **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) > **345-022-0070** - Threatened and Endangered Species Local Plans and Codes (related to Goal 5)	*Applicable policies are similar to those of marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, **Policy 1** to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies A, B, G **TSP Part 4**, Uses of the Seafloor, Policies 4.C, 4.D.4 **TSP Part 5**, Uses of the Territorial Sea, **Policy B.4.g.3**, Ecological Resources Protection Standards. **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and (7) burial of all cables **OAR 141-083-0850(6)**, Removal of cables and (8) cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and (15)(b) Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination. **OAR 635-100-0130**, Requirement for Survival Guidelines. **(1)** Before a state agency takes, authorizes, or provides direct financial assistance for any action on land owned or leased by the state, or for which the state holds a recorded easement, the state agency shall consult with the department to determine whether the action is consistent with the survival guidelines established by the commission. **(3)** If a state agency fails to adopt the recommendations made by the department under section (2) of this rule, it shall consult with the department and demonstrate in writing that: **(a)** The potential public benefits of the proposed action outweigh the potential harm from failure to adopt the recommendations; **and (b)** Reasonable mitigation and enhancement measures shall be taken, to the extent practicable, to minimize the adverse impact of the action on the affected species. **Local plans and codes** include development and compatibility standards for projects within sensitive fish and wildlife areas.	**GAP** > TSP (generally) - Definition clarification or expansion of "renewable marine resources" terminology. Terminology should be consistent throughout. > TSP Part 5 * The ecological resource standards in Part 5 should be amended to be broadly applicable to the resource rather than the location. * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) > ORS 469 - Regulation of Energy Facilities (related or supporting facilities), Enforceable Policies need to be updated, if applicable > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? **STRENGTHEN** > ODFW -The State Wildlife Action Plan (SWAP) is a non-regulatory plan that highlights species of greatest conservation need, key habitats, and key conservation issues to guide agencies, partners, and stakeholders in identifying ways to address the most pressing threats to Oregon's fish and wildlife and the habitats they depend on. Consider how these conservation objectives might guide our thinking in identifying ways to strengthen policies to address potential impacts from offshore wind. **WISHLIST** > OAR 635-100-0040 - Oregon's Sensitive Species Rule > OAR 635-100-0125 - Oregon's Threatened and Endangered Species List
Protected Areas - Effects on **protected areas** such Marine Reserves, Marine Protected Areas, and certain TSP Part 3 designations prohibit utility siting.	> Local protected areas such as Port Orford Stewardship Area	**SP Goal 19** **TSP Parts 3, 4, 5** **ORS 196** - Removal-Fill **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands > **OAR 141-142** - Rules that establish Marine Reserves and Marine Protected Areas	*Applicable policies are the same as for marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies A, B, G **TSP Part 4**, Uses of the Seafloor, Policies 4.C, 4.D.4 **TSP Part 5**, Uses of the Territorial Sea, Policy B.4.g.3 **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits ... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and **(7)** burial of all cables **OAR 141-083-0850(6)**, Removal of cables and **(8)** cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination. **OAR 141-142-0020(1)**, states that DSL may only authorize removal-fill if the use is necessary to study, monitor, evaluate, enforce or protect the marine reserve, marine garden, marine	**GAP** > TSP Part 5 - Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. (ELI) > OAR 635-012 - ODFW Rules for Marine Reserves and Protected Areas are not currently included as Enforceable Policies > OAR 736-029 - OPRD Rules for Marine Reserves and Marine Protected Areas are not currently included as Enforceable Policies

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			conservation area, marine protected area, marine research area, or seabird protection area. Therefore, utility siting is not authorized in these protected areas.	
Coastal Environment - 1) Effects of wind energy extraction to **swell, coastal erosion, sediment transport** to/from beaches, **longshore currents**, nearshore **weather patterns**, and **sea state**. 2) Effect of wind energy extraction and turbulence to **precipitation and "fog drip"** in redwood forest ecosystems. 3) Effects of energy extraction to **upwelling and primary production**, both locally and cumulatively across the California Current Large Marine Ecosystem (including regional effects from projects located in CA and WA)	> Potential for an altered shoreline habitat and nearshore retention dynamics (e.g., from relaxation, headlands, reefs, banks) > Upwelling alteration may affect larval distribution and settlement in nearshore and estuarine environments > Includes "slump zones" > Potential reduction and relocation of primary productivity > Migration and forage behavior changes (e.g., birds fly out to upwelling fronts) > Changes to ocean mixing, which may include larval distribution or ocean transport > Compounding effects of energy extraction and climate change	**SP Goal** 19 **TSP Parts 3, 4, 5** (can Part 5 address oceanic effects on terrestrial systems?) **ORS 196** - Removal-Fill **ORS 496** – Wildlife Policy **ORS 390.610** – Ocean Shores **ORS 506.109** – Food Fish Policy **OAR 141** - State Lands **OAR 635-415** – Fish and Wildlife Habitat Mitigation Policy	*Applicable policies are the same as for marine community composition effects and benthic community effects (above and here)* **SP Goal 19**, Ocean Resources, Policy 1 to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries. **TSP Part 3**, Rocky Habitat Management Strategy, Policies A, B, G **TSP Part 4**, Uses of the Seafloor, Policies **4.C** and **4.D.4** **TSP Part 5**, Uses of the Territorial Sea, Policy **B.4.g.3**, Ecological Resources Protection Standards. In addition, > Policies related to recreational uses **ORS 196.825**, General Policy on Removal-Fill **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits ... **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits... **OAR 141-083-0810(4)**, Cable easement locations and **(7)** burial of all cables **OAR 141-083-0850(6)**, Removal of cables and **(8)** cable inspection. **OAR 141-125-0170(10)**, Renewable energy removal and **(15)(b)** Short-term access authorization for scientific or research purposes... **OAR 141-140**, Termination. - and - **ORS 390.610**, Ocean Shores general provisions including policies related to recreational uses. (2) The Legislative Assembly recognizes that over the years the public has made frequent and uninterrupted use of the ocean shore and recognizes, further, that where such use has been legally sufficient to create rights or easements in the public through dedication, prescription, grant or otherwise, that it is in the public interest to protect and preserve such public rights or easements as a permanent part of Oregon's recreational resources.	**GAP** > *Applicable gaps of TSP Part 5 are the same as those listed above.* > OAR 736/ORS 390 - HB 2925 (2025) will require rulemaking to OAR 736 and ORS 390. New regulations and changes to existing policies should be amended after rulemaking. **STRENGTHEN** > ODFW - The State Wildlife Action Plan (SWAP) is a non-regulatory plan that highlights species of greatest conservation need, key habitats, and key conservation issues to guide agencies, partners, and stakeholders in identifying ways to address the most pressing threats to Oregon's fish and wildlife and the habitats they depend on. Consider how these conservation objectives might guide our thinking in identifying ways to strengthen policies to address potential impacts from offshore wind. **ISSUE/NEED** > Additional information needed regarding forest protection policies at the state level or within local implementation of the statewide land use planning goals. > Develop and Pursue a Research Agenda for Oregon/ Establish a Research Collaborative to build Oregon-specific scientific consensus and coordinate with other west coast states
Terrestrial - Effects of temporary displacement of and/or disturbance to **wildlife and botanical** resources in the immediate vicinity during Project construction, including effects of cable placement to shoreline. Effects of **habitat alteration or loss** due to the operation, maintenance, and upgrades of land-based Project structures (e.g., power monitoring and control building, support facilities, transmission, energy storage facilities) that may be required from the cable landing location to high-power transmission lines.	> Destruction of plants and displacement of animal species, including beach and dune ecosystem impacts > Potential loss of recreational access > Alteration or loss of habitat quantity, quality, function or connectivity	**SP Goals 17, 18** **ORS 390** – Ocean Shores **ORS 469** - Regulation of Energy Facilities (related or supporting facilities) **ORS 49**6 – Wildlife Policy **OAR 736-020** – Ocean Shore Permit Standards **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) > **345-022-0060** - Fish and Wildlife Habitat **OAR 635-415** – Fish and Wildlife Habitat Mitigation Policy **Local Plans and Codes**	**ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... **ORS 469.310**, Regulation of Energy Facilities. In the interests of the public health and the welfare of the people of this state, it is the declared public policy of this state that the siting, construction and operation of energy facilities shall be accomplished in a manner consistent with protection of the public health and safety and in compliance with the energy policy and air, water, solid waste, land use and other environmental protection policies of this state. Note: ORS 469.300, Definitions. "Related or supporting facilities" means any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structure, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial structures. **ORS 390.655**, Standards for Improvement Permits. The standards shall be based on the following considerations, among others: **(1)** The public need for healthful, safe, aesthetic surroundings and conditions; the natural scenic, recreational and other resources of the area; and the present and prospective need for conservation and development of those resources. **(2)** The physical characteristics or the changes in the physical characteristics of the area and suitability of the area for particular uses and improvements. **(3)** The land uses, including public recreational use if any, and the improvements in the area, the trends in land uses and improvements, the density of development and the	**GAP** > SP Goals 17, 18 - Potential gap regarding onshore/cable transmission (what protections are included here) > ORS/OAR - "Storage facility" or "Battery Energy Storage System" that may occur on resource lands (e.g., farm or forest lands) is not well defined in ORS/OAR. Previously explored options include 1) folding it into definition of utility facility ORS 215.275, 2) Add specific criteria under utility facility, and 3) modify OAR 660-033-0130 regarding power generation facilities. > ORS 469 - Regulation of Energy Facilities (related or supporting facilities), Enforceable Policies need to be updated, if applicable > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > OAR 736 - Ocean Shores Permit Standards - only a portion of this rule is an Enforceable Policy. the remainder is waiting in line to be submitted to NOAA. In addition, HB 2925 (2025) will require rulemaking to OAR 736 and ORS 390. This information should be revised after upcoming rulemaking. **STRENGTHEN** > ODFW - The State Wildlife Action Plan (SWAP) is a non-regulatory plan that highlights species of greatest conservation need, key habitats, and key conservation issues to guide agencies, partners, and stakeholders in identifying ways to address the most pressing

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			property values in the area. **(4)** The need for recreation and other facilities and enterprises in the future development of the area and the need for access to particular sites in the area. [1969 c.601 §11; 1979 c.186 §22] **OAR 635-415**, Fish and Wildlife Habitat Mitigation Policy, applicable to terrestrial effects of construction, operation of land-based structures. **OAR 736-020-0005**, Beach Construction/Alteration Standards, Factors Evaluated **(1)** Each site on the ocean shore presents different conditions and applicants have varying project needs. Evaluations point up the relative significance of the general, scenic, recreational, safety, and other interests of the public. In acting on any application for an ocean shore permit under ORS 390.640, 390.715 or 390.725, the Department shall consider: (a) Provisions necessary to protect the affected area from any use, activity or practice that is not in keeping with the conservation of natural resources or public recreation; (b) The public need for healthful, safe, esthetic surroundings and conditions; the natural, scenic, recreational, economic and other resources of the area and the present and prospective need for conservation and development of those resources; (c) The physical characteristics or the changes in the physical characteristics of the area, and the suitability of the area for particular uses and improvements (This may include bank alignments, topography, shoreline materials and stability, width of the beach, past erosion, storm water levels, sand movement, water currents, adjoining structures, beach access, land uses, etc.); (d) The land uses, including public recreational use; the improvements in the area; the trends in land uses and improvements; the density of development; and the need for access to particular sites in the area. (e) The need for recreation and other facilities and enterprises in the future development of the area and the need for access to particular sites in the area. **(2)** Public opinion in response to public notice or hearings on an application shall be considered in evaluating each proposed ocean shore project. **(3)** Considered together, and in accordance with the intent of the Legislature, the factors listed in sections (1) and (2) of this rule assist in the overall decision for granting, an ocean shore permit, or denying, or modifying the ocean shore permit application when the level of impact is determined to be unacceptable. **Local plans and codes** include development and compatibility standards for projects within the estuaries, coastal shorelands, and beaches and dunes. Local codes also address ecologically sensitive areas and habitats, wetlands, floodplain, fish and wildlife, etc. Some jurisdictions may prohibit cable landings in residential zones. Also, utility facilities, substations or nonconforming uses may be regulated in local codes.	threats to Oregon's fish and wildlife and the habitats they depend on. Consider how these conservation objectives might guide our thinking in identifying ways to strengthen policies to address potential impacts from offshore wind. **ISSUE/NEED** > Potential measures that may include location standards that require avoiding migratory routes or important/sensitive habitats; scheduling installation and maintenance to avoid sensitive periods (for marine example, gray whale migration); or recommendations to minimize lighting. > Local - Cable landing concerns and issues include 1) some local plans do not have provisions for cable landings, 2) establishing and prioritizing location of landings, including creating criteria on how to choose those landing spots, and 3) whether to regulations around separating or co-locating cable landings (potential cost savings to have multiple cables land in one area). > Local - There are a variety of issues and concerns coming from the local level. These may include compatibility and locational issues such as near residential and park developments. > Develop and Pursue a Research Agenda for Oregon/ Establish a Research Collaborative to build Oregon-specific scientific consensus and coordinate with other west coast states

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Invasive Species - Effects related to **invasive species** introduction from vessel activities and permanent infrastructure attachment	> Risks of invasive species introduction at sea and especially in estuaries from vessels or imported materials or manufacturing. > Risks onshore from construction/disturbance in terrestrial, riparian, wetland, freshwater systems.	**SP Goal** 19 **ORS 496.012** - Wildlife **ORS 783** – Ballast Water **OAR 340-143** – Ballast Water Management	**ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state. In furtherance of this policy, the State Fish and Wildlife Commission shall represent the public interest of the State of Oregon and implement the following coequal goals of wildlife management: **(1)** To maintain all species of wildlife at optimum levels. **(2)** To develop and manage the lands and waters of this state in a manner that will enhance the production and public enjoyment of wildlife. **(3) - (7)** etc. **OAR 340**, Water Quality. Policies can be used for reviewing this effect but regulating this effect depends on the geographic location of the work/disturbance/development (e.g., territorial sea, waters of the state, waters of the US) and type of federal permitting nexus (e.g., CWA 404 or other).	**GAP** > ODFW implements OARs to prohibit introduction of invasive species in freshwater systems especially 635- 056-0050 & 635-056-0130 (Prohibited Species), 635-059-0000 (Aquatic Invasive Species) & 635-059-0010 (Inspection/Reporting). > Potential gap - Regarding risks of invasive species introduction at sea and especially in estuaries from vessels or imported materials or manufacturing. Includes risks onshore from construction/disturbance in terrestrial, riparian, wetland, freshwater systems. > TSP Part 5 - Does not elevate indigenous species or explicitly discuss invasive species effects as a distinct threat to indigenous species. > OAR 340-143 - Ballast Water - Currently not a listed Enforceable Policy. **STRENGTHEN** > ODFW - In Oregon's State Wildlife Action Plan (SWAP), Key Conservation Issues (KCIs) identify and address major challenges impacting species of greatest conservation need and their habitats, such as invasive species. KCIs offer a framework for understanding the root causes of habitat degradation and species decline. **ISSUE/NEED** > DEQ/DSL - Establish state water quality standards and permit as listed above. > DEQ - Look at Hydroelectric standards ORS 543A for ideas to incorporate into offshore wind. See previous comments. > Potential protective standard could include requiring the use of antifouling measures such as specialized coatings or paints or frequent cleaning on hard surfaces.
Hazards - Effects on **geology** and the *marine environment* by failed/sunken platforms. *Note: Similar effects are listed under the Environmental Protection section and Local and Regional Communities section.*	> Potential impacts to fishing access > Loss of fishing gear > Potential marine pollution (e.g., oil, debris, fiberglass shards) > Impact of floating turbines detach from moorings or damaged parts from turbine failures reach shore as debris or sink in nearshore waters (including beaches, rocky habitats, marine protected areas) > Risks of collision, entanglement, or entrapment to marine species	**SP Goal 19** **TSP Parts 3, 4, 5** **ORS 390** – Ocean Shores **ORS 274** – Submerged Lands **ORS 496.012** – Wildlife Policy **ORS 506.109** – Food Fish Policy **ORS 468b, OAR 340** – Water Quality	**TSP Part 4**, Uses of the Seafloor > **Policy D.7**, Decommission and Recovery. After the usable, operational, or design life of seafloor infrastructure or fixture an owner or operator shall decommission any infrastructure or fixtures, removing them from the seabed. The owner or operator of the seafloor infrastructure or fixture shall submit a decommissioning plan to DSL for approval pursuant to the terms and conditions of the easement. **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.g.3,** Ecological Resources Protection Standards (if the affected resource is a marine species or habitat). 3.) The state shall protect living marine organisms, the biological diversity of marine life, the functional integrity of the marine ecosystem, important marine habitat and associated biological communities by using the following ecological resource protection standards to evaluate marine renewable energy project proposals. > **Policy B.4.e,** Information requirement. 3.) Natural and Other Hazards Evaluate the potential risk to the renewable energy facility, in terms of its vulnerability to certain hazards and the probability that those hazards may cause loss, dislodging, or drifting of structures, buoys, or facilities. Consider both the severity of the hazard and the level of exposure it poses to the renewable marine resources and coastal communities. Hazards to be considered shall include the scouring action of currents on the foundations and anchoring structures, slope failures and subsurface landslides, faulting, tsunamis, variable or irregular bottom topography, weather related, or due to human cause. > **Policy D.3,** Project Operation Plan. An operation plan is required that describes, at a minimum, information regarding the routine environmental monitoring, safety management and emergency response procedures, facility inspections, and the decommissioning of the project. The operation plan shall explain the procedures and mechanisms that will be employed so that the facility will comply with regulatory standards and other conditions of permit or license approval related to water and air quality, environmental protection and mitigation, facility maintenance and safety, operational failure and incident reporting. An operation plan shall include the following information... * **Policy D.3.a**, Contingency Plan. A plan to describe how the facility operator will respond to emergencies caused by a structural or equipment failure due to human error, weather, geologic or other natural event. The plan shall include a description of the types of equipment, vessels and personnel that would be deployed, the chain of command or management structure for managing the facility repairs, recovery or other forms of	**GAP** > DSL - Requirements for the Emergency Response Plan from the applicant and coordination with different stakeholders (see related notes in this table). > TSP Part 5 (potential) * Does not require projects to avoid geologically unstable areas or otherwise mitigate for effects of instability unless it would have an adverse ecological effect. Potential to develop siting standards in geologically unstable areas. * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) * Policy B.4.g.2-5, does not address (protect) natural hazard areas. (ELI) > OAR 736/ORS 390 - HB 2925 (2025) will require rulemaking to OAR 736 and ORS 390. New regulations and changes to existing policies should be amended after rulemaking. **STRENGTHEN** > TSP Part 3 - Extend mitigation policies in this part so applicable to undesignated rocky habitat sites > Establish a mitigation hierarchy, ensuring that coastal communities and the state receive tangible benefits > Policy around decommissioning and major repair with added scrutiny before equipment is installed that it is feasible equipment can be successfully removed and decommissioned (reuse, recycle or disposal), if required (there are additional decommissioning or removal effects identified in this table) > Operations plan must require decommissioning or recovery of any failed components of a facility (e.g., blades) > OAR 340-141 - Would offshore wind energy project require a Contingency Plan under these regulations for oil spill prevention and emergency response plan? Are oil spill policies applicable in federal waters through the GLD? OAR 340-141 is currently not a listed Enforceable Policy. * ORS 468B.305 exempts entry of oil if proven as "An act of war or sabotage or an act of God" **ISSUE/NEED** > Geological standards, waste deposition plan, management of environmental impacts of

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			remedial action, and the process and timeline for notification of state and federal authorities. > **Policy D.4,** Decommissioning Plan. An applicant shall provide a plan to restore the natural characteristics of the site to the extent practicable by describing the facilities to be removed. **ORS 468b, OAR 340**, Water Quality. Policies can be used for reviewing this effect but regulating this effect depends on the geographic location of the work/disturbance/development (e.g., territorial sea, waters of the state, waters of the US) and type of federal permitting nexus (e.g., CWA 404 or other).	unexpected events. > OAR 345 - Energy Facility Siting Standards (related or supporting facilities), not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > DEQ/DSL - Support and establish a stand-alone state-based water quality standards and permit that would evaluate compliance with water quality standards and laws in a manner similar to CWA Section 401 but be applicable in absence of any Federal permit. It would be nice to have a 401-like certification that would look at the overall project (similar to how DEQ can use the FERC license process for wave energy). Currently the 401 cert is based on the USACE 404 scope and DEQ may only see pieces of a larger project and not the whole project. There may be some legal issue with the idea because the project is out in the ocean, but [maybe] the case could be made that the state wants to look at the impact of the entirety of the project. > DEQ - Look at Hydroelectric standards, ORS 543A for ideas to incorporate into offshore wind. Hydroelectric Application Review Team (HART) regulations are currently in Rule related to how OWRD, DEQ, ODFW work together when looking at a hydro project. ORS 543 (new hydro) and ORS 543A (relicensure hydro), https://www.oregonlegislature.gov/bills_laws/ors/ors543.html. There is extensive process with permits, and it might be something to consider creating for offshore wind energy review process. Currently ORS 543A-013 is not applicable to ocean projects if in territorial sea or in an estuary. When a 401 cert for a hydroelectric project is issued, DEQ will look at 1) water quality, and 2) other water related requirements of state law. This allows the concept of beneficial uses to come into evaluation with how water is there to support fish use, for example, which allows a hook for ODFW to require a fish passage. > Local - Engage local governments and state agencies regarding the effects and potential gaps resulting from 1) construction, 2) natural disaster, 3) failure, 4) decommissioning of offshore and onshore components, and 5) waste management. Some policies may be better addressed at the state level, while onshore components may warrant local government policies to address impacts. Local governments are concerned about construction impacts (lights, transportation, frac-out, drilling fluids and waste), natural disaster or failure waste, decommission waste, waste disposal site limitations or nonexistent (trucked out), recycling of materials, response plan and clean up, and inaccessible beach due to emergency event. Therefore, it will be beneficial to work with local governments to identify and amend policy gaps in their compatibility standards applicable to onshore components of an offshore energy project.

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Hazards - Natural hazard co-effects related to a **geologically** unstable areas, including landslides or wildfire hazards associated with onshore components and transmission lines. *Note: This effect is listed under the Environmental Protection section and Local and Regional Communities section.*	> Potential increased threat of injury, displacement or loss of humans, marine and terrestrial species including risk of habitat damage. > Location of equipment could be placed in areas that avoid high risk hazards, steep slopes and landslide prone areas. > Concern over the failure of ocean- and land-based equipment , including transmission line.	**SP Goal 7, 16, 17, 18** **TSP Part 3, 5** **ORS 469** - Regulation of Energy Facilities (related or supporting facilities) **ORS 496** – Wildlife Policy **ORS 757.963-966 (2021)** Requires utilities to develop wildfire protection plans **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) **> 345-022-0115** - Wildfire Prevention and Risk Mitigation Oregon PUC requirements for energy reliability? **Local Plans and Codes** (primarily related to SP Goals 7, 17, 18)	**TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.e**. Information requirement (associated standard applies to fisheries uses only). 3.) Natural and Other Hazards Evaluate the potential risk to the renewable energy facility, in terms of its vulnerability to certain hazards and the probability that those hazards may cause loss, dislodging, or drifting of structures, buoys, or facilities. Consider both the severity of the hazard and the level of exposure it poses to the renewable marine resources and coastal communities. Hazards to be considered shall include the scouring action of currents on the foundations and anchoring structures, slope failures and subsurface landslides, faulting, tsunamis, variable or irregular bottom topography, weather related, or due to human cause. > **Policy D.3**. Project Operation Plan. An operation plan is required that describes, at a minimum, information regarding the routine environmental monitoring, safety management and emergency response procedures, facility inspections, and the decommissioning of the project. The operation plan shall explain the procedures and mechanisms that will be employed so that the facility will comply with regulatory standards and other conditions of permit or license approval related to water and air quality, environmental protection and mitigation, facility maintenance and safety, operational failure and incident reporting. An operation plan shall include the following information... **ORS 469.310**, Regulation of Energy Facilities. In the interests of the public health and the welfare of the people of this state, it is the declared public policy of this state that the siting, construction and operation of energy facilities shall be accomplished in a manner consistent with protection of the public health and safety and in compliance with the energy policy and air, water, solid waste, land use and other environmental protection policies of this state. Note: **ORS 469.300**, Definitions. “Related or supporting facilities” means any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structure, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial structures. **ORS 757.963**, Public utility required to develop wildfire protection plan. (1) A public utility that provides electricity must have and operate in compliance with a risk-based wildfire protection plan that is filed with the Public Utility Commission and has been evaluated by the commission. The plan must be based on reasonable and prudent practices identified through workshops conducted by the commission pursuant to ORS 757.960 and on commission standards adopted by rule. The public utility must design the plan in a manner that seeks to protect public safety, reduce risk to utility customers and promote electrical system resilience to wildfire damage. **ORS 757.966**, Consumer-owned utility required to develop wildfire mitigation plan. (2) A consumer-owned utility must have and operate in compliance with a risk-based wildfire mitigation plan approved by the governing body of the utility. The plan must be designed to protect public safety, reduce risk to utility customers and promote electrical system resilience to wildfire damage. **Local plans and codes** may have siting standards for development in geologically unstable areas. Development in hazardous areas is discouraged or restricted under Goals 7, 17,18.	**GAP** > Goal 7 - While Goal 7 requires certain actions, it is primarily a process-based goal supported by guidance rather than rules. Carefully constructed rules could improve Goal 7 implementation, offshore, at the shore, and on land. > DSL - Requirements for the Emergency Response Plan from the applicant and coordination with different stakeholders (see related notes in this table). > TSP Part 5 (Potential) - Does not require projects to avoid geologically unstable areas or otherwise mitigate for effects of instability unless it would have an adverse ecological effect. Potential to develop siting standards in geologically unstable areas. In addition, it seems there is a gap on state planning and policies related to what will happen during an infrastructure failure (e.g., turbines, anchors, etc.) and any clean-up or impacts caused by such failure. Policy B.4.g.2-5, does not address (protect) natural hazard areas. (ELI) > TSP Part 3 - Extend mitigation policies in this part so applicable to undesignated rocky habitat sites > ORS 469 - Regulation of Energy Facilities (related or supporting facilities), Enforceable Policies need to be updated, if applicable > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > ORS 757 - Wildfire protection plan standards are not included in Enforceable Policy suite for Federal Consistency **STRENGTHEN** > Establish a mitigation hierarchy, ensuring that coastal communities and the state receive tangible benefits **ISSUE/NEED** > Geological standards may or may not be present through some local or state codes requiring land-based components to avoid geologically unstable areas. > Waste deposition plan, management of environmental impacts of unexpected events. > Local - Engage local governments and state agencies regarding the effects and potential gaps resulting from 1) construction, 2) natural disaster, 3) failure, 4) decommissioning of offshore and onshore components, and 5) waste management. Some policies may be better addressed at the state level, while onshore components may warrant local government policies to address impacts. Local governments are concerned about construction impacts (lights, transportation, frac-out, drilling fluids and waste), natural disaster or failure waste, decommission waste, waste disposal site limitations or nonexistent (trucked out), recycling of materials, response plan and clean up, and inaccessible beach due to emergency event. Therefore, it will be beneficial to work with local governments to identify and amend policy gaps in their compatibility standards applicable to onshore components of an offshore energy project.

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TRIBAL INTERESTS - Protection of tribal cultural and archaeological resources, culturally significant viewsheds and other interests of Tribal Nations.				
Cultural & Tribal - Effects on **historic, archeological and traditional cultural** resources located within the Project Area of Potential Effect (determined in consultation with tribes and Oregon State Historic Preservation Office)	> Concern about seafloor disturbance within the historical shoreline offshore and onshore (paleoshoreline) > Changes in wave energy and sediment on the seafloor may uncover additional cultural resources so regular surveys should be conducted.	**SP Goal 19** **TSP Part 5** **ORS 97** – Rights and Duties Relating to Cemeteries, Human Bodies and Anatomical Gifts **ORS 358** – Archaeological Objects and Sites **ORS 390.235** – Archaeological Sites and Historic Material **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) > **345-022-0090** - Historic, Cultural and Archaeological Resources **OAR 660-023** - Programs to Achieve Goal 5 (applicable onshore) **> OAR 660-023-210** - Cultural Areas (new) > **OAR 660-023-195(6)** - Historic, Cultural, and Archaeological Resources (new) **OAR 736-51** – Archaeological Permits	Referenced policies require state archaeological permits in coordination with tribes.	**Note** > Federal Consistency regulations require that the state must retain the authority to make consistency decisions and cannot delegate that authority. **GAP** > Goal 19 lack substantive standards or mention of cultural resources protection. > TSP Part 5, Policy B.4.g.2-5, does not address (protect) cultural resource areas. (ELI) > OAR 345, Energy Facility Siting Standards (related or supporting facilities), not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > OAR 660-023-0210 - This is a new subsection addressing cultural areas and needs to be updated as an Enforceable Policy > OAR 660-023-0195(6) - Consider adapting these new solar farm rules to onshore components of offshore wind energy development. > OAR 736/ORS 390 - HB 2925 (2025) will require rulemaking to OAR 736 and ORS 390. New regulations and changes to existing policies should be amended after rulemaking. **ISSUE/NEED** > Policy lacks a clear definition of "cultural resources" and protection or avoidance guidelines. Consideration of establishing a probability map (inventory) of local tribal cultural resources. Clarifying questions may include 1) Does it include "place" for gathering resources, practices, etc. 2) Does it yield archaeological artifacts? 3) Does it include tribal or other cultural groups? 4) Should there be a clear distinction between "traditional cultural resources" (tribal context) and "traditional ocean users (broader community use)? 5) Include traditional ecological knowledge in decisions? 6) Could natural resources be considered cultural resources, suggesting that policies protecting natural resources would inherently protect cultural resources (this may imply that environmental conservation policies might cover cultural preservation needs, potentially streamlining regulations)? > Consider preemptively conducting a cultural resource site inventory as part of an offshore wind spatial planning process, which could inform planning decisions about places to avoid in future leasing. Alternatively, the Territorial Sea Plan and the state rules for Goal 5 should be revised to require (or direct local governments to require in the case of Goal 5) marine energy development proponents to commission a cultural resource inventory as part of the required information for land use decisions or seafloor leasing. > Current state laws do not protect cultural resources from disclosure in the same manner that archaeological resources are protected under ORS 192.345. Seek legislative action to amend state statutes and rules to exclude cultural resource areas from public disclosure when necessary. > Define "sensitive ecological resources" or similar terminology that is interpreted clearly through and reflective of tribal worldviews (the whole concept of natural resources as cultural resources) > What happens if there is a rediscovery of lost information over time? The important views may not be static. > As a best practice, consider exploring adding a Federal Consistency coordination step where the state asks the Oregon tribes for relevant policies applicable to a proposed project, such as offshore energy development.

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Cultural & Tribal - Effects on **tribal uses and/or resources** located within the Project area.	> influence of the Project beyond just the Project site and includes nearshore and onshore areas. > Potential impact to onshore archaeological sites; Native American Graves Protection and Repatriation Act (NAGPRA) specific.	**TSP Part 5** **OAR 141-140-0040 -** Pre-Application Requirements **OAR 660-023** - Programs to Achieve Goal 5 (applicable onshore) > **OAR 660-023-210** - Cultural Areas (new) > **OAR 660-023-195(6)** - Historic, Cultural, and Archaeological Resources (new) **Local Plans and Codes** (e.g., Coos Estuary Plan Policy 18)	*Applicable policies include those of marine community composition effects and benthic community effects (above)* - and - **TSP Part 5**, Uses of the Territorial Sea. > **Policy B.4.g.5.** Visual Resource Protection Standards > **Policy D.6.** Agreements. Applicants shall communicate with traditional ocean users and stakeholders with an interest in the area of the proposed project to address issues of concern. Applicants are encouraged to memorialize agreements with those ocean users and stakeholders on specific actions, including conducting the adaptive management and monitoring plan, that the applicant is required to perform. **OAR 141-140-0040**, Pre-Application Requirements. ...before submitting an application to the Department, a person wanting to install, construct, operate, maintain or remove ocean energy monitoring equipment or an ocean energy conversion facility for a research project, demonstration project or commercial operation shall meet with (a) Department staff to discuss the proposed project; and (b) **Affected ocean users** and other government agencies having jurisdiction in the Territorial Sea to discuss possible use conflicts, impacts on habitat, and other issues related to the proposed use of an authorized area for the installation, construction, operation, maintenance or removal of ocean energy monitoring equipment or an ocean energy facility. **OAR 660-023-0040,** Local governments shall develop a program to achieve Goal 5 for all significant resource sites based on an analysis of the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use. **Coos Estuary Plan** > **Policy 18**. Local government shall provide protection to historical, cultural and archaeological sites and shall continue to refrain from widespread dissemination of site-specific information about identified archaeological sites. This strategy shall be implemented by requiring review of all development proposals involving a cultural, archaeological, or historical site to determine whether the project as proposed would protect the cultural, archaeological, and historical values of the site.... Upon receipt of the statement by the tribe(s), or upon expiration of the tribe(s) thirty day response period, the local government shall conduct an administrative review of the Site Plan Application and shall: (a) Approve the development proposal if no adverse impacts have been identified, as long as consistent with other portions of this plan, or (b) Approve the development proposal subject to appropriate measures agreed upon by the landowner and the tribe(s), as well as any additional measures deemed necessary by the local government to protect the cultural, historical, and archaeological values of the site. If the property owner and the tribe(s) cannot agree on the appropriate measures, then the governing body shall hold a quasi-judicial hearing to resolve the dispute. The hearing shall be a public hearing at which the governing body shall determine by preponderance of evidence whether the development project may be allowed to proceed, subject to any modifications deemed necessary by the governing body to protect the cultural, historical, and archaeological values of the site.	**GAP** > Goal 19 lack substantive standards or mention of cultural resources protection. > TSP Part 5, Policy B.4.g.2-5, does not address (protect) cultural resource areas. (ELI) > Potential gap - For those uses/resources not already covered by a resource protection statute/rule, e.g., water, wildlife. > Potential gap - Tribal uses and/or resources in onshore areas not within Coos Co? > Protection of cultural practices > OAR 660-023-0210 - This is a new subsection addressing cultural areas and needs to be updated as an Enforceable Policy > OAR 660-023-0195(6) - Consider adapting these new solar farm rules to onshore components of offshore wind energy development. > General policies do not lend themselves well to incorporating new knowledge and discoveries > Culturally significant sites (e.g., harvesting sites) are not protected **ISSUE/NEED** > Encourage local policies to protect cultural sites. > Consider gaps for those uses/resources not already covered by a resource protection statute/rule (e.g., water and wildlife) or general policies that do not lend themselves well to incorporating new knowledge and discoveries. Some of this may include tribal uses and/or resources in onshore areas or effects to estuary species adequately covered by non-marine species and habitat policies. Encourage local policies to protect cultural sites. > As a best practice, consider exploring adding a Federal Consistency coordination step where the state asks the Oregon tribes for relevant policies applicable to a proposed project, such as offshore energy development.

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Cultural & Tribal - Effects to **tribal lifeways**, including sacred views (cultural viewsheds); commercial and subsistence activities, important foods, degraded environment, natural resources as cultural resources.	> Influence of the Project on Indigenous Determinants of Health and regional effect from migratory species > Effect to non-ESA species of importance (e.g., lamprey)	**SP Goal 5, 19** **TSP Part 5** **ORS 496** – Wildlife Policy **ORS 506.109** – Food Fish Policy **OAR 660-023** - Programs to Achieve Goal 5 > **OAR 660-023-210** - Cultural Areas (new) > **OAR 660-023-195(6)** - Historic, Cultural, and Archaeological Resources (new) **Local Plans and Codes** (associated with Goal 5)	*Applicable policies include those of marine community composition effects and benthic community effects (above) and* **TSP Part 5**, Uses of the Territorial Sea. > **Policy B.4.g.5**. Visual Resource Protection Standards **ORS 496.012**, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits... **Local plans and codes** may include standards or procedures when related to cultural resources (Goal 5). Tribal engagement is incorporated into some local codes or through agreements, where applicable.	**GAP** > TSP Part 5 - This part does not explicitly include sacred tribal views as Class 1 viewsheds. Consider having standard viewshed protection but not identify specific sacred viewsheds. > OAR 660-023-0210 - This is a new subsection addressing cultural areas and needs to be updated as an Enforceable Policy > OAR 660-023-0195(6) - Consider adapting these new solar farm rules to onshore components of offshore wind energy development **ISSUE/NEED** > Effects to estuary species adequately covered by non-marine species and habitat policies? > As a best practice, consider exploring adding a Federal Consistency coordination step where the state asks the Oregon tribes for relevant policies applicable to a proposed project, such as offshore energy development.
ENERGY AND CLIMATE GOALS - Achievement of state energy and climate policy objectives, including energy resource diversity, reliability and resilience of state and regional energy system				
Energy/Climate - Effects on l**ocal, regional, and state energy resiliency and grid reliability**. This includes any effect to attainment of Oregon clean energy targets.	> Energy grid reliability and resiliency benefits to coast > Additional energy generation in the coastal or Columbia River regions would allow development in areas zoned for development but lack the power to do so. > Net gain of carbon offset with the development of OSW projects. Much of the development may require use of fossil fuels. > Concept of Energy Balance (what it takes to generate it versus how much it provides, including consideration of how much energy is lost through transmission to load centers - and how much will it produce). > Local grid upgrades > Wave energy converter (WEC) could be collocated with OSW platform. "A cost analysis by Kluger et al. (2023) of a standalone wind installation versus a collocated wind-wave power installation found that the collocated wind-wave installation had smoother power supply, less energy curtailment, and higher farm-to-grid efficiency than the stand-alone wind farm." (California Energy Commission, Sea Space Analysis for Wave and Tidal Energy, 2025)	**TSP Part 5** **SP Goal 13** **HB 2021** **HB 2065 / HB 2066** (2025) Microgrids **Local Plans and Codes**	**SP Goal 13**, *To conserve energy. Land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles* *1. Priority consideration in land use planning should be given to methods of analysis and implementation measures that will assure achievement of maximum efficiency in energy utilization.* *2. The allocation of land and uses permitted on the land should seek to minimize the depletion of non-renewable sources of energy.* *...* *5. Plans directed toward energy conservation within the planning area should consider as a major determinant the existing and potential capacity of the renewable energy sources to yield useful energy output. Renewable energy sources include water, sunshine, wind, geothermal heat and municipal, forest and farm waste. Whenever possible land conservation and development actions provided for under such plans should utilize renewable energy sources.* **HB 2021** (2021) established a clean energy program overseen by OPUC and in part by Oregon DEQ that requires Oregon's largest investor-owned utilities (Portland General Electric and PacifiCorp), and power suppliers for some large energy users (Electric Service Suppliers or ESSs) to reduce greenhouse gas (GHG) emissions associated with the generation of electricity sold in Oregon. GHG emissions must be reduced, relative to baseline emissions levels established by DEQ, by 80 percent by 2030, 90 percent by 2035, and 100 percent by 2040. The law requires PGE and PacifiCorp to develop Clean Energy Plans that are based on or included in their Integrated Resource Plans that: 1) Include annual goals/actions that make progress towards the clean energy targets, 2)Examine costs and opportunities of offsetting energy generated from fossil fuels with community-based renewable energy, 3) Include an examination of resiliency opportunities based on industry resiliency standards and guidelines established by the OPUC, and 4) Result in an affordable, reliable and clean electric system. OPUC must review and acknowledge the Clean Energy Plans if they are in the public interest and consistent with the clean energy targets. In addition to its compliance authority for Oregon's 100% Clean Electricity Law, OPUC also has review and oversight authority over the types of resources that Oregon's IOUs procure, whether for regulatory compliance or any other reason. **Local plans and codes** may include county energy resilience plans but these are not Enforceable Policies. This is related to Oregon HB 3630 (2023) and includes Clatsop, Tillamook, Columbia, and Lane Counties. Plans are in process.	**GAP** > Gap regarding the destination of generated energy, suggesting a need for clearer regulatory frameworks to ensure local benefits and community resilience from offshore wind energy projects. > Potential policy to require power generated within our review jurisdiction to land in Oregon. > TSP Part 5 potential gap would be to add energy grid reliability/resilience to B.4.d and B.4.g.2-5 > Goal 13 was not written to govern or direct the production of energy, but its conservation. Potential gap would be to amend Goal 13 to address development of alternative energy sources and adding energy grid reliability/resilience. > ORS/OAR - "Storage facility" or "Battery Energy Storage System" that may occur on resource lands (e.g., farm or forest lands) is not well defined in ORS/OAR. Previously explored options include 1) folding it into definition of utility facility ORS 215.275, 2) Add specific criteria under utility facility, and 3) modify OAR 660-033-0130 regarding power generation facilities. **STRENGTHEN** > ODFW - In Oregon's State Wildlife Action Plan (SWAP), Key Conservation Issues (KCIs) identify and address major challenges impacting species of greatest conservation need and their habitats, such as a changing climate. KCIs offer a framework for understanding the root causes of habitat degradation and species decline. **ISSUE/NEED** > Is this a benefit we want to see, an adverse effect to avoid? How would it affect offshore wind energy development and approval decisions? > Staff research indicates the embedded carbon cost of offshore wind energy would be repaid early in the life of a project. > HB 2021 - Could these be adopted as Enforceable Policies? > Exploring the potential for the state to have a power procurement authority, as has been implemented in Maine, California, and other states. This would provide greater investment certainty for development and allow the state to place additional expectations alongside power purchase (e.g., research funding, community agreements, etc.) > HB 3630 - For those energy resilience plans developed via HB 3630 (2023), is it possible for them to be Enforceable Policies, if applicable?

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Energy/Climate – Investment	> Exploring the potential for amendment to Oregon energy policies to encourage greater investment in long lead-time resources, including offshore wind. One example might be an increase to the cap for direct access procurement. [to be expanded]			
Energy/Climate - Procurement authority	> Exploring the potential for the state to have a power procurement authority, as has been implemented in Maine, California, and other states. This would provide greater investment certainty for development and allow the state to place additional expectations alongside power purchase (e.g., research funding, community agreements, etc.)			
LOCAL AND REGIONAL COMMUNITIES - Protect and sustain coastal communities and existing local and regional uses of the coastal zone, including fishing, recreation, tourism, and aesthetic and spiritual enjoyment.				
ECONOMIC OPPORTUNITY AND SUSTAINMENT - Support the creation of economic opportunities and sustainment of existing local and regional economies.				
WORKFORCE - Position Oregon to have an offshore wind energy workforce that is local, trained, housed and equitable.				
Aesthetic - Effects on **aesthetic and visual** experience from land by ocean-based platforms and navigational lighting (viewshed effects). This also includes effects of land-based Project structures and facilities to visual resources or state park lands.	> This assumes no land-based structures are part of a lease decision. > Aesthetic Resources economic impact of reduced visitation due to dislike of viewshed. > Travel Oregon's Visitor Profile indicates that most people visit the Oregon coast for wildlife viewing, connection to nature and visiting the beach.	**SP Goal 5** **TSP Part 5** **ORS 390.610** – Ocean Shores **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) > **345-022-0080** - Scenic Resources **HB 2375** (2025) **Local Plans and Codes**	**TSP Part 5,** Uses of the Territorial Sea. > **Policy B.4.g.4**. Recreational Resources Standards. The state shall protect recreational resources as a beneficial use of the territorial sea. The standards for recreational resources shall be applied to all renewable energy facility projects throughout the territorial sea, unless otherwise provided by the plan. A determination of impact is based on the inventory of recreational uses contained in the map (Part Five, Appendix B). > **Policy B.4.g.5**. Visual Resource Protection Standards. The regulating agencies shall protect visual resources (i.e., viewsheds of the territorial sea) by applying the following visual resource protection standards to evaluate the potential impact of proposed renewable energy projects on the affected viewsheds.(a) Classification of Viewsheds. The following classification system categorizes viewshed sites based on a set of objective criteria related to the unique setting, aesthetic qualities and physical properties of each site. Each viewshed class has a specific objective that determines the level of activity that would be compatible with maintaining the character of the viewshed. The class objectives and project review criteria are used to determine the impact a project has on each affected viewshed. i. Class I: The objective of this class is to preserve the existing character of the seascape. This class provides for natural ecological changes; however, it does not preclude very limited development activity. The level of change to the characteristic seascape must be very low and may not attract attention. ii. Class II: The objective of this class is to retain the existing character of the seascape. The level of change to the characteristic seascape must be low. Development activities may be seen, and may attract minimal attention, but may not dominate the view of the casual observer. iii. Class III: The objective of this class is to partially retain the existing character of the seascape. The level of change to the characteristic seascape may be moderate. Development activities may be seen and may attract attention but may not dominate the	**GAP** > Potential gap - Local policies regarding shoreside structures as seen from land (at discretion of local government) > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > TSP Part 5 * Does not explicitly include economic effect policies. * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) > Uncertain if policies exist to restrict adverse effects from projects on tourism or local economy. > HB 2375 is a new bill from the 2025 Oregon Legislative Session and is not yet an approved Enforceable Policy. > OAR 736/ORS 390 - HB 2925 (2025) will require rulemaking to OAR 736 and ORS 390. New regulations and changes to existing policies should be amended after rulemaking. **ISSUE/NEED** > TSP Part 5 identifies high value visual resources and includes strong protection policies that would be applicable to offshore wind; however, these policies do not explicitly mention culturally significant views to tribes or establish separate criteria that would guide decisions affecting these views. > Establish locations where visual impacts are minimized; identify design standards that minimize visual impacts on scenic resources; or establish a capacity limit across the territorial sea (e.g., no more than 1 GW worth of development).

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
			view of the casual observer. iv. Class IV: The objective of this class is to provide for development activities which require major modifications of the existing character of the seascape. The level of change to the characteristic seascape can be high. These development activities may dominate the view and be the major focus of viewer attention. However, every attempt shall be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements. > **TSP Part 5** contains additional guidance for how agencies shall consider contrast criteria. **ORS 390.610**, Ocean Shores general provisions including policies related to recreational uses. **(4)** The Legislative Assembly further declares that it is in the public interest to do whatever is necessary to preserve and protect scenic and recreational use of Oregon's ocean shore. **HB 2375** (2025) Requires a person who is developing or repowering a wind energy facility to apply to the Federal Aviation Administration and, if applicable, the Federal Communications Commission, for approval for the installation and use of light-mitigating technology systems and, if approved, install the systems within 24 months or as soon as reasonably practicable thereafter. Prohibits a county or city from allowing or permitting a wind energy facility if the person seeking to develop or repower the wind energy facility does not apply for approval for the installation and use of light-mitigating technology systems. https://olis.oregonlegislature.gov/liz/2025R1/Measures/Overview/HB2375 **Local plans and codes** may include compatibility standards for onshore components of an offshore wind project. Local codes may include viewshed protection zones (applicable to onshore development only), lighting ordinances, and airport imaginary surface zones (if near an airport).	> Protection of natural vistas for future generations > Federal Aviation Administration (FAA) sets turbine color standards > Visual impacts by onshore components may also be addressed by ODAV and FAA if within an airport imaginary surface. > Evaluation of how viewshed changes influence community identity, tourism, and local culture > Local - Local community's expressed ocean view sensitivity (for some, if offshore components are not visible, it's not a concern). > Local - Some local communities have compatibility standards for onshore components while others may not review this and could be a potential gap in local codes.
Recreation & Tourism - Effects of **recreational** qualities and uses of state park lands resulting of land-based Project structures and facilities, including closure of beach access during installation, and noise effects to nearby residents. In addition, effects to **ocean-based recreation** from Project presence or activities.	> Port construction, for example, might be in a tourist area. First the loss of economic income because of construction. However, consider refocusing attention to other areas or ecotourism or climate tourism (OSW museum or information center). Also, post construction, have at-sea tours.	**SP Goal 19** **TSP Part 5** **ORS 390** - Parks, Recreation Programs, Scenic Waterways, Recreation Trails **OAR 141-140** **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) > **345-022-0100** - Recreation **OAR 736-020** – Ocean Shore Permit Standards **Local Plans and Codes**	**TSP Part 5**, Uses of the Territorial Sea. **> Policy B.4.g.4**. Recreational Resources Standards. The state shall protect recreational resources as a beneficial use of the territorial sea. The standards for recreational resources shall be applied to all renewable energy facility projects throughout the territorial sea, unless otherwise provided by the plan. A determination of impact is based on the inventory of recreational uses contained in the map (Part Five, Appendix B). **ORS 390.010**, Policy of state toward outdoor recreation resources **ORS 390.610**, Ocean Shores; State Recreation Areas; (4) The Legislative Assembly further declares that it is in the public interest to do whatever is necessary to preserve and protect scenic and recreational use of Oregon's ocean shore. **ORS 390.705**, Prohibition against placing certain conduits across recreation area and against removal of natural products. No person shall: (1) Place any pipeline, cable line or other conduit across and under the state recreation areas described by ORS 390.635 (Jurisdiction of department over recreation areas) or the submerged lands adjacent to the ocean shore, except as provided by ORS 390.715 (Permits for pipe, cable or conduit across ocean shore, state recreation areas and submerged lands). **OAR 736-020-0005**, Beach Construction/Alteration Standards, Factors Evaluated (1) Each site on the ocean shore presents different conditions and applicants have varying project needs. Evaluations point up the relative significance of the general, scenic, recreational, safety, and other interests of the public. In acting on any application for an ocean shore permit under ORS 390.640, 390.715 or 390.725, the Department shall consider: (a) Provisions necessary to protect the affected area from any use, activity or practice that is not in keeping with the conservation of natural resources or public recreation; (b) The public need for healthful, safe, esthetic surroundings and conditions; the natural, scenic, recreational, economic and other resources of the area and the present and prospective need for conservation and development of those resources; (c) The physical characteristics or the changes in the physical characteristics of the area, and the suitability	**GAP** > OAR 736 - Ocean Shores Permit Standards - only a portion of this rule is an Enforceable Policy. the remainder is waiting in line to be submitted to NOAA. In addition, HB 2925 (2025) will require rulemaking to OAR 736 and ORS 390. This information should be revised after upcoming rulemaking. > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? **ISSUE/NEED** > Would local zoning prevent port construction in a tourist area as described in the "effect details"? > Local - Some local communities have compatibility standards for onshore components while others may not review this and could be a potential gap in local codes.

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			of the area for particular uses and improvements (This may include bank alignments, topography, shoreline materials and stability, width of the beach, past erosion, storm water levels, sand movement, water currents, adjoining structures, beach access, land uses, etc.); (d) The land uses, including public recreational use; the improvements in the area; the trends in land uses and improvements; the density of development; and the need for access to particular sites in the area. (e) The need for recreation and other facilities and enterprises in the future development of the area and the need for access to particular sites in the area. (2) Public opinion in response to public notice or hearings on an application shall be considered in evaluating each proposed ocean shore project. (3) Considered together, and in accordance with the intent of the Legislature, the factors listed in sections (1) and (2) of this rule assist in the overall decision for granting, an ocean shore permit, or denying, or modifying the ocean shore permit application when the level of impact is determined to be unacceptable. **Local plans and codes** include development and compatibility standards, and may overlay to a separate noise ordinance.	
Recreation & Tourism - Effects on **recreation** resulting from recovery/clean-up activities associated with spills or other emergencies.	> Consequence of floating turbines detaching from moorings or damaged parts from turbine failures reach shore as debris.	**SP Goal 19** **TSP Part 4, 5** **ORS 390 -** Ocean Shores **OAR 340** - Oil spills, antidegradation	*See policies under natural hazard effects above.* **TSP Part 4**, Uses of the Seafloor > Policy D.7, Decommission and Recovery. **TSP Part 5**, Uses of the Territorial Sea > Policy B.4.g, Ecological Resources Protection Standards > Policy B.4.e, Information requirement. 3.) Natural and Other Hazards Evaluate the potential risk to the renewable energy facility... > Policy D.3, Project Operation Plan. Including D.3.a. Contingency Plan. > Policy D.4, Decommissioning Plan. **OAR 340**, Water Quality. Policies can be used for reviewing this effect but regulating this effect depends on the geographic location of the work/disturbance/development (e.g., territorial sea, waters of the state, waters of the US) and type of federal permitting nexus (e.g., CWA 404 or other). **OAR 340-041-0004**, Antidegradation (only applicable to nearshore aspects of an offshore wind energy project that fall within the waters of the state) (1) Purpose. The purpose of the Antidegradation Policy is to guide decisions that affect water quality to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 (Statewide Narrative Criteria) through 340-041-0350 (The Three Basin Rule: Clackamas, McKenzie (above RM 15) & the North Santiam) supplement the Antidegradation Policy. Note: **OAR 340-041-0002**, Definitions. "Waters of the state" means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction. **OAR 340-141**, Oil Spill Contingency Planning. OAR 340-141 is currently not a listed Enforceable Policy.	**GAP** > OAR 736/ORS 390 - HB 2925 (2025) will require rulemaking to OAR 736 and ORS 390. New regulations and changes to existing policies should be amended after rulemaking. **STRENGTHEN** > TSP Part 5 * Add Emergency Response Plan to this part. Also expand the role of the response officer (?) to include TSP Part 5. * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) > OAR 340-141 - Would offshore wind energy project require a Contingency Plan under these regulations for oil spill prevention and emergency response plan? Are oil spill policies applicable in federal waters through the GLD? OAR 340-141 is currently not a listed Enforceable Policy. **ISSUE/NEED** > DEQ/DSL - Establish state water quality standards and permit as listed above. > DEQ - Look at Hydroelectric standards ORS 543A for ideas to incorporate into offshore wind. See previous comments.

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Recreation & Tourism - Effects to **tourism**, including nature-based tourism (e.g., whale watching, kayaking) of lost or altered recreation and associated opportunities. *Note: This effect is listed under the Local and Regional Communities section and Economic Opportunity and Sustainment section.*	> Economic effects to small businesses as recreation economic drivers, tourism avoidance of areas that once had "unspoiled" ocean views, loss of "seafood tourism", lost dune recreation effects. > Effects based upon access. > Effects based on the casual sequence of negative impacts of tourism. Tourism infrastructure is a driver of economic activity on the coast. Needs to be better understood > Project development could have beneficial effects on tourism with the potential to refocus attention to other areas or ecotourism or climate tourism (e.g., OSW museum or information center and at-sea tours).	**TSP Part 5**	**TSP Part 5**, Uses of the Territorial Sea. > **Policy B.4.g.4**. Recreational Resources Standards. The state shall protect recreational resources as a beneficial use of the territorial sea. The standards for recreational resources shall be applied to all renewable energy facility projects throughout the territorial sea, unless otherwise provided by the plan. A determination of impact is based on the inventory of recreational uses contained in the map (Part Five, Appendix B).	**ISSUE/NEED** > Establish guidelines regarding location of offshore equipment in order to be positioned away from popular recreational areas, and if avoidance is not possible, the area should be clearly marked on local maps and signs.
Recreation & Tourism - Effects on **ocean waves and swell** downwind of the Project, including potential effects to safety from physical nearshore changes and attraction/avoidance.	> The extraction of wind energy might influence oceanic patterns that **recreational** communities depend on, such as wind, waves, and deposition of sand.	**SP Goal 19** **TSP Part 5**	**TSP Part 5**, Uses of the Territorial Sea. > **Policy B.4.g.4**. Recreational Resources Standards. The state shall protect recreational resources as a beneficial use of the territorial sea. The standards for recreational resources shall be applied to all renewable energy facility projects throughout the territorial sea, unless otherwise provided by the plan. A determination of impact is based on the inventory of recreational uses contained in the map (Part Five, Appendix B).	
Land Use - Effects of shoreline privatization.		**ORS 390.620** - Pacific Shore not to be alienated **Local Plans and Codes** (?)	**ORS 390.620,** Pacific Shore Not to be Alienated **(1)** No portion of the lands described by ORS 390.610 (Policy) or any interest either therein now or hereafter acquired by the State of Oregon or any political subdivision thereof shall be alienated except as expressly provided by state law. **(2)** No portion of the ocean shore declared a state recreation area by ORS 390.610 (Policy) shall be alienated by any of the agencies of the state except as provided by law. Some jurisdictions prohibit cable landings in residential areas.	**GAP** > Is the effect of concern related to the use of public lands for cable landing? Are there other scenarios where the shoreline would be privatized?

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Land Use - Impact of Project decommissioning	> Impact of waste management, recycling and disposal of components. > Potential risk of spills, failures, noise, traffic, and other activity during dismantling of turbine and other support equipment. > Need to find appropriate onshore location, if applicable, for decommissioning such as salvage yard/boat breaking facility.	**TSP Parts 4, 5** Various offshore and onshore policies could apply depending on activities **ORS 469** - Regulation of Energy Facilities (related or supporting facilities) **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) > **345-022-0120** - Waste Minimization **Local Plans and Codes**	**TSP Part 4**, Uses of the Seafloor > **Policy D.7**, Decommission and Recovery. After the usable, operational, or design life of seafloor infrastructure or fixture an owner or operator shall decommission any infrastructure or fixtures, removing them from the seabed. The owner or operator of the seafloor infrastructure or fixture shall submit a decommissioning plan to DSL for approval pursuant to the terms and conditions of the easement. **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.e**. Information requirement. 3.) Natural and Other Hazards Evaluate the potential risk to the renewable energy facility, in terms of its vulnerability to certain hazards and the probability that those hazards may cause loss, dislodging, or drifting of structures, buoys, or facilities. Consider both the severity of the hazard and the level of exposure it poses to the renewable marine resources and coastal communities. Hazards to be considered shall include the scouring action of currents on the foundations and anchoring structures, slope failures and subsurface landslides, faulting, tsunamis, variable or irregular bottom topography, weather related, or due to human cause. > **Policy D.3**. Project Operation Plan. An operation plan is required that describes, at a minimum, information regarding the routine environmental monitoring, safety management and emergency response procedures, facility inspections, and the decommissioning of the project. The operation plan shall explain the procedures and mechanisms that will be employed so that the facility will comply with regulatory standards and other conditions of permit or license approval related to water and air quality, environmental protection and mitigation, facility maintenance and safety, operational failure and incident reporting. An operation plan shall include the following information... * **Policy D.3.a**. Contingency Plan. A plan to describe how the facility operator will respond to emergencies caused by a structural or equipment failure due to human error, weather, geologic or other natural event. The plan shall include a description of the types of equipment, vessels and personnel that would be deployed, the chain of command or management structure for managing the facility repairs, recovery or other forms of remedial action, and the process and timeline for notification of state and federal authorities. > **Policy D.4**. Decommissioning Plan. An applicant shall provide a plan to restore the natural characteristics of the site to the extent practicable by describing the facilities to be removed. **Local plans and codes** include development and compatibility standards and may overlay to a separate noise ordinance. In addition, some uses, like salvage yard or boat breaking facility may not be clearly defined in local codes but it may fit under a similar use.	**GAP** > DSL Requirements for Mitigation Plan, Decommissioning Plan and cables removal, Emergency Response Plan, coordination with different stakeholders, and appropriately calculated compensation costs. Also include plan for potential failure of components. > ORS 469 - Regulation of Energy Facilities, Enforceable Policies need to be updated, if applicable, for related or supporting facilities > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? **STRENGTHEN** > A roadmap to define how decommissioning should be handled. > Policy around decommissioning and major repair with added scrutiny before equipment is installed that it is feasible equipment can be successfully removed and decommissioned (reuse, recycle or disposal), if required. Considering decommissioning of wind turbine, anchor and mooring system, cables, and substation and location of such activities (decommissioning port). Example: Guide to a floating offshore wind farm (https://guidetofloatingoffshorewind.com/), Section D (decommissioning) and Section O (major repair). > TSP Part 5 - This part could include a requirement that decommissioning plans include a waste dispositioning plan that must demonstrate there is a feasible method of waste disposal. **ISSUE/NEED** > Local - Some local communities have compatibility standards for onshore components while others may not review this and could be a potential gap in local codes. > Local - Engage local governments and state agencies regarding the effects and potential gaps resulting from 1) construction, 2) natural disaster, 3) failure, 4) decommissioning of offshore and onshore components, and 5) waste management. Some policies may be better addressed at the state level, while onshore components may warrant local government policies to address impacts. Local governments are concerned about construction impacts (lights, transportation, frac-out, drilling fluids and waste), natural disaster or failure waste, decommission waste, waste disposal site limitations or nonexistent (trucked out), recycling of materials, response plan and clean up, and inaccessible beach due to emergency event. Therefore, it will be beneficial to work with local governments to identify and amend policy gaps in their compatibility standards applicable to onshore components of an offshore energy project.
Land Use - Effects to **ports** including space (slip space, dry dock, storage), services (vessel maintenance), freight (ship/road/rail), and harbor-based businesses (fish processors)	> Potential increased costs from industries competing for space and materials > Secondary effects from changes to fisheries with regard to support industries and economies. > Influence of development on the ports including space (slip space, dry dock, storage) and increased demand for services. > Potential effects to fishing ports if fisheries are displaced/lose access to fishing grounds	**Local Plans and Codes**	**Local plans and codes** include development standards and procedure ordinances that require citizen involvement in proposed projects. In addition, Coos County reported vessel type proportion restrictions for port marina space.	**GAP** (?) > Compare to California Coastal Act Section 39234 - "*Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreation boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided*." **ISSUE/NEED** > Local - Local plans and codes contain development and compatibility standards. However, there are a variety of issues and concerns coming from the local level. These may include zoning and use variability (recreation, commercial), slip space issues/categorization/competition, rail resurgence and access, land availability, ownership constraints, waterway and dredging issues, protection of species, and dangerous or inaccessible bar.

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Socioeconomic & Tribal - Effects to Tribal, **commercial and recreational fishing** and includes effects to crabbing and shrimping.	> Loss of fishing grounds from Project area > Changes in fishing effort or distribution from space use conflicts or species redistribution > Loss of catch efficiency due to area avoidance or increased transit time > Gear loss and entanglement > "Fleet squeeze" into available areas > Secondary effects to support industries > Loss or impact of generational fishing heritage > Decreased catch from adverse effects to fish species > Increased competition for port space and services from increased vessel presence/traffic > Adverse effects to vessel safety or navigation equipment > Increases to bycatch in available areas > Disruption of scientific management and MSC certification. > Potential disruption of the radar with fishing vessels, safety concern. > NOAA equipment impacts > Temporary effects from cable installation (assuming no crabbing presence in farther offshore areas) > Potential malformation from EMF (UK example?) > Increased activity in harbors and similar increases in activity in nearshore regions where more recreation fishing occurs. > Policy limit for phased offshore wind development for Oregon; allowing for the continued inter-generational fishing family businesses; provide stability and confidence in making better business plans	**SP Goal 19** **TSP Parts 4, 5** **ORS 496.012** – Wildlife Policy **ORS 506.109** – Food Fish Policy	**SP Goal 19, Ocean Resources** **> Policy 1, Uses of Ocean Resources. Policies to protect marine organisms, marine ecosystem integrity, important marine habitat, and areas important to fisheries.** **TSP Part 5, Uses of the Territorial Sea** **> Policy B.4.g.2. Fisheries Use Protection Standards**. The regulating agencies shall protect areas important to fisheries using the following use protection standards to evaluate the impact an individual renewable energy facility would have on fisheries use.... The following standards must be considered in determining the possible adverse effects a renewable energy facility might have on fisheries use, and are applicable to applications in all resource and use areas unless otherwise designated by the plan: i. Minimize the displacement of fishers from traditional fishing areas, and the related impact on the travel distance and routing required to fish in alternative areas; ii. Minimize the compaction of fishing effort caused by the reduction in the areas normally accessible to fishers; iii. Minimize the economic impact resulting from the reduction in area available for commercial and recreational fishing for the effected sectors and ports. iv. Mitigate possible hazards to navigation and, provide practicable opportunities for vessel transit, at the project location. v. Limit the number and size of projects that are located in an area to minimize the impact on a particular port or sector of the fishing industry. Consider the distribution of projects and their cumulative effects based on the criteria listed in (i) through (iv). **ORS 506.109, Food Fish Management Policy.** It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits for present and future generations of the citizens of this state. In furtherance of this policy, the goals of food fish management are: **(1)** To maintain all species of food fish at optimum levels in all suitable waters of the state and prevent the extinction of any indigenous species. **(2)** To develop and manage the lands and waters of this state in a manner that will optimize the production, utilization and public enjoyment of food fish. **(3)** To permit an optimum and equitable utilization of available food fish. **(4)** To develop and maintain access to the lands and waters of the state and the food fish resources thereon. **(5)** To regulate food fish populations and the utilization and public enjoyment of food fish in a manner that is compatible with other uses of the lands and waters of the state and provides optimum commercial and public recreational benefits. **(6)** To preserve the economic contribution of the sports and commercial fishing industries in a manner consistent with sound food fish management practices. **(7)** To develop and implement a program for optimizing the return of Oregon food fish for Oregon's recreational and commercial fisheries. [1975 c.253 §15; 1985 c.529 §2] Standard: To overcome the presumptive exclusion, an applicant must demonstrate and the regulating agency must concur that the project will have no reasonably foreseeable adverse effect on areas important to fisheries and there is no practicable alternative site. Definition: Adverse Effect for Fisheries Use Protection Standards: a significant reduction in the access of commercial and recreational fishers to an area spatially delineated as an area important to a single fishing sector, multiple combined sectors, or to the fishing community of a particular port.	**GAP** > TSP Part 5, Potential * Vessel operation impacts (e.g., collisions, strikes). * Ecological resource standards are spatially limited and could be revised to be generally applicable to resources regardless of location. * Amend the area-specific fishery use protection standards to make them broadly applicable to types of environments rather than specific geographical areas. This includes the standard of presumptive exclusion unless the project proponent can demonstrate no significant adverse effect on areas important to fisheries and that there be no practicable alternative site. * Seasonal considerations (e.g., in water work periods in ocean considering species presence or fisheries uses) * Define "Adverse Effect for Ecological Resource Protection" and role of mitigation on the effect of significance. * Policy B.4.g, Special Resources and Uses Review Standards, provide more detail in the policy about what "minimization" means. Except for visual effects and fisheries standards, the minimization requirements found in B.4.g.1-5 might benefit from more details and/or useful examples of what it means to minimize. (ELI) * Amend the policy around memorialized agreements to make them a firm requirement rather than an encouraged action. > Assess the use of existing state fisheries protection policies for tribal community impacts and amend as necessary to explicitly consider tribal fishing uses in addition to commercial and recreational fishing. > Potential gap: The state should consider establishing via legislation a cap on the total GW capacity of offshore wind development as an early development step. Some members of the fishing community proposed that a cap on development would give the seafood sector some measure of confidence and certainty that they will be able to fish specific areas of the ocean for a decade or more. This would allow for the continuance of inter-generational fishing family businesses, allow fishermen and processors to make better business plans with confidence and allow ports and communities some stability **STRENGTHEN** > Guidance on what constitutes best available data and when to acquire it > TSP Part 5 - Apply the fisheries use standards to all phases of offshore wind energy development (see TSP Part 5 section B.4.g.2) **ISSUE/NEED** > Assess the distribution of different fishing efforts (commercial and recreational) to evaluate needed changes to transit due to closed areas, and changes in fishing effort/ distribution due to space use and species distribution. > Potential protective measure may include establishing locations where fishing impacts are minimized; reduce size of project footprint; establish design standards to maximize existing access to fisheries or improve habitat; establish schedule guideline for when installation and maintenance can occur so to minimize disruption to fishing activities; limit deployments in popular fishing areas; create fishing exclusion zones around equipment to minimize gear entanglement; or establish a capacity limit across the territorial sea (e.g., no more than 1 GW worth of development). > For any future leasing actions for offshore wind energy exploration, DLCD should establish an Offshore Wind Energy Fisheries Working Group to facilitate the development memorialized agreements between offshore wind developers and fishing communities.

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Socioeconomic - Effects of **local, state and regional** socioeconomic benefits and challenges related to developing offshore wind energy. This includes workforces, social services, education and training, housing for low-income and marginalized community members. *Note: This effect is listed under the sections Local and Regional Communities, Economic Opportunity and Sustainment, and Workforce.*	> Benefits and impacts to job market (creation) and workforce training for the local community. > Potential opportunity for fishing vessels to be used as support of the offshore wind operations during off season. > Potential opportunity for new shipbuilding industry. OSW development uses specialized ships and equipment that has limited or no domestic production. > Potential for new industry for communities that have lost timber industry. > Potential concern regarding source water demand for increased businesses, housing and economic development. > Influence of new industry and the need for increasing community support services (e.g., police, fire, social services). Infrastructure improvement via community benefit agreements or property taxes. > Impacts to the housing market, including quality, quantity and affordability > Potential impacts to capacity levels with local government > Economic influence by industry changes to coastal community tourism or port/fishing industries > Cost of electricity to residents and businesses (however, there could be an overestimation of economic effects such as with Eastern Oregon windfarms (not strong economic driver and lack of local use workforce and development) > Need a "willingness to pay" survey to residents and businesses regarding how much they would be willing to pay for OSW. Energy cost impacts to ratepayers. What price will they be bringing	**HB 2021** - Labor Standards **HB 4080** - Labor standards **TERO** (Tribal Employment Rights Ordinance)? **ORS 469** - Regulation of Energy Facilities (related or supporting facilities) **ORS 757, OAR 860** – Public Utility Commission Standards for "prudence" for energy rates **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) > **345-023-0005** - Need Standard for Non-generating Facilities > **345-023-0020** - Least-Cost Plan Rule **Local Plans and Codes**	Costs are a main driver in assessing procurement decisions – focused on "least cost, least risk". RFP evaluation criteria sometimes include both price and non-price scoring, the latter of which can potentially address non-monetary benefits. **Local plans and codes** include development and compatibility standards. There may be some overlap to local business or economic development plans that are not Enforceable Policies.	**GAP** > Potential gap - PUC standards only applicable to in-state procurement by Investor Owned Utilities. Seeming gap, both in terms of existing policy and also the data required to compare what is gained and lost. * Compare to Rhode Island (650-RICR-20-05-11.10.1(C)) - *Offshore developments shall not have a significant adverse impact on the natural resources or existing human uses of the Rhode Island coastal zone, as described in the Ocean SAMP. In making the evaluation of the effect on human uses, the Council will determine, for example, if there is an overall net benefit to the Rhode Island marine economic sector from the development of the project or if there is an overall net loss. Where the Council determines that impacts on the natural resources or human uses of the Rhode Island coastal zone through the pre-construction, construction, operation, or decommissioning phases of a project constitute significant adverse effects not previously evaluated, the Council shall, through its permitting and enforcement authorities in state waters and through any subsequent CZMA federal consistency reviews, require that the applicant modify the proposal to avoid and/or mitigate the impacts or the Council shall deny the proposal.* > Potential gap - Need for policies for energy procurement that can be more reliable, address resiliency, planning, and type of systems/mechanism that need to be in place (?) > ORS 469 - Regulation of Energy Facilities, Enforceable Policies need to be updated, if applicable, for related or supporting facilities > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > Limited existing policies that address socio-economic impacts of offshore wind energy development (suggested focus on economic development, community benefits, and housing stability related to OSW infrastructure) > HB 4080, HB 2021 - Potential policy but not currently included as Enforceable Policies for Federal Consistency review. > HB 2021 - Applies only to in-state procurement by investor-owned utilities (potential) > ORS 506.109 - Food Fish Policy could be strengthened similar to other states (e.g., RI) for protection of fisheries uses. > Limited existing policies that address socio-economic impacts of offshore wind energy development and protect community interests in particularly in vulnerable and indigenous communities. Provide a framework for accountability, ensuring promises made during development negotiations are legally binding. Suggested focus on economic development, community and tribal benefits, and housing stability related to offshore wind energy development. > Potential gap - No state policies require mitigation for new industry growth effects on housing availability or quality. **ISSUE/NEED** > Is it possible to have a stand-alone local/regional/state economic development policy as an Enforceable Policy? Refer to ELI's Strong Enforceable Policies Guide. It might be best to address economics through resource-based, use-based, or location-based policies. https://www.eli.org/research-report/strong-enforceable-policies-examples-and-tips > Local - Local plans and codes contain development and compatibility standards. However, there are a variety of issues and concerns at the local level. These issues may or may not be tied to an Enforceable Policy but could possibly be addressed in a community benefit agreement or other type of agreements. Generally, responsible new development that has community engagement throughout the process would be beneficial and may touch on impacts to required workforce housing, infrastructure improvements, fishing heritage and other community impacts (e.g., schools). It may also address constraints found with land availability, waterway infrastructure, zoning, topography, developers, etc.

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
	electricity onshore? > Potential economic benefit with businesses that are interested in places that offer renewable energy sources to avoid power disruption to operations > Greater demands on the limited shoreline, which may force more impacts inland or on resource (farm and forest) lands from economic growth.			
Socioeconomic - Effects to **scientific research** resulting from the presence of ocean-based structures, vessel traffic, and other Project-related changes to offshore conditions	> Displacement or interference with surveys (research, protected species or fisheries stock)	**TSP Parts 4, 5** **ORS 496.012** – Wildlife Policy **ORS 506.109** – Food Fish Policy	**TSP Part 4**, Uses of the Seafloor > **Policy D.3.5.2**. Information requirement. Current Uses: Evaluate the effects of the project or development action on current uses and the continuation of a current use of ocean resources. **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.e**. Information requirement (associated standard applies to fisheries uses only) 2.) Current Uses: Evaluate the effects of the project on current uses and the continuation of a current use of ocean resources such as fishing, recreation, navigation, and port. Factors to consider include but are not limited to: (a) Local and regional economies; (b) Archeological and historical resources; and (c) Transportation safety and navigation. **ORS 496.01**2, Wildlife Policy. It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state. In furtherance of this policy, the State Fish and Wildlife Commission shall represent the public interest of the State of Oregon and implement the following coequal goals of wildlife management: **(1)** To maintain all species of wildlife at optimum levels. **(2)** To develop and manage the lands and waters of this state in a manner that will enhance the production and public enjoyment of wildlife. **(3) - (7)** etc. **ORS 506.109**, Food fish management policy. It is the policy of the State of Oregon that food fish shall be managed to provide the optimum economic, commercial, recreational and aesthetic benefits for present and future generations of the citizens of this state. In furtherance of this policy, the goals of food fish management are: **(1)** To maintain all species of food fish at optimum levels in all suitable waters of the state and prevent the extinction of any indigenous species. **(2)** To develop and manage the lands and waters of this state in a manner that will optimize the production, utilization and public enjoyment of food fish. **(3) - (7)** etc.	**STRENGTHEN** >TSP Part 5 - Consider how we might apply Part 5 protection standards to survey activities, so we continue to get information from surveys that is essential to fisheries management and natural resource protection

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
Socioeconomic - Effects to/from **other subsea cables** (e.g., telecommunications) that may result from competition for landing areas onshore and cable routes offshore.	> Assumes all data reporting would be remote	**TSP Parts 4, 5** **Local Plans and Codes**	**TSP Part 4**, Uses of the Seafloor > **Policy D.3.5.2**. Information requirement. Current Uses: Evaluate the effects of the project or development action on current uses and the continuation of a current use of ocean resources. **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.e**. Information requirement (associated standard applies to fisheries uses only) 2.) Current Uses: Evaluate the effects of the project on current uses and the continuation of a current use of ocean resources such as fishing, recreation, navigation, and port. Factors to consider include but are not limited to: (a) Local and regional economies; (b) Archeological and historical resources; and (c) Transportation safety and navigation.	**GAP** > DSL - State separation standards are needed between fiber optic cables, power cables, and pipelines. DSL policy does not include a minimum width/separation established in OAR 141-083. It was not an issue in 1999 with just a few cables in Oregon. Current easements have a broad range of widths. 15 feet is the standard minimum width for other easements issued by DSL on land. DSL will need to make it clear and include a minimum width for the cables in the Territorial Sea in their updated Division 83. This information should be revised later on after the Division 83 rulemaking. **ISSUE/NEED** > Need clarification on whether this is an economic issue or another issue? Who is responsible? Where should we put all the cables? Nothing guarantees them a rate for pay? > Local - Cable landing concerns and issues include 1) some local plans do not have provisions for cable landings, 2) establishing and prioritizing location of landings, including creating criteria on how to choose those landing spots, and 3) whether to regulations around separating or co-locating cable landings (potential cost savings to have multiple cables land in one area). > Local - There are a variety of issues and concerns coming from the local level. These may include compatibility and locational issues such as near residential and park developments.
Navigation - Effects of potential **navigation restrictions** on marine transportation and **maritime safety**	> Influence of development on helicopter safety > Restrictions or complications to Search and Rescue operations at sea	**TSP Parts 4, 5** – Ocean User Agreements (?)	**TSP Part 4**, Uses of the Seafloor > **Policy D.3.5.2**. Information requirement. Current Uses: Evaluate the effects of the project or development action on current uses and the continuation of a current use of ocean resources. **TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.e.** Information requirement (associated standard applies to fisheries uses only) 2.) Current Uses: Evaluate the effects of the project on current uses and the continuation of a current use of ocean resources such as fishing, recreation, navigation, and port. > **Policy B.4.g.2.b**. Fisheries Use Protection Standard: iv. Mitigate possible hazards to navigation and, provide practicable opportunities for vessel transit, at the project location. > **Policy D.6**. Agreements. Applicants shall communicate with traditional ocean users and stakeholders with an interest in the area of the proposed project to address issues of concern. Applicants are encouraged to memorialize agreements with those ocean users and stakeholders on specific actions, including conducting the adaptive management and monitoring plan, that the applicant is required to perform.	**GAP** > The state does not necessarily regulate marine transportation. OSMB does have authority to regulate vessel speeds and establish restricted areas within the territorial sea, but no such restrictions currently exist. Explore establishing a speed based on vessel size or migration season. Example: Virginia has guidelines for speed based on vessel size (10Kt for heavier vessels). It may also include guidelines for speed during migration seasons. Additional research https://www.fisheries.noaa.gov/action/amendments-north-atlantic-right-whale-vessel-strike-reduction-rule **ISSUE/NEED** > Does the state need policies/standards to address safety effects to vessels and ocean users that could result from a project? > Coordinate with Coast Guard to establish aids to navigational hazards that may need to be installed near deployment sites (e.g., navigational marker buoys that may include sound and lighting).
Hazards - Natural hazard co-effects related to a **geologically** unstable areas, including landslides or wildfire hazards associated with onshore components and transmission lines. *Note: This effect is listed under the Environmental Protection section and Local and Regional Communities section.*	> Potential increased threat of injury, displacement or loss of humans, marine and terrestrial species including risk of habitat damage. > Location of equipment could be placed in areas that avoid high risk hazards, steep slopes and landslide prone areas. > Concern over the failure of ocean- and land-based equipment , including transmission line.	**SP Goal 7, 16, 17, 18** **TSP Part 3, 5** **ORS 469** - Regulation of Energy Facilities (related or supporting facilities) **ORS 496** – Wildlife Policy **ORS 757.963-966 (2021)** Requires utilities to develop wildfire protection plans **OAR 345** - Energy Facility Siting Standards (related or supporting facilities) **> 345-022-0115** - Wildfire Prevention and Risk Mitigation Oregon PUC requirements for energy reliability? **Local Plans and Codes** (primarily related to SP Goals 7, 17, 18)	**TSP Part 5**, Uses of the Territorial Sea > **Policy B.4.e**. Information requirement (associated standard applies to fisheries uses only). 3.) Natural and Other Hazards Evaluate the potential risk to the renewable energy facility, in terms of its vulnerability to certain hazards and the probability that those hazards may cause loss, dislodging, or drifting of structures, buoys, or facilities. Consider both the severity of the hazard and the level of exposure it poses to the renewable marine resources and coastal communities. Hazards to be considered shall include the scouring action of currents on the foundations and anchoring structures, slope failures and subsurface landslides, faulting, tsunamis, variable or irregular bottom topography, weather related, or due to human cause. > **Policy D.3**. Project Operation Plan. An operation plan is required that describes, at a minimum, information regarding the routine environmental monitoring, safety management and emergency response procedures, facility inspections, and the decommissioning of the project. The operation plan shall explain the procedures and mechanisms that will be employed so that the facility will comply with regulatory standards and other conditions of permit or license approval related to water and air quality, environmental protection and mitigation, facility maintenance and safety, operational failure and incident reporting. An operation plan shall include the following information... **ORS 469.310**, Regulation of Energy Facilities. In the interests of the public health and the welfare of the people of this state, it is the declared public policy of this state that the siting, construction and operation of energy facilities shall be accomplished in a manner consistent	**GAP** > Goal 7 - While Goal 7 requires certain actions, it is primarily a process-based goal supported by guidance rather than rules. Carefully constructed rules could improve Goal 7 implementation, offshore, at the shore, and on land. > DSL - Requirements for the Emergency Response Plan from the applicant and coordination with different stakeholders (see related notes in this table). > TSP Part 5 (Potential) - Does not require projects to avoid geologically unstable areas or otherwise mitigate for effects of instability unless it would have an adverse ecological effect. Potential to develop siting standards in geologically unstable areas. In addition, it seems there is a gap on state planning and policies related to what will happen during an infrastructure failure (e.g. turbines, anchors, etc.) and any clean-up or impacts caused by such failure. > TSP Part 3 - Extend mitigation policies in this part so applicable to undesignated rocky habitat sites > ORS 469 - Regulation of Energy Facilities (related or supporting facilities), Enforceable Policies need to be updated, if applicable > OAR 345 - Energy Facility Siting Standards (related or supporting facilities) are not included in Enforceable Policy suite for Federal Consistency, if applicable. Could some of these be used with offshore wind energy, primarily the onshore components? Could they be adapted to offshore components? > ORS 757 - Wildfire protection plan standards are not included in Enforceable Policy suite

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
			with protection of the public health and safety and in compliance with the energy policy and air, water, solid waste, land use and other environmental protection policies of this state. Note: **ORS 469.300**, Definitions. "Related or supporting facilities" means any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structure, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial structures. **ORS 757.963**, Public utility required to develop wildfire protection plan. (1) A public utility that provides electricity must have and operate in compliance with a risk-based wildfire protection plan that is filed with the Public Utility Commission and has been evaluated by the commission. The plan must be based on reasonable and prudent practices identified through workshops conducted by the commission pursuant to ORS 757.960 and on commission standards adopted by rule. The public utility must design the plan in a manner that seeks to protect public safety, reduce risk to utility customers and promote electrical system resilience to wildfire damage. **ORS 757.966**, Consumer-owned utility required to develop wildfire mitigation plan. (2) A consumer-owned utility must have and operate in compliance with a risk-based wildfire mitigation plan approved by the governing body of the utility. The plan must be designed to protect public safety, reduce risk to utility customers and promote electrical system resilience to wildfire damage. **Local plans and codes** may have siting standards for development in geologically unstable areas. Development in hazardous areas is discouraged or restricted under Goals 7, 17, 18.	for Federal Consistency **STRENGTHEN** > Establish a mitigation hierarchy, ensuring that coastal communities and the state receive tangible benefits **ISSUE/NEED** > Geological standards may or may not be present through some local or state codes requiring land-based components to avoid geologically unstable areas. > Waste deposition plan, management of environmental impacts of unexpected events. > Local - Engage local governments and state agencies regarding the effects and potential gaps resulting from 1) construction, 2) natural disaster, 3) failure, 4) decommissioning of offshore and onshore components, and 5) waste management. Some policies may be better addressed at the state level, while onshore components may warrant local government policies to address impacts. Local governments are concerned about construction impacts (lights, transportation, frac-out, drilling fluids and waste), natural disaster or failure waste, decommission waste, waste disposal site limitations or nonexistent (trucked out), recycling of materials, response plan and clean up, and inaccessible beach due to emergency event. Therefore, it will be beneficial to work with local governments to identify and amend policy gaps in their compatibility standards applicable to onshore components of an offshore energy project.
Community Benefits - Effects related to Community Benefit definition and agreements. This may include economic development or community benefit policies.	*See listed policy gaps*			**GAPS** (Potential) > Community Benefit Agreements * Definition of "Community Benefit" * Overarching state policy but community-specific agreement but with sideboards (and components) set by state. * Things to consider: 1) Voluntary or with cost and time values? 2) non-monetary values and benefits? 3) Establish a standard set of agreements that would get incorporated into any contract, and those agreements could be developed collaboratively. * Local - Local government concerns regarding effects resulting from construction, natural hazard, failure, and decommissioning that may be incorporated into a community benefit agreement and that include: 1) Construction impacts (lights, transportation, frac-out, drilling fluids and waste), 2) Natural disaster or failure waste, 3) Decommission waste, 4) Disposal Site limitations or nonexistent (trucked out), 5) Recycling of materials, 6) Response Plan and clean up, 7) Inaccessible beach due to event * Local - There are a variety of issues and concerns at the local level. These issues may or may not be tied to an Enforceable Policy but could possibly be addressed in a community benefit agreement or other type of agreements. Generally, responsible new development that has community engagement throughout the process would be beneficial and may touch on impacts to required workforce housing, infrastructure improvements, fishing heritage and other community impacts (e.g., schools). It may also address constraints found with land availability, waterway infrastructure, zoning, topography, developers, etc. > Economic development or community benefit policies: Explore the potential to create a policy stating that net benefits must outweigh costs to affected communities, which could provide the legal basis for enforceable community benefit agreements being a requirement for Federal Consistency review of an offshore wind project Construction and Operations Plan or potentially a shoreside port infrastructure improvement.

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
Adaptive - Effects related to Adaptive Management	*See listed policy gaps*	**TSP Part 5**	**TSP Part 5**, Uses of the Territorial Sea > Policy D.3. Project Operation Plan. An operation plan is required that describes, at a minimum, information regarding the routine environmental monitoring, safety management and emergency response procedures, facility inspections, and the decommissioning of the project. The operation plan shall explain the procedures and mechanisms that will be employed so that the facility will comply with regulatory standards and other conditions of permit or license approval related to water and air quality, environmental protection and mitigation, facility maintenance and safety, operational failure and incident reporting. An operation plan shall include the following information… * Policy D.3.d. Adaptive Management Plan. An adaptive management plan to provide a mechanism for incorporating new findings and new technologies into the operation and management of the project. The adaptive management plan shall include performance standards that are based on results of the resource inventory and effects evaluation and incorporated in the study design of the monitoring plan as described in paragraph C.3.c (Monitoring Plan)….	**GAPS** (Potential) > Adaptive Management, generally and generational adaptation > TSP Part 5 * *Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon* found, "The absence of enforceable mechanisms in the TSP [Part Five] for lifecycle project evaluation significantly impairs the effectiveness of informed, adaptive management planning. The gap of enforceable mechanisms in the TSP is likely to result in insufficient data on environmental and community impacts throughout projects lifespan within the Federal Consistency review window, weakening the foundation for a robust environmental monitoring plan. …. The TSP should include enforceable requirements for lifecycle analysis of proposed offshore wind projects, which can be utilized to support informed long-term environmental monitoring requirements and clearly defined adaptive management thresholds. To achieve this, new environmental and community impact data may be required." (Baldinger, et. al., 2025) * Provide greater clarity on what makes an acceptable adaptive management plan, which may include decision rules, mitigation/compensation triggers, operational change triggers, cooperative frameworks for reviewing incoming information, or something similar.
Miscellaneous effects related to > Local Plans and Codes gaps and concerns	*See listed policy gaps* > Local plans and code that have been amended but have not been submitted to NOAA for approval. These amendments may fill existing or potential gaps at the local level and address any effects identified here.	**Local Plans and Codes**	**Local plans and codes**	**ISSUE/NEED** > Local - Plans and codes that have been amended but have not been submitted to NOAA for approval. These amendments may fill existing or potential gaps at the local level and address any effects identified in this table where local plans and codes are triggered. > Local - Zoning limitations such as multiple overlay zones that could hinder development either now or if amended (intentionally). > Local - Land availability or structurally unsuitable. * Industrial/General Land Availability – Unsuitable,- nonexistent, occupied, less than ideal. Based on constraints with location, infrastructure (bridges, water supply), ownership interests, other zoning, topography, historic uses, UGB, and other issues. * Industrial Land Availability – Land is available, communities looking for opportunities > Local - Community resistance (e.g., ballot measure or other strong opposition) > Local - Onshore components may not be reviewed equally among coastal communities. > Local - Concern that local review would be removed or overridden by Oregon legislature or state agency.
PUBLIC ENGAGEMENT - Optimize the Offshore Wind Energy Permitting Process				
Effective public engagement		**TSP Parts 4, 5 JART** **15 CFR 930.61** (Federal Consistency Public Engagement) **National Environmental Policy Act** **Statewide Planning (SP) Goals 1, 19** **DSL/DLCD/OPRD/Local** public process requirements for permits **Local Plans and Goals** (related to Goal 1)	**Goal 1**, Citizen Involvement **Local plans and codes** include procedures regarding noticing and citizen involvement. Tribal engagement is incorporated into some local codes or through agreements, where applicable.	**GAP** > TSP Parts 4/5 - Consider expanding the JART composition to include all nine federally recognized tribes in Oregon > TSP Parts 4/5 - Consider improving, expanding, clarifying various aspects of the JART > Ensure there is a plan in place for tribal communication. > Add Federal Consistency coordination step where we ask tribal governments for related policies? > SP Goal 1 - Goal 1 may be perceived as insufficient in creating meaningful public engagement and may have been ignored by agencies and local governments. Review Goal 1 for potential Enforceable Policies and conduct an evaluation of policy gaps that could provide more meaningful standards of engagement under Goal 1. > The non-federally recognized tribes of Oregon, as noted in *Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon*, "face barriers when seeking to engage with state government agencies and entities, but there are identified best practices for engaging with tribes." The report continues by suggesting, "Oregon should consider creating an Offshore Wind Tribal Working Group to engage both federally and non-federally recognized tribes." (Baldinger, et. al., 2025) > *Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon* states, "To support agencies, developers, and

Effect of Interest	Effect Details	Enforceable Policies (existing and potential)	Policy Strongest or Most Applicable Excerpt	Policy Strengthening Issues, Needs, Gaps, or Wishlist
				communities as they navigate the complex permitting and engagement process for offshore wind development, Oregon state agencies should continue and expand their efforts to clarify timelines, with clear engagement points highlighted. The creation of a publicly accessible permitting and engagement guide could serve as a resource for communities, tribes, developers, and other interested parties." (Baldinger, et. al., 2025) > As a best practice, consider exploring adding a Federal Consistency coordination step where the state asks the Oregon tribes for relevant policies applicable to a proposed project, such as offshore energy development. > Local - Assist local communities with available resources (basic and factual) for public education and outreach, in addition to, the development of staff (e.g., FAQ, brochures, technical resources, subject matter experts) > *Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon* suggests, "Oregon should seek to establish a memorandum of understanding(s) or agreement(s) with BOEM and/or BSEE to clarify roles and responsibilities – and potentially consider including other relevant federal agencies in this process."-(Baldinger, et. al., 2025) > *Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon*, suggests, "To support agencies, developers, and communities as they navigate the complex permitting and engagement process for offshore wind development, Oregon state agencies should continue and expand their efforts to clarify timelines, with clear engagement points highlighted. The creation of a publicly accessible permitting and engagement guide could serve as a resource for communities, tribes, developers, and other interested parties." (Baldinger, et. al., 2025)

APPENDIX B

GOVERNMENT CAPACITY ASSESSMENT

Appendix B Government Capacity Assessment

B.1 Introduction

Oregon House Bill 4080 (2024) directed the DLCD to create an assessment of Enforceable Policies that, "must focus on the adequacy of existing enforceable policies and agency capacity to address reasonably foreseeable effects to state coastal uses and resources that would result from offshore wind energy development". Agency capacity, in this case, is the ability of a state agency, local government, or tribal government to address reasonably foreseeable effects to state coastal uses and resources as reviewed in Federal Consistency and other duties related to offshore wind energy development such as agency and regional coordination, engagement efforts, and trainings. Federal Consistency review is a mechanism by which states may evaluate proposed federal actions such as offshore wind energy development with coastal effects against that state's relevant Enforceable Policies. The regulatory and permitting process for an offshore wind energy project is complex, involving multiple entities at multiple scales of government.

Through this assessment, DLCD sought to understand the factors enabling or inhibiting performance and capacity change that might result from offshore wind energy development. The components of the capacity assessment consisted of looking at capacity, such as the existence of sufficient staff with the right set of technical skills and expertise, equipment and technology, and work processes in order to review and address offshore wind energy development through Federal Consistency review.

To produce this capacity assessment, DLCD consulted the network of state agencies, local governments, and tribal governments with jurisdiction or a sovereign interest in the coastal zone. The intent of the assessment is to gain insight into what staff or other resource capacity agencies would need to participate fully and effectively in the process if offshore wind energy development were to occur off the coast of Oregon. This appendix provides an overview of this capacity assessment. The information gathered from state agencies, local governments, and tribal governments can inform decision-making processes, support future projects, and guide the allocation of resources to ensure the successful implementation of offshore wind energy projects in the state.

B.2 Assessment Participants

The capacity assessment involved consultation with the network of state agencies, local governments, and tribal governments with jurisdiction or sovereign interest in the coastal zone. These included the following.

B.2.1 State Agencies

Eleven state agencies participated, providing information on their capacity needs.[43]

- Oregon Bureau of Labor and Industry (BOLI)[44]
- Oregon Department of Aviation (ODAV)[45]
- Oregon Department of Energy (ODOE) with Energy Facility Siting Council (EFSC)
- Oregon Department of Environmental Quality (DEQ)
- Oregon Department of Fish and Wildlife (ODFW)
- Oregon Department of Geology and Mineral Industries (DOGAMI)
- Oregon Department of Land Conservation and Development (DLCD)
- Oregon Department of State Lands (DSL)
- Oregon Parks and Recreation Department (OPRD)
- Oregon Public Utilities Commission (PUC)
- Oregon State Marine Board (OSMB)

B.2.2 Local Governments

Coastal community consultation involved meetings with each Oregon county and their cities along the coast. These included:

- Columbia County (county staff only, no cities)
- Clatsop County and Cities of Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton
- Tillamook County and Cities of Bay City, Garibaldi, Manzanita, Rockaway Beach, and Tillamook
- Lincoln County, and Cities of Lincoln City, Newport, Toledo, Waldport, and Yachats
- Lane County and City of Florence
- Douglas County and City of Reedsport
- Coos County and Cities of Coos Bay, North Bend, and Bandon
- Cities of Curry County including Brookings, Gold Beach, and Port Orford (Curry County staff were unable or declined to attend)[46]

B.2.3 Tribal Governments

As part of the development process for the Offshore Wind Energy Roadmap, the federally recognized tribes in Oregon were invited to participate in a Tribes-Only Table. Seven of the nine tribes participated

[43] Although some agencies have jurisdictional authority in the coastal zone, DLCD staff determined offshore wind energy development would not trigger their related policies and so, that agency was not included in the assessment. These agencies include Oregon Department of Agriculture (ODA) and Oregon Department of Forestry (ODF).
[44] Oregon's suite of Enforceable Policies does not include any policies from BOLI. For this assessment, their capacity needs assumed that the wage standards in Section 8(2)(c) of HB 4080 (2024) were Enforceable Policies.
[45] For this capacity assessment, ODAV capacity is site specific and not applicable to all areas along the Oregon coast. The assumption used for this survey was that turbines would be assembled near shore and in a location that would trigger review by ODAV and FAA (e.g., Coos Bay, being one of the only places this could happen along the coast).
[46] Curry County staff were unable to attend the first in-person meeting that occurred in May 2025. DLCD staff reached out to Curry County staff for a future meeting of which they declined.

in the Tribes-Only Table and were asked to participate in the capacity survey. Participating tribes included:

- Confederated Tribes of Coos, Lower Umpqua & Siuslaw
- Coquille Indian Tribe[47]
- Confederated Tribes of Grand Ronde
- Confederated Tribes of Siletz Indians
- Confederated Tribes of the Umatilla Indian Reservation
- Cow Creek Band of Umpqua Tribe of Indians
- Confederated Tribes of the Warm Springs Reservation

The Burns Paiute Tribe and Klamath Tribes deferred to coastal tribes.

B.3 Assessment Process and Methodology

Since House Bill 4080 did not provide specificity regarding "capacity", DLCD took a holistic approach for this assessment. As noted previously, DLCD defines agency capacity as the ability of a state agency, local government, or tribal government to address reasonably foreseeable effects to state coastal uses and resources through Federal Consistency review and other related duties. DLCD looked primarily at capacity such as the existence of sufficient staff with the right technical skills and expertise, equipment and technology, and work processes. State agencies, local governments, and tribal governments were asked to participate in a self-assessment by considering what they believe is important for the context of Federal Consistency review, which included looking at the entire lifecycle of offshore wind energy development. In some cases, they were asked to consider separate and distinct phases of a project and related projects such as shoreside development. State partner agencies were also asked to look at two scenarios: 1) one project and 2) two concurrent projects. This came with an understanding that such a development scenario or phasing could happen anywhere along the Oregon coast. State, local, and tribal governments were asked to consider all aspects of their capacity (e.g., staff, expertise, and other resources) in the interest of efficient and effective operations. The process involved surveying each group separately, through email, meetings, and staff-to-staff discussions.

Phases of Development

State agencies and tribal governments were asked to consider a single project scenario that would include an array of turbines, cables, and onshore components of a project but excluded shoreside manufacturing/support port facilities. Shoreside facilities were addressed separately from the four distinct phases. State agencies were also requested to consider a scenario in which two offshore wind energy projects were running concurrently at various places in the process. The following phase descriptions of an offshore wind energy project are what state agencies and tribes considered when looking at their capacity.

> Phase 1: Pre-lease (up to 4 years). The Offshore Wind Energy Roadmap may identify pre-leasing activities such as rulemaking, additional marine spatial planning, or participation in a regional science collaborative. Agencies or tribes may be asked to participate in future BOEM siting

[47] The Coquille Indian Tribe participated in the Tribes-Only Table but chose not to be involved in the capacity survey.

processes. Agencies may need to build early staff expertise in offshore wind energy topics. This phase may also involve reviewing additional BOEM leasing proposals.

Phase 2: Post-lease/Pre-Construction and Operations Plan (up to 5 years). After leasing has occurred but prior to an application for the Construction and Operations Plan (COP), this is the phase where activities may include coordination of survey plans, early coordination with applicants and coastal partners about permit needs, research and building expertise on what will be needed during review.

Phase 3: Permit/Federal Consistency Review (6 months to 2 years). This is the phase that occurs upon the submittal of a formal application for any permit under agency authority and Federal Consistency but prior to a Federal Consistency decision.

Phase 4: Post-permit/Operations (up to 30 years). This phase occurs after Federal Consistency decisions and relevant permits have been issued and may include effective oversight of active offshore wind energy development operations, monitoring, and future decommissioning.

Other Related Projects. This aspect includes review of related shoreside projects (e.g., shoreside manufacturing/support port facilities), additional government-to-government coordination and communication, engagement and outreach activities, and other special considerations and challenges.

The information obtained from state agencies, local governments, and affected tribal governments is intended to serve a variety of purposes, depending on the partner and the circumstance. Although the information obtained was directed at offshore wind energy development, DLCD recognizes that the information could be considered for any significant and similar project, such as another form of marine renewable energy, involving the coastal zone.

B.3.1 State Agencies

The survey requested agencies to consider all aspects of their capacity, including staff, expertise, equipment, technology, and any additional information that might help DCLD understand their agency's capacity and fiscal needs with the intent of operating efficiently and effectively. State agencies were asked to strive for a model of stability and to forecast staffing levels that would ensure the team had sufficient expertise and a program that ran smoothly. Agency capacity needs would vary depending on their level of involvement, whether they have permit authority or their review supports the DLCD-led Federal Consistency reviews, or both. In addition, DLCD asked agencies to answer questions related to the lifecycle of an offshore wind energy project, including pre-review, formal review, and any post-review. The survey provided guidelines to aid consistency in responses, including specified development scenarios (one project vs. two concurrent projects), level of involvement for the agency, staff capacity descriptors, phase of development being reviewed, and phase time estimates. Through the course of the assessment coordination, it was agreed that a detailed and accurate fiscal assessment would be better reserved for future policy option packages.

B.3.2 Local Governments

Consultation with coastal communities involved meeting with each Oregon county and their cities along the coast. County and city staff were also provided with a survey prior to or after these meetings. The

survey was focused on the capacity related to the review of onshore components of an offshore wind energy development project, such as cable placement, transmission line upgrades, or shoreside support projects that would be indirectly related to wind turbine installation. Within each project, there may be multiple components, which may require separate but interdependent permitting processes. DLCD asked for a practical assessment of what it would take to support offshore wind-related needs at the regulatory and engagement level. The idea was to allow local governments to bring forward their needs for future offshore wind energy reviews, including interim reviews (e.g., survey plans for pre-application activities). Although local planning staff were presented with this survey, most staff opted to provide direct feedback about their specific capacity needs and ideas for assistance during the meetings. These joint county/city meetings were held between November 2024 and May 2025. The information obtained from these meetings is generalized, and not as specific as the information obtained from state agencies.

B.3.3 Tribal Governments

The effect that offshore wind energy development may have on the Oregon tribes is important to capture, and DLCD staff recognizes the importance of including tribal government capacity needs in the Roadmap alongside the needs of state agencies and local governments. Offshore wind energy development could occur anywhere along the Oregon coast, and any of the tribal governments may elect to participate in and review development processes and proposals if they determine that such a proposal would affect their sovereign rights or interests. The Tribes-Only Table focused on direct discussion between DLCD and tribal staff concerning offshore wind energy in the state, which included a staff capacity discussion. This was followed by a survey and staff-to-staff discussions seeking additional specific information about the capacity needs of each tribe in order to participate fully in any future offshore wind energy development processes.

B.4 Key Insights

Each group provided unique insights and considerations based on their roles and responsibilities in the coastal zone, knowing that sustaining the work over the years requires a substantial, ongoing capacity and financial commitment. The state agency assessment provides the most data of all the entities surveyed, and the information below illustrates this data. Due to capacity limitations, and the lack of information at this time regarding the specific shoreside development and community impacts that may accompany future offshore wind energy development, the information from local county and city staff is more general; however, it provides insight into their capacity needs. Tribal governments bring their unique perspective, and the key insight into their capacity needs is under development.

B.4.1 State Agencies

Capacity needs would vary depending on agency involvement level (e.g., permit authority). Not all agencies provided comparative responses. However, of the 11 agencies that responded to the survey, eight provided sufficient information, and three provided limited data. All data is incorporated here where appropriate. This initial assessment provides an overview of the needs of state agencies. These needs will require further refinement to effectively address future policy options, requests, or similar initiatives.

B.4.1.1 General Considerations

- When evaluating the employee status, whether new, existing, or reallocated/revised duties of existing employees, this status includes all personnel who would normally be involved in addressing reasonably foreseeable effects to state coastal uses and resources as reviewed in Federal Consistency.
- Position titles and classifications were provided by some agencies and were based on the best available information. However, when evaluating the capacity data by employee status – new, existing, or reallocated/revised – the title and classification information was not included for the purpose of providing a consistent and straightforward comparison but also because of limitations with the submitted data. Since staff title and classification may vary among agencies, this assessment was not intended or equipped to provide such comparisons.
- State agency partners were asked to look at two scenarios – one project and two concurrent projects. Observations by phase of development are illustrated below. Refer to Figures B-1 and B-2.
- Estimates of new versus existing staff capacity are illustrated below in Figures B-3 and B-4, respectively, which incorporate cumulative data for both scenarios. Two concurrent projects can expect to see an increase in capacity needed at various times throughout the process, but it depends on each agency's level of participation. Refer to the full staff capacity tables below for detailed information under one project scenario (Table B-2) and two concurrent projects scenario (Table B-3).
- Agencies furnished the identification of different staff positions and an estimated full-time equivalent (FTE) calculation for those positions. The FTE was based on a percentage of a 5-day work week. For example, 0.1 FTE equals 0.5 days per week of work on a project while 0.2 FTE is 1 day per week of work. Refer to the Legend that follows and is associated with Tables B-2, B-3, and B-4. Although the goal was to obtain consistency with each agency response, not all provided commensurate responses thus leading to gaps in data.

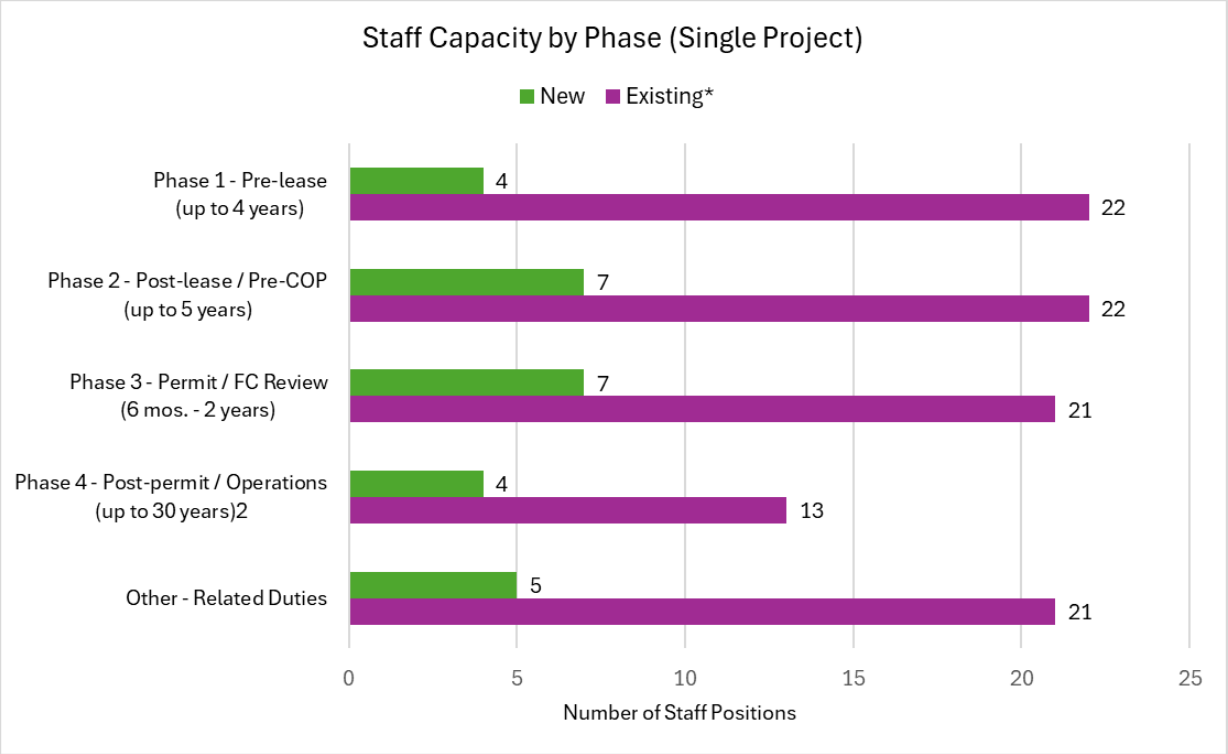
B.4.1.2 Observations: Agency Staff Capacity by Phase

Agencies forecasted staffing levels that offered an efficient and effective team as they considered the level of staff involvement for each phase of development. Figure B-1 below outlines the estimated staffing needs for one offshore wind energy project, separated by phase. The data shown in the figure consists of a consolidation of all agencies. It shows both current and new staff requirements, specified by the number of positions needed. This figure also shows staff needs for other associated activities such as supporting engagement and outreach activities, reviewing related projects (e.g., shoreside support facilities), and other special considerations and challenges. Figure B-1 consolidates the data for both: 1) existing staff whose current duties would include offshore wind-related work; and 2) existing staff where duties would need to be reallocated from other agency functions. .

Although the total number of positions is identified in Figures B-1 and B-2, the actual estimated time spent reviewing a project phase will vary depending on each agency's level of participation and personnel qualifications and may not equate to full-time work on an offshore wind energy project(s). The time spent on a project would grow or shrink, with a higher need in the years leading up to a permit review for an offshore wind energy project. For example, it will take approximately 22 current staff members to review phase one of a single offshore wind energy project. However, one employee may

only spend four hours a week, on average, reviewing a project while another employee may spend a full 5 days per week of their time. Moreover, the cumulative FTE estimate for existing staff would range from 5.7 FTE to over 11.3 FTE, spread out over 38 existing positions, depending on the number of subject matter experts reviewing a project and the phase of development. For specific information for each agency, refer to Tables B-2, B-3, and B-4 at the end of this appendix.

Figure B-1. Consolidated State Agency Staff Capacity by Phase (Single Project Scenario)

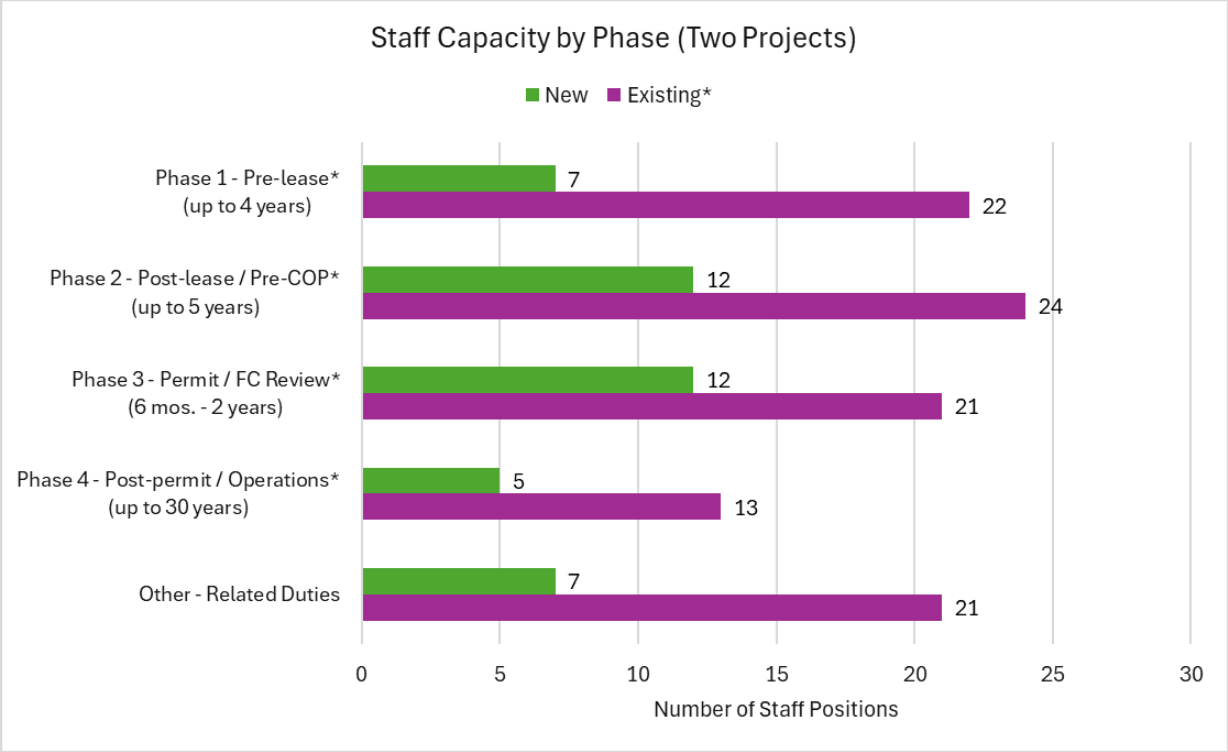


Note: Although a total number of positions is identified, the actual estimated time spent reviewing a project phase will vary depending on each agency's level of participation and personnel qualifications and may not equate to full-time work on an offshore wind energy project(s)

** Existing staff capacity includes the use of either 1) existing staff in current positions and 2) existing staff in current positions that may have reallocated duties to accommodate offshore wind energy development.*

As a comparison to the one project scenario above, Figure B-2 identifies the estimated capacity needs for two concurrent offshore wind energy projects by phase. This figure illustrates both existing staff capacity and new staff requirements, specified by the number of positions needed. The data shown in the figure consists of a consolidation of all agencies. Two concurrent projects can expect to see an increase in needed capacity, but that information will vary depending on each agency's level of participation.

Figure B-2. Consolidated State Staff Capacity by Phase (Two Concurrent Project Scenario)



Note: Although a total number of positions is identified, the actual estimated time spent reviewing a project phase will vary depending on each agency's level of participation and personnel qualifications and may not equate to full-time work on an offshore wind energy project(s)

** Existing staff capacity includes the use of either 1) existing staff in current positions and 2) existing staff in current positions that may have revised or reallocated duties to accommodate offshore wind energy development.*

B.4.1.3 Observations: New Agency Staff Capacity

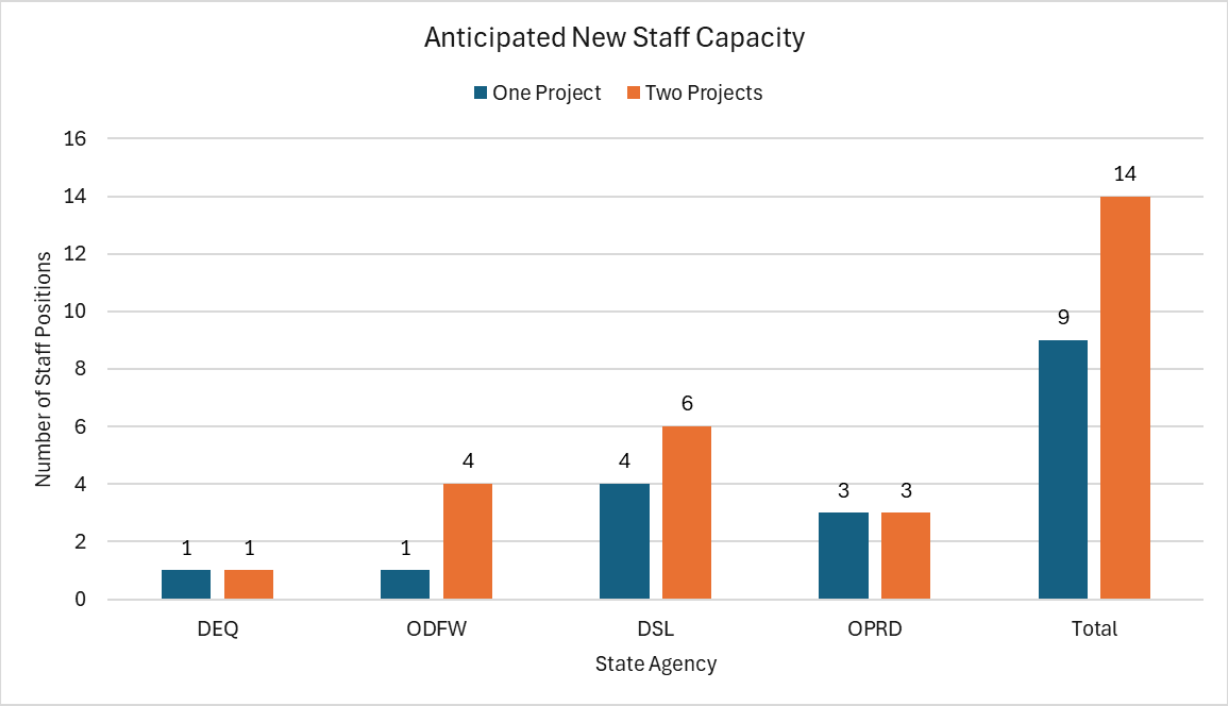
State agencies operate under unique pressures, including balancing complex regulatory demands across numerous projects. Offshore wind energy development will bring an additional burden, which would require adding staff capacity. This is in addition to utilizing existing staff capacity discussed below. The following are general observations regarding state agency capacity needs for new staff. Figure B-3 also illustrates the anticipated new staff capacity by agency. This data includes new staffing needs for the four phases and the other related projects section. It also considers any new staff that may be needed for two concurrent projects, since there is significant overlap.

- Four agencies propose a cumulative total of 9-14 new staff positions. These positions have varying levels of involvement, depending on the number of projects being reviewed (e.g., one project or two concurrent projects). Figure B-3 illustrates which agencies propose new staff based on the number of projects being reviewed. The positions proposed for one project will also be needed for two concurrent projects. However, some agencies, such as DSL and ODFW found that additional assistance would be necessary for multiple concurrent projects.
- Some agencies, such as OPRD, considered limited-duration employees, whether in existing or new positions. This information is not separated out in the figures below but is identified in Table

B-1 and the full staff capacity tables for one project scenario, Table B-2, and two concurrent projects scenario, Table B-3.

Figure B-3 illustrates the anticipated new staff capacity by showing the number of staff positions that each agency would need to manage and review offshore wind energy projects. Each position will have varying levels of involvement.

Figure B-3. Anticipated New Staff Capacity by Agency



The information in Table B-1 has agency specific estimates for new position, which compliments the preceding Figure B-3.

Table B-1. Anticipated New Staff Capacity by Agency

Agency	One Project	Two Projects	Proposed Positions
DEQ	1	1	1 Offshore Wind Energy Coordinator; NRS3
ODFW	1	4	1 Offshore Wind Energy Coordinator; NRS4 1-3 Policy Analysts; NRS3
DSL	4	6	1-2 Proprietary Coordinators 1-2 Aquatic Resource Coordinators (for removal-fill permitting) 0.5-1 Administrative support staff 0.5-1 Engagement and outreach staff
OPRD	3	3	0.5 Ocean Shore Policy and Engagement Specialist, NRS3 – Limited Duration 1 Ocean Shore Program Manager 1 Ocean Shore Cable Permitting & Compliance Specialist; NRS3

B.4.1.4 Observations: Existing Agency Staff Capacity

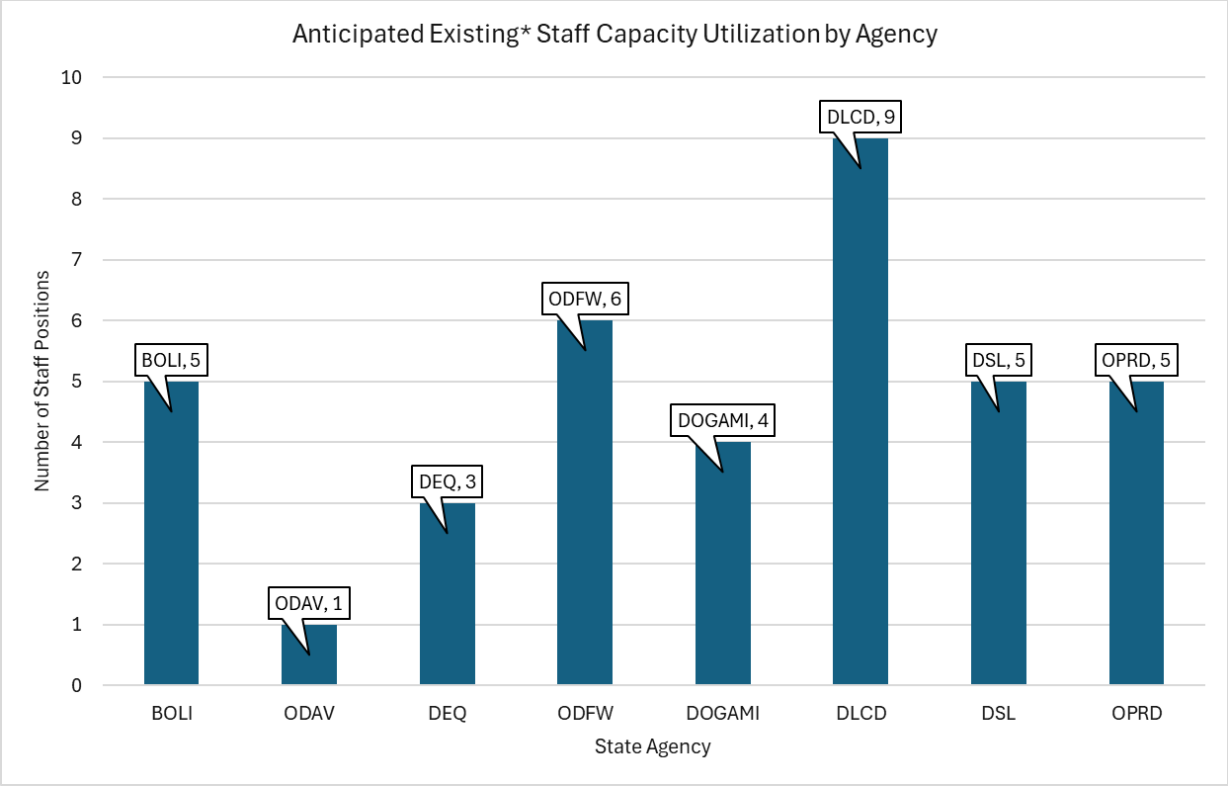
As previously stated, state agencies operate under a unique set of pressures including balancing complex regulatory demands for numerous projects and thus the additional burden that offshore wind energy development would bring will need to be absorbed by existing staff. This is in addition to any new staff needs previously discussed. The following are general observations regarding state agency capacity needs with existing staff.

- All 11 agencies plan to use current personnel of varying qualifications, in approximately 38 positions. These positions would have varying levels of involvement that may not equate to full-time work on an offshore wind energy project(s). Further, these 38 positions will be utilized at various times throughout the lifetime of an offshore wind energy project, regardless of whether one project or two concurrent projects are occurring.
- For eight of the 11 agencies, the cumulative FTE estimate ranges from 5.7 to over 11.3 FTE, spread out over those 38 positions, depending on the number of subject matter experts reviewing a project and the phase of development. The FTE ranges would also grow and shrink depending on the project phase, with a higher capacity need in the years leading up to a permit review for an offshore wind energy project.
- Three agencies did not provide detailed estimates of staffing needs, but they emphasized that existing staff would be utilized.
- Existing staff capacity includes the use of either 1) existing staff in current positions and 2) existing staff in current positions that may have revised or reallocated duties to accommodate offshore energy development project review.[48] When reallocating duties, the expectation is that these additional duties will be absorbed. However, other agency functions may go unserved and new personnel may be needed to elevate pressure on existing staff.
- For offshore wind energy project review, some agencies such as ODFW and OPRD expect to utilize multiple subject matter experts. The data included here is the minimum provided by those agencies and does not fully account for all subject matter experts used in project review.
- Some agencies, such as OPRD, considered limited duration employees, whether in existing or new positions. This information is not separated in the figure below. For specific data on these positions, please refer to the full staff capacity tables for one project scenario, Table B-2, and two concurrent projects scenario, Table B-3.

Figure B-4 illustrates the anticipated existing staff capacity by agency by showing the number of existing staff positions that would be used during the lifetime of an offshore wind energy project, regardless of project scenario (one project or two concurrent projects). Each position will have varying levels of involvement that may not equate to full-time work.

[48] BOLI and ODFW proposed reallocating duties of five existing staff in order to perform necessary duties in the review of the development. For specific data for BOLI or ODFW, refer to the full staff capacity tables for one project scenario, Table B-2, and two concurrent projects scenario, Table B-3.

Figure B-4. Anticipated Existing Staff Capacity Utilization by Agency



** Existing staff capacity includes the use of either 1) existing staff in current positions and 2) existing staff in current positions that may have revised or reallocated duties to accommodate offshore wind energy development. Capacity needs evaluated here are identical for both project scenarios – one project or two concurrent projects.*

B.4.2 Local Governments

Coastal counties and cities continue to experience capacity issues, whether it is lack of staff, funding, or other resources (e.g., engagement and outreach resources), which leads to significant challenges. An offshore wind energy development proposal would strain the local county or city systems, utilizing employees of varying expertise. The responsibility for managing and regulating land use falls with staff from the local planning departments. As a result, local government tends to be the first point of contact in managing impacts of development and thus, would play a central role in managing the onshore components and impacts of offshore wind energy development. In the case of offshore wind energy development, local governments will be involved at any point where the project enters their jurisdiction. If there is a proposed activity, such as rulemaking or a large or fast-moving development that requires different responsibilities and expertise, participation would require staff to go beyond normal operational capacity, which then strains their existing systems. Considering all potential facets that such a project could have on a community, the local government staff provided the following suggestions:

- Increase in staff capacity whether as new staff, contract staff (e.g., planning consultants), or shared staff with specific knowledge or skill (e.g., Certified Flood Plain Manager) that would assist with complex planning applications, rulemaking, or public engagement.
- Additional funding for additional staff capacity.

- DLCD or other state agency support (this would vary depending on the task but may include subject matter experts being available to provide topic-specific information at public engagements or hearings).
- Model codes or policy recommendations for rulemaking that would be tailored to meet the needs of a community while following best practices, or adhere to state or federal standards, rules, or statutes.
- Resources that support engagement and outreach (e.g., fact sheets, brochures, technical resources, or subject matter experts).

This information is not intended to be a formal request for assistance. Instead, this information can be used as a guide for future support to local planning efforts by local elected officials, the state legislature, and other coastal partners.

B.4.3 Tribal Governments

As outlined in Section 6, Strategy 6.4.13 of the Roadmap, in order to participate fully in an ongoing engagement process for offshore wind energy planning and development, there is a recognized need for increased tribal staff capacity at multiple phases of an offshore wind energy development lifecycle. Some options that may address this capacity need could include capacity grants from federal, state, or third-party; Cost recovery support; or direct support from the Legislature for Full-Time Equivalent staff. Tribal governments bring their unique perspective, and the key insight into their capacity needs is under development.

B.5 Conclusion

Following HB 4080, DLCD was directed to assess the adequacy of the state's current Enforceable Policies and the capacity of relevant agencies. The regulatory and permitting process for offshore wind energy projects is complex, involving numerous entities at various government levels. Full and effective participation from state agencies, local governments, and tribal governments in addressing potential impacts on state coastal uses and resources is crucial.

State agencies, local governments, and tribal governments recognized that their diverse capabilities, knowledge, and resources would be essential for managing offshore wind energy development. Based on their roles and responsibilities, each entity offered unique insights, emphasizing their capacity to address reasonably foreseeable effects on state coastal uses and resources. Input from each group indicated that current staffing levels are generally insufficient to handle the required capacity for even one project, and certainly not two running simultaneously. Furthermore, using existing staff and reallocating resources would likely negatively impact other projects and workloads.

In preparation for potential future offshore wind energy projects in the state, the data collected from state agencies, local governments, and tribal governments can support future policy initiatives, direct resource allocation, and inform decision-making processes. This assessment does not adequately evaluate critical soft capacities or acknowledge or value current capacity. However, this evaluation could serve as a catalyst for a government or agency to establish reasonable goals and objectives to be performed by programs adequately staffed to accomplish the necessary work tasked by state law or

potential future legislative mandates. When current or projected resources are not enough to meet demand, these network participants may need to invest in capacity improvement or expansion initiatives.

B.6 Capacity Assessment Tables

The capacity assessment tables are shown below. This data includes staffing needs for the four phases and other related projects section. The total staff needs reflected in the following tables, however, are an underestimation because it does not account for all the additional subject-specific input agencies will need to collect, resulting in an unpredictable amount of staff time necessary for these efforts. The following pages include three tables and the legend.

- Table B-2, Offshore Wind Energy Capacity Assessment - Staff Capacity for One Project
- Table B-3, Offshore Wind Energy Capacity Assessment - Staff Capacity for Two Concurrent Projects
- Table B-4, Offshore Wind Energy Capacity Assessment – Staff Capacity Notes
- Legend for the Capacity Assessment Tables

Table B-2. Offshore Wind Energy Capacity Assessment – Staff Capacity for One Project

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
BOLI : Oregon Bureau of Labor and Industry Note: For this assessment, BOLI assumes that the wage standards in Section 8(2)(c) of HB 4080 (2024) are Enforceable Policies.	**Pre-lease & FC & Rulemaking- Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 3 R; 0.1 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R; 0.1 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.25 FTE Apprenticeship Rep. (Part of HB 4080 Fiscal) **Involvement minimal.** BOLI anticipates minimal involvement in this phase. However, it is possible that the agency will be asked questions related to whether a pre-leasing activity triggers the prevailing wage rate laws for a project. It is likely there will be some questions related to the payment requirements to workers during the rulemaking in this phase. It is also possible that employers will begin the process of establishing a Registered Apprenticeship Program described in section 8(2). Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with no change to duties or with revised job duties.	**Post-lease / Pre-COP - Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 3 R; 0.1 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R; 0.1 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.5 FTE Apprenticeship Rep. (Part of HB 4080 Fiscal) **Involvement minimal.** BOLI anticipates minimal involvement in this phase. There is the possibility/opportunity for training on Prevailing Wage Laws in this phase. It is likely that employers will begin the process of establishing a Registered Apprenticeship Program described in section 8(2). Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with no change to duties or with revised job duties.	**FC & Permits & COP Review - Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 3 R; 0.1 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R: 0.1 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.25 FTE Apprenticeship Rep. (Part of HB 4080 Fiscal) **Involvement minimal.** BOLI has not identified a role for the agency during this phase. However, BOLI anticipates continued education or fielding of questions related to prevailing wage laws and Registered Apprenticeship Programs. Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with no change to duties or with revised job duties.	**Operations & Monitoring - Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 2 E; 0.1 FTE Operations and Policy Analyst 3 R; 1.0 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R; 1.0 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.5 FTE Apprenticeship Rep. (Position part of HB 4080 Fiscal) *See comments in Table B-4 for detail on how FTE was calculated* **Involvement ongoing based on wage claims or third-party complaints received.** Workers who are not paid the wage standard established in HB 4080 may file a wage claim or complaint with BOLI for unpaid wages or other wage and hour violations. If the work is determined to be subject to the Prevailing Wage Laws, then BOLI will open a company-wide investigation to ensure all workers have been paid correctly. BOLI's main enforcement will be related to ensuring the workers are paid the correct amount under Section 8(2)(c) of HB 4080(2024), along with regulatory review of any Registered Apprenticeship Programs that have been established.	**Other/Engagement & Outreach - Existing Staff** E; 0.1 FTE Operations and Policy Analyst 2 E; 0.2 FTE Operations and Policy Analyst 3 R; 0.2 FTE Compliance Spec. 1 (Position part of HB 4080 Fiscal) Outreach and Education to contractors, contracting agencies, and general public on both wage and hour laws and prevailing wage laws. Issuing Coverage Determinations in response to requests to formally determine whether the projects are covered. The requestor or any other person adversely affected or aggrieved by the determination may request a hearing on the determination. The hearings will be handled by BOLI's Administrative Prosecution Unit. Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with current or revised job duties.
ODA : Oregon Department of Agriculture – *Based on authority and applicable Enforceable Policies, it was determined that ODA would not be as involved as other state agencies and therefore not surveyed for this assessment.*					

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODAV : Oregon Department of Aviation Note: For this assessment, ODAV assumes that turbines will be assembled near shore and in a location that will trigger review by ODAV and FAA (e.g., Coos Bay, being one of the only places this could happen along the coast).	**Pre-lease & FC & Rulemaking - No Staff**	**Post-lease / Pre-COP - Existing Staff** E; 0.1-1.0 FTE Aviation Planner The following assumptions may trigger ODAV (and FAA) review and require Notice of Construction review at this phase or the next phase. ODAV also looks at the land use compatibility component (e.g., housing at the end of a runway, try to discourage). 1) Development occurs nearshore, whether in an estuary or upland area, and within state territory. 2) Development occurs in an airport imaginary surface (e.g., Coos Bay). ODAV states, "If staged in an estuary, there would be hope that wherever staging is placed, it would not impact approach surfaces at ends of runways for incoming or outgoing aircraft. Part 77 surfaces are key for them." 3) Development, including any components, exceeds 200 feet even temporarily. 4) Review times will be quite minimal but will depend on how and where the structures will be assembled. The # FTE could vary from 0.1-1.0 FTE. For this phase, the lesser number was selected. Review of proposed height and locations of the structures and their proximity to public-use airports and helipads to determine if there would be any impact to airspace.	**FC & Permits & COP Review - Existing Staff** E; 0.1-1.0 FTE Aviation Planner The following assumptions may trigger ODAV (and FAA) review and require Notice of Construction review at this phase or the next phase. ODAV also looks at the land use compatibility component (e.g., housing at the end of a runway, try to discourage). 1) Development occurs nearshore, whether in an estuary or upland area, and within state territory. 2) Development occurs in an airport imaginary surface (e.g., Coos Bay). ODAV states, "If staged in an estuary, there would be hope that wherever staging is placed, it would not impact approach surfaces at ends of runways for incoming or outgoing aircraft. Part 77 surfaces are key for them." 3) Development, including any components, exceeds 200 feet even temporarily. 4) Review times will be quite minimal but will depend on how and where the structures will be assembled. The # FTE could vary from 0.1-1.0 FTE. For this phase, the larger number was selected. Review of proposed height and locations of the structures and their proximity to public-use airports and helipads to determine if there would be any impact to airspace.	**Operations & Monitoring - No Staff**	**Other/Shoreside - Existing Staff** E; 0.1-1.0 FTE Aviation Planner The following assumptions may trigger ODAV (and FAA) review and require Notice of Construction review at this phase or the next phase. ODAV also looks at the land use compatibility component (e.g., housing at the end of a runway, try to discourage). 1) Development occurs nearshore, whether in an estuary or upland area, and within state territory. 2) Development occurs in an airport imaginary surface (e.g., Coos Bay). ODAV states, "If staged in an estuary, there would be hope that wherever staging is placed, it would not impact approach surfaces at ends of runways for incoming or outgoing aircraft. Part 77 surfaces are key for them." 3) Development, including any components, exceeds 200 feet even temporarily. 4) Review times will be quite minimal but will depend on how and where the structures will be assembled. The # FTE could vary from 0.1-1.0 FTE. For this phase, the lesser number was selected. Review of proposed height and locations of the structures and their proximity to public-use airports and helipads to determine if there would be any impact to airspace.

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODOE : Oregon Department of Energy **EFSC: Energy Facility Siting Council**	**Pre-lease & FC & Rulemaking - Existing or No Staff** **Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*. **Rulemaking - Not applicable or unlikely no additional capacity need.** Regarding Oregon's renewable and clean electricity laws – and any potential changes/amendments to existing authorities or wholly new authorities, EFSC and ODOE have no existing administrative statutes/rules or other policies specifically relating to the potential development of floating OSW projects in Federal waters adjacent to Oregon. *See comments in Table B-4 for additional information.*	**Post-lease / Pre-COP - No Staff Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*.	**FC & Permits & COP Review - No Staff Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*.	**Operations & Monitoring - No Staff Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*.	**Other - No or Existing Staff Not applicable or likely no additional capacity need.** E; 0 FTE EFSC and/or ODOE Engagement & Outreach on Ocean or Land-based Impacts of an OSW project; N/A E; ? FTE ODOE Technical Support Relating to the Power Grid, Clean Energy & Climate Policies, and State Energy Programs & Incentives; likely no additional ODOE capacity need E; ? FTE ODOE Support Relating to Tribal and Community Engagement and Outreach Efforts; likely no additional ODOE capacity need *Refer to comments in Table B-4 for more information.*

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
DEQ : Oregon Department of Environmental Quality	**Pre-lease & FC & Rulemaking - Existing / New Staff** N; 0.5 FTE OSW Coord.; NRS3; 1.0 – 4.0 year, support planning and early coordination or any rulemaking DEQ does not currently have staff available to assign to fully review plans prior to permit or certification application; however, DEQ may be able to reallocate duties of existing staff to participate in pre-permitting or pre-certification meetings when the topic is appropriate if available. We anticipate participation to include advising on appropriate environmental clearances through DEQ's regulatory programs. These programs may include 401 Water Quality Certification Dredge and Fill and/or Hydropower, and NPDES Construction Stormwater Permits. These programs are mainly fee funded. If necessary, DEQ could seek to enter into fee agreements to support staff time for the review and analysis of application materials.	**Post-lease / Pre-COP - Existing / Reallocated Staff** E; 0.5-2.0 FTE Engineering and Program staff Staff may include 401 Water Quality Certification Dredge and Fill and/or Hydropower, and NPDES Construction Stormwater Permits. These programs are mainly fee funded. If necessary, DEQ could seek to enter into fee agreements to support staff time for the review and analysis of application materials.	**FC & Permits & COP Review - Existing / Reallocated Staff** E; 0.5-2.0 FTE Engineering and Program staff Staff may include 401 Water Quality Certification Dredge and Fill and/or Hydropower, and NPDES Construction Stormwater Permits. These programs are mainly fee funded. If necessary, DEQ could seek to enter into fee agreements to support staff time for the review and analysis of application materials.	**Operations & Monitoring- Existing Staff** Additional environmental clearances could be required for these processes; however, DEQ does not anticipate having a large role due to the location of active OSW operations occurring outside state water quality jurisdiction.	**Other - Existing Staff** E; ? FTE Environmental Compliance staff; this outreach would be part of the environmental compliance review

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODFW : Oregon Department of Fish and Wildlife	**Pre-lease & FC & Rulemaking - Existing / Reallocated / New Staff** N; 1.0 FTE OSW Coord.; NRS4; ≤ 4.0 years N/R; 0.5 FTE Fishery Spec.; NRS3; ≤ 4.0 years N/R; 0.5 FTE Environmental Spec.; NRS3; ≤ 4.0 years N/E; 0.2 FTE Onshore Energy Coord.; NRS4; ≤ 4.0 years Assumes staff will spend between 20-100% of their time on analysis of potential impacts on natural resources or fisheries from future BOEM proposals, providing comments, building up staff and expertise, marine/coastal spatial planning for the state or for offshore/onshore facility siting, participation in a regional science collaborative, coordination with agencies and other work prior to a lease. Amount of staff time spent on rulemaking depends on the extent of policy development needed. ODFW assumes rulemaking or policy amendment would require at least 1-4 years for policy review.	**Post-lease / Pre-COP - Existing / Reallocated / New Staff** N; 1.0 FTE OSW Coord.; NRS4; 0.5 years N/R; 0.5 FTE Fishery Spec.; NRS3; 0.5 years N/R; 0.5 FTE Environmental Spec.; NRS3; 0.5 years N/E; 0.2 FTE Onshore Energy Coord.; NRS4; 0.5 years N/E; 0.4 FTE Outreach Spec.; PAS-2; up to 5 years E (multi); 0.4 FTE Subject Matter Experts; multiple classifications; 0.5 yrs E; 0.2 FTE Management Review; NRPSM-1; 0.5 years Assumes there will be an opportunity to integrate ODFW input in review of site characterization survey plans, and staff might spend between 40-100% of their time and managers might spend 20% of their time spread out over an approximately 6-month period. Outreach Spec. is added to help address heightened public awareness once physical presence of lessee survey activities begin.	**FC & Permits & COP Review - Existing / Reallocated / New Staff** N; 1.0 FTE OSW Coord.; NRS4; 2.0 years N/R; 0.5 FTE Fishery Spec.; NRS3; 2.0 years N/R; 0.5 FTE Environmental Spec.; NRS3; 2.0 years N/E; 0.4 FTE Onshore Energy Coord.; NRS4; 2.0 years N/E; 0.4 FTE Outreach Spec.; PAS-2; 2.0 years E (multi); 0.4 FTE Subject Matter Experts; multiple classifications; 2.0 yrs E; 0.2 FTE Management Review; NRPSM-2; 2.0 years Assumes staff might spend 40-100% of their time on COP review and impact analysis spread out over an approximately 2-year period. ODFW would need to include review/input from multiple subject matter experts in addition to manager/leadership.	**Operations & Monitoring - Existing / Reallocated / New Staff** N; 0.5 FTE OSW Coord.; NRS4; ongoing N/R; 0.2 FTE Fishery Spec.; NRS3; ongoing N/R; 0.2 FTE Environmental Spec.; NRS3; ongoing N/E; 0.1 FTE Onshore Energy Coord.; NRS4: ongoing Assumes ODFWs role would be limited to reviewing monitoring reports and providing input as appropriate to operations, monitoring and future decommissioning. ODFWs role would not extend to performance of monitoring activities or any at-sea work. Staff might spend 10-50% of their time over the operational phase.	**Other - Existing / Reallocated / New** **<u>Engagement & Outreach</u>** N; 0.2 FTE OSW Coord.; NRS4; ongoing N/R; 0.2 FTE Fishery Spec.; NRS3; ongoing N/R; 0.2 FTE Environmental Spec.; NRS3; ongoing N/E; 0.1 FTE Onshore Energy Coord.; NRS4; ongoing E (multi); 0.2 FTE Subject Matter Experts; multiple classifications; ongoing E; 0.2 FTE Outreach Spec. PAS-2; ongoing E; 0.1 FTE Mgmt. Review; NRPSM-1; ongoing Assumes work is ongoing before/ during/after/beyond project work described in Ph 1-4; staff with appropriate expertise might spend 20% of their time on engagement/outreach activities with researchers, fisheries groups, tribes, and communities. Staff estimates are part of, not additive to, Ph 1-4 work. **<u>Shoreside Review</u>** N; 0.2 FTE OSW Coord.; NRS4; N/R; 0.2 FTE Fishery Spec.; NRS3; N/R; 0.2 FTE Environmental Spec.; NRS3; N/E; 0.4 FTE Onshore Energy Coord.; NRS4; N/E; 0.4 FTE Outreach Spec.; PAS-2; E (multi); 0.4 FTE Subject Matter Experts; multiple classifications; E; 0.2 FTE Mgmt. Review; NRPSM-1 Assumes this would include developments that are authorized outside the scope of the offshore wind energy Project(s) described in Ph 1-4 but ODFW would need capacity to address potential impacts. These related developments are necessitated by OSW onshore development (e.g., port development, expanded roads/rail, new or expanded transmission across coast range, new manufacturing facilities).

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	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODF : Oregon Department of Forestry – *Based on authority and applicable Enforceable Policies, it was determined that ODF would not be as involved as other state agencies and therefore not surveyed for this assessment.*					
DOGAMI : Oregon Department of Geology and Mineral Industries	**Pre-lease & FC & Rulemaking - Existing or No Staff** If DOGAMIs role is largely review, they would conduct the work with existing staff, using appropriate planning within our existing project workload and project workflows. Rulemaking, not applicable. DOGAMI has no regulatory responsibility on these subjects. Their role would largely be scientific review of EIS documents.	**Post-lease/Pre-COP - Existing Staff** E (multi); 0.125 FTE Subject Matter Experts/Lead Scientist Level; NRS4; expertise in tsunami research and coastal geomorphology, quaternary geology, neotectonics, and terrain analysis	**FC & Permits & COP Review - Existing Staff** E (multi); 0.125 FTE Subject Matter Experts/Lead Scientist Level; NRS4 If DOGAMIs role is largely review, they would conduct the work with existing staff, using appropriate planning within their existing project workload and project workflows.	**Operations & Monitoring - No Staff** Not applicable. DOGAMI has no regulatory responsibility on these subjects. Their role would largely be scientific review of EIS documents.	**Other - Existing Staff** **<u>Engagement & Outreach</u>** E; 0.1 FTE Coastal Geologist; Capacity and expertise to help with community outreach and support engagement E; 0.1 FTE GS&S Program Mgr.; Has expertise of coastal geology and is the Agency Tribal Liaison to the Legislative Commission on Indian Services E; 0.1 FTE Public Outreach Coord.; very limited capacity to contribute except to review and comment on planned outreach activities
DLCD : Oregon Department of Land Conservation and Development	**Pre-lease & FC & Rulemaking - Existing Staff** E; 1.0 FTE Offshore Wind Energy Policy Spec.; Planner 3 E; 1.0 FTE Offshore Wind Roadmap Coord.; Planner 4 E; 0.3 FTE Marine Affairs Coord.; Planner 4 E; 0.1 FTE Administrative support/coastal rulemaking/procurement E: 0.1 FTE Legal Counsel E; 0.2 FTE Management (Director's Office, Oregon Coastal Program Mgr., Communications) E; 0.1 FTE GIS Spec.; if marine spatial planning involved	**Post-lease / Pre-COP - Existing Staff** E; 1.0 FTE Offshore Wind Energy Policy Spec.; Planner 3 E; 1.0 FTE Offshore Wind Roadmap Coord.; Planner 4 E; 0.3 FTE Marine Affairs Coord.; Planner 4; as it relates to the inventory requirements of TSP Part 5 E; 0.1 FTE Administrative support E; 0.1 FTE Management (Director's Office, Oregon Coastal Program Mgr., Communications)	**FC & Permits & COP Review - Existing Staff** E; 0.8 FTE Offshore Wind Energy Policy Spec.; Planner 3 E; 0.7 FTE Offshore Wind Roadmap Coord.; Planner 4; scope of work not directly related to FC review but advancing enf agreements/supply chain/coordinating relationships/etc. E; 0.3 FTE Marine Affairs Coord.; Planner 4 E: 0.1 FTE Legal Counsel E; 0.1 FTE Management (Director's Office, Oregon Coastal Program Mgr., Communications)	**Operations & Monitoring - Existing Staff** E; 0.1 FTE Offshore Wind Energy Policy Spec.; Planner 3; adaptive management team role, environmental report review E; 0.1 FTE Marine Affairs Coord.; Planner 4 E; 0.1 FTE Legal and Management (Director's Office, Oregon Coastal Program Mgr., Communications)	**Other - Existing Staff** E; 0.2 FTE Offshore Wind Energy Policy Spec., Planner 3 E; 0.3 FTE Offshore Wind Energy Roadmap Coord.; Planner 4; it is unclear what role there is for Roadmap Coord. depending on when things happen (possibly help with coordinating the "bargain/benefit" conversations with communities if DLCD has an explicit role. E; 0.5 FTE State Federal Relations Coord.; Planner 3 E; 0.2 FTE Coastal Policy Spec.; Planner 4; if Coos Bay shoreside and estuary development

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
DSL : Oregon Department of State Lands	**Pre-lease & FC & Rulemaking - Existing / New Staff** E; 1.0 FTE Territorial Sea Spec. (NRS 4) E; 0.2 FTE Proprietary Coord. E; 0.4 FTE Rules Coord. E; 0.1 FTE Engagement Spec. E; 0.1 FTE Administrative support staff	**Post-lease / Pre-COP – Existing / New Staff** N; 1.0 FTE Proprietary Coord. N; 1.0 FTE Aquatic Resource Coord. (for removal-fill permitting) N; 0.5 FTE Administrative support staff N; 0.5 FTE Engagement and outreach staff person E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); Handle interagency coordination and planning, lead the JART process under TSP Parts 4 and 5 *See comments in Table B-4 for additional information.*	**FC & Permits & COP Review – Existing / New Staff** N; 1.0 FTE Proprietary Coord. N; 1.0 FTE Aquatic Resource Coord. (for removal-fill permitting) N; 0.5 FTE Administrative support staff N; 0.5 FTE Engagement and outreach staff person E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); Handle interagency coordination and planning, lead the JART process under TSP Parts 4 and 5 *See comments for additional information.*	**Operations & Monitoring – Existing / New Staff** N; 1.0 FTE Proprietary Coord.; in addition to other duties, they can provide effective oversight of active OSW operations, monitoring, and future decommissioning. E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); in addition to other duties, they can provide effective oversight of active OSW operations, monitoring, and future decommissioning. *See comments for additional information.*	**Other – Existing / New Staff** N; 1.0 FTE Proprietary Coord. N; 1.0 FTE Aquatic Resource Coord. (for removal-fill permitting) N; 0.5 FTE Administrative support staff N; 0.5 FTE Engagement and outreach staff person E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); Handle interagency coordination and planning, lead the JART process under TSP Parts 4 and 5 *See comments for additional information.*
OPRD : Oregon Parks and Recreation Department	**Pre-lease & FC & Rulemaking - Existing / New Staff** E; 0.2 FTE Ocean Shore Resource Coord.; NRS4 E; 0.1 FTE Ocean Shore Program Coord.; NRS4 (rulemaking) E; 0.1 Management (Director's Office, Program Mgr., Communications) N: 0.5 Ocean Shore Policy and Engagement Spec., NRS3 (LD) N: 1.0 FTE Ocean Shore Program Mgr.	**Post-lease / Pre-COP - Existing / New Staff** E; 0.2 FTE Ocean Shore Resource Coord.; NRS4 E; 0.2 FTE Ocean Shore Program Coord.; NRS4 E: 0.1 Management (Director's Office, Program Mgr., Communications) N: 0.5 Ocean Shore Policy and Engagement Spec., NRS3 (LD) N: 1.0 FTE Ocean Shore Program Mgr.	**FC & Permits & COP Review - Existing / New Staff** E; 0.2 FTE Ocean Shore Program Coord.; NRS4 N; 1.0 FTE Ocean Shore Cable Permitting & Compliance Spec.; (NRS3) N: 1.0 FTE Ocean Shore Program Mgr.	**Operations & Monitoring - Existing / New Staff** E; 0.1 FTE Ocean Shore Program Coord.; NRS4 N: 1.0 FTE Ocean Shore Cable Permitting & Compliance Spec.; NRS3 N: 1.0 FTE Ocean Shore Program Mgr.	**Other/Shoreside - Existing Staff** E; 0.1 FTE Ocean Shore Resource Coord.; NRS4 E; 0.1 FTE Tribal/Archaeology Coordination; NRS4 E; 0.1 FTE beach rangers; OS monitoring and compliance

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
PUC : Oregon Public Utilities Commission	**Pre-lease & FC & Rulemaking - Existing or No Staff** Not applicable to the PUC. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities. *See comments in Table B-4 for additional information regarding PUC roles*. **Pre-lease/Rulemaking - Existing Staff** The resources and time needed would depend on the extent of rules or other policies that needed to be amended. The PUC has resources and staff to update rules and other policies, so to the extent minimal updates were needed, the PUC would likely not need additional resources. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities	**Post-lease / Pre-COP - Existing or No Staff** Not applicable to the PUC. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities. *See comments in Table B-4 for additional information regarding PUC roles*.	**FC & Permits & COP Review - Existing Staff (if applicable)** Not applicable to the PUC unless there are transmission lines as part of the shoreside support facilities that involve land condemnation. In that case, the PUC may need to review a petition for a Certificate of Public Convenience and Necessity (CPCN). CPCN review is a routine PUC activity that already has staff assigned and would not require additional staff. *See comments for additional information.* This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities	**Operations & Monitoring - Existing Staff** To the extent a PUC-regulated utility owned an OSW operation, the PUC could potentially have a role in monitoring utility operating, investment and decommissioning decisions. That would be done through routine PUC review of utility planning and rate-related submissions and would not require additional staff. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities	**Other - Existing Staff** The PUC anticipates adequate staff and resources to support engagement and outreach on foreseeable PUC-specific dockets related to OSW based on current PUC roles and responsibilities as discussed in comments section. The PUC typically conducts some form of outreach and engagement on PUC dockets. This typically includes posting information, workshops, public meetings, and opportunities for written comments. Some PUC decisions are quasi-judicial, which limit or specify certain outreach and engagement. This outreach and engagement would likely be built into any PUC OSW-related item and supported as a matter of routine operations. The PUC also routinely engages in state agency working groups and regional venues where OSW is discussed. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities
OSMB : Oregon State Marine Board	**Pre-lease & FC & Rulemaking - Minimal Staff** OSMB represents recreational boaters in waters of the state and so the agency will likely have a minimal role in an OSW project. OSMB staff anticipate attending meetings to watch for impacts to boaters. In addition, if there are any temporary rules necessary to support	**Post-lease / Pre-COP - No Staff** *See comments in Table B-4 for additional information.*	**FC & Permits & COP Review - No Staff** *See comments in Table B-4 for additional information*	**Operations & Monitoring - No Staff** *See comments in Table B-4 for additional information*	**Other - Minimal Staff** OSMB represents recreational boaters in waters of the state and so the agency will likely have a minimal role in an OSW project. OSMB staff anticipate attending meetings to watch for impacts to boaters. In addition, if there are any temporary rules necessary to support the project, OSMB would provide that support.

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
	the project, OSMB would provide that support.				
Local Government † County (7) City (23)	**Pre-lease & FC & Rulemaking - Existing or Contract Staff** Large projects or rulemaking with different expectations may require additional staff, contract (planning consultants) or shared staff, in addition to funding and other resources. Contracted staff would need to be knowledgeable of the process in which their services are being requested. Other capacity needs may include Model Codes or policy recommendations, if rulemaking.	**Post-lease / Pre-COP - Existing Staff** Existing staff	**FC & Permits & COP Review - Existing or Contract Staff** Everyday permitting can be handled with existing capacity but if there are large or fast-moving projects with different expectations it may require additional staff, contract (planning consultants) or shared staff, in addition to funding and other resources.	**Operations & Monitoring - Existing Staff** Existing staff	**Other - Existing Staff or Contract Staff** **<u>Engagement & Outreach</u>** There may be a need for additional resources (basic and factual) for public education and outreach and the development of staff (e.g., FAQ, brochures, technical resources, subject matter experts) **<u>Shoreside Reviews</u>** Everyday permitting can be handled of basic shoreside facilities (e.g., substations improvements) with existing capacity. Large or fast moving shoreside reviews may require additional staff, contract (planning consultants) or shared staff, in addition to funding and other resources.
CTCLUSI: Confederated Tribes of Coos, Lower Umpqua & Siuslaw	**Pre-lease & FC & Rulemaking - Existing or Contract (C) Staff** E; 0.2 FTE Tribal Attorney E; 0.2 FTE Tribal Policy Analyst E; 0.2 FTE Tribal Historic Preservation Officer (THPO) E; 0.2 FTE Culture and Natural Resources Staff C; 0.25 FTE Outside Fisheries Consultant *See comments for additional*	**Post-lease / Pre-COP - Existing or Contract Staff** E; 0.2 FTE Tribal Attorney E; 0.2 FTE Tribal Policy Analyst E; 0.2 FTE Tribal Historic Preservation Officer (THPO) E; 0.2 FTE Culture and Natural Resources Staff C; 0.25 FTE Outside Fisheries Consultant *See comments for additional*	**FC & Permits & COP Review** E; 0.2 FTE Tribal Attorney E; 0.2 FTE Tribal Policy Analyst E; 0.2 FTE Tribal Historic Preservation Officer (THPO) E; 0.2 FTE Culture and Natural Resources Staff C; 0.25 FTE Outside Fisheries Consultant *See comments for additional information regarding CTCLUSI*	**Operations & Monitoring - Existing Staff** E: 0.25 FTE Staff (general) E; 0.2 FTE Tribal Attorney E; 0.2 FTE Tribal Policy Analyst E; 0.2 FTE Tribal Historic Preservation Officer (THPO) E; 0.2 FTE Culture and Natural Resources Staff C; 0.25 FTE Outside Fisheries Consultant *See comments for additional*	

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
	information regarding CTCLUSI involvement. CTCLUSI anticipates that the above noted tribal staff and contractors will be engaged in offshore wind roadmap processes during the pre-lease, post-lease/pre-COP, and permit/consistency review phases, along with their approximate time commitments expressed as full-time equivalents (FTEs)**.**	*information regarding CTCLUSI involvement.* CTCLUSI anticipates that the above noted tribal staff and contractors will be engaged in offshore wind roadmap processes during the pre-lease, post-lease/pre-COP, and permit/consistency review phases, along with their approximate time commitments expressed as full-time equivalents (FTEs).	*involvement*. CTCLUSI anticipates that the above noted tribal staff and contractors will be engaged in offshore wind roadmap processes during the pre-lease, post-lease/pre-COP, and permit/consistency review phases, along with their approximate time commitments expressed as full-time equivalents (FTEs).	*information regarding CTCLUSI involvement.* During the operations phase, monitoring would likely require approximately 0.25 FTE of one employee, with staffing ramping back up to the levels listed in the first three phases during decommissioning.	
Oregon Tribes ‡ Note: Under development	**Pre-lease & FC & Rulemaking - Existing or Contract Staff**	**Post-lease / Pre-COP - Existing or Contract Staff**	**FC & Permits & COP Review**	**Operations & Monitoring - Existing Staff**	**Other**

Table B-3. Offshore Wind Energy Capacity Assessment – Staff Capacity for Two Concurrent Projects

Agency	**Phase 1 - Pre-lease*** (up to 4 years)	**Phase 2 - Post-lease/Pre-Construction & Operations Plan*** (up to 5 years)	**Phase 3 - Permit/Federal Consistency Review*** (6 mos. - 2 years)	**Phase 4 - Post-permit/Operations*** (up to 30 years)	**Other - Related Duties**
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
BOLI : Oregon Bureau of Labor and Industry Note: For this assessment, BOLI assumes that the wage standards in Section 8(2)(c) of HB 4080 (2024) are Enforceable Policies.	**Pre-lease & FC & Rulemaking- Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 3 R; 0.1 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R; 0.1 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.25 FTE Apprenticeship Rep. (Part of HB 4080 Fiscal) **Involvement minimal.** BOLI anticipates minimal involvement in this phase. However, it is possible that the agency will be asked questions related to whether a pre-leasing activity triggers the prevailing wage rate laws for a project. It is likely there will be some questions related to the payment requirements to workers during the rulemaking in this phase. It is also possible that employers will begin the process of establishing a Registered Apprenticeship Program described in section 8(2). Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with no change to duties or with revised job duties.	**Post-lease / Pre-COP - Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 3 R; 0.1 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R; 0.1 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.5 FTE Apprenticeship Rep. (Part of HB 4080 Fiscal) **Involvement minimal.** BOLI anticipates minimal involvement in this phase. There is the possibility/opportunity for training on Prevailing Wage Laws in this phase. It is likely that employers will begin the process of establishing a Registered Apprenticeship Program described in section 8(2). Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with no change to duties or with revised job duties.	**FC & Permits & COP Review - Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 3 R; 0.1 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R: 0.1 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.25 FTE Apprenticeship Rep. (Part of HB 4080 Fiscal) **Involvement minimal.** BOLI has not identified a role for the agency during this phase. However, BOLI anticipates continued education or fielding of questions related to prevailing wage laws and Registered Apprenticeship Programs. Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with no change to duties or with revised job duties.	**Operations & Monitoring - Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 2 E; 0.1 FTE Operations and Policy Analyst 3 R; 1.0 FTE Compliance Spec. 1 (Part of HB 4080 Fiscal) R; 1.0 FTE Compliance Spec. 3 (Part of HB 4080 Fiscal) R; 0.5 FTE Apprenticeship Representative (Position part of HB 4080 Fiscal) *See comments in Table B-4 for detail on how FTE was calculated* **Involvement ongoing based on wage claims or third-party complaints received.** Workers who are not paid the wage standard established in HB 4080 may file a wage claim or complaint with BOLI for unpaid wages or other wage and hour violations. If the work is determined to be subject to the Prevailing Wage Laws, then BOLI will open a company-wide investigation to ensure all workers have been paid correctly. BOLI's main enforcement will be related to ensuring the workers are paid the correct amount under Section 8(2)(c) of HB 4080(2024), along with regulatory review of any Registered Apprenticeship Programs that have been established.	**Other/Engagement & Outreach - Existing / Reallocated Staff** E; 0.1 FTE Operations and Policy Analyst 2 E; 0.2 FTE Operations and Policy Analyst 3 R; 0.2 FTE Compliance Spec. 1 (Position part of HB 4080 Fiscal) Outreach and Education to contractors, contracting agencies, and general public on both wage and hour laws and prevailing wage laws. Issuing Coverage Determinations in response to requests to formally determine whether the projects are covered. The requestor or any other person adversely affected or aggrieved by the determination may request a hearing on the determination. The hearings will be handled by BOLI's Administrative Prosecution Unit. Employee Identification - Any impact to BOLI will be absorbed with existing staff in this phase, either with current or revised job duties.

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODA : Oregon Department of Agriculture – *Based on authority and applicable Enforceable Policies, it was determined that ODA would not be as involved as other state agencies and therefore not surveyed for this assessment.*					
ODAV : Oregon Department of Aviation Note: For this assessment, ODAV assumes that turbines will be assembled near shore and in a location that will trigger review by ODAV and FAA (e.g., Coos Bay, being one of the only places this could happen along the coast).	**Pre-lease & FC & Rulemaking - No Staff**	**Post-lease / Pre-COP - Existing Staff** E; 0.1-1.0 FTE Aviation Planner The following assumptions may trigger ODAV (and FAA) review and require Notice of Construction review at this phase or the next phase. ODAV also looks at the land use compatibility component (e.g., housing at the end of a runway, try to discourage). 1) Development occurs nearshore, whether in an estuary or upland area, and within state territory. 2) Development occurs in an airport imaginary surface (e.g., Coos Bay).ODAV states, "If staged in an estuary, there would be hope that wherever staging is placed, it would not impact approach surfaces at ends of runways for incoming or outgoing aircraft. Part 77 surfaces are key for them." 3) Development, including any components, exceeds 200 feet even temporarily. 4) Review times will be quite minimal but will depend on how and where the structures will be assembled. The # FTE could vary from 0.1-1.0 FTE. For this phase, the lesser number was selected. Review of proposed height and locations of the structures and their proximity to public-use airports and helipads to determine if there would be any impact to airspace.	**FC & Permits & COP Review - Existing Staff** E; 0.1-1.0 FTE Aviation Planner The following assumptions may trigger ODAV (and FAA) review and require Notice of Construction review at this phase or the next phase. ODAV also looks at the land use compatibility component (e.g., housing at the end of a runway, try to discourage). 1) Development occurs nearshore, whether in an estuary or upland area, and within state territory. 2) Development occurs in an airport imaginary surface (e.g., Coos Bay).ODAV states, "If staged in an estuary, there would be hope that wherever staging is placed, it would not impact approach surfaces at ends of runways for incoming or outgoing aircraft. Part 77 surfaces are key for them." 3) Development, including any components, exceeds 200 feet even temporarily. 4) Review times will be quite minimal but will depend on how and where the structures will be assembled. The # FTE could vary from 0.1-1.0 FTE. For this phase, the larger number was selected. Review of proposed height and locations of the structures and their proximity to public-use airports and helipads to determine if there would be any impact to airspace.	**Operations & Monitoring - No Staff**	**Other/Shoreside - Existing Staff** E; 0.1-1.0 FTE Aviation Planner The following assumptions may trigger ODAV (and FAA) review and require Notice of Construction review at this phase or the next phase. ODAV also looks at the land use compatibility component (e.g., housing at the end of a runway, try to discourage). 1) Development occurs nearshore, whether in an estuary or upland area, and within state territory. 2) Development occurs in an airport imaginary surface (e.g., Coos Bay).ODAV states, "If staged in an estuary, there would be hope that wherever staging is placed, it would not impact approach surfaces at ends of runways for incoming or outgoing aircraft. Part 77 surfaces are key for them." 3) Development, including any components, exceeds 200 feet even temporarily. 4) Review times will be quite minimal but will depend on how and where the structures will be assembled. The # FTE could vary from 0.1-1.0 FTE. For this phase, the lesser number was selected. Review of proposed height and locations of the structures and their proximity to public-use airports and helipads to determine if there would be any impact to airspace.

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODOE : Oregon Department of Energy **EFSC : Energy Facility Siting Council**	**Pre-lease & FC & Rulemaking - Existing or No Staff Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*. **Rulemaking - Not applicable or unlikely no additional capacity need.** Regarding Oregon's renewable and clean electricity laws – and any potential changes/amendments to existing authorities or wholly new authorities, EFSC and ODOE have no existing administrative statutes/rules or other policies specifically relating to the potential development of floating OSW projects in Federal waters adjacent to Oregon. *See comments in Table B-4 for additional information.*	**Post-lease / Pre-COP - No Staff Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*.	**FC & Permits & COP Review - No Staff Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*.	**Operations & Monitoring - No Staff Involvement - Not applicable** Neither EFSC nor ODOE have regulatory authority over ocean-based energy projects, including any related and supporting facilities such as ocean-based transmission lines or ocean-based substations, or land-based substations. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. *See comments in Table B-4 for additional information including authority over land-based transmission line projects*.	**Other - No or Existing Staff Not applicable or likely no additional capacity need.** E; 0 FTE EFSC and/or ODOE Engagement & Outreach on Ocean or Land-based Impacts of an OSW project; N/A E; ? FTE ODOE Technical Support Relating to the Power Grid, Clean Energy & Climate Policies, and State Energy Programs & Incentives; likely no additional ODOE capacity need E; ? FTE ODOE Support Relating to Tribal and Community Engagement and Outreach Efforts; likely no additional ODOE capacity need *Refer to comments in Table B-4 for more information.*

Agency	Phase 1 - Pre-lease* (up to 4 years)	Phase 2 - Post-lease/Pre-Construction & Operations Plan* (up to 5 years)	Phase 3 - Permit/Federal Consistency Review* (6 mos. - 2 years)	Phase 4 - Post-permit/Operations* (up to 30 years)	Other - Related Duties
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
DEQ : Oregon Department of Environmental Quality	**Pre-lease & FC & Rulemaking - Existing / New Staff** N; 0.5 FTE OSW Coord.; NRS3; 1.0 – 4.0 year, support planning and early coordination or any rulemaking DEQ does not currently have staff available to assign to fully review plans prior to permit or certification application; however, DEQ may be able to reallocate duties of existing staff to participate in pre-permitting or pre-certification meetings when the topic is appropriate if available. We anticipate participation to include advising on appropriate environmental clearances through DEQ's regulatory programs. These programs may include 401 Water Quality Certification Dredge and Fill and/or Hydropower, and NPDES Construction Stormwater Permits. These programs are mainly fee funded. If necessary, DEQ could seek to enter into fee agreements to support staff time for the review and analysis of application materials.	**Post-lease / Pre-COP - Existing / Reallocated Staff** E; 0.5-2.0 FTE Engineering and Program staff Staff may include 401 Water Quality Certification Dredge and Fill and/or Hydropower, and NPDES Construction Stormwater Permits. These programs are mainly fee funded. If necessary, DEQ could seek to enter into fee agreements to support staff time for the review and analysis of application materials.	**FC & Permits & COP Review - Existing / Reallocated Staff** E; 0.5-2.0 FTE Engineering and Program staff Staff may include 401 Water Quality Certification Dredge and Fill and/or Hydropower, and NPDES Construction Stormwater Permits. These programs are mainly fee funded. If necessary, DEQ could seek to enter into fee agreements to support staff time for the review and analysis of application materials.	**Operations & Monitoring- Existing Staff** Additional environmental clearances could be required for these processes; however, DEQ does not anticipate having a large role due to the location of active OSW operations occurring outside state water quality jurisdiction.	**Other - Existing Staff** E; ? FTE Environmental Compliance staff; this outreach would be part of the environmental compliance review

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	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODFW : Oregon Department of Fish and Wildlife	**Pre-lease & FC & Rulemaking - Existing / Reallocated / New Staff** N; 1.0 FTE OSW Coord.; NRS4; 1.0 – 4.0 years N/R; 0.5 FTE Fishery Spec.; NRS3; 1.0 – 4.0 years N/R; 0.5 FTE Environmental Spec.; NRS3; 1.0 – 4.0 years N/E; 0.2 FTE Onshore Energy Coord.; NRS4; 1.0 – 4.0 years N; 1.0-3.0 FTE Policy Analysts; NRS3; ongoing Assumes staff will spread their time across multiple projects but will perform similar duties to those described in column D (One Project, Phase 1). Additional positions needed because as OSW gets momentum ODFW will need to grow capacity to provide technical expertise, fishery and habitat mapping, Federal Consistency review, etc.	**Post-lease / Pre-COP - Existing / Reallocated / New Staff** N; 1.0 FTE OSW Coord.; NRS4; 0.5 years N/R; 0.5 FTE Fishery Spec.; NRS3; 0.5 years N/R; 0.5 FTE Environmental Spec.; NRS3; 0.5 years N/E; 0.4 FTE Onshore Energy Coord.; NRS4; 0.5 years N/E; 0.4 FTE Outreach Spec.; PAS-2; 0.5 years E (multi); 0.4 FTE Subject Matter Experts; multiple classifications; 0.5 yrs E; 0.2 FTE Management Review; NRPSM-1; 0.5 years N; 1.0-3.0 FTE Policy Analysts; NRS3; ongoing Assumes staff will spread their time across multiple projects but will perform similar duties to those described in column E (One Project, Phase 2), spread out over an approximately 6-month period. Additional positions needed because as OSW gets momentum ODFW will need to grow capacity for review of site characterization survey plans or other activities, etc.	**FC & Permits & COP Review- Existing / Reallocated / New Staff** N; 1.0 FTE OSW Coord.; NRS4; 2.0 years N/R; 0.5 FTE Fishery Spec.; NRS3; 2.0 years N/R; 0.5 FTE Environmental Spec.; NRS3; 2.0 years N/E; 0.4 FTE Onshore Energy Coord.; NRS4; 2.0 years N/E; 0.4 FTE Outreach Spec.; PAS-2; 2.0 years E (multi); 0.4 FTE Subject Matter Experts; multiple classifications; 2.0 yrs E; 0.2 FTE Management Review; NRPSM-2; 2.0 years N; 1.0-3.0 FTE Policy Analysts; NRS3; ongoing Assumes staff will spread their time across multiple projects but will perform similar duties to those described in column F (One Project, Phase 3). Additional positions needed because as OSW gets momentum ODFW will need to grow capacity for reviews of permits, FC, Construction and Operation Plans, etc.	**Operations & Monitoring- Existing / Reallocated / New Staff** N; 0.5 FTE OSW Coord.; NRS4; ongoing N/R; 0.2 FTE Fishery Spec.; NRS3; ongoing N/R; 0.2 FTE Environmental Spec.; NRS3; ongoing N/E; 0.1 FTE Onshore Energy Coord.; NRS4: ongoing Assumes staff will spend 10-50% of their time tracking operations and monitoring activities for multiple OSW developments, performing similar duties to those described in column G (One Project, Phase 4).	**Other - Existing / Reallocated / New** **<u>Engagement & Outreach</u>** N; 0.2 FTE OSW Coord.; NRS4; ongoing N/R; 0.2 FTE Fishery Spec.; NRS3; ongoing N/R; 0.2 FTE Environmental Spec.; NRS3; ongoing N/E; 0.1 FTE Onshore Energy Coord.; NRS4; ongoing E (multi); 0.2 FTE Subject Matter Experts; multiple classifications; ongoing E; 0.2 FTE Outreach Spec. PAS-2; ongoing E; 0.1 FTE Mgmt. Rev.; NRPSM-1; ongoing Assumes work is ongoing before/ during/after/beyond project work described in Ph 1-4; staff with appropriate expertise might spend 10-20% of their time on engagement/ outreach activities with researchers, fisheries groups, tribes, and communities. Staff estimates are part of, not additive to, Ph 1-4 work. **<u>Shoreside Review</u>** N; 0.2 FTE OSW Coord.; NRS4; N/R; 0.2 FTE Fishery Spec.; NRS3; N/R; 0.2 FTE Environmental Spec.; NRS3; N/E; 0.4 FTE Onshore Energy Coord.; NRS4; N/E; 0.4 FTE Outreach Spec.; PAS-2; E (multi); 0.4 FTE Subject Matter Experts; multiple classifications; E; 0.2 FTE Mgmt. Review; NRPSM-1; Assumes this would include developments that are authorized outside the scope of the OSW Project(s) described in Ph 1-4 but ODFW would need capacity to address potential impacts. These related developments are necessitated by OSW onshore development (e.g., port development, expanded roads/rail, new or expanded transmission across coast range, new manufacturing facilities).

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	Employee Identification (Status; # FTE Position; Classification; Notes)**				
ODF : Oregon Department of Forestry – *Based on authority and applicable Enforceable Policies, it was determined that ODF would not be as involved as other state agencies and therefore not surveyed for this assessment.*					
DOGAMI : Oregon Department of Geology and Mineral Industries	**Pre-lease & FC & Rulemaking - Existing or No Staff** If DOGAMIs role is largely review, they would conduct the work with existing staff, using appropriate planning within our existing project workload and project workflows. Rulemaking, not applicable. DOGAMI has no regulatory responsibility on these subjects. Their role would largely be scientific review of EIS documents.	**Post-lease/Pre-COP - Existing Staff** E (multi); 0.125 FTE Subject Matter Experts/Lead Scientist Level; NRS4; expertise in tsunami research and coastal geomorphology, quaternary geology, neotectonics, and terrain analysis	**FC & Permits & COP Review - Existing Staff** E (multi); 0.125 FTE Subject Matter Experts/Lead Scientist Level; NRS4 If DOGAMIs role is largely review, they would conduct the work with existing staff, using appropriate planning within our existing project workload and project workflows.	**Operations & Monitoring - No Staff** DOGAMI has no regulatory responsibility on these subjects. Their role would largely be scientific review of EIS documents.	**Other - Existing Staff** **<u>Engagement & Outreach</u>** E; 0.1 FTE Coastal Geologist; Capacity and expertise to help with community outreach and support engagement E; 0.1 FTE GS&S Program Mgr.; Has expertise of coastal geology and is the Agency Tribal Liaison to the Legislative Commission on Indian Services E; 0.1 FTE Public Outreach Coord.; very limited capacity to contribute except to review and comment on planned outreach activities
DLCD : Oregon Department of Land Conservation and Development	**Pre-lease & FC & Rulemaking - Existing Staff** E; 1.0 FTE Offshore Wind Energy Policy Spec.; Planner 3 E; 1.0 FTE Offshore Wind Roadmap Coord.; Planner 4 E; 0.3 FTE Marine Affairs Coord.; Planner 4 E; 0.1 FTE Administrative support/coastal rulemaking/procurement E: 0.1 FTE Legal Counsel E; 0.2 FTE Management (Director's Office, Oregon Coastal Program Mgr., Communications) E; 0.1 FTE GIS Spec.; if marine spatial planning involved	**Post-lease / Pre-COP - Existing Staff** E; 1.0 FTE Offshore Wind Energy Policy Spec.; Planner 3 E; 1.0 FTE Offshore Wind Roadmap Coord.; Planner 4 E; 0.2 FTE State Federal Relations Coord.; Planner 3 E; 0.3 FTE Marine Affairs Coord.; Planner 4; as it relates to the inventory requirements of TSP Part 5 E; 0.1 FTE Administrative support E; 0.1 FTE Management (Director's Office, Oregon Coastal Program Mgr., Communications)	**FC & Permits & COP Review - Existing Staff** E; 0.8 FTE Offshore Wind Energy Policy Spec.; Planner 3 E; 0.7 FTE Offshore Wind Roadmap Coord.; Planner 4; scope of work not directly related to FC review but advancing enf agreements/supply chain/coordinating relationships/etc. E; 0.3 FTE Marine Affairs Coord.; Planner 4 E: 0.1 FTE Legal Counsel E; 0.1 FTE Management (Director's Office, Oregon Coastal Program Mgr., Communications)	**Operations & Monitoring - Existing Staff** E; 0.1 FTE Offshore Wind Energy Policy Spec.; Planner 3; adaptive management team role, environmental report review E; 0.1 FTE Marine Affairs Coord.; Planner 4 E; 0.1 FTE Legal Counsel or Management (Director's Office, Oregon Coastal Program Mgr., Communications)	**Other - Existing Staff** E; 0.2 FTE Offshore Wind Energy Policy Spec., Planner 3 E; 0.3 FTE Offshore Wind Energy Roadmap Coord.; Planner 4; it is unclear what role there is for Roadmap Coord. depending on when things happen (possibly help with coordinating the "bargain/benefit" conversations with communities if DLCD has an explicit role. E; 0.5 FTE State Federal Relations Coord.; Planner 3 E; 0.2 FTE Coastal Policy Spec.; Planner 4; if Coos Bay shoreside and estuary development

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	Employee Identification (Status; # FTE Position; Classification; Notes)**				
DSL : Oregon Department of State Lands	**Pre-lease & FC & Rulemaking - Existing Staff** E; 1.0 FTE Territorial Sea Spec. (NRS 4) E; 0.4 FTE Proprietary Coord. E; 0.5 FTE Rules Coord. E; 0.2 FTE Engagement Spec. E; 0.2 FTE Administrative support staff	**Post-lease / Pre-COP – Existing / New Staff** N; 1.0-2.0 FTE Proprietary Coord. N; 1.0-2.0 FTE Aquatic Resource Coord. (for removal-fill permitting) N; 0.5-1.0 FTE Administrative support staff N; 0.5-1.0 FTE Engagement and outreach staff person E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); Handle interagency coordination and planning, lead the JART process under TSP Parts 4 and 5 *See comments in Table B-4 for additional information.*	**FC & Permits & COP Review – Existing / New Staff** N; 1.0-2.0 FTE Proprietary Coord. N; 1.0-2.0 FTE Aquatic Resource Coord. (for removal-fill permitting) N; 0.5-1.0 FTE Administrative support staff N; 0.5-1.0 FTE Engagement and outreach staff person E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); Handle interagency coordination and planning, lead the JART process under TSP Parts 4 and 5 *See comments in Table B-4 for additional information.*	**Operations & Monitoring – Existing / New Staff** N; 1.0-2.0 FTE Proprietary Coord.; in addition to other duties, they can provide effective oversight of active OSW operations, monitoring, and future decommissioning E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); in addition to other duties they can provide effective oversight of active OSW operations, monitoring, and future decommissioning *See comments in Table B-4 for additional information.*	**Other – Existing / New Staff** N; 1.0-2.0 FTE Proprietary Coord. N; 1.0-2.0 FTE Aquatic Resource Coord. (for removal-fill permitting) N; 0.5-1.0 FTE Administrative support staff N; 0.5-1.0 FTE Engagement and outreach staff person E; 1.0 FTE Territorial Sea Spec. (converted from LD to permanent in 2025); Handle interagency coordination and planning, lead the JART process under TSP Parts 4 and 5 *See comments in Table B-4 for additional information.*
OPRD : Oregon Parks and Recreation Department	**Pre-lease & FC & Rulemaking - Existing / New Staff** E; 0.3 FTE Ocean Shore Resource Coord.; NRS4 E; 0.2 FTE Ocean Shore Program Coord.; NRS4 (rulemaking) E; 0.1 Management (Director's Office, Program Mgr., Communications) N: 0.5 Ocean Shore Policy and Engagement Spec., NRS3 (LD) N: 1.0 FTE Ocean Shore Program Mgr.	**Post-lease / Pre-COP - Existing / New Staff** E; 0.3 FTE Ocean Shore Resource Coord.; NRS4 E; 0.3 FTE Ocean Shore Program Coord.; NRS4 E: 0.1 Management (Director's Office, Program Mgr., Communications) N: 0.5 Ocean Shore Policy and Engagement Spec., NRS3 (LD) N: 1.0 FTE Ocean Shore Program Mgr.	**FC & Permits & COP Review - Existing / New Staff** E; 0.3 FTE Ocean Shore Program Coord.; NRS4 N; 1.0 FTE Ocean Shore Cable Permitting & Compliance Spec.; NRS3 N: 1.0 FTE Ocean Shore Program Mgr.	**Operations & Monitoring - Existing / New Staff** E; 0.1 FTE Ocean Shore Program Coord.; NRS4 N: 1.0 FTE Ocean Shore Cable Permitting & Compliance Spec.; NRS3 N: 1.0 FTE Ocean Shore Program Mgr.	**Other/Shoreside - Existing Staff** E; 0.1 FTE Ocean Shore Resource Coord.; NRS4 E; 0.1 FTE Tribal/Archy Coordination; NRS4 E; 0.1 FTE beach rangers; OS monitoring and compliance

Agency	**Phase 1 - Pre-lease*** (up to 4 years)	**Phase 2 - Post-lease/Pre-Construction & Operations Plan*** (up to 5 years)	**Phase 3 - Permit/Federal Consistency Review*** (6 mos. - 2 years)	**Phase 4 - Post-permit/Operations*** (up to 30 years)	**Other - Related Duties**
	Employee Identification (Status; # FTE Position; Classification; Notes)**				
PUC : Oregon Public Utilities Commission	**Pre-lease & FC & Rulemaking - Existing or No Staff** Not applicable to the PUC. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities. *See comments in Table B-4 for additional information regarding PUC roles*. **Pre-lease/Rulemaking - Existing Staff** The resources and time needed would depend on the extent of rules or other policies that needed to be amended. The PUC has resources and staff to update rules and other policies, so to the extent minimal updates were needed, the PUC would likely not need additional resources. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities	**Post-lease / Pre-COP - Existing or No Staff** Not applicable to the PUC. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities. *See comments in Table B-4 for additional information regarding PUC roles*.	**FC & Permits & COP Review - Existing Staff (if applicable)** Not applicable to the PUC unless there are transmission lines as part of the shoreside support facilities that involve land condemnation. In that case, the PUC may need to review a petition for a Certificate of Public Convenience and Necessity (CPCN). CPCN review is a routine PUC activity that already has staff assigned and would not require additional staff. *See comments in Table B-4 for additional information.* This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities	**Operations & Monitoring - Existing Staff** To the extent a PUC-regulated utility owned an OSW operation, the PUC could potentially have a role in monitoring utility operating, investment and decommissioning decisions. That would be done through routine PUC review of utility planning and rate-related submissions and would not require additional staff. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities	**Other - Existing Staff** The PUC anticipates adequate staff and resources to support engagement and outreach on foreseeable PUC-specific dockets related to OSW based on current PUC roles and responsibilities as discussed in comments section. The PUC typically conducts some form of outreach and engagement on PUC dockets. This typically includes posting information, workshops, public meetings, and opportunities for written comments. Some PUC decisions are quasi-judicial, which limit or specify certain outreach and engagement. This outreach and engagement would likely be built into any PUC OSW-related item and supported as a matter of routine operations. The PUC also routinely engages in state agency working groups and regional venues where OSW is discussed. This number of projects would likely not affect PUC's staffing needs given the PUC role related to these projects as described above. PUC work related to these projects is part of routine PUC activities
OSMB : Oregon State Marine Board	**Pre-lease & FC & Rulemaking - Minimal Staff** OSMB represents recreational boaters in waters of the state and so the agency will likely have a minimal role in an OSW project. OSMB staff anticipate attending meetings to watch for impacts to boaters. In addition, if there are any temporary rules necessary to support	**Post-lease / Pre-COP - No Staff** *See comments in Table B-4 for additional information.*	**FC & Permits & COP Review - No Staff** *See comments in Table B-4 for additional information*	**Operations & Monitoring - No Staff** *See comments in Table B-4 for additional information*	**Other - Minimal Staff** OSMB represents recreational boaters in waters of the state and so the agency will likely have a minimal role in an OSW project. OSMB staff anticipate attending meetings to watch for impacts to boaters. In addition, if there are any temporary rules necessary to support the project, OSMB would provide that support.

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	Employee Identification (Status; # FTE Position; Classification; Notes)**				
	the project, OSMB would provide that support.				
Local Government † County (7) City (23)	**Pre-lease & FC & Rulemaking - Existing or Contract Staff** Large projects or rulemaking with different expectations may require additional staff, contract (planning consultants) or shared staff, in addition to funding and other resources. Contracted staff would need to be knowledgeable of the process in which their services are being requested. Other capacity needs may include Model Codes or policy recommendations, if rulemaking.	**Post-lease / Pre-COP - Existing Staff** Existing staff	**FC & Permits & COP Review - Existing or Contract Staff** Everyday permitting can be handled with existing capacity but if there are large or fast-moving projects with different expectations it may require additional staff, contract (planning consultants) or shared staff, in addition to funding and other resources.	**Operations & Monitoring - Existing Staff** Existing staff	**Other - Existing Staff or Contract Staff** **Engagement & Outreach** There may be a need for additional resources (basic and factual) for public education and outreach and the development of staff (e.g., FAQ, brochures, technical resources, subject matter experts) **Shoreside Reviews** Everyday permitting can be handled of basic shoreside facilities (e.g., substations improvements) with existing capacity. Large or fast moving shoreside reviews may require additional staff, contract (planning consultants) or shared staff, in addition to funding and other resources.
CTCLUSI: Confederated Tribes of Coos, Lower Umpqua & Siuslaw – *Refer to Table B-2 and B-4 for information.*					

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	Employee Identification (Status; # FTE Position; Classification; Notes)**				
Oregon Tribes ‡ Note: Under development	**Pre-lease & FC & Rulemaking**	**Post-lease / Pre-COP**	**FC & Permits & COP Review**	**Operations & Monitoring**	**Other**

Table B-4. Offshore Wind Energy Capacity Assessment - Notes

Agency	Additional Information
BOLI : Oregon Bureau of Labor and Industry	*BOLI policies are not state Enforceable Policies. However, if HB 4080 (2024) labor standards or similar were to be approved as policies enforceable through CZMA, BOLI anticipates the needed capacity addressed here.* **Comments** BOLI anticipates the same impact on its workload regardless of the scenario chosen (one project vs. two concurrent projects). BOLI assumes that the wage standards in Section 8(2)(c) of HB 4080(2024) are enforceable. The prevailing rate of wages is issued at least two times per year by the Commissioner. BOLI assumes when the prevailing rate of wage is required to be paid to the workers, the applicable wages will be fixed/set at the time the project is bid. This may require some combination of a legislative change, an administrative rule, or a contractual provision to ensure this is captured. Without this assumption, the number of employees identified in Phase 4 would likely increase significantly as the investigation will become more complicated when calculating any wages owed. If passed, HB 2688 (2025) will expand prevailing wage to off-site custom work for use in a public works project. The current estimate of BOLI staff needed does not assume passage of this bill. In calculating the number of workers who would be covered by HB 4080, BOLI used this article, *Suppliers' Guide to Success, Smart Scaling for the U.S. West Coast Floating Wind Market* by The West Coast Supplier Council (https://online.flippingbook.com/view/496802731/, see page 5) BOLI estimates an increase of at least 6,000 to 8,000 additional jobs/year based on number of workers identified in the articles. BOLI anticipates a maximum of 10% of these workers will file wage claims with BOLI based on the percentage of wage claims filed with BOLI from workers in the construction industry. The complexity of some of these investigations in determining the appropriate rate of pay will result in many of these cases needing to be escalated to the Compliance Specialist 3 position.
ODA : Oregon Department of Agriculture – *Based on authority and applicable Enforceable Policies, it was determined that ODA would not be as involved as other state agencies and therefore not surveyed for this assessment.*	
ODAV : Oregon Department of Aviation	*For this assessment, ODAV assumes that turbines will be assembled near shore and in a location that will trigger review by ODAV and FAA (e.g., Coos Bay, being one of the only places this could happen along the coast).* **Comments** 03/09/2023 - If in an estuary within state territory and exceeds 200 feet even temporarily, ODAV would want to take look at it. It would require notice of construction wherever those are going to be placed. If 20 miles off coast, unlikely that ODAV would require notice and review for that. Could potentially provide recommendations. ODAV looks at same thing as FAA. Have same imaginary surfaces as FAA in Part 77 code. ODAV tends to be more strict than FAA. FAA tends to bend their own rules more than OR is prone to doing. ODAV also looks at the land use compatibility component (e.g., housing at the end of a runway, try to discourage). If staged in an estuary, there would be hope that wherever staging is placed, it would not impact approach surfaces at ends of runways for incoming or outgoing aircraft. Part 77 surfaces are key for them. Did north spit of Coos Bay pose an issue during Jordan Cove? There were some structures that were going to be of concern to ODAV. Regional airport runway points right at the north spit. Fairly wide cone of approach. ODAV puts out notices to air navigators when construction is present that could pose a hazard. Requires notice and coordination ahead of time. 05/09/2025 - [O]ur original comments from 2023 stand. If these turbines will be assembled out at sea, there will likely be no review required by our office. However, if they are assembled near shore and dragged into position, we'll likely need the proponent to submit notice of construction to both the FAA and ODAV, depending on proposed turbine height and proximity to public-use airports (per 14 CFR Part 77 and OAR 738-070-0060 requirements). Either way, anything exceeding 200' above ground level or sea level may trigger notice to the FAA (wherever the turbines are assembled and/or permanently installed). The applicant/proponent can check filing requirements using the FAA's Notice Criteria Tool: https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm The FAA and ODAV's determination letters are both valid for 18 months from the time of issuance. So, we can get involved during the planning phase to go over potential concerns and permitting requirements but wouldn't expect to conduct formal reviews until closer to when construction will actually take place.

Agency	Additional Information
ODOE : Oregon Department of Energy **EFSC : Energy Facility Siting Council**	**Authority**. EFSC jurisdiction unlikely for a proposed floating OSW project and OSW Construction and Operations Plan proposed to BOEM. EFSC does have jurisdiction over proposed land-based transmission line projects, but only if a proposed transmission line project is: 1) longer than 10 miles in length, and 2) passes through more than one city or county in the state, and 3) 230 kV or more. However, EFSC jurisdictional, land-based transmission line projects are unlikely to be a direct component of an OSW Construction and Operations Plan proposed to BOEM for several reasons. First, a land-based transmission line project qualifying under EFSC jurisdiction is not a necessary component for a proposed OSW project to be constructed and operated. In other words, there are several scenarios where an OSW project could be constructed and operated without a proposed land-based transmission line project that would qualify under EFSC jurisdiction. Second, even if a land-based transmission line project qualifying under EFSC jurisdiction was deemed necessary to operate a proposed OSW project (for example, to provide power to the onshore power grid), that land-based transmission line project would likely be proposed by the owner of the local onshore transmission system (e.g., the owner of the onshore substation where the proposed OSW project's ocean-based transmission line interconnects to the mainland grid) – and would not be proposed by the same owner of the proposed OSW project. Considering all that's known at this time, it is unlikely that an EFSC jurisdictional, land-based transmission line would be a component of a proposed OSW project and an OSW Construction and Operations Plan proposed to BOEM. **Engagement & Outreach.** EFSC and/or ODOE Engagement & Outreach on Ocean or Land-based Impacts of an OSW project. N/A – EFSC has no authority and therefore no role in supporting engagement and outreach activities related to OSW energy. This means EFSC, and by extension ODOE, lack a nexus with the subject matter expertise and lack the staff resources necessary to help support engagement and outreach activities related to the ocean or land-based impacts of an OSW project that could be proposed to BOEM. ODOE Technical Support Relating to the Power Grid, Clean Energy & Climate Policies, and State Energy Programs & Incentives. Likely no additional ODOE capacity need – In terms of any efforts to support engagement and outreach activities on topics other than ocean or land-based impacts of an OSW project, such as technical support on power grid topics, clean and renewable electricity policies, state energy programs and incentives – all topics that relate to the subject matter expertise of those on ODOE staff who do not support EFSC – ODOE is likely well situated with existing resources to support engagement and outreach activities related to OSW energy. ODOE's Policy and Innovation Team has adequate existing resources to provide technical support on clean energy & climate policies, power grid topics, and state/federal energy programs & incentives relating to OSW. NOTE: Currently there are no state energy programs or incentives specifically directed toward OSW. ODOE Support Relating to Tribal and Community Engagement and Outreach Efforts. Likely no additional ODOE capacity need – ODOE is likely well situated with existing resources to help support engagement and outreach efforts to tribes and communities related to OSW energy. However, it is not likely that ODOE staff support would be necessary to help ensure tribal and community representatives are engaged with efforts led by the state agencies with direct authority over key decisions relating to potential OSW development. ODOE's Strategic Engagement Team has adequate existing resources to provide general support and information sharing on tribal and community engagement and outreach efforts on energy topics but would not be stepping into communications better suited for agency staff with direct jurisdiction over OSW regulatory decisions. **Rulemaking.** Regarding Oregon's renewable and clean electricity laws – and any potential changes/amendments to existing authorities or wholly new authorities, EFSC and ODOE have no existing administrative statutes/rules or other policies specifically relating to the potential development of floating OSW projects in Federal waters adjacent to Oregon. Therefore, EFSC and ODOE analysis concludes it would require a drastic change/amendment to existing statutes/rules/policies, or adoption of wholly new statutes/rules/policies applicable to EFSC and/or ODOE in order to expand the scope of EFSC and/or ODOE authorities, duties, directives, and programs in ways that could substantively help "better prepare the state for [potential] OSW development". Similar to EFSC's lack of authority over floating OSW projects and attendant transmission infrastructure in Federal and state waters adjacent to Oregon (detailed in Q1), one can also better appreciate how the broader ODOE agency also lacks authority over floating OSW projects by examining the authorities, roles, and responsibilities of Oregon's state agencies relating to Oregon's most prominent renewable and clean energy laws. ... (see ODOE 12/20/2024 response for more information)

Agency	Additional Information
DEQ : Oregon Department of Environmental Quality	**COP or Shoreside Project Review**. This may depend on many factors, including public interest and potential environmental clearances. DEQ may need engineering staff and program staff to review plans as part of permits and/or certifications. This could be 0.5 to 2.0 FTE depending on the number of projects and regulatory clearances needed. DEQ is unlikely to hire new staff specifically to support these reviews. DEQ could seek to develop a fee agreement with applicants to support review time of existing staff in expectation of issuing 401 water quality certification for activities in the COP or other shoreside work that trigger compliance with CWA 404 permitting. **Engagement & Outreach**. Depending on public interest, DEQ may anticipate a robust public notice and public hearing process. DEQ does have a fee structure in place for the review and issuance of permits and/or certifications and does not anticipate public outreach until after an application is received. This outreach would be part of the environmental compliance review; existing staff could be used.
ODFW : Oregon Department of Fish and Wildlife	**Position Roles/Duties**: > OSW Coordinator (NEW NRS4) Role: Policy review, coordinate OSW team specialists and SME input, represent ODFW at local / state / regional levels, communicate with state and federal agencies (NMFS, BOEM), Federal Consistency review, coordinate ODFW review and comment on project permits and plans, outreach and engagement. > Fishery Specialist (NEW or reallocated NRS3) Role: Technical expertise, fishery mapping, OSW team Federal Consistency review, regulatory expertise, contribute to ODFW review and comment on project permits and plans > Environmental specialist (NEW or reallocated NRS3) Role: Technical expertise, Federal consistency review, regulatory expertise, habitat mapping, fish and wildlife expertise, contribute to ODFW review and comment on project permits and plans > Onshore Energy Coordinator (NEW or Existing NRS4) Role: Coordinate analysis of onshore effects with SME input, Federal Consistency review, present data, communicate with communities. > Outreach specialist (NEW or Existing PAS-2) Role: Outreach and engagement of fishing industry, environmental interest groups, coastal communities, tribes. > Subject Matter Experts (Existing, multiple classifications) Role: technical expertise in fisheries, habitat, species. ODFW would need to include review/input from multiple subject matter experts in addition to ocean energy program members, especially during project Phases 2 and 3 as well as during shoreside review. > Management Review (Existing NRPSM-1 or 2) Role: Review comments > Policy Analysts (1-3 NEW NRS3) Role: hired as needed to add capacity to ODFWs technical expertise, fishery and habitat mapping, Federal Consistency review, or other work. **General Notes**: ODFW estimates of staff needs are based on DLCDs direction to *"consider the broader sense of your staff capacity that may include activities such as agency and regional coordination, other types of participation and engagement efforts, conferences, and training*" and "*forecast staffing levels that will provide your agency adequate expertise and a team to run the program smoothly and without struggle*". There is still a lot of uncertainty and guesswork in this assessment, so ODFW staff included "notes" with their assumptions for each project phase and "other" related work in an attempt to provide context for their estimates. If the direction or assumptions change, their numbers will likely change too.
ODF : Oregon Department of Forestry – *Based on authority and applicable Enforceable Policies, it was determined that ODF would not be as involved as other state agencies and therefore not surveyed for this assessment.*	
DOGAMI : Oregon Department of Geology and Mineral Industries – *No additional comments*	
DLCD : Oregon Department of Land Conservation and Development – *No additional comments*	

Agency	Additional Information
DSL : Oregon Department of State Lands	**Level of Involvement:** > DSL authorizes certain public, private, and commercial uses of Oregon-owned waterways, including the Territorial Sea. The OSW project will require proprietary authorization within the Territorial Sea. > In addition to the above proprietary role, DSL also issues permits for projects that add, remove, or move material in wetlands and waterways to minimize negative impacts on people, fish, and wildlife. The OSW will likely require removal-fill permits. > DSL is involved in supporting Federal Consistency reviews led by DLCD. > DSL facilitates coordination and communication among state and federal agencies, and local jurisdictions in the early stages of OSW project planning throughout the pre-application and application process under the Joint Agency Review Team (JART) for the Territorial Sea Plan (TSP) Parts 4 and 5. **Level of capacity and employee identification**:. Any significant and sustained increase in OSWs will require additional resources. OSW applications will require a high level of technical information and agency review, DOJ involvement, and special coordination under the Oregon TSP. Factors affecting staff needs are the overall number of applications, their timing relative to other work and other OSW applications, the complexity of OSW projects, and the quality of submitted applications. JART Process: The JART process under the TSP Parts 4 and 5 will be a new process for DSL, and further research is needed to determine specific staff needs. A JART pre-application meeting would need to be organized during the review of OSW lessee survey plans and characterization activities that might occur between issuance of an OSW exploration lease and submittal of a Construction and Operations Plan. To support future reviews of OSW Construction and Operation Plans or related projects, such as shoreside support facilities, DSL will need to complete the proprietary authorization application review process with the involvement of proprietary coordinators. OSW projects will also likely require removal-fill permits with the involvement of removal-fill specialists, which is a separate process and application in addition to the proprietary authorization.
OPRD : Oregon Parks and Recreation Department	NEW Position Information: Ocean Shore Cable Permitting & Compliance Specialist NRS 3 (at Step 3, annual cost $118000+S&S). Between .5-3 positions depending on scale and timing, many unknowns regarding number of cable landings per project. Ocean Shore Policy & Engagement Specialist NRS 3 (at Step 3, annual cost $118000+S&S). OPRD staff is at capacity for supporting current efforts, this will take dedicated and additional efforts to facilitate and coordinate future projects. Min .5 FTE. Rulemaking and policy revisions can take 9 months-1 year. Existing policy and rulemaking staff would need to be engaged and would pull them away from other priorities. Depending on the scope, it could require additional technical expertise to do ocean shore rulemaking. Ocean Shore Program Manager Sustainability/NR Manager 1 (annual cost $143000+S&S). Ocean shore staff is already overextending the current management structure. New responsibilities will require the OS team to be structured with its own manager. Note: OPRD has no capacity for obligating existing funds through either "other funds" or lottery funds towards new positions. any new position(s) would require non-measure 76 funding or general funds.

Agency	Additional Information
PUC : Oregon Public Utilities Commission	The Oregon Public Utility Commission's (PUC) role in review of specific OSW projects is different than other Oregon state agencies with direct jurisdiction over OSW projects and permits. The PUC only has a role if a PUC-regulated utility is involved in the project or there is transmission lines involved. And even then, the PUC's role is unique. The PUC has three main roles when it comes to OSW projects: > Review of utility resource plans and investments: The PUC reviews utility resource planning and investments. To the extent an OSW project is a resource that investor-owned utilities consider investing in or procuring energy from, the PUC has a role in assessing whether that investment or procurement is reasonable and ultimately prudent. This assessment occurs through PUC review of utility planning documents (e.g., Integrated Resource Plans and Clean Energy Plans) and utility resource procurements (e.g., Requests for Proposals). If an investment is ultimately made by a utility in an OSW project, the PUC assesses the prudence of that decision in a rate case where utilities seek cost recovery for their investment. > Issuance of Certificates for Public Convenience and Necessity (CPCN) for transmission lines: Under ORS 758.015(1), when any person or transmission company providing electric utility service proposes to construct an overhead transmission line for which the condemnation of land or an interest in land is necessary, that person must petition the PUC for a CPCN. If the PUC grants a CPCN, the transmission line for which the land is required becomes a public use and necessary for public convenience. To the extent that OSW projects would include transmission lines that require a CPCN, the PUC would review the CPCN petition. > Participation in regional transmission planning: Given the regional nature of transmission and the fact that investor-owned utilities the PUC regulates are required to participate in regional transmission planning by the Federal Energy Regulatory Commission, the PUC participates in multiple regional transmission planning forums. OSW-related transmission projects have and may continue to be discussed in these forums. Discussions in these forums focus on understanding and identifying regional transmission needs (including specific projects) and transmission project cost allocation. Key forums currently include NorthernGrid, Western Power Pool's Western Transmission Expansion Coalition (WestTEC), and Western Interstate Energy Board's Committee on Regional Electric Power Cooperation Transmission Collaborative (CREPC-TC). None of these forums have the authority to require a project to be built. All of the PUC roles above are part of routine PUC activities whether or not OSW projects are involved. And the PUC already has staff assigned to these activities. As a result, there would be minimal impact on PUC resources if OSW projects are presented in the future.
OSMB : Oregon State Marine Board	**Comments** 12/17/2024 (Alan Hanson email inquiry) - "I think that OSMB will have a minimal role in the OSW project. We represent recreational boaters in waters of the state. My understanding is that the project will be located more than three miles offshore, which is beyond our regulatory authority. I would also anticipate that the transport of all equipment/materials/personnel would be from a commercial port, which is outside our authority. I would anticipate that we will attend meetings to watch for impacts to boaters and if any temporary rules are necessary to support the project, we would provide that support."
Local Government † County (7) City (23)	Staff Capacity > Everyday permitting can be handled with current capacity but if there are large or fast-moving projects or any rulemaking and expectations change, resources will be needed. * Need more help with staff, funding, other resources * Sharing staff w/ specific knowledge (e.g., Certified Flood Plain Manager). City/County partnership, share with other jurisdictions. * Contract staff (planning consultants), if affordable. Contract staff may come with limitations or may lack expertise. Consultant could be used to maneuver through any sort of Enforceable Policy assessment. This may include a program similar to, but not the same as, the Oregon Building Codes Division (the division provides permit and inspection services throughout Oregon) but in this case, DLCD would administer a contract program of shared staff. * Community has other high priorities over any OSW policy work. * With reduced staffing, state role will be more important * Staff would need council and/or commission to give direction and approve work on any special project like an OSW project or policy work. Other Capacity > Model Codes or policy recommendations. Most model codes would address some related onshore components such as cable landings or other development. The idea is to protect the community's opinion. Also, a list of activities for onshoring and codes that offer a menu of things to amend. Engagement > Generally, assist local communities with available resources (basic and factual) for public education and outreach, in addition to, the development of staff (e.g., FAQ, brochures, technical resources, subject matter experts)

Agency	Additional Information
CTCLUSI: Confederated Tribes of Coos, Lower Umpqua & Siuslaw	The offshore wind process engages multiple levels of tribal governance and staff. These activities often involve travel and related costs. > Tribal Council members participate in government-to-government consultation, leadership committees, and review and approval of formal comment documents. > Tribal Attorney and Policy Analyst review documents, draft comments, and attend meetings. > Culture and Natural Resources staff, including the Tribal Historic Preservation Officer (THPO), and contracted technical experts review materials, contribute to comment development, brief Tribal Council, attend meetings, and conduct field visits and evaluations. The Tribe anticipates the highest level of involvement will occur during the pre-lease, post-lease/pre-COP, and permit/consistency review phases. Tribal involvement will taper during operations phase, focused primarily on compliance and monitoring, and increase again during the decommissioning.
Oregon Tribes ‡ Note: Under development	

Legend for the Capacity Assessment Tables

*PHASE DESCRIPTIONS

Phase 1: Pre-lease (up to 4 years). The Offshore Wind Energy Roadmap may identify pre-leasing activities such as rulemaking, additional marine spatial planning, or participation in a regional science collaborative. Agencies or tribes may be asked to participate in future BOEM siting processes. Agencies may also find it necessary to build early staff expertise in offshore wind energy topics. This phase may also involve reviewing additional BOEM leasing proposals.

Phase 2: Post-lease/Pre-Construction & Operations Plan (up to 5 years). After leasing has occurred but prior to an application for the Construction and Operations Plan or COP, is the phase where activities may include coordination of survey plans, early coordination with applicants and coastal partners about permit needs, research and building expertise in what will be needed during review.

Phase 3: Permit/Federal Consistency Review (6 months to 2 years). This is the phase that occurs upon the submittal of a formal application of any permit under agency authority and Federal Consistency (FC) but prior to a Federal Consistency decision.

Phase 4: Post-permit/Operations (up to 30 years). This phase occurs after Federal Consistency decisions and relevant permits have been issued and may include effective oversight of active offshore wind energy development operations, monitoring, and future decommissioning.

Other: Related Projects. This aspect includes review of related shoreside projects (e.g., shoreside manufacturing/support port facilities), additional government-to-government coordination and communication, engagement and outreach activities, and other special considerations and challenges.

**EMPLOYEE IDENTIFICATION

Status N = New
R = Revised or reallocated duties of existing staff
E = Existing staff, no change to duties
C = Contract staff

Capacity Assessment – Tables Legend (cont.)

FTE for Days per week

0.1 FTE for 0.5 days/week	0.6 FTE for 3 days/week
0.2 FTE for 1 day/week	0.7 FTE for 3.5 days/week
0.3 FTE for 1.5 days/week	0.8 FTE for 4 days/week
0.4 FTE for 2 days/week	0.9 FTE for 4.5 days/week
0.5 FTE for 2.5 days/week	1.0 FTE for 5 days/week

Position and Classification: Position titles and classifications may be based on the best available information.

Duties: Include information about the employee's duties or roles in reviewing offshore wind energy projects

† LOCAL GOVERNMENT PARTICIPATION

Columbia County:	County staff only, no cities
Clatsop County:	Astoria, Cannon Beach, Gearhart, Seaside, Warrenton
Tillamook County:	Bay City, Garibaldi, Manzanita, Rockaway Beach, Tillamook
Lincoln County:	Lincoln City, Newport, Toledo, Waldport, Yachats
Lane County:	Florence
Douglas County:	Reedsport, limited county staff interaction
Coos County:	Coos Bay, North Bend, Bandon
Curry County:	No County staff. City staff only from Brookings, Gold Beach, and Port Orford

‡ TRIBAL PARTICIPATION [under development]

APPENDIX C

RESEARCH AGENDA FRAMEWORK

Appendix C Research Agenda Framework

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C.1 Existing Research and Information Relevant to Oregon Offshore Wind Energy

C.1.2 National and International Research on Offshore Wind Energy Effects

Much effort and investment are being made around the US and the world to better understand the potential environmental effects of offshore wind energy to the ocean environment and species.

- US Department of Energy Offshore Wind Energy Guide: In 2024, the US Department of Energy (USDOE) produced an overview guide to the technologies, systems, effects, and processes related to both fixed-bottom and floating offshore wind energy.[49] This guide represents a primer on the topic of offshore wind energy at its present state of development.
- Representative Project Design Envelope for Floating Offshore Wind Energy: A Focus on the California 2023 Federal Leases: In 2024, the National Renewable Energy Laboratory published a report titled which provides estimates of the scale and number of components in a floating offshore wind energy facility to assist in the evaluation of potential impacts from a project.[50]
- OCCRI Offshore Wind Energy Summary: The Oregon Climate Change Research Institute (OCCRI) published its 2024 biennial assessment of the state of climate change science as it relates to

[49] U.S. Department of Energy. 2024. "Offshore Wind Energy Guide" Office of Energy Efficiency and Renewable Energy Wind Energy Technologies Office: WINDExchange. https://docs.nrel.gov/docs/fy25osti/88620.pdf
[50] https://www.osti.gov/servlets/purl/2438557

Oregon that includes an overview of the current known state of the science regarding the environmental and socioeconomic effects of offshore wind energy development. [51, 52]

- NOAA NMFS West Coast Offshore Wind Energy Strategic Science Plan: This plan outlines research directions that are needed to: a) fulfill NMFS' consultation and authorization mandates with respect to offshore wind energy development; b) advance the scientific understanding of the interactions between offshore wind energy development and NMFS trust resources on the U.S. West Coast, including assessing the effects of planned offshore wind energy activities on fish, fisheries, protected species, habitats, and ecosystems; and c) support the development of strategies to mitigate impacts. The plan outlines six priority areas for research. [53]
- Pacific Northwest National Laboratories TETHYS knowledgebase: TETHYS has collected more than 8,000 documents related to the environmental effects of wind energy (land-based and offshore). [54] All documents are available in a table format via the TETHYS Knowledge Base.
- US Offshore Wind Synthesis of Environmental Effects Research: SEER synthesizes key issues and disseminates existing knowledge about environmental effects, informing applicability to U.S. waters, and prioritize future research needs. [55]
- Wind Energy-Environmental Research & Engagement Network (WREN): WREN was established by the International Energy Agency (IEA) Wind Technology Collaboration Program to focus on environmental issues associated with commercial development of land-based and offshore wind energy projects and includes publications, science summaries, wind monitoring and mitigation technology catalog, and webinars. [56]
- Effects of Offshore Wind Energy on Upwelling Systems: Recent studies have begun to examine the potential effects of offshore wind energy extraction on oceanic boundary system upwelling and the resulting changes to nutrient availability and phytoplankton abundance as the base of the oceanic food web. [57, 58, 59] This is an area of continued uncertainty with implications for wildlife and fisheries, and research is ongoing.
- 2025 GAO Report on Offshore Wind Energy Development: In 2025, the Government Accountability Office (GAO) released a report titled, "Offshore Wind Energy: Actions Needed to Address Gaps in Interior's Oversight of Department." [60, 61] In its recommendations, the GAO noted gaps in the federal oversight process by BOEM and the Bureau of Safety and Environmental Enforcement (BSEE), particularly regarding meaningful tribal consultation, engagement with the fishing industry, community outreach, and regional capacity. The GAO

[51] https://oregonstate.app.box.com/s/j85nuhy5tqieoxdnszoiie8e9xotzrsz
[52] https://blogs.oregonstate.edu/occri/oregon-climate-assessments/
[53] https://www.fisheries.noaa.gov/s3//2024-10/offshore-wind-energy-strategic-science-plan-wcr-2024.pdf
[54] https://tethys.pnnl.gov/knowledge-base-all
[55] https://tethys.pnnl.gov/us-offshore-wind-synthesis-environmental-effects-research-seer
[56] https://tethys.pnnl.gov/about-wren
[57] https://uwnxt.nasx.edu/cdn/materials/a0559d37-93a2-4423-b1dc-9c657208af1a
[58] https://www.nature.com/articles/s43247-023-00780-y
[59] https://oregonstate.box.com/s/j85nuhy5tqieoxdnszoiie8e9xotzrsz
[60] https://www.gao.gov/assets/gao-25-106998.pd
[61] https://www.gao.gov/products/gao-25-106998

recommended that BOEM improve oversight and stakeholder engagement and provided six key recommendations.

- BOEM Studies in Support of Offshore Wind Energy Leasing on the West Coast: In support of offshore leasing activities, BOEM has completed several studies of environments, species, technologies, socioeconomic effects, energy systems, and infrastructure that could support west coast offshore wind energy.[62] BOEM retains a repository of completed environmental and technical studies for future reference.

C.2 Identifying and Prioritizing Offshore Wind Knowledge Gaps for Oregon[63]

The Identifying and Prioritizing Offshore Wind Knowledge Gaps for Oregon report was prepared for the Oregon Ocean Policy Advisory Council (OPAC) by the OPAC Scientific and Technical Committee (STAC). This draft was presented to OPAC in January 2026, and the Council will consider endorsing the report at their April 2026 meeting. This draft report is included with the public review draft of Offshore Wind Energy Roadmap to invite further consideration and feedback for OPAC.

This report, as presented here, has been modified slightly (e.g., formatting) in order to conform to the Offshore Wind Energy Roadmap document. No changes have been made to the contents of the document.

OPAC Scientific and Technical Committee members

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Veronica Dujon, Ph.D., Oregon Higher Education Coordination Commission
Kelsey Emard, Ph.D., Oregon State University, College of Earth, Ocean, and Atmospheric Sciences
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[62] https://www.boem.gov/environment/recently-completed-environmental-technical-studies-pacific
[63] **Suggested Citation:** OPAC STAC (2026) Identifying and prioritizing offshore wind knowledge gaps for Oregon - DRAFT, Ocean Policy Advisory Council. [URL]

Executive Summary

Scientific understanding of climate change and its impacts on natural and social systems have motivated policies to reduce our reliance on fossil fuels and to transition to clean energy sources. Until recently, new policies and federal support have been driving historic investments in clean energy technologies including renewable energy, electric vehicles, and energy efficiency. Starting in January 2025, federal energy policy reversed course. Oregon, and many other states, continue to pursue variety of ambitious clean energy targets to reduce greenhouse gas (GHG) emissions driving climate and ocean changes, and provide related economic growth opportunities, within the next few decades.

Oregon's Department of Land Conservation and Development is working on a legislatively mandated Offshore Wind Energy Roadmap to be completed in June 2026. Concurrently, the Ocean Policy Advisory Council (OPAC) directed the Scientific and Technical Advisory Committee (STAC) to deliver this report to identify knowledge gaps, research needs, and propose a research prioritization framework to inform responsible planning, adaptive management, and policy decisions.

This report synthesizes current scientific and technical understanding, identifies research needs across natural science, social science, and engineering, and proposes a transparent, stepwise framework for evaluating and prioritizing future research investments. It also includes a topically organized bibliography of recent and highly relevant ecological studies and related reports as a resource for developing research plans and siting assessments for floating offshore wind in Oregon.

Research Prioritization Framework

This STAC recommended approach ranks research priorities or questions following a two-step process that evaluates their relevance to Oregon research needs, their feasibility or likelihood of success, the level of effort required, and the likely impact of the information gained.

Step 1 — Relevance & Feasibility Scoring

Proposed research projects or questions are evaluated and scored by a designated group of experts (e.g., STAC) using a set of criteria, including relevance to offshore wind development, usefulness to decision making, feasibility, Oregon specificity, likelihood of reducing uncertainty, and ability to leverage existing data. A simple three-point scoring system is used to evaluate the project against each criterion (0 - does not meet, 1 - meets somewhat, 2 - fully meets) and scores for each criterion are summed to yield a total score for the project.

Step 2 —Priority Matrix ("Quick Wins" and "Major Projects")

A designated group of experts (e.g., STAC) evaluates the likely information gained ('impact') and the level of effort or funding ('effort') needed for a proposed research project. They use this to place it into a matrix (Figure 1) that classifies projects into four categories: quick wins (high impact, low effort), major projects (high impact, high effort), thankless tasks (low impact, high effort), or fill ins (low impact, low effort).

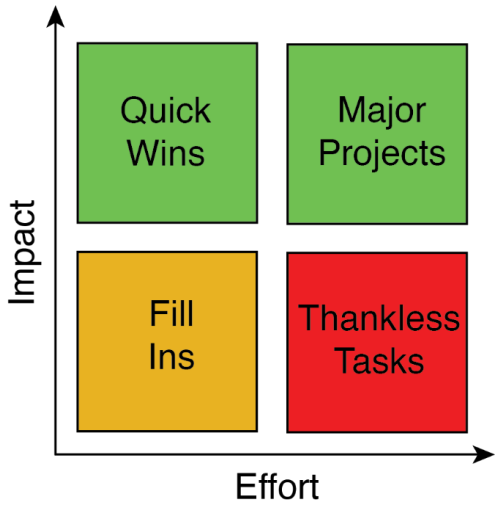


Figure 1. Priority matrix in which proposed projects can be evaluated based on the level of effort required, and the impact of the information produced by the work.

When evaluating a full suite of potential projects, the last step is to identify projects identified as 'Quick Win' and 'Major Project' that also scored above the median score from the first step. These projects would be recommended as the highest priority research projects.

Regionally Relevant Knowledge & Gaps and Research Needs

The breadth of expertise needed to address the full range of topics relevant to floating offshore wind energy projects in Oregon exceeded the STAC's scope of expertise. We focused our efforts on 1) natural, social science, and engineering topics that were not already addressed in the Floating Offshore Wind Energy Infrastructure chapter of the Seventh Oregon Climate Assessment (submitted to the legislature in 2025) and 2) that also aligned with the areas of expertise STAC members and an ad hoc contributor recruited to address engineering topics. In the report, we summarize regionally relevant research and identify knowledge gaps in the domains of social sciences, natural sciences, and engineering in a series of short topical briefs. The summary list of research needs below is derived from the topical briefs in the report. It reflects the expertise of the subject matter experts who contributed to the report and is not an exhaustive summary of all potentially relevant research needs and questions for Oregon.

Summary of Identified Research Needs

Natural Sciences

- Establish fine scale coastal modeling tailored to Oregon's unique wind regime and topography.
- Combine model predictions with field programs measuring upwelling, nutrients, and plankton across offshore wind affected regions.
- Develop robust methods to detect cumulative and far-field impacts beyond the immediate turbine zone in the presence of natural variability and climate change.
- Longterm marine megafauna (e.g., marine mammals, seabirds) monitoring programs that include winter surveys and nocturnal behavior.

- Year-round monitoring programs for species distribution and collision risk including behavioral tracking inside and around floating arrays to validate collision risk models.
- Integration of seabird energetics and foraging ecology with oceanographic modeling.
- Targeted tagging and telemetry studies to assess migration, electromagnetic field exposure, and behavior within offshore wind areas, especially for salmon.
- Field studies examining species assemblages at floating structures, moorings, and anchors.
- Identification of fishes and fish communities that are attracted to or repelled by floating structures, cables and anchoring devices
- Habitat maps, including foraging areas and migration routes, need to be refined to model potential impacts, particularly for listed and sensitive species
- Baseline habitat surveys and long-term disturbance studies in cable corridors and landing sites.
- Monitoring to determine how local effects of floating offshore wind infrastructure manifest at larger spatial or population scales, and their cumulative impacts on focal species.
- Effects of planned mitigation strategies (chemical and mechanical) for reducing biofouling on infrastructure.
- Chemical weathering and corrosion studies that are specific to materials used in floating offshore wind infrastructure.
- Regional-scale monitoring of microplastics, metals, and coatings.
- Expanded noise monitoring and experimental studies linking noise profiles to species responses.

Social Sciences

- Qualitative studies of social-cultural impacts on fishing communities during times of fishery disruption and community response strategies.
- Analysis of community perceptions of fairness in offshore wind outcomes and engagement processes.
- Identification of fishing community members' trusted information pathways for receiving new evidence and what shapes trust in sources.
- Codeveloped research with tribes on justice frameworks and culturally grounded governance models.
- Evaluation of current state Tribal consultation protocols using Tribal Caucus of the West Coast Ocean Alliance five essential guidelines and other Tribal approved guidance.
- Exploration of models for Tribal led relational sovereignty for offshore wind planning to build capacity for potential Tribal co-ownership, and shared scientific research and monitoring of wind development.
- Predict the economic impact of floating offshore wind construction and operation on commercial fisheries at the port level using existing fisheries data sets.
- Predict the potential regional economic impact of marine terminal construction.
- Forward looking cost modeling incorporating supply chain, port, and regulatory pathways.
- Analysis of offshore wind value to Oregon’s grid under multiple decarbonization scenarios.

Engineering

- Comparative analysis of platform designs suitable for Oregon's offshore conditions.
- Design and analyses of modular, serial manufacturing ready, platforms.
- Certification pathways that enable innovation while ensuring safety.
- Modeling, laboratory testing, and field trials of innovative mooring configurations.
- Comparative lifecycle assessments of anchor technologies.
- Testing of dynamic cables at depths relevant to Oregon.
- Joint Oregon–California interconnection planning.
- Studies of seabed and nearshore routing constraints for cables and landing sites.
- Evaluation of offshore wind contributions to grid reliability and resilience.
- Engineering studies of required upgrades (cranes, quay walls, channel dimensions) for specific ports with specific opportunities.
- Workforce transition planning and maritime sector capacity analyses.
- Research partnerships with global offshore wind hubs to leverage real-world data.
- Pilot demonstrations of autonomous monitoring systems in Oregon waters.

Introduction

Karina Nielsen

Background

Scientific understanding of climate change and its impacts on natural and social systems have motivated policies to reduce our reliance on fossil fuels and to transition to clean energy sources. Until recently, new policies and federal support have been driving historic investments in clean energy technologies including renewable energy, electric vehicles, and energy efficiency. Starting in January 2025, federal energy policy reversed course. This sharp reversal included the elimination or reduction of tax credits and federal funding for clean energy, energy efficiency, and infrastructure projects. It also resulted in the withdrawal of offshore wind leasing, rescission of Wind Energy Areas on the Outer Continental Shelf previously approved by the Bureau of Ocean Energy Management (BOEM), including two off the Oregon coast, and review of existing offshore wind leases and permits (1). The U.S. also withdrew from the "Paris Agreement under the United Nations Framework Convention on Climate Change" for a second time, eliminating international commitments to climate actions (2).

Oregon and many other states continue to pursue variety of ambitious clean energy targets to reduce greenhouse gas (GHG) emissions driving climate and ocean changes, and provide related economic growth opportunities, within the next few decades. The combination of rising electricity demand, retirement of coal plants, and delays in building new energy infrastructure and resources was recently projected to create a nearly 9-gigawatt (GW) gap for the PNW (3 GW for Oregon and Washington alone) between electricity generated and anticipated need by 2030 (3). In addition, energy costs are rising due to a combination of higher wholesale power costs, wildfire risk reduction and insurance, maintenance

and upgrades to aging infrastructure, inflation, and severe weather events (4). Climate related changes in annual precipitation patterns and drought are also affecting the Pacific Northwest's hydropower.

Oregon, and the US West Coast, also have an abundance of potential offshore ocean energy from persistent and powerful ocean waves and winds. Oregon's offshore waters continue to be of interest for emerging floating offshore wind and wave energy projects. An open-ocean, grid-connected wave energy testing facility off Newport, OR (PacWave) was recently completed(5). Planning for siting the PacWave facility started in 2012 in consultation with fishermen and other community members. In 2013, Principle Power proposed a pilot-scale floating offshore wind project off Coos Bay(6) that was qualified by BOEM in 2014 to proceed with their noncompetitive process to submit a plan for the proposed lease area (7). In 2016 the company requested that BOEM stop processing their application after the Oregon Utility Commission declined to purchase power from the project due to the high price (8).

In 2019, BOEM convened an Oregon Intergovernmental Renewable Energy Task Force and continued through 2024 to establish formal Wind Energy Areas (9). Five federally qualified developers expressed interest in the Call Areas BOEM initially proposed in 2022, setting the stage for a competitive leasing process. The process generated strong interest from Tribes and many different communities in Oregon including the renewable energy sector, fishing industry, labor unions, environmental and coastal recreation groups, and others. Coastal communities, the fishing industry, and Tribes raised many concerns about the possible impacts of offshore wind energy development.

In 2023, Oregon Consensus facilitated an informal work group to explore the impacts and benefits of offshore wind energy along Oregon's coast and produced a set of recommendations, "Oregon Floating Offshore Wind Energy Roadmap with Exit Ramps: Considerations," about how Oregon might incorporate offshore wind energy with the environment, existing ocean uses, cultures, and communities (10). This effort led to the passage of House Bill 4080 in 2024 directing the Department of Land Conservation and Development to develop an offshore wind roadmap Oregon (11).

In 2024, the United States Department of Interior proposed two areas off the Oregon coast for offshore wind energy development along with auction details and lease terms (12). DLCD's Oregon Coastal Management Program conducted its Federal Consistency review of the proposed leasing action and determined it was consistent with the state's enforceable policies, provided multiple conditions were met related to species and habitat protection, ongoing state involvement in offshore surveys, protection of archaeological resources, and coordination with affected ocean resources users (13).

Ocean Policy Advisory Council Charge

The Ocean Policy Advisory Council (OPAC) is legislatively mandated to advise the Governor, state agencies, and local governments on ocean policy and resource management matters (ORS 196.433). On June 14, 2024, it charged its Scientific and Technical Advisory Committee (STAC) to "… synthesize existing relevant research, identify knowledge gaps, and prioritize research needs in a synthesis to inform adaptive management need for research and monitoring (specific to the BOEM offshore wind authorization process) STAC is also directed to explore the development of an independent technical

committee to provide perspective on Oregon or regional research needs and recommendation." The report was to be delivered in June 2025.

However, in September 2024, BOEM postponed the lease auction due to insufficient bidder interest. Simultaneously, the Oregon Governor withdrew the state from BOEM's Intergovernmental Task Force, citing the need to complete its own offshore wind roadmap. Development of Oregon's Offshore Wind Energy Roadmap commenced in November 2024. While it was expected to be delivered by June 2025, the timeline was extended by a year and is on track to be completed by June 2026 (14).

Considering these changes, OPAC revised the charge to STAC at its meeting on May 7, 2025. The charge shifted from addressing BOEM's Oregon offshore wind authorization process to focusing on needs related to Oregon's Offshore Wind Energy Roadmap process. Additionally, California was already moving forward with development of a regional offshore wind research entity to inform their immediate needs related to adaptive management and monitoring. The Humboldt and Morro Bay offshore wind leases had been auctioned off in 2022, and developers were already working on their construction and operation plans. OPAC dropped the portion of the charge "…to explore the development of an independent technical committee…" OPAC's revised charged directed STAC to focus on developing an offshore wind energy "research prioritization framework" to prioritize key knowledge gaps for further research or monitoring and summarizing regionally relevant research to identify current knowledge gaps. It also requested that STAC crosswalk its identified knowledge gaps with those identified by the offshore wind Roadmap work group(s) and then apply the "research prioritization framework" to identify priority research and monitoring needs for Oregon. The due date for the report was also extended to winter 2026.

STAC Approach to Developing this Report

Over the summer the STAC formed four work groups to 1) develop the research prioritization framework, summarize regionally relevant research and identify knowledge gaps in the domains of 2) social science and 3) natural science, and 4) identify new research, especially empirical studies from floating offshore wind facilities or other relevant settings.

The breadth of expertise needed to address the full range of relevant topics exceeded the scope of expertise of STAC members. We decided to focus on natural and social science topics that were not already addressed in the Seventh Oregon Climate Assessment chapter, Floating Offshore Wind Energy Infrastructure (15) and that also aligned with each STAC member's area of expertise. We were also able to recruit an ad hoc expert to address floating offshore wind engineering knowledge gaps relevant to deep water deployments off the Oregon coast.

For additional relevant scientific and technical information related to floating offshore wind in Oregon, we encourage readers to consult the Seventh Oregon Climate Assessment chapter focused on floating offshore wind. It includes a policy overview, detailed descriptions of floating offshore wind energy infrastructure, transmission, and ports, and sections on how the infrastructure interacts with the environment. Specific environmental topics addressed are wind-driven upwelling, underwater sound,

secondary entanglement hazards, electromagnetic fields, and submerged cultural and archaeological resources. It concludes with information on societal responses and adaptive management principles.

This report does not include a compilation or list of Oregon specific research questions from the Offshore Wind Roadmap, OPAC working group, informal roadmap report or other relevant sources such as public comments. It does include a summary of the research needs identified in this report and compiled in the Executive Summary. This report did not apply the research prioritization framework to a full set of research questions or needs aside from the two worked examples. The STAC recommends that OPAC consider forming a joint working group with a subset of the members from the STAC, Roadmap Roundtable, and OPAC Working Group to identify, refine, and compile a more comprehensive list. That list could then be used by the STAC to apply the research prioritization framework and generate a report on the outcome of the analysis.

Research Prioritization Framework

Will White, Veronica Dujon, and William Jaeger

Given limited time and resources, it is important to have a transparent framework that will guide decisions for funding research on the environmental and ecological impacts and engineering of floating offshore wind. We propose a framework that builds on one developed to prioritize research on ecological climate resilience in marine protected areas (16). This approach is to rank research priorities or questions following a two-step process that evaluates their relevance to Oregon research needs, their feasibility/likelihood of success, the level of effort required, and the likely impact of the information gained.

For any proposed research project, the STAC (or other designated scientific and technical entity) will first score the proposed work for relevance and feasibility (Step 1). They will then categorize the proposed work in a priority matrix (Step 2 below) based on their expert assessment. The purpose of the priority matrix is to identify scientific investigations that can be expected to yield high-value information that fills key information gaps, while balancing the difficulty, cost, or likelihood of success. Only projects that are scored in the 'green' areas of the priority matrix and above the median score from Step 1 will be recommended by STAC. Below we provide worked examples of how this framework could be applied to hypothetical proposed research questions.

Step 1: Score research on relevance & feasibility

Scores are 0 (does not meet), 1 (meets somewhat), 2 (fully meets)

- Applicability to offshore wind projects
- Importance to decision making by the relevant agencies (e.g., Oregon Department of Fish and Wildlife, Oregon Department of Energy)
- Feasibility to complete
- Addresses gaps in knowledge
- Addresses topics with a plausible hypothesis but limited evidence
- Likelihood of producing information that reduces uncertainty

- Addresses questions on a relevant time scale
- Addresses topics specific to Oregon
- Can be completed with existing data, or will collect all necessary data

Step 2: Evaluate priority

Experts will place proposed research into a matrix (Figure 1) that evaluates the likely information gained ('impact') given the level of effort or funding ('effort').

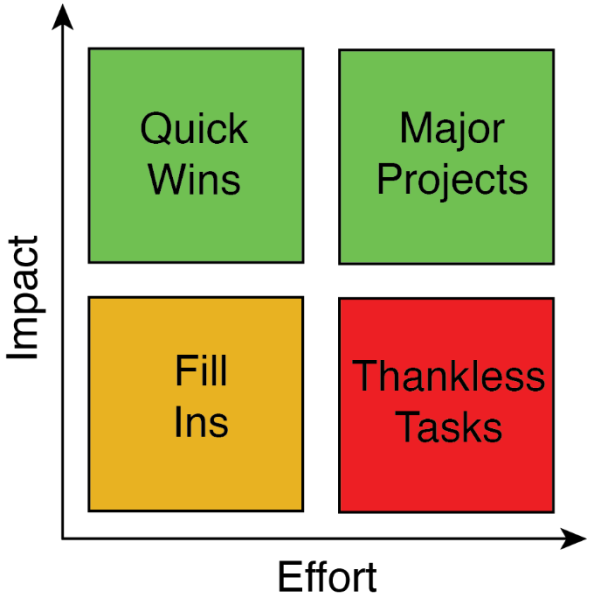


Figure 1. Priority matrix in which proposed projects can be evaluated based on the level of effort required, and the impact of the information produced by the work.

Examples

Two potential research questions (RQs) that could be prioritized in this framework are:

1. Will floating offshore wind infrastructure cause a reduction or relocation of primary productivity because of interference with wind-driven upwelling circulation?
2. Will electromagnetic fields generated by offshore wind infrastructure or transmission cables affect navigation, orientation, or prey detection of marine species, particularly anadramous species in or near estuaries?

Step 1 Scoring

Scores are 0 (does not meet), 1 (meets somewhat), 2 (fully meets)

Scoring question	**RQ1**	**RQ2**	**Comments**
Applicability to offshore wind projects	2	2	

Scoring question	RQ1	RQ2	Comments
Importance to decision making by ODFW	1	1	Unclear how this information would influence state-level regulatory processes
Feasibility to complete	2	1	RQ1 could be simulated with existing biophysical models; RQ2 would require experimental deployments in lab and field.
Addresses gaps in knowledge	2	2	
Addresses topics with a plausible hypothesis but limited evidence	2	1	There is already a body of literature on EMF effects on fish, but it would be important to assess the specific proposed cable designs on species relevant to Oregon.
Likelihood of producing information that reduces uncertainty	2	1	It is uncertain whether lab or field investigations on EMF effects could scale up to the magnitude or spatial scale of proposed developments, or whether it is possible to assess effects on the full life cycle of species (e.g., anadramous salmonids).
Addresses questions on a relevant time scale	2	1	It may be impossible to fully assess RQ2 until full-scale infrastructure is in place.
Addresses topics specific to Oregon	2	2	
Can be completed with existing data, or will collect all necessary data	2	2	
Total	17	13	

Step 2 Scoring

RQ1 could be addressed on a short time scale using simulations with existing, validated biophysical models. For example, this type of analysis has already been conducted for California waters (17). The results would be important in assessing the overall ecosystem impacts of floating offshore wind, as wind-driven upwelling is the primary driver of ecosystem productivity on the Oregon continental shelf. This would classify the project as a 'Quick Win'.

RQ2 has already been addressed in a variety of laboratory and field studies on various species (18) but the state of knowledge in the field points to the need to evaluate the specific proposed cable layout

design and the species of particular concern in Oregon (15). This is because the magnitude and location in the water column of induced magnetic fields depends heavily on how the cables will be deployed in the array, and because species differ substantially in their sensitivity to those fields. Addressing this question would produce valuable Oregon-specific knowledge but would require challenging experimental work to provide answers at ecologically relevant spatial and temporal scales. Hence the project would be classified as a 'Major Project'.

Had we evaluated a full suite of potential projects in this example, the next step would be to identify projects in the 'Quick Win' and 'Major Project' categories that also scored above the median in Step 1. These projects would be recommended as the highest priority research projects to pursue.

Regionally Relevant Knowledge & Gaps

Natural Science

Ocean Ecosystem: Winds, Upwelling, Circulation, and Lower Trophic Levels

James Lerczak

Various research groups have utilized an atmosphere/ocean/ecological modeling framework to assess the impacts of offshore wind turbines on wind circulation and turbulence in the atmosphere, circulation of the coastal ocean in the vicinity of wind energy sites, as well as impacts on nutrients and lower trophic level ecosystem dynamics (see for example, Farr et al. (19)). Some recent modeling studies have focused on European sites such as in the North Sea (for example, Daewel et al. (20)). Whereas others have focused on impacts to the U.S. West coast California Current Large Marine Ecosystem (17,21,22) (CCLME). As part of the 7th Oregon Climate Assessment, variability in wind forcing, coastal topography, and resultant variability in upwelling along the Oregon coast is described and potential impacts to upwelling circulation from offshore floating wind energy farms are outlined (15). Further, the report emphasizes the challenges in detecting impacts on upwelling and the coastal ecosystem by wind farms and distinguishing them from natural variability and changes associated with long-term climate change. More recent, unpublished studies, have advanced the modeling and quantification of impacts of floating offshore wind sites on upwelling and ecosystems in the CCLME system (for example, see the National Academy of Science sponsored meeting on Impacts on Shipping and Commercial, Tribal, and Recreational Fisheries from Development of Renewable Energy on the West Coast (23)).

These studies have high relevance to assessing impacts on circulation and ecosystems at potential floating offshore wind energy sites off Oregon with some direct assessment of impacts at potential Oregon sites (for example, offshore of Coos Bay, OR). However, the emphasis of much of current work has focused on potential California offshore wind energy sites. U.S. West coast modeling has utilized models with horizontal resolution of >1 km. Thus, wind turbines and their resultant impacts on wind circulation and turbulence must be parameterized, and important physical and biological processes of upwelling systems may not be effectively resolved (for example, the physics and biological productivity in regions with strong fronts).

Impacts on upwelling circulation by floating offshore wind sites within models have been quantified by the coastal upwelling transport index (CUTI). These impacts can be positive or negative and are limited to a region where the wind field is directly impacted (~10s km downwind of the wind farm site). Impacts on nutrient supply have been quantified by the biological effective upwelling transport index (BEUTI). Similar to CUTI, impacts on BEUTI were limited to regions where wind fields are directly modified by the floating offshore wind energy site.

Within the modeling studies noted above, impacts on phytoplankton and zooplankton concentrations were as large as ~20% relative to baseline studies. These impacts have broader spatial scales compared to those on CUTI and BEUTI, due to both local impacts of nutrient supply and by larger scale transport of plankton by the coastal circulation.

There are a host of historical and ongoing modeling studies of the CCLME system along the U.S. West Coast, including Oregon, as well as impacts on this system due to climate change (22,24,25). Studies specific to impacts on the Oregon system due to floating offshore wind energy devices are limited. The recent studies on wind energy sites along the U.S. West coast impacts on winds, upwelling, nutrients, and lower trophic levels represent the state-of-the-art approach and provide a sound framework for assessing impacts of Oregon floating offshore wind energy sites on coastal circulation and lower trophic level ecosystems. However, we identify **some knowledge and assessment gaps** that should be considered:

- Adequacy of **model resolution and physics parameterizations** need to be assessed.
    - Is the ~3 km horizontal resolution used in recent studies sufficient to resolve the impacts on relevant and important physical and biological processes in the upwelling system (e.g., the physics and productivity in regions of strong fronts)?
    - Is the parameterization of wind turbines and resultant impacts on wind momentum and turbulence accurate and sufficient?
- **Development of robust observational and modeling methods and strategies** is needed to directly measure and distinguish wind energy farm impacts from natural variability and long-term climate change.
- **Impacts on higher trophic level species** (e.g., fish) and important biogeochemical tracers (e.g., dissolved oxygen) need to be assessed.

Offshore wind energy site impacts have focused on proposed California sites, with limited assessment of Oregon sites. This represents a significant gap in **direct Oregon offshore wind impacts assessment**, given Oregon's unique wind field and topographically driven circulation relative to California.

Marine Mammals & Seabirds

Jan Hodder

Marine Mammals

Robust information on cetacean abundance including “hot” and “cold” distribution spots in Oregon waters are expected to be available soon from three projects, still in progress, conducted by members of the Marine Mammal Institute at OSU:

1. HALO: Holistic Assessment of Living marine resources off Oregon (26)
2. MOSAIC: Marine Offshore Species Assessments to Inform Clean Energy (27)
3. OPAL: Overlap Predictions About Large whales (28)

These projects will provide several years of observations from April to October off Oregon and Northern California (29). Winter abundances and hot/cold spots are less well documented other than for the nearshore gray whale migration.

Threats to cetaceans from floating offshore wind activities include vessel strikes, noise production and entanglement. Noise type and levels are dependent on the specific design of floating offshore wind structures (30). Primary entanglement where an animal would be directly impacted by the floating offshore wind structure is unlikely but secondary entanglement, where debris such as ghost fishing gear becomes caught on a structure and subsequently catches an animal, is a possibility for both cetaceans and pelagic pinnipeds. The potential of secondary entanglement may become a more significant concern if fishing is permitted within floating offshore wind sites. NOAA does not anticipate and has not authorized—or proposed to authorize—death or serious injury of cetaceans for any wind-related action. The majority of take authorized for offshore wind activities has been for Level B harassment, which is a disruption of behavioral patterns or a temporary reduction in hearing sensitivity. These impacts are expected to be relatively short in duration (31).

The distribution of pinnipeds in Oregon is well known for those that haul-out on land in Oregon. Less well known is the distribution of the more pelagic Northern and Guadeloupe fur seals which do not come to land in the state and are the most likely species to be impacted by secondary entanglement. The design of floating offshore wind structures may impact the likelihood that pinnipeds could use them as haul-out opportunities.

Seabirds

An understanding of the Oregon offshore abundance and distribution of seabirds has increased because of surveys conducted in spring (May/June) of 2014, 2015, and 2016 (32) and six, two-week surveys conducted during April – October 2023 and 2024 by OSU’s Marine Offshore Species Assessments to Inform Clean Energy (MOSAIC) project (27). Abundance and distribution heat maps for eleven marine bird species are included in Orban et al. (32). The data analysis from the MOSAIC surveys is still in progress but bird distribution and hot/cold spots for twenty-two species are being developed (pers comm. Rachel Orben, OSU). These data, however, also only covers the April - October period. There are very few data on the presence and distribution of seabirds offshore in Oregon in winter. Other gaps include information on distribution and abundance of species that migrate through Oregon’s ocean such as loons and phalaropes, those that breed elsewhere but use Oregon's ocean in their non breeding season such as Cassin’s Auklets, jaegers, and Endangered Species Act listed Short-Tailed Albatross, and

the travel corridors and feeding areas of Leach's Storm Petrels during the breeding season that feed over 100 km offshore bringing them into the floating offshore wind space.

An understanding of seabird flight heights and structure attraction and avoidance is needed to estimate collision vulnerability to offshore wind energy development. Modelling seabird collision vulnerability by Wallach et al. (33) included data from Oregon. Of the forty-four types of seabirds examined most are predicted to remain within 10 meters of the sea surface. Only about 8% of the seabird community, including sooty shearwater (a dynamic soaring species) and various gull species, are likely to be present at heights exceeding 10 meters above the sea surface where interference with rotor blades might occur. Recent work in Scotland looking at larid (gulls and kittiwakes) flight vulnerability **within** a floating offshore wind array indicated a strong avoidance response but cautioned that the pattern may breakdown in situations of strong turbine-induced turbulence and high wind speeds (34). Gaps in understanding collision vulnerability include an understanding of finer detail of within-array wind dynamics and for effects on species that are more active during twilight and darkness such as Rhinoceros and Cassin's Auklets. There is a potential for seabird distributions to be impacted by floating offshore wind structures if species are attracted to roost or to feed in the area if a fish "reef" effect is present (see Fishes and Fish Habitat section below). There is considerable research about the impacts of lighted structures on seabirds. The U.S. Fish and Wildlife Service maintains a collection of information sources focusing on this topic including mitigation measures for the floating offshore wind industry (35).

With respect to more nearshore impacts of floating offshore wind development such as cable routes and landing sites there is a robust understanding of the distribution and abundance of the breeding seabird community (36) and of snowy plover nesting sites (37).

Additional gaps

The impact of floating offshore wind on food sources for these top predators is not possible to assess currently. Changes to the food web could be positive or negative depending on multiple factors including physical oceanography effects, fisheries exclusion effects, or the artificial reef potential of floating offshore wind structures.

Fishes and Fish Habitat

Selina Heppell

While the effects of offshore energy development on fishes and invertebrates have been studied for several decades, particularly the influence of support structures on fish habitat (38–40), the effects of floating offshore wind devices on fishes are poorly studied due to its relatively new development. Installation, operation, and maintenance of floating offshore wind can impact fishes in a number of different ways, depending on fish behavior and ecology, trophic level, habitat use, sensitivity to pollutants, commercial value, and other factors (18,41). Not all effects are expected to be negative; for example, the structures may serve as fish habitat and accumulate seaweeds and invertebrates that contribute to the nearshore food chain, as documented for offshore oil platforms in California (42). Scale is also important to consider, as many fishes in Oregon have broad geographic ranges, but local changes may be apparent in the number and diversity of fish species in and around the farms. The value of fish

resources in Oregon is high, and a precautionary approach based on well-designed studies is important to anticipate impacts to fish and invertebrates and their habitats.

Peer-reviewed studies of floating offshore wind impacts are growing, but the oldest operational facilities have been in place for less than a decade. Recent literature that reviews field and laboratory studies of the effects of offshore wind development on fishes includes a special issue of the journal Oceanography (43). Reports from 11 field studies of floating offshore wind (Hywind farms in Scotland and Norway) included six of which evaluated fish communities at the sites relative to reference areas or distances from the sites (30). Five of the six studies found no significant differences in fish or plankton relative to distance from the farm, while limited environmental DNA sampling in a report from Scotland found evidence of higher concentrations of baitfish (sprat and herring) within the farm site compared to reference sites. Research needs identified by Gill et al. (44) are similar to those identified by the Oregon Department of Fish and Wildlife and the Pacific Fisheries Management Council (PFMC), who have considered effects and uncertainties of floating offshore wind on Oregon's coastal fish and invertebrate species.

As the most valuable fisheries in the state, salmon, Dungeness crab, and Pacific whiting are species of concern for potential floating offshore wind development. Habitat impacts that affect groundfish (sablefish, flatfish (including halibut), rockfish and lingcod and the potential for structures to attract pelagic species such as mackerel and albacore tuna should also be evaluated. Critical uncertainties to study in Oregon include:

- the attraction of local species to floating structures and anchors, which may serve as artificial reefs with positive or negative effects
- measurable effects of floating offshore wind on the migration behavior of salmonids and crab due to noise, electromagnetic fields, or the structures themselves
- short and long-term impacts of installation on fish habitat
- effects of planned mitigation strategies to reduce biofouling of structures and cables (chemical or mechanical)
- scale of impact – the relevance of local effects of floating offshore wind infrastructure at larger spatial or population scales, and cumulative impacts on focal species

The siting of the wind infrastructure requires local expertise to identify potential impacts and minimize harm to marine resources. Habitat Areas of Particular Concern (HAPCs) identified by NOAA and PFMC need to be avoided, including critical estuarine habitats that will be impacted by onshore infrastructure and power transmission. Installation impacts on fish communities and habitat may be transient (e.g., noise (45)) or long-lasting (e.g., disruption of soft sediments or rocky reef habitats), but may have a small footprint, particularly if anchoring devices are small and well-secured.

The shape and size of structures introduced into the marine environment, particularly in locations where physical structure is absent, will affect how those structures act as artificial reefs and alter fish behavior and marine communities. There is a growing body of literature on the costs and benefits to fishes of manmade structures in the marine environment (41), including stationary (fixed bottom) offshore wind farms (39,46). The fish aggregation attraction of floating objects is well-known (47), and

pelagic stages of Oregon groundfish are attracted to certain devices in the upper water column (48), but the potential for attraction of floating offshore wind platforms for pelagic fishes in Oregon has not been evaluated.

The effects of electromagnetic fields on fishes have been studied in some species and are generally believed to be highly localized and minimal (18). However, Klimley et al. (49) specifically called for more research on the effects of subsea cables on migratory species that use the Earth's magnetic field for homing, including salmonids. Additional research and monitoring of salmon near floating offshore wind infrastructure and cables is likely needed to identify any substantial change in behavior or distribution of out-migrating juveniles and, importantly, returning adults.

It will be important to learn from impact monitoring studies in Northern California following the construction of floating offshore wind projects, as that region has significant overlap with Oregon in the species and distribution of nearshore fishes and invertebrates.

Altered Physical and Chemical Conditions

Elise Granek

There is a body of literature on physical and chemical effects of floating offshore wind, however many of these studies are place-based and are dependent on both the local conditions and the characteristics of a particular floating offshore wind array. Therefore, to determine the effects of floating offshore wind developments in the region, a number of variables need to be considered.

Physical and chemical components

The types and quantities of plastic, metal, etc. used in the manufacturing and installation of the structures will dictate what materials may be generated and released during the infrastructure installation and over time through weathering. Chemical agents applied to the structures during manufacturing or utilized in the hydraulics of the structures vary across manufacturers. Therefore, the chemicals utilized and quantities that might be released during installation and weathering of the infrastructure may vary. Previous studies on structures from relevant manufacturers can be used to assess potential effects.

For example: seawater corrosion can release metals and anti-corrosion organic coatings can release organic matter (50,51). Previous research has measured the metal body burden of mussels colonizing wind turbines (52) and trace elements released from wind turbines (53).

Wind farms can entrain and release ocean microplastics (54) and microplastics can be released from turbine blade erosion (55–57). Monitoring microplastic releases in the regional environment may be informative.

Sound

Floating offshore wind structures can generate sound that may affect some marine animals. The frequency, duration, and types of sound generated will vary depending on environmental conditions, such as wind speed. It is notable that installation of floating offshore wind produces less sound than

fixed. There is limited data on the effects of floating offshore wind operational sounds on marine and avian species, though some research has been conducted on the effects on fisheries and wildlife (58–63).

Light

The inclusion of lighting on floating offshore wind structures is important for aviation (red) and marine navigation safety (yellow). Aircraft detection lighting systems can mitigate aviation lighting. Studies on the effects of structure lighting on marine and avian species are limited, with some previous research on light pollution effects on wildlife and humans (64–66).

Electromagnetic fields

Many marine species respond to and can be affected by electromagnetic fields, e.g., fish behavior. Previous studies indicate no evidence of harm from electromagnetic fields at existing densities of high voltage subsea cables. At higher cable densities, including inter-array cables connecting individual turbines suspended in the water column that may be part of a field of floating offshore wind structures, migratory species of concern should be monitored (15).

Scale of impact

Changes in physical and chemical conditions around floating offshore wind sites may affect species living adjacent to the structures. Monitoring for larger scale effects that cannot be assessed in advance through modeling or smaller scale studies is warranted.

Social Science

Oregon Coast Fishing Community

Kelsey Emard

Studies of the impacts of offshore wind on fisheries globally have not accumulated a sufficient base of evidence to confirm impacts. A recent systematic literature review of 1,268 documents found that there was insufficient direct evidence to determine impacts, owing to inconclusive results and inconsistent effects (30). While the study identified indirect impacts to fisheries, such as changes in the benthic ecosystem, those indirect impacts have not been studied long enough to determine the final relationship with fish populations and fishing livelihoods. Despite the insufficient evidence base, early studies in Oregon provide preliminary evidence that offshore wind could impact fisheries and fishing livelihoods in important ways. Warlick et al. (67) analyzed the exposure, adaptive capacity, and sensitivity of groundfish (Dover sole, Thornyheads, and Sablefish) trawling fisheries to the proposed offshore wind areas near Coos Bay and Brookings and found comparatively high levels of risk compared to proposed offshore wind areas in California.

The fishing community has voiced concerns regarding the impacts of offshore wind on fish and shellfish behavior and movement, habitat provisioning for commercial species, and their ability to use their current fishing practices (68). In fact, of 1,718 public comments on BOEM's offshore wind proposals for

Coos Bay and Brookings, approximately half of the comments that were opposed to the proposal cited concerns for local fishing (69). While most of the concerns are ecological and biological in nature and will be addressed through relevant environmental assessment and scientific research, there is also a need to understand the fishing industry's resilience to changes in the fishery, including changes wrought by offshore wind. Accordingly, a key research gap pertains to our limited understanding of the economic, social, and cultural impacts if the fishery were to experience population declines, behavior changes, or spatial shifts, or if fishers were required to fish using new methods.

While few studies have examined these questions in relation to offshore wind, we can draw from the work on the resiliency of Oregon's fishing community to other ecological and economic pressures. Conway and Cramer (70) draw on two decades of scholarship with Oregon's coastal communities and document myriad ways that Oregon fishing families and communities adapt to changes and demonstrate cultural and community resilience. Yet, in another study with the same authors, Haugen et al. (71) found that when compounding factors impact Oregon coast fishing communities, such as climate change and economic shifts simultaneously, the resilience and adaptive capacity of the fishing industry and community become notably strained. This suggests that offshore wind impacts, if compounded with other drivers of change, could test the resiliency of the fishing community. There is much more that should be investigated to better understand how Oregon's fishing industry and communities would respond to offshore wind impacts, including what alternative livelihoods, fishing methods, or other economic strategies they would employ to adapt, as well as the cultural and social loss that may accompany these changes.

Oregon's fishing community also raised concerns about a lack of meaningful engagement in the process that would determine offshore wind project siting and parameters (68). Thus, a second key research gap is our lack of evidence regarding what processes and plans the fishing community would find acceptable as meaningful engagement. While we have limited research in the context of Oregon, we can learn from studies done in other regions. For example, a study of offshore wind projects and fisheries in the UK and the Eastern United States identified the following as key to meaningful offshore wind planning processes and outcomes for communities: 1) financial assistance provided in the forms of community funds and matching grants to support fisheries in the wake of offshore wind implementation; 2) the provision of alternative employment opportunities related to the wind energy operations; 3) collaborative negotiation of alternative livelihoods, as being on the sea can hold meaning that goes beyond simply economic; and 4) engagement that is done in person, early, and throughout the process (72,73). These findings need to be evaluated in the specific context of Oregon to know if they remain consistent here.

A final research gap is our limited understanding of the trusted knowledge sources and information pathways for Oregon's fishing community that would allow for knowledge sharing and dialogue on offshore wind in the future. While there are studies of fishers' knowledge sources (74), the particular networks of trusted information for Oregon fishing communities who would be impacted by the proposed offshore wind projects have not been evaluated and is highly pertinent to future project development.

Tribal Consultation and Collaboration

Jenna Tilt

Tribal consultation and engagement are fundamentally different from community engagement. "From a Tribal perspective, the goal of Tribal consultation is to achieve decision making through consensus. Meaningful consultation using a consensus-seeking decision-making approach acknowledges that Tribal Governments are sovereign governments, not stakeholders" (75). Every Tribe has a different process for Tribal consultation; however, all Tribes have a formal government-to-government (G2G) consultation process that is situated in a broader consultation process. Overly focusing only on the formal G2G does not provide for the adequate time and space for the development of a meaningful and productive process. Thus, the Tribal Caucus of the West Coast Ocean Alliance (WCOA) defines Tribal consultation as "the overall process of sharing information, coordination, engagement, and dialogue that occurs between Tribal Governments and governmental or administrative entities within the United States" (75). It is the job of agencies to educate themselves regarding Tribal communication and consultation protocols, not the Tribe. Being highly knowledgeable of specific Tribal history and treaty rights is critical to understanding any proposed actions and impacts to a Tribe. Taking the time to continue to educate new staff about Tribal governance and cultural world views can be extremely frustrating and wasteful of Tribal resources. To assist in this learning process, WCOA provides five essential guidelines to a meaningful Tribal consultation (75). These guidelines are summarized below.

1. **Engaging in early and frequent communication with Tribal Governments**. Agencies should reach out as early as possible in the process (e.g., proposal submission, rule change, research question). Communication should not be just a "Dear Tribal Leader" letter/email but include follow up in-person conversations and phone calls. Notifying Tribes after a process has begun (e.g., engaging first with other communities, hiring consultants, initiating planning or initiating a scope of work) leaves the impression that Tribal input does not matter and they have no impact on the action or decision. Tribal governments do not like to be asked to change their decision-making timeframes to fit within agency timeframes; agencies should recognize that 60- or 90-day comment periods are often inconsistent with Tribal government time frames. It is recommended that agencies initiate consulting with Tribes before non-Tribal public comment periods open.
2. **Ensuring the presence of appropriate representatives for a given stage of the process**. While Tribal Council is the official point of contact for G2G consultation, the consultation process may involve multiple Tribal roles from Tribal technical expertise, alternative points of contact, and others. Agencies should coordinate with the Tribal liaison within their own agency or meet with Tribal technical staff to identify the most appropriate Tribal representative to initiate early conversations. Tribes may not immediately respond to request for consultation given limited capacity or other issues. It is up to the agency to continue to reach out in multiple modalities and provide assistance to overcome capacity issues (e.g., summary documents, travel stipends).
3. **Having an understanding of and respect for Tribal decision-making processes**. Tribal decision-making processes are unique in their structure and represent unique cultural worldviews. Agencies should become highly knowledgeable in how Tribal governance decisions are made in

order to establish effective communication channels and partnerships with Tribes. Communication with Tribal members and staff outside of formal G2G consultation meetings can facilitate understanding of the decision-making processes and issues at hand. However, this informal communication cannot be interpreted as formal G2G consultation.

4. **Adopting a consensus-seeking approach to Tribal consultation**. A consensus-seeking approach requires an understanding of the FPIC principles—governments should obtain free, prior, and informed consent (FIPC) from Tribes before enacting policies or actions that may affect their rights, lands, and resources (76). As such, it is the Tribal government that determines the impact of a proposed action will have, not the agency. Together, agencies and Tribes need to identify and establish the endpoint goal of G2G consultation and how to determine if Tribal needs are met.
5. **Ensuring a transparent and accountable process that provides clarity on agency decision making and the potential for Tribal Governments to affect the final decision**. Agencies need to understand their own consultation and communication rules and reconcile these with those of Tribal governments. Agencies need to maintain clear and confidential data management agreements with Tribes and adopt transparent consultation protocols such as timely development and distribution of meeting summaries after approved by Tribal Governments. These agreements and policies will help with continuity in the consultation process, especially with changes in leadership and staff.

Literature Findings related to offshore wind development and Tribal engagement

- Energy justice involves three tenets of justice: 1) distributive justice—how costs and benefits of energy transition to offshore wind are distributed throughout geographic and interest communities; 2) procedural justice—how different groups—Indigenous and Non-Indigenous are included in the decision-making process; and 3) Recognition justice: acknowledgement of the disproportional impacts of energy transitions (77). More research is needed in identifying how these three tenets of justice are uniquely conceptualized by Oregon Tribes for offshore wind energy projects and how the state can ensure just and equitable outcomes (78,79).
- Tribes are more likely to oppose offshore wind if they cannot negotiate shared power with the federal government through a co-management agreement or similar approaches (80–83). For example, North Coast California Tribes want to share ownership and control of the offshore wind development to promote their own economic development while stewarding their kinship with the ocean (84). Additionally, shared jurisdictional authority over, and Tribal management of, offshore renewable energy activities is supported by The National Congress of American Indians (83).
- Tribal-led relational sovereignty could inform and guide negotiations between Tribes and governments in offshore spaces. This approach focuses on alternative strategies for shared decision-making centered on relationships between sovereign governments and wind leaseholders and developers. These partnerships are essential to build Tribal capacities and priorities for co-ownership, as well as scientific research and monitoring of wind development activities (85). Essential to relational sovereignty is the concept of reciprocity and

interconnectedness between humans and nonhumans, particularly the ocean and species that rely on its health (84).

- Indigenous concerns have been co-opted through formal and legal decision-making processes in the U.S. (86). In a review of public comments for the Cape Wind and Vineyard projects, a majority of public comments by non-Indigenous stakeholders misrepresented views of and interests of the Tribes to promote their own positions and interests. More research is needed to understand how non-Tribal public engagement could be misrepresenting Tribal positions and interests.

Potential Research Directions

- How are the three key tenets of justice (e.g., distributive, procedural, and recognition) are conceptualized by Oregon Tribes for offshore wind energy projects and how can the state ensure just and equitable outcomes?
- How could state agency consultation and communication practices and protocols with Tribal governments better incorporate the WCOA five essential guidelines?
- What are the benefits and challenges to developing a Tribal-led relational sovereignty for offshore wind in Oregon?
- How can state agencies ensure that Tribal interests and positions are not being misrepresented by non-Tribal members in state-led community engagement efforts?

Economic Impacts on Fisheries

David Kling

Offshore wind infrastructure development may affect both recreational and commercial fisheries in Oregon for a variety of reasons, including spatial overlap with fishing areas, navigation channels, and changes to fishing ports. Potential impacts may occur as soon as construction commences on offshore wind infrastructure and continue through the operational life of an installation, with varying effects over time (87). Not all impacts will necessarily be negative. For example, areas of the ocean closed to fishing may create a positive marine reserve effect, eventually leading to higher catch rates in areas open to fishing.

There is a very large economic literature on the economic effects of marine reserves on commercial fisheries, which has produced a range of estimates regarding the impact of reserves on fisheries both before (including preemptive fishing), during, and in some cases after a reserve has been removed. Offshore wind, and in particular floating offshore wind that may eventually be built off the coast of Oregon may share some similarities to marine reserves in terms of the impacts on commercial fisheries, particularly during construction. However, the effective footprint of floating offshore wind once it is in place and operating will be determined by regulations, interactions with other non-fishery factors (e.g., protected species), and technical and preference characteristics of the fisheries themselves. For example, all else being equal trawl vessels may be more limited by floating offshore wind due to the logistics of deploying trawl gear compared to other fisheries(88).

For offshore wind development off of Oregon, Feist et al. (89) provide a sophisticated analysis of the overlap of viable offshore wind zones and recent areas of fishing activity for several fisheries, drawing on the main regulatory data sets (e.g., fish tickets and vessel monitoring system data). The authors examine trade-offs for offshore wind siting in terms of the levelized cost of energy (defined in the section below) from the installations versus fishery "exposure" or overlap with fishery revenue-weighted areas of the ocean. Oregon's exposure by this metric appears to be modest, with the at-sea hake and albacore fisheries having the greatest overlap, particularly under ambitious mid-century targets for power generation.

While the Feist et al. analysis (89) is an important step toward quantifying potential economic effects of floating offshore wind on Oregon fisheries, it falls short of the bar for ex ante economic analysis of this floating offshore wind for at least two reasons. First, while informative, exposure is not a sufficient measure of because it does not correspond to economic profit from fishing; instead, it is essentially a quantification of past fishing revenue. Second, this analysis, like similar work done in support of offshore wind planning(88) does not account for multiple margins of adjustment fleets may exhibit, including: anticipatory fishing ahead of offshore wind construction, within-season spatial or temporal adjustment, home and landing port choice, and across-season portfolio adjustment (90,91) This is a missed opportunity because the fisheries potentially affected are all data-rich, and in principle analyses that would allow for these margins to be analyzed econometrically. A broad knowledge gap category for floating offshore wind in Oregon is therefore the expected cost of development for Oregon fisheries using contemporary empirical methods in economics.

A second knowledge gap area is the potential link between reserve effects of floating offshore wind and fisheries. Predicting the potential for a reserve effect ahead of floating offshore wind development which would require original research connecting econometric fishery models with spatial fish population models (89,92). Once the first floating offshore wind installation is built, it may be possible to use econometric methods to conduct an initial analysis of the impacts on affected fisheries, using data on fleet activity pre- and post-construction.

Fishing ports and onshore businesses like seafood processors would also more than likely be affected by floating offshore wind construction and maintenance. In one scenario, a marine terminal facility could be built in Coos Bay, with accompanying dredging of the navigation channel (93). This development would bring radical changes to the port and a great deal more economic activity overall. With respect to the local fishery, seafood processors, and support businesses, the effects are uncertain and depend on factors including level of disruption to port operations in different phases and effects on the local labor pool. For example, expansion of the Port of Coos Bay may bring in more workers into the area but may increase competition for vessel crew and onshore business labor.

Scenarios for port-level impacts may be explored through a few different methods prior to floating offshore wind construction. The draft of the Oregon Offshore Wind Energy Roadmap summarizes a few studies that have attempted to quantify economic impact and job creation from floating offshore wind (93). Economic impact analysis methods can be used to place bounds on potential changes in economic activity in other industries in what might be called "high disruption" and "low disruption" scenarios (94).

Another approach to placing bounds on the short-run economic effects of floating offshore wind development on Oregon fisheries would be to use existing fisheries data sets to construct a model of vessel-level port choice for landings. Similar to an empirical study aimed at predicting the effect of reduced access to some fishing areas, the approach would be to run empirical models that predict whether congestion or port disruptions (whether in Coos Bay or elsewhere) induce vessels to switch ports, and where they switch (95). This analysis would measure shifts in landings through the season and associated effects on vessel-level revenue (with an accompanying model of demand for landings). Because floating offshore wind development would likely lead to permanent shifts in the coastal economy, ex ante predictions for port choice and landings using this methodology would necessarily be short-run and need to be updated annually using new data after construction commences.

Economic Competitiveness of Offshore Wind Energy in Oregon

William Jaeger

A critical aspect of offshore wind development is the economics of energy development. Will these investments pay off for private investors? Are the benefits from both private and social perspectives significant in relation to the costs but also in relation to the ecological and social effects (both positive and negative).

The costs and returns to renewable energy technologies vary greatly across types of technologies and their location. The productivity and competitiveness of renewables have been declining at a fast pace in recent years, which is an encouraging sign for future investments. These trends are reflected in Table 1, reproduced below, from the International Renewable Energy Agency (IRENA), Renewable Power Generation Costs in 2024 (96). The Levelized Cost of Energy (LCOE) measures the lifetime costs of an energy technology divided by its energy production. This is done by calculating the present value of the total costs (which will occur in different time periods over the technology's lifetime, including capital costs, operating costs and maintenance costs), and dividing by a similarly discounted sum of energy production across all years. The result can be interpreted as an averaging of the costs per unit of energy over the lifespan of a given technology.

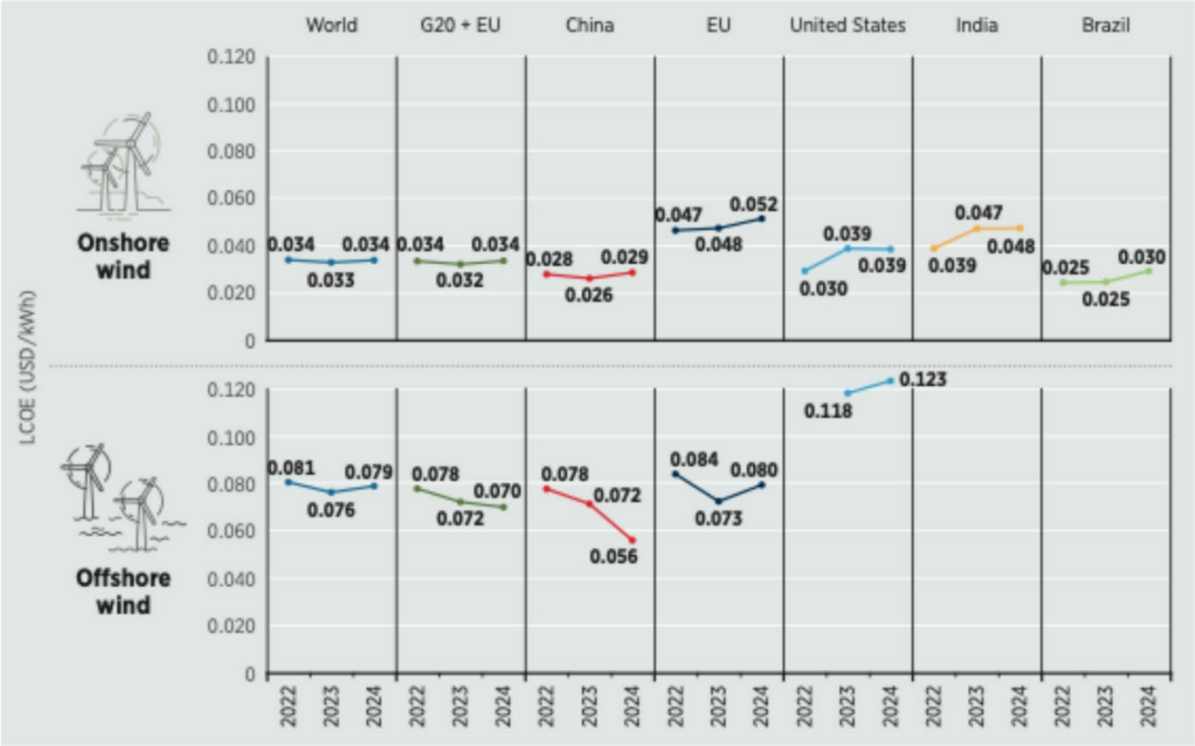
Conditions are changing quickly. Just a few years ago there were few commercially viable offshore wind facilities operating anywhere, now there are numerous. Especially for floating offshore wind turbines, there was a prototype in 2009 in Norway, with additional projects in Portugal, England, France, Japan, and the U.S. (97). However, there remains a lack of existing large-scale floating offshore wind arrays (89).

Table 1. Total installed cost, capacity factor and LCOE trends by technology, 2010 and 2024. Source: International Renewable Energy Agency (2025)

	Total installed costs (2024 USD/kW)			Capacity factor (%)			Levelised cost of electricity (2024 USD/kWh)		
	2010	2024	Percent change	2010	2024	Percent change	2010	2024	Percent change
Bioenergy	3 082	3 242	5%	72	73	1%	0.086	0.087	1%
Geothermal	3 083	4 015	30%	87	88	1%	0.055	0.060	9%
Hydropower	1 494	2 267	52%	44	48	9%	0.044	0.057	30%
Solar PV	5 283	691	-87%	15	17	13%	0.417	0.043	-90%
CSP	10 703	3 677	-66%	30	41	37%	0.402	0.092	-77%
Onshore wind	2 324	1 041	-55%	27	34	26%	0.113	0.034	-70%
Offshore wind	5 518	2 852	-48%	38	42	11%	0.208	0.079	-62%

Notes: CSP = concentrated solar power; kW = kilowatt; kWh = kilowatt hour; USD= United States dollars.

The LCOE comparing onshore and offshore wind globally and in different countries (96) (Figure 2) suggests offshore costs around $0.07 to $0.08 per KWH in many countries, but 50% higher in the U.S. for offshore wind. Given the limited number of operational ***floating*** offshore wind projects to date, this section has focused on fixed-bottom offshore wind developments.



Notes: EU = European Union; G20 = Group of 20; kWh = kilowatt hour; LCOE = levelised cost of electricity; USD = United States dollar.

Figure 2. Wind power weighted average LCOE: Global, G20, EU and selected countries, 2022-2024. Source: International Renewable Energy Agency (2025)

The projected scaling up of U.S. domestic floating offshore wind is growing at a slower pace than for fixed-bottom technologies, National Renewable Energy Laboratory (NREL; recently renamed the National Laboratory of the Rockies) reports a development pipeline of 25,116 MW as of May 2024, including lease areas and proposed lease areas (98). Projections regarding the pace of offshore wind development has become much more uncertain since the recent policy changes by the U.S. Administration.

Globally, floating offshore wind installations nearly doubled capacity in 2023, bringing the total to 231.4 MW (98). Given the nascent state of the floating offshore wind industry in the U.S., reliable cost estimates are few. A recent study focused on California estimated LCOE for floating offshore wind between 2019 and 2032 at commercial project scale (99). Their analysis is summarized in Figure 3. Given the date of the study (2020), the available estimates at that time would appear to be $0.10 to $0.11 per KWH range.

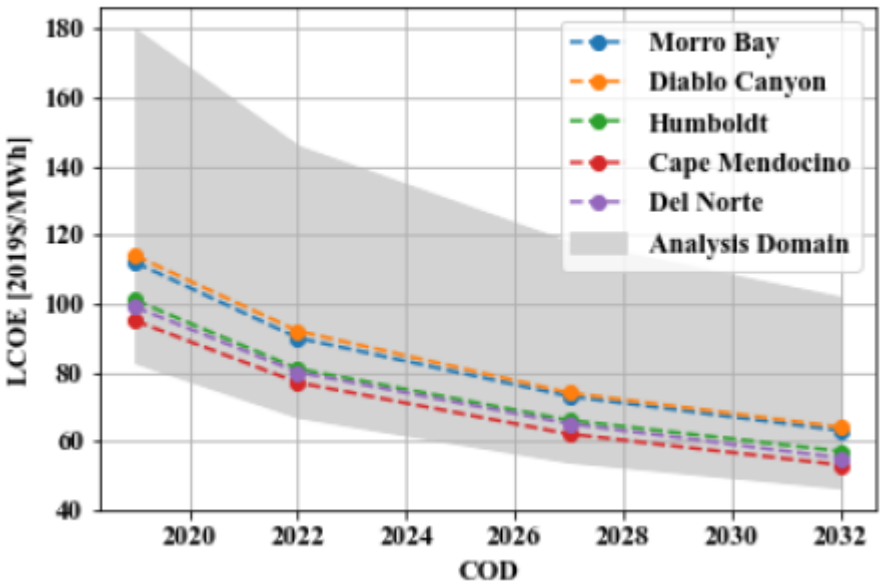


Figure 3. Estimated LCOE trajectory between 2019 and 2032 (COD). Source: Beiter et al. 2020

These costs and trends suggest that the following observations can be made:

- Costs and returns to renewable energy technologies vary by type and location
- Cost competitiveness of renewables has been declining at a fast pace since 2010
- Levelized costs of energy from offshore wind have declined 62% from 2010 to 2024
- Globally, offshore wind remains more than double the cost of onshore wind
- For the US, offshore wind costs are triple the cost of onshore wind

Engineering

Bryson Robertson

Globally, an estimated 60–80% of offshore wind resources are located in water depths exceeding 60 meters (100)—the conventional boundary between fixed-bottom and floating offshore wind turbines – thus requiring floating offshore wind turbines. Positively, over the past decade, the technical feasibility of floating offshore wind has been clearly demonstrated, with approximately 220 MW of cumulative installed capacity across Europe alone (including projects in Portugal, Norway, the UK, and France). These pre-commercial deployments have validated fundamental engineering feasibility, confirmed loading assumptions, quantified performance, and demonstrated system survivability. These are all major successes – but were achieved at above-market electricity costs.

As the sector matures, the primary focus is on reducing the Levelized Cost of Energy (LCOE) and increasing the electrical grid utility value through system scale-up (larger turbines), performance improvements, and cost reductions across the value chain. Some projections suggest that installed floating offshore wind capacity could reach approximately 10 GW by 2030 (98), achieve cost competitiveness with fixed-bottom offshore wind around the same time, and continue to realize cost reductions thereafter. That said, achieving these reductions depends on significant process industrialization, billions of dollars in port and infrastructure investments, transmission accessibility, and a range of other enabling factors.

A few contextual points are important when reviewing this material. First, Oregon is unlikely to be an early adopter or global leader in floating offshore wind deployment. Instead, the State stands to benefit from international experience and partnership with California, including accumulated performance data, environmental monitoring, and insights from social engagement efforts worldwide. Second, LCOE is a necessary, but insufficient, metric (101). It does not capture all generation attributes that are valuable to, and considered by, grid operators when considering costs and reliability to customers. Additional benefits of floating offshore wind include access to stronger and more consistent wind resources, higher capacity factors (which can reduce the need for overbuilding other generation assets), and siting farther offshore - which may help mitigate viewshed and coastal community concerns (102).

The following non-exhaustive review of outstanding research needs is organized thematically, moving from offshore to shoreline considerations. It broadly covers: (1) turbines and platforms, (2) anchors and moorings, (3) transmission and interconnection, (4) port systems, and, finally, (5) industrialization of the overall development process and supply chain.

Turbine and Platform

In 2017, Hywind Scotland became the world's first floating offshore wind farm, deploying five 6-MW turbines with 154-meter rotor diameters (103). Just 7 years later, in 2024, turbines rated at 26 MW (with rotor diameters approaching 310 meters) are undergoing testing (104). While these advancements

highlight rapid innovation, substantial challenges remain before such turbines can be commercialized at scale.

The downside of this continued turbine size innovation is a lack of clarity for developers, communities, utilities and regulators when trying to assess a project. Calls for standardization of a single size of turbine are growing. Standardization can enable industrialization across serial manufacturing, installation, vessels, ports, and workforce training, ultimately driving faster cost reductions. For example, the onshore wind industry's focus on deploying standardized 2-MW turbines contributed to a 63% cost reduction between 2008 and 2021 (98). More recently, and specifically for floating offshore wind, GE Vernova announced its intention to prioritize its 15.5-MW Haliade-X offshore turbine, stepping away from pursuing larger 17–18-MW variants (105). Note that much of the remaining turbine-specific innovation will continue to be led by original equipment manufacturers (OEMs) with company specific IP.

While floating and fixed-bottom offshore wind systems often use similar turbines, floating platforms remain highly bespoke and largely unindustrialized. Most existing floating systems are effectively one-off designs, which significantly increases costs due to single case mobilization, specialized tooling, workforce training, geographically dispersed suppliers, and associated demobilization. Accelerated global innovation in the design, testing, and analysis of floating platforms is therefore essential.

To date, deployed floating offshore wind systems have largely resulted from integrating independently designed turbines and floating platforms. Co-designing integrated turbines and platforms as a unified system offers significant potential to reduce costs and improve performance. In parallel, innovation in platform materials—traditionally, steel and concrete—and manufacturing methods will be critical. Modular platform designs that can be manufactured in existing facilities, along with improved anti-corrosion technologies, could further lower costs.

It is important to remember that independent certification plays a vital role in commercializing new technologies. However, certification bodies are naturally risk-averse, while technology developers must test novel concepts to demonstrate cost and performance gains. This tension can slow innovation and increase costs, even as it reduces risk. Developing innovation-friendly policies and processes that better align certification and development objectives would provide substantial value to the floating offshore wind sector.

Anchors and Moorings

Current floating offshore wind projects largely rely on anchoring and mooring approaches adapted from the offshore oil and gas industry. These systems typically use taut or semi-taut moorings, primarily polyester lines, and anchors capable of sustaining vertical, or near-vertical, loads.

However, the dynamic behavior of floating offshore wind systems differs significantly from oil and gas platforms. Floating wind turbines experience larger horizontal offsets due to aerodynamic thrust on the turbine and tower, thus transferring non-vertical loads to anchors. As deployment depths increase - currently around 100–200 meters but will need to increase to ~1,000 meters for Oregon - floating offshore wind-specific mooring designs and materials will become increasingly critical. In addition, anchors with longer lifespans, improved performance, and lower lifecycle costs are needed for deep-

water applications. Considerable numerical and economic research has explored the concept of shared anchors, but these systems must still be proven, de-risked, and certified before commercial deployment (106).

Similarly, the dynamic in-water electrical transmission cables used to connect individual floating turbines require further testing and analysis to confirm their performance, durability, and suitability for deep water and high-motion environments. Advancements in this area are essential to reducing the cost of large floating wind arrays.

Transmission and Interconnection

While offshore wind resources can be effectively absorbed and converted into electricity, transmitting that power to terrestrial demand centers remains a major cost challenge. Fully realizing the full potential of floating offshore wind will require the development of floating offshore substations, offshore high-voltage direct current (HVDC) networks, and upgraded onboard transmission systems (107) . Encouragingly, the California Energy Commission is funding work on floating substations (108), the Pacific Northwest National Laboratory (PNNL) has conducted comprehensive offshore transmission studies (109), and the Bonneville Power Administration (BPA) is actively working to reduce timelines (110) for new transmission development in the Pacific Northwest.

PNNL's analysis indicates that up to 33 GW of floating offshore wind could be deployed and interconnected along the U.S. West Coast by 2050 (109). Developing an optimized transmission network to support this buildout is estimated to cost approximately $10 billion but would yield roughly $35 billion in savings through interregional coordination between Oregon and California. The results from the PNNL should be integrated within the Oregon Department of Energy and Oregon-based utilities to understand implications across the grid and associated customers. Broadly speaking, transmission development in the Pacific Northwest remains costly, slow, and complex, despite its widely recognized benefits for reliability, affordability, and regional economic development. This needs to change for many reasons beyond a potential floating offshore wind sector

Port Infrastructure and Supply Chain

To date, floating offshore wind demonstration projects have been too small to justify major investments in port infrastructure needed for serial, industrial-scale, manufacturing and deployment. Ports supporting floating offshore wind assembly and commissioning require high-capacity cranes capable of lifting loads exceeding 100 tonnes at heights greater than 150 meters, quaysides with depths of 8–10 meters, channels wider than 100 meters, and minimal overhead restrictions (111). As a result, West Coast ports capable of supporting floating offshore wind development are limited, with primary candidates including the Port of Los Angeles (CA) and ports in Puget Sound (WA). Humboldt Bay, California, presents a potential opportunity but would require billions of dollars in federal investment.

Building on previous National Renewable Energy Laboratory port studies, detailed assessments of Oregon ports' existing and potential future capabilities (112) - ranging from manufacturing, component delivery, to operations and maintenance - could help identify targeted economic development opportunities associated with floating offshore wind development along Oregon's coastlines. Given the

scale of investment required, collaborative, port-driven initiatives along the West Coast should focus on compatibility and load-sharing, as no single port is likely to meet all needs independently.

One positive aspect of floating offshore wind is that much of the construction occurs at the quayside, thus allowing the use of smaller and less expensive vessels for installation and maintenance (when compared to fixed-bottom offshore wind) (113). This might align better with the existing Oregon-based vessel fleet. Better understanding the vessel requirements and workforce needs for West Coast floating offshore wind development will be critical for long-term procurement planning and workforce training.

Industrialization

Achieving the scale of cost reductions projected for floating offshore wind will require a transition from bespoke, single-unit projects to rapid serial production. Manufacturing, transportation, installation, and operations and maintenance processes must all be industrialized to capture efficiencies, economies of scale, and learning effects. Fortunately, floating offshore wind shares many components with fixed-bottom offshore wind, providing a strong foundation of existing data, experience, and supply chain capacity to support future commercialization.

New technologies will be key enablers of this transition. Targeted research into remote sensing to reduce operations and maintenance costs, autonomous offshore operations to limit vessel use and human exposure, and digital twins for predictive maintenance will all play important roles.

Encouragingly, the international research community is actively advancing innovation across all of these areas. Oregon is well positioned to partner with these institutions, and leverage global expertise, data, and tools to inform future opportunities within the state. For interested readers, the 'Considerations for the Global Commercialization of Floating Offshore Wind" by Robertson et al. is well worth a review (102).

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Appendix A: Recent and Highly Relevant Ecological Studies of Floating Offshore Wind

We searched for recent peer-reviewed publications that could be valuable resources for development of research plans and siting assessments for floating offshore wind in Oregon. The literature on the effects of ***floating*** offshore wind is growing, but these are relatively new technologies that have had minimal time for empirical study. We expect that reports and journal publications on living marine resources, coastal economies, and physical processes will emerge as more floating offshore wind networks are put in place, and that research will contribute to filling the gaps and reducing the uncertainties identified in this report.

Our literature review focuses primarily on data-driven evidence from existing wind energy projects (many of which are in Europe), recent reviews that include observational studies, and recent modeling studies and other papers and reports that are relevant to potential ecological effects of floating offshore wind in Oregon. It was not an exhaustive search.

The bibliography that follows is organized starting with relevant regional and national reports and followed by specific topics. Some of the references cited here overlap with the ones cited in our report, but some are only listed here.

Reports

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APPENDIX D

OFFSHORE WIND PERMITTING OPPORTUNITIES AND GUIDANCE

Appendix D Offshore Wind Energy Permitting Opportunities and Guidance

Note: For the public review draft of the Roadmap, DLCD intends to include a guidance appendix for potential offshore wind energy developers to help them understand what actions they can take to improve their chances of a successful offshore wind energy project proposal.

D.1 Guiding Recommendations for an Efficient and Effective Permitting Process

The permitting process for offshore wind energy projects and related shoreside activities can be lengthy and complex. The following are recommendations for potential future developers to make the process efficient, effective, and aligned with the expectations of Oregon agencies, local governments, and affected communities:

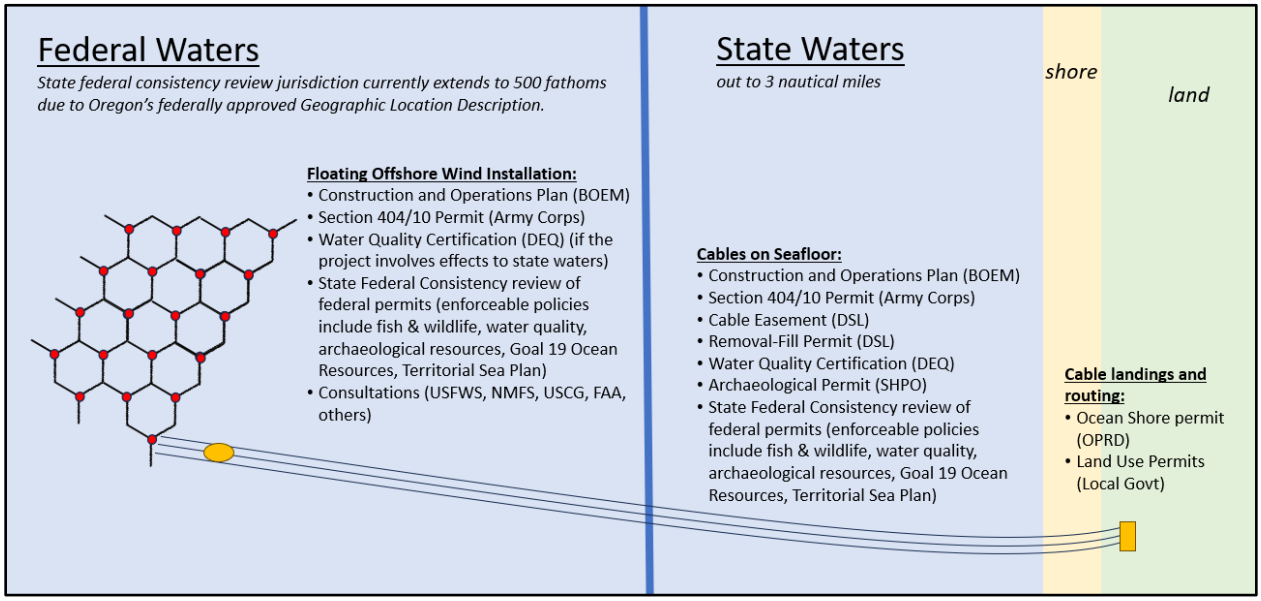
- Stay informed on the contents of the Oregon research agenda and participate in answering key questions that will be relevant to future Federal Consistency reviews.
- Consult the state early for a list of relevant Enforceable Policies to be applied at the Construction and Operations Plan stage early, to inform project design and permit information requirements.
- Coordinate early with state agencies and local governments with permit authority to discuss information needs.
- Be open and transparent with data collected to support the permits, including survey data. Information sharing promotes accountability and trust in permit outcomes.
- Start conversations early with affected communities and support capacity for them to engage in community agreement discussions.
- Consult with the state about the identification of potentially affected communities to inform Community Agreement conversations.
- Meet early with tribes to understand their interests and participate in tri-party discussions with tribes and the state to understand policy consistency expectations and information needs.
- Begin the process of designing an adaptive management approach early in the permit development process to understand monitoring needs and come to agreement on response action options and a framework for ongoing coordination.
- Provide clarity as early in the process as possible regarding project design specifications, options, and supply chain fulfillment plans and needs that may be met within the state. Provide best estimates of how many and what types of jobs might accrue to Oregon and when they may be needed.
- Coordinate early with labor organizations, apprenticeship program providers, and other workforce development resources in the state.
- Participate in the siting and planning phase, before leasing, to inform that process and begin to build relationships and trust.

- Offshore wind energy developers should coordinate with the developers of support projects onshore and within estuaries, such that the timing of permit applications presents a single holistic “decision package” for state review consideration.

D.2 Oregon Offshore Wind Energy Permitting Process and Roles

The regulatory and permitting process associated with an offshore wind energy project is complex, involving multiple entities at various levels of government (see Figure D-1). Within each project, there may be numerous components, such as shoreside support facilities, navigation channel modifications, transmission infrastructure improvements, and the offshore installation itself, which may require separate but interdependent permitting processes. The 2022 Oregon Department of Energy Floating Offshore Wind Study provides an overview of the federal and state roles and processes related to offshore wind energy permitting.[64] Relevant information is reproduced in this section.

Figure D-1. Regulatory Overview Pictogram for an Offshore Wind Energy Installation in Federal Waters (does not include transmission projects or shoreside facilities beyond cable landing).



The table and figure below outline the collection of federal, state, and local permits, authorizations, and consultations that would be required before an offshore wind energy project installation would be allowed to proceed. The primary authorizations for a project located in federal waters would be a Construction and Operations Plan from the Bureau of Ocean Energy Management and a permit issued by the US Army Corps of Engineers under the Clean Water Act and the Rivers and Harbors Act. These federal authorizations also trigger the need for an assessment of environmental impacts under the

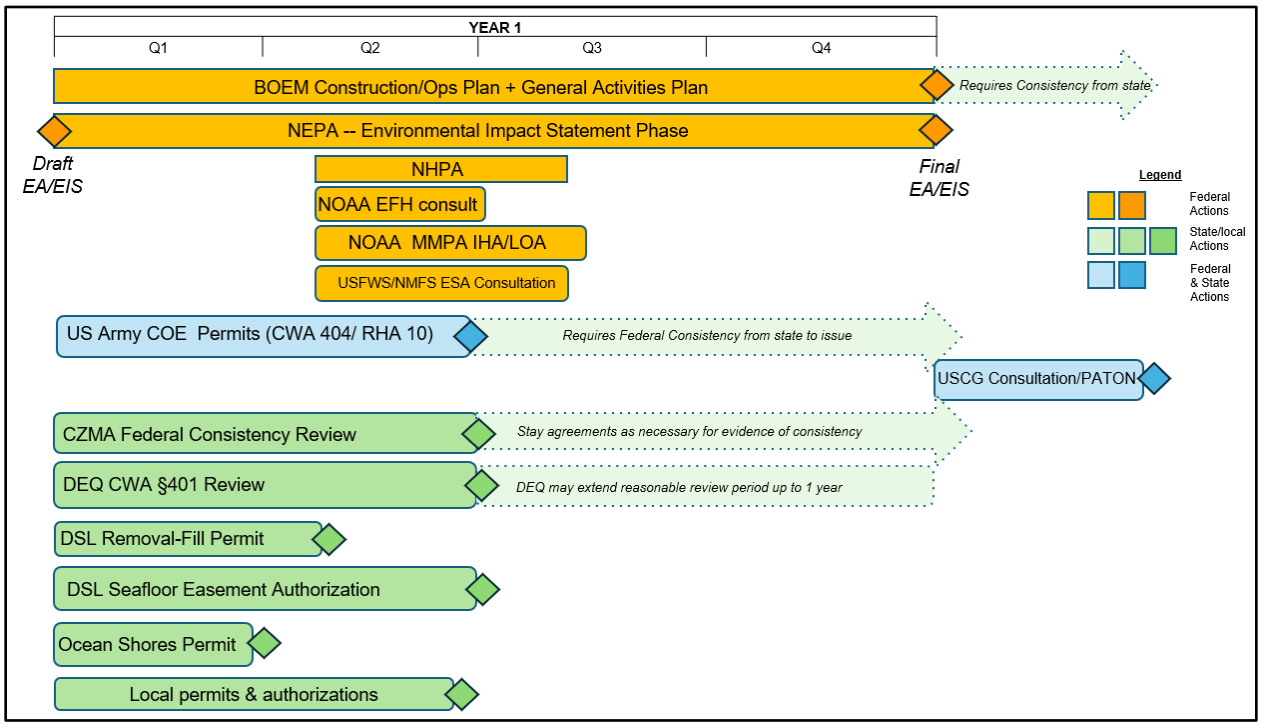
[64] https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Floating-Offshore-Wind-Report.pdf

National Environmental Policy Act and for a Federal Consistency review by the state under the Coastal Zone Management Act. Altogether, the permitting process for an offshore wind energy project may take multiple years of coordinated effort, and the need for information is likely to be significant. Table D-1 depicts the multiple permitting processes and consultations that would be involved in the decision whether to approve an offshore wind energy project. This process would occur after leasing has occurred and the leaseholder has conducted years of site investigation and permit application development.

Table D-1. Regulatory Overview of Offshore Wind Energy Installation. Aspects included in Federal Consistency review are shaded in salmon color.

Authority	Agency	Application	Decision Type	Purpose
Federal Regulatory	BOEM	Construction & Operations Plan	Approval to Develop	Approves the use of the Outer Continental Shelf to produce energy.
	US Army Corps	§ 404 (CWA) § 10 (RHA)	Permit Permit	Regulates discharges to waters of the United States and permits construction of structures in or over any navigable water of the US.
Federal Consultation	NOAA NMFS	Magnuson Stevens & MMPA	Biological Opinion	Conserve Essential Fish Habitat for fish; marine mammals
	USFWS	ESA Consultation	Biological Opinion	The action should not jeopardize endangered populations or critical habitat.
	US Army Corps	NHPA §106 Consultation	Report, MOA	Protect historical properties and archaeological resources
State/Fed Delegated Authority	DEQ	§ 401 CWA Beneficial Use	§ 401 Certification	Protection of water quality standards
	DLCD/ OCMP	Consistency Certification + Necessary Information	Federal Consistency	Federal licenses and permits must be fully consistent with state Enforceable Policies
State Agency Regulatory Authority	DSL	Removal-Fill	Permit	Protect wetlands and waters for home, commercial, wildlife habitat, public navigation, fishing and recreational uses.
		Proprietary Lease	Lease	Manage state submerged and submersible lands in the public trust.
	OPRD	Ocean Shore	Permit	Approve ocean shore alterations and protect the free and uninterrupted use of ocean shores
	OPRD-SHPO	Archaeological Resources	Permit	Protect historical properties and archaeological resources
State Consultation	ODFW		Consultation	Protection and enhancement of fish and wildlife and their habitats
	ODOE		Consultation	
Local Government	City or County	Permit (Conditional Use)	Land Use	Shoreside portions of projects must be consistent with Oregon Statewide Planning Goals

Figure D-2. Regulatory processes and timelines related to review of an offshore wind energy project Construction and Operations Plan and US Army Corps of Engineers Section 404/10 Permit (occurring up to five years post-leasing). This figure represents an idealized timeline that assumes all permitting activities begin concurrently.



D.2.1 Offshore Wind Energy Projects in Federal Waters – Federal Authorities and Roles

From a regulatory standpoint, offshore wind energy projects could be located in federal or state waters. To date, Oregon has asked the offshore wind energy industry to focus on federal waters adjacent to Oregon's coast.[65] Federal waters begin where Oregon's Territorial Sea ends (state waters end three nautical miles from the westernmost point of land) and extends out to 200 nautical miles. Oregon's policy preference to consider federal waters is in part based on the likelihood of increased conflicts closer to shore, including viewsheds, fisheries/navigational conflicts, avian species risks, entanglement and acoustic effects on marine species closer to shore, and other recreational uses.

Federal Bureau of Ocean Energy Management (U.S. Department of Interior)

BOEM is responsible for the leasing of ocean areas in federal waters and is the lead agency for siting and permitting potential offshore wind energy projects sited off Oregon's coast. BOEM's mission is to facilitate the responsible development of renewable energy resources on the Outer Continental Shelf

[65] https://www.oregon.gov/lcd/Commission/Documents/2022-07_Item-2_Directors-Report_Attachment-A_BOEM-2022-0009-0219.pdf

through conscientious planning, stakeholder engagement, comprehensive environmental analysis, and sound technical review.

The Energy Policy Act of 2005 authorized the development of regulations for the Outer Continental Shelf Renewable Energy Program. This regulatory framework provides a process for issuing leases, easements, and rights-of-way for offshore wind energy projects, which require environmental review and significant site-specific research prior to the siting of offshore facilities. Each project is subject to a review under the National Environmental Policy Act as well as consultations with the National Marine Fisheries Service and the U. S. Fish and Wildlife Service under the Endangered Species Act and the Magnuson-Stevens Act. Tribal consultation is also conducted under Section 106 of the National Historic Preservation Act. In addition to multiple levels of review, BOEM develops, funds, and manages a rigorous scientific research program. The following outlines the current administrative processes in the federal regulations, but it should be noted that in August 2025 the Department of Interior announced an intention to undertake a "full review of offshore wind energy regulations." [66, 67]

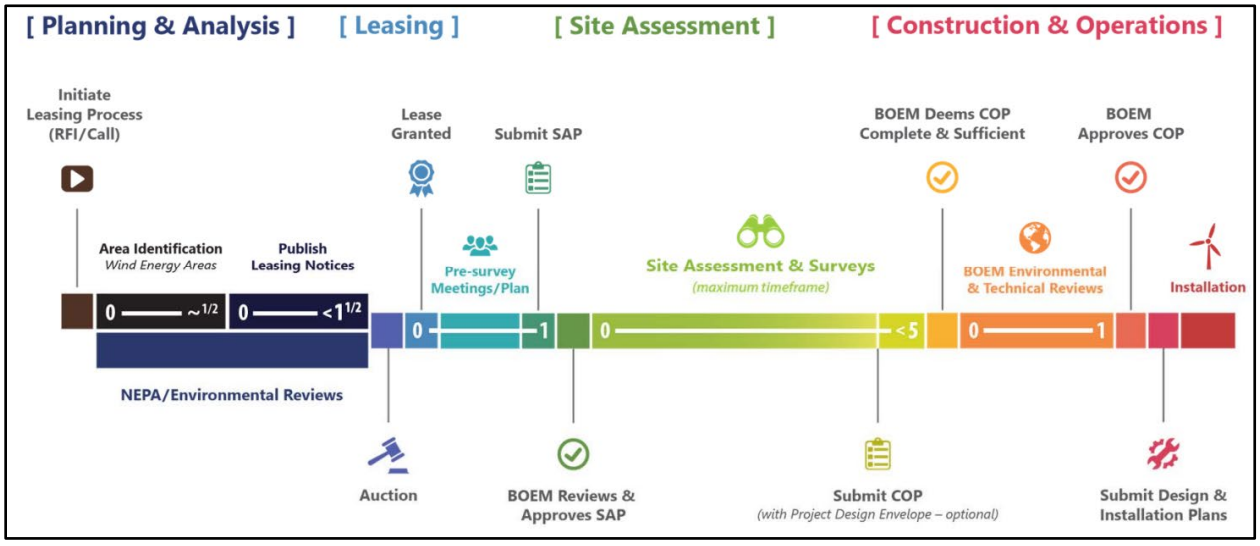
1. Preliminary planning & analysis (which may include BOEM-State Intergovernmental Task Force by state request)
    a. Key BOEM Actions - Collaborate with local/state/federal/tribal entities, while also engaging with the public, developers, and other interested affected parties to inform identification of Call Areas based on the best available data and information.
2. Identification of Call Areas (Large ocean areas)
    a. Key BOEM Action - Request for Information on Call Areas, including nominations of interest for leasing.
3. Identification of Wind Energy Areas (Smaller ocean areas with potential for multiple projects)
    a. Key BOEM Action - NEPA Environmental Assessments for Wind Energy Areas
    b. Key State Action - Federal Consistency review of BOEM's NEPA Environmental Assessment for Wind Energy Areas and site assessment activities under authority of the Coastal Zone Management Act and Oregon's Coastal Management Program (see next page for more information).
4. BOEM Auction and Issuance of Leases to Developers for Lease Areas (Smaller portions of Wind Energy Areas for specific projects)
5. Site Assessment Plans and Site Characterization Activities by Developers
    a. Key BOEM Action – BOEM review of developer's Site Assessment Plans.
6. Construction and Operations Plans by Offshore Wind Energy Developers & BOEM Review

[66] https://www.ecfr.gov/current/title-30/chapter-V/subchapter-B/part-585
[67] https://www.doi.gov/pressreleases/interior-launches-overhaul-offshore-wind-rules-prioritize-american-energy-security

a. Key BOEM Action – BOEM review of Construction and Operations Plans, including NEPA Environmental Impact Statements.[68]
b. Key State Action - Federal Consistency review of Construction and Operations Plans under authority of the CZMA and OCMP (see next page for more information).

Under the federal regulations, the Bureau of Safety and Environmental Enforcement (BSEE) is the lead agency responsible for directing the response to unexpected project failures, harm, or emergency situations. The state should have clear lines of communication and procedures to coordinate with BSEE in the event that unexpected situations intersect with state areas or interests. BSEE and BOEM [(30 CFR 585.516 et seq.)] are also responsible for ensuring offshore wind energy projects have adequate financial assurance (e.g., bonds) to cover project decommissioning, disaster/liability events, and the risk of default.[69]

Figure D-3. Typical BOEM Offshore Wind Energy Development Regulatory Timeline.



Note: RFI = Request for Information; SAP = Site Assessment Plan; NEPA = National Environmental Policy Act; COP = Construction and Operations Plan

Federal Consultations

[68] Note: In May 2025, the Supreme Court ruled that NEPA does not require agencies to consider the environmental effects of upstream or downstream projects that are separate in time or place from the proposed action subject to NEPA review (i.e., cumulative effects analysis). In September 2025, the Council on Environmental Quality issued guidance reflecting this decision. (https://eelp.law.harvard.edu/tracker/nepa-environmental-review-requirements/)

[69] https://www.federalregister.gov/documents/2024/05/15/2024-08791/renewable-energy-modernization-rule#sectno-citation-585.516

BOEM consults with NMFS and other federal agencies to meet the requirements of the Endangered Species Act, the Magnuson-Stevens Act and Marine Mammal Protection Act.[70]

Additionally, the Department of Defense has a significant influence in identifying exclusion areas where wind energy development is limited or prohibited. The BOEM-designated Call Areas in Oregon were found to include extensive exclusion areas, which substantially limited the subsequent siting of Wind Energy Areas within the Call Areas.

D2.2 Oregon Regulatory Framework for Offshore Wind Energy Project Reviews

Under the Coastal Zone Management Act, federally approved state coastal programs have the authority to review federal actions (which includes leasing of the Outer Continental Shelf for offshore wind energy exploration and federal licenses and permits for offshore wind) that may affect coastal Oregon resources and uses for consistency with state "Enforceable Policies." These Enforceable Policies are drawn from existing state statutes and rules, the 19 Statewide Planning Goals, and the local embodiment of the Goals in city and county plans and codes.

In the case of Oregon, the NOAA Office for Coastal Management has approved the state's review authority to extend out to a depth of 500-fathoms (i.e., into federal jurisdictional waters) for marine renewable energy projects, in recognition that a project in federal waters would have reasonably foreseeable effects to state coastal uses and resources. This means that Oregon has the ability to apply its state Enforceable Policies to the entirety of an offshore wind energy project located within federal waters or within the state's coastal zone.[71] The portions of projects that would exist within state jurisdiction would also be subject to permits and authorizations, such as those relating to water quality, uses of the seafloor, effects to the ocean shore, and effects to estuaries, shorelands, and uplands within local jurisdiction. Any alterations to Oregon shoreline, estuaries, wetlands, or navigation channels to facilitate the deployment of offshore wind energy projects would also be subject to Federal Consistency review. The Oregon Department of Land Conservation and Development is the lead state agency for these reviews.

The Oregon Coastal Management Program within DLCD would coordinate with other local, state, and federal agencies and consult with tribal nations in the Federal Consistency review of any offshore wind-related federal actions within its jurisdiction. At the conclusion of the review, the OCMP can concur that the activity is consistent, concur with conditions, or object on the grounds that the activity is inconsistent with the state's Enforceable Policies. If a review of a federally permitted project results in an objection, the federal agency will not issue the permit to the applicant. The applicant may appeal an objection to the U.S. Secretary of Commerce. The OCMP consists of a network of 41 local and 11 state

[70] https://www.boem.gov/renewable-energy/environmental-consultations-offshore-renewable-energy-projects-atlantic-outer
[71] https://www.oregon.gov/lcd/ocmp/pages/coastal-zone.aspx

agency partners with authority in the coastal zone and Enforceable Policies to be used in Federal Consistency review. The state agencies that make up the OCMP are listed below:

- Oregon Department of Land Conservation and Development
- Oregon Department of Fish and Wildlife
- Oregon Department of State Lands
- Oregon Parks and Recreation Department
- Oregon Watershed Enhancement Board
- Oregon Department of Environmental Quality
- Oregon Water Resources Department
- Oregon Department of Geology and Mineral Industries
- Oregon Department of Agriculture
- Oregon Department of Forestry
- Oregon Department of Energy (as staff for the Energy Facility Siting Council)

Although tribal nations within Oregon's coastal zone are not networked partners with the OCMP, OCMP recognizes and respects that Oregon tribes are each separate and sovereign nations with deep cultural and historical connections to the Oregon Coast. OCMP currently uses the broader DLCD government-to-government consultation policy to consult with Oregon tribes during Federal Consistency reviews.

DLCD, through coordination with local, state, and federal agencies, and in consultation with Oregon tribes within the Coastal Zone, leads analyses of the potential direct and indirect impacts, including consideration of cumulative and secondary impacts that have reasonably foreseeable effects on coastal resources or uses. Coastal effects cover five major categories: natural resources, cultural resources, coastal economies, aesthetics, and recreation/public access.

An offshore wind energy project would also be required to obtain several state or local government permits or authorizations related to portions of the project located within state waters or onshore. These components would include subsea transmission cables, shoreside cable landing interconnections, and transmission lines from the interconnection to the larger coastal electricity grid. These authorizations and permits are required independently of the state's federal consistency review authority under the CZMA, and a project would not be able to move forward without them. The necessary permits and authorizations are listed in Table 1 and generally consist of:

- Clean Water Act Section 401 Water Quality Certification (Oregon DEQ)
- Seafloor Special Use Proprietary Authorization (Oregon DSL for cable placement)
- Removal-Fill Permit (Oregon DSL for cable installation or other alterations to state submerged lands or onshore wetlands)
- Proprietary Authorization for uses of state submerged lands for other project-related uses of state submerged lands (Oregon DSL e.g., wharves, docks, fill, etc.)
- Ocean Shores Permit (Oregon Parks and Recreation Department for activities on or under the beach, e.g., horizontal drilling and placement of cables)
- Archaeological Permits (OPRD State Historic Preservation Office for offshore or onshore ground disturbance activities)

- County or City land use authorizations or permits (onshore cable interconnection and grid infrastructure)
- State Federal Consistency Review Decision (Oregon Department of Land Conservation and Development)
- Navigation Hazard Determination (Oregon Department of Aviation)

D2.3 Power Procurement Framework

Investor-owned utilities (PGE, Idaho Power, Pacific Power) account for growth in customer demand and assess the ability of existing and new energy projects to meet demand in public planning processes that identify least-cost, least-risk solutions and actions (e.g., Integrated Resource Planning). The Oregon Public Utility Commission (PUC) reviews the costs and risks of investor-owned utility plans and determines if any procurement plan, such as procuring offshore wind energy, achieves the best balance of cost and risk for customers. If an investment in a new generation source is determined to not meet the PUC's Request for Proposal evaluation criteria for prudence (e.g., if the cost of power from an offshore wind energy installation were deemed to be not "least-cost, least-risk" in the interest of Oregon ratepayers), the PUC can prevent the investor-owned utility from recovering the cost of its investment using ratepayer fees.[72, 73]

The PUC does not regulate cooperatives, utility districts, or municipality-owned utilities, except in matters relating to the safety of their operation and facilities. Public Utility Districts, like those serving the coast, are not regulated by the PUC beyond safety considerations and primarily purchase power for their retail customers directly from the Bonneville Power Administration (BPA). Oregon's consumer-owned utilities (COUs) are currently engaged in 20-year Regional Dialogue Contracts with BPA that are due to expire in 2028.[74] BPA recently initiated a series of public workshops to address the development of the policies and contracts that it will offer to its customers to meet their evolving needs post-2028.[75] Under the current contract, some of the state's COUs receive a fixed slice of BPA's power output, while that utility supplements the electricity delivery from BPA with output from its own generating resources or from other power contracts. The majority of the COUs that serve Oregonians, however, are full requirements customers of BPA, meaning that they "generate no power, relying instead on BPA for all of the power needed to meet their total load requirements."

[72] https://apps.puc.state.or.us/orders/2007ords/07-047.pdf
[73] https://www.oregon.gov/lcd/OCMP/Documents/UPDATE_PUC_OSW-Roundtable_010925.pdf
[74] https://www.bpa.gov/energy-and-services/power/regional-dialogue
[75] https://www.bpa.gov/energy-and-services/power/provider-of-choice

APPENDIX E

COMMUNITY ENGAGEMENT SUMMARY REPORT

Appendix E Community Engagement Summary Report

Prepared for: Oregon Department of Land Conservation & Development, December 2025[76]

Table of Contents

[76] The Offshore Wind Energy Roadmap Community Engagement Summary Report, as presented here, has been modified slightly (e.g., formatting) in order to conform to the Offshore Wind Energy Roadmap document. No changes have been made to the contents of the document.

1 Executive Summary

Introduction to the Offshore Wind Energy Roadmap

In 2024, the Oregon Legislature approved House Bill 4080, which tasked the Department of Land Conservation and Development (DLCD) to create the Offshore Wind Energy Roadmap (Roadmap). The primary objective of the Roadmap is to establish standards for processes related to offshore wind energy development. These standards will be used to guide future research, investments, partnerships, and community engagement surrounding the potential development of offshore wind in Oregon. The Roadmap is a step in the process to help the State of Oregon consider if and how to pursue offshore wind energy. Goals of the Offshore Wind Roadmap include:

- Ensure effective stakeholder engagement
- Support local and regional coastal communities
- Create economic opportunities while sustaining existing economies
- Develop an offshore wind energy workforce that is local, trained, housed, and equitable
- Protect tribal cultural resources, archaeological sites, and culturally significant viewsheds, along with other tribal interests
- Protect the environment and marine species
- Ensure alignment with state energy and climate policy objectives, promoting energy diversity, reliability, and resilience within the state and regional systems.

Introduction to the Community Engagement Summary Report

As part of the process of developing the Roadmap, a comprehensive community engagement effort was initiated to engage coastal community members and provide opportunities for inclusive and meaningful input on the Roadmap. The DLCD engaged Consor and The Formation Lab to support community engagement. In close coordination with DLCD, they were tasked with ensuring the community is effectively engaged, diverse voices are heard and considered, and that participants feel ownership in the outcomes of the Offshore Wind Energy Roadmap process and outcomes. Top community engagement goals and objectives:

- Educate the public about wind energy
- Build awareness of Oregon's wind energy Roadmap and process
- Enable coastal community members to identify gaps in the offshore wind energy Roadmap
- Gather input on how the state can prepare and build the Roadmap for the future

Community engagement included the following activities:

- Community Meetings
    - Seaside, North Coast Community Meeting
    - Brookings Community Meeting
    - North Bend/Coos Bay Community Meeting
- Offshore Wind Energy Community Survey
- Community Based Partnerships

    - North Coast Community Based Organization Roundtable
    - Mid Coast Community Based Organization Roundtable
    - South Coast Community Based Organization Roundtable
- Focus Groups
    - Tourism Focus Group
    - Energy Affordability Focus Group
    - Supply Chain Focus Group
    - Youth Focus Group

Program Schedule

All focus groups and community-based partnerships were conducted between June 2025 and November 2025, summarized in Table 1.

Community Meetings	Seaside, North Coast	April 2025
	Brookings	May 2025
	North Bend/Coos Bay	June 2025
Survey	Online Survey	April – November 2025
	Paper Survey	April – June 2025
Community Based Partnership	South Coast	June 2025
	Mid Coast	October 2025 (scheduled)
	North Coast	November 2025
Focus Group	Tourism	August 2025
	Energy Affordability	September 2025
	Supply Chain	October 2025
	Youth Focus Group	November 2025

Engagement Considerations

The recent changes to federal policy and operations impacted the Roadmap's engagement efforts. Major policy reversals by the Department of the Interior and Bureau of Ocean Energy Management (BOEM)—including the rescission of designated Wind Energy Areas across federal waters and the pause of new leasing and permitting under new offshore wind policy directives generated some confusion among stakeholders. Many communities questioned why the State of Oregon pursued the Roadmap given recent federal policy changes. This, combined with some discontent with the BOEM's past outreach efforts, contributed to the level of participation in engagement activities. Additionally, the government shutdown halted the Supplemental Nutrition Assistance Program (SNAP), increasing scarcity and decreasing capacity for marginalized community members to participate.

2 Offshore Wind Community Meetings

As part of the community engagement process, the DLCD held three community meetings on the Oregon coast in Seaside, Brookings, and North Bend/Coos Bay in the spring of 2025. The locations were selected to reach different coastal geographies.

Goals

- Educate the public about offshore wind energy
- Build awareness of Oregon's wind energy Roadmap
- Provide opportunities for community members to give input on how the state can prepare and build a Roadmap for wind energy in the future

To meet these goals and objectives, each community meeting included an informational presentation from the DLCD's Offshore Wind Energy Roadmap Coordinator. During and after the presentation, community members could ask questions and provide comments. The meetings also included interactive activities for community members to learn more about offshore wind energy and provide input on recommendations for the state on what to consider to prepare for offshore wind in the future. These included stations with display boards and sticky note activities to identify gaps in the Roadmap, comment cards, and question-and-answer opportunities for participants to engage with DLCD staff.

DLCD staff members were present throughout the community meetings to promote conversation and answer questions. A Spanish speaker was on hand at each meeting to support Spanish-speaking community members.

In addition, a survey was developed to provide an additional opportunity for community members to provide input on the Roadmap. The survey was available online and on paper in both English and Spanish. It was launched with the community meeting efforts but was designed to be open throughout the community engagement process to enable diverse community members to provide feedback on the Roadmap whether they attended a community meeting or not.

Common Themes from Community Meetings

- **Protecting the environment and wildlife are top priorities for community members.** Coastal community members want to ensure that the Roadmap takes into consideration the impacts on the environment, birds, fish, and wildlife. These should be a priority throughout the life cycle of the project including building, operating, maintaining, and decommissioning offshore wind infrastructure when it reaches its end of life.
- **Participants wanted local communities and local utilities to realize the benefits of offshore wind energy first.** Questions included: How will local utilities benefit from offshore wind energy? Will the Roadmap show how local utilities share the benefits? Who will get to use the energy? How will it impact local utility rates? Will it be available locally first? How will revenues from leases go back to local communities?
- **Some participants indicated that both protecting existing local jobs and traditional industries and providing long-term local job opportunities are vital to sustain the coastal economy.** Some

participants expressed the hope that offshore wind energy could provide sustainable, long-term job opportunities on the coast, especially for young people. Other participants expressed skepticism that offshore wind energy would create lasting and well-paying jobs for people already living along the coast. Some were fearful that it could damage already vulnerable industries like commercial fishing, crabbing, and tourism and leave coastal communities worse off than before.

- **Some participants recommended including workforce training and economic development as part of the Roadmap.** There was a concern for the future of coastal communities economically and a belief by many that there needs to be a balance between short-term and long-term jobs and industry. Participants noted the need for workforce training to support offshore wind and worried that without it, jobs would be filled by workers from outside the community rather than local residents. Workforce training would give them the opportunity to build local expertise for these jobs and could help keep people in the community.
- **There were questions about funding sources for the development of offshore wind energy.** Some community members were unsure how state and federal government, ratepayers, developers, and other states would pay for the development of offshore wind. How much would local ratepayers have to pay? Would developers be subsidized? There was concern that rates will increase significantly for local residents but that they will not reap the benefits of offshore wind energy.
- **In addition to offshore wind energy, many participants considered onshore wind energy, solar, natural gas, and nuclear energy as alternative energy sources worth exploring** to develop future energy policies. Many participants were appreciative of the state's proactive approach and suggested that research should be done to prove that offshore wind energy is cost effective and a more viable source of energy for the future. Some coastal community members also raised questions about the use of fossil fuel and how much carbon would be produced through the lifecycle of an offshore wind project.
- **Affordability was important to participants.** Many questioned if offshore wind energy was the most affordable source of energy for the future compared to other alternative energy sources and suggested a cost benefits analysis. They wondered if there are ways to make offshore wind affordable.
- **Participants wanted to know the plan for decommissioning infrastructure after it has reached the end of its useful life.** How and who will decommission it? Who will pay? What happens when old turbines wear out or fail? There was concern that the developers would walk away, the infrastructure would be abandoned, and the coastal residents would be left with the consequences.
- **Some participants wanted the Roadmap to consider the potential for natural disasters and the resilience of offshore wind infrastructure**. Because the Oregon coast is a seismically active area, there were questions about the size, location, and construction of offshore wind infrastructure and how a natural disaster might impact it and nearby communities. Does the Roadmap consider what would happen if there were a major earthquake, tsunami, or storm? What would

the impact be on the infrastructure and the nearby coastal community? How would the state respond to the emergency?

- **Participants indicated there should be an ongoing effort to consider tribal heritage, culture, and perspectives when developing the Roadmap.** Several acknowledged the work DLCD is currently doing with the tribes and encouraged this to continue throughout the Roadmap process.
- **Participants wanted accountability and plain language in the Roadmap. They also wanted research and data collected to inform decision-making.** Some expressed concern that there will not be capacity to do this work due to federal cuts to National Oceanic and Atmospheric Administration (NOAA)and National Marine Fisheries Service (NMFS).
- **Some expressed frustration with the previous federal process from the Bureau of Ocean Energy Management (BOEM).** Some believed the previous BOEM process was not transparent and did not truly listen to community preferences.
- DLCD staff explained the purpose of the Roadmap process and the state's proactive approach to determining offshore wind energy's potential future in the state. **However, there were some questions about the purpose of the Roadmap and why it is happening now in Oregon.** Some noted that offshore wind energy was previously voted down on the southern coast and that the current federal administration used an executive order in 2025 to stop offshore wind energy development in the country.

Seaside/North Coast Community Meeting Highlights

The first offshore wind energy community meeting was held on the North Coast to gather input from those community members.

Thursday, April 24
5:30 – 7:30 pm
Bob Chisolm Center, Seaside Oregon

Community Participants: 13

DLCD Oregon Coastal Management Program Staff:

- Jeff Burright, Offshore Wind Energy Roadmap Coordinator
- Brett Estes, North Coast Regional Representative
- Cynthia Smidt, Offshore Wind Energy Policy Specialist

Facilitators/support: Libby Bakke, Tammy Menkerud, Isaac Estrada

Seaside Community Meeting Program

Libby Bakke, Consor, provided a welcome, reviewed the agenda, explained the posters and sticky note activity, and invited attendees to take (and share with others) the community survey. Jeff Burright, DLCD, gave an informational presentation on the offshore wind energy Roadmap. The presentation included opportunities for community members to ask questions and provide comments to DLCD staff.

The community meeting also provided interactive opportunities to learn more about offshore wind energy and weigh in on the Roadmap through surveys, comment cards, and through interactive stations.

Interactive Stations

Three stations with informational display boards and sticky notes provided opportunities for community members to learn more about offshore wind energy and provide input on the Roadmap. DLCD staff members were available to answer questions and gather feedback at the stations. The following is a breakdown of the topics covered by the different stations.

Station 1: What impacts or effects are missing?

- Possible Effects of Offshore Wind Energy – Local Communities
- Possible Effects of Offshore Wind Energy – Cultural and Tribal Development
- Possible Effects of Offshore Wind Energy – Viewsheds, Recreation and Fishing
- Possible Effects of Offshore Wind Energy – Ocean and Environment
- Possible Effects of Offshore Wind Energy –Terrestrial Environment and Resources

Station 2: Waypoint Path

- Planning/Siting
- Leasing
- Permitting
- Construction
- Operations

Station 3: Policies

- Relevant Policy Overview Table
- Relevant Enforceable Policies
- Relevant Enforceable Policies
- Territorial Sea Plan, Fisheries Use Protection Standards
- Relevant Enforceable Policies

Summary of Comments and Questions

During the presentation and throughout the meeting, community members and DLCD staff engaged in an open dialog. Participants had the opportunity to share feedback, engage with staff, ask questions about offshore wind energy, and get answers from staff. Following are some of the key themes and considerations that emerged from the North Coast meeting:

Need for Local Community Benefits and the Impact on Jobs and Traditional Industries

North Coast communities would like any development of offshore wind energy to deliver direct, tangible benefits to the people on the coast. Key questions included: Where will the energy generated will go? Who will receive it? Would developers get subsidies to development energy – at the cost of the coastal economy? There was a strong desire for the local coastal communities to realize the economic benefits

of offshore wind energy first and concern that these would be realized by outside developers or other states instead.

Community members wanted traditional industries protected. Questions were also asked about the impact of offshore wind energy on traditional coastal industries like commercial fishing and crabbing. Concerns were also raised about the potential impact of anchors and underwater equipment on crab feeding grounds and how this could be a loss to fishing, crabbers, and the crabbing industry.

In addition, community members had questions about construction for offshore wind energy, the manufacturing of the materials needed to support any construction, and what ports could support offshore wind. There is a consensus that more local jobs need to be created on the coast overall so that it would be economically feasible for the younger generation, in particular, to stay in the community. Many believed that jobs related to offshore wind energy construction and operations could be an opportunity to create more types of jobs. From a broader perspective, some also viewed offshore wind energy as an economic opportunity for the United States and did not want the country to miss this opportunity to other countries like China.

Energy Strategy and Alternatives to Help Address Climate Change

North Coast community members expressed general concern about climate change. They desire safe, alternative ways to generate energy. Some community members voiced concerns about nuclear energy, specifically, and would support offshore wind energy as a strategy if it prevented the development of nuclear energy.

Participants asked about the difference between offshore wind energy and land-based wind energy, noting the wind turbines up the Columbia Gorge. They were interested in understanding which option was better—offshore or onshore. Some asked questions about anchoring turbines in state waters and asked about the differences between state and federal waters.

Looking into the future, some community members were curious about whether offshore wind could support data centers and their requirements for high amounts of energy.

Protection of the Ocean Environment, Birds, Fish and Wildlife

Protection of the environment was a top priority. Many North Coast community members were concerned about the impact of offshore wind energy on birds, fish, wildlife, ocean systems, and habitat. Participants expressed a desire to have the Roadmap consider the impacts of offshore wind development and wind turbines on a variety of things including migratory bird routes, fish food superhighways, phytoplankton, ocean systems, harbors, eel grass, among others.

Consideration for Cultural and Tribal Resources

North Coast participants expressed the desire to protect the culture of the coast including the natural landscape, tribes, and local economy.

Transparency and Accountability

North coast community members indicated a desire for transparency in the process so that they could trust the data. They wanted to know who is monitoring this. Some asked about how adaptive management could be used in the process. Some community members also expressed appreciation for the work the DLCD staff is doing on offshore wind energy.

Brookings Community Meeting Highlights

The second offshore wind energy community meeting was held in Brookings to gather input from those community members.

May 14, 2025
5:30 – 7:30 pm
Brookings-Harbor High School Cafeteria, Brookings

Community Participants: 50

DLCD Oregon Coastal Management Program Staff:

- Jeff Burright, DLCD Offshore Wind Energy Roadmap Coordinator
- Lisa Phipps, DLCD Ocean and Coastal Services Division Manager
- Cynthia Smidt, Offshore Wind Energy Policy Specialist

Facilitators/Support: Libby Bakke, Isaac Estrada

Community Meeting Program

Lisa Phipps, DLCD, provided a welcome and meeting expectations. Libby Bakke, Consor, reviewed the agenda, explained the posters and sticky note activity, and invited attendees to take (and share with others) the community survey. Jeff Burright, DLCD, gave an informational presentation on the Offshore Wind Energy Roadmap. During and after the presentation community members had the opportunity to ask questions and provide comments to DLCD staff.

The community meeting also provided interactive opportunities to learn more about offshore wind energy and weigh in on the Roadmap through surveys, comment cards, and sticky note activities.

Interactive Stations

Three stations with informational display boards and sticky notes provided opportunities for community members to learn more about offshore wind energy and provide input on the Roadmap. DLCD staff members were available to answer questions and gather feedback at the stations. The following is a breakdown of the topics covered by the different stations.

Station 1: What impacts or effects are missing?

- Possible Effects of Offshore Wind Energy – Local Communities
- Possible Effects of Offshore Wind Energy – Cultural and Tribal Development

- Possible Effects of Offshore Wind Energy – Viewsheds, Recreation and Fishing
- Possible Effects of Offshore Wind Energy – Ocean and Environment
- Possible Effects of Offshore Wind Energy –Terrestrial Environment and Resources

Station 2: Waypoint Path

- Planning/Siting
- Leasing
- Permitting
- Construction
- Operations

Station 3: Policies

- Relevant Policy Overview Table
- Relevant Enforceable Policies
- Relevant Enforceable Policies
- Territorial Sea Plan, Fisheries Use Protection Standards
- Relevant Enforceable Policies

Summary of Questions and Comments

During the presentation and throughout the meeting in Brookings, community members and DLCD staff engaged in an open dialog. Participants had the opportunity to share feedback, engage with staff, ask questions about offshore wind energy, and get answers from staff.

Need for Local Community Benefits and the Impact on Jobs and Traditional Industries

Similar to at the North Coast, participants wanted the local community to realize benefits. Some participants noted the high poverty in the area and shared concerns that local residents would bear the financial, environmental, and social costs of developing offshore wind energy infrastructure, while the benefits would go elsewhere, like California. Concerns were also raised that locals would pay for the infrastructure and receive no free or reduced-cost power.

Brookings community members also wanted to ensure existing coastal industries like fishing and tourism are protected. Some expressed concerns that offshore wind energy could have a negative impact on tourism and dissuade people from coming to the southern coast because it would take away from the scenic ocean views and potentially disrupt fishing and other recreation tourism activities.

Energy Strategy and Climate Change

Participants in Brookings were also interested in having a diverse energy strategy. Some expressed interest in having other sources of energy including onshore wind, natural gas, coal, or solar evaluated by the state. Energy needs for data centers were also mentioned. Some held the view that wind and solar would not be a good source of constant energy for data centers.

Funding and Affordability

Sources of funding for offshore wind were also discussed. Questions were raised about where funding would come from for offshore wind development and some suggested that private funding probably wouldn't be an option because of the high risk.

Land and Infrastructure to Support Offshore Wind

Some participants in Brookings had questions about the land and infrastructure (both onshore and offshore) that would be needed to support offshore wind. Some participants had questions about land use and were interested in learning if public or private land might be needed to support offshore wind and asked if land would need to be condemned.

The impact of offshore wind infrastructure on the ocean environment was also a consideration. Some people raised concerns about the potential impact of offshore wind turbines, including whether failing turbine parts could damage coastlines. There were also questions about maintenance for wind infrastructure and how that might affect the marine ecosystem.

Decommissioning

Decommission of offshore wind facilities was also a consideration. Some asked about the state's plan to pay for and decommission offshore wind facilities at their end of life.

State's Objectives for Offshore Wind Energy

Some participants wanted to have a better understanding of the state's objective. Is it to produce cheap, viable power or is it to produce wind power? There are other alternatives like coal that might be cheap. They requested seeing the cost comparisons. Some questioned if green energy was scalable.

State Roadmap Process and Objectives

Some participants asked questions about the process and shared that they believed it should be a legislative one. Some noted that voters in Coos and Curry County already voted down offshore wind and didn't understand why the DLCD was reaching out again now. Some expressed frustrations at being asked for input again. Some had the perception that their input wasn't taken into consideration in the past.

Comment Card Highlights

Below are highlights of written comments and questions from the comment cards.

- "What is the comparison in costs to nuclear, natural gas or coal, if the problem of cheap reliable energy is seriously considered?"
- "Has this group compared renewable energy sources and/or weighed investments w/reductions in energy consumption?"
- "What about DARPA maneuvers at federal waters."

North Bend/Coos Bay Community Meeting Highlights

The third offshore wind energy community meeting was held in North Bend/Coos Bay to gather input from the South Coast.

June 16, 2025

5:30 – 7:30 PM

North Bend Community Center, North Bend

Participants: 55
DLCD Staff:

- Jeff Burright, Offshore Wind Energy Roadmap Coordinator
- Hui Rodomsky, South Coast Regional Representative
- Lisa Phipps, Ocean and Coastal Services Division Manager

Facilitators/Support: Tammy Menkerud, Nicki Pozos, Isaac Estrada

Community Meeting Program

Lisa Phipps, DLCD, provided a welcome and meeting expectations. Nicki Pozos, Consor/The Formation Lab, reviewed the agenda, explained the posters and sticky note activity, and invited attendees to take (and share with others) the community survey. Jeff Burright, DLCD, gave an informational presentation on the Offshore Wind Energy Roadmap. The presentation included opportunities for community members to ask questions and provide comments to DLCD staff.

The community meeting also provided interactive opportunities to learn more about offshore wind energy and weigh in on the Roadmap through surveys, comment cards, display boards with sticky note activities, and table handouts where people could share comments.

Interactive Stations

Three stations with informational display boards and sticky notes provided opportunities for community members to learn more about offshore wind energy and provide input on the Roadmap.

Station 1: What impacts or effects are missing?

- Possible Effects of Offshore Wind Energy – Local Communities
- Possible Effects of Offshore Wind Energy – Cultural and Tribal Development
- Possible Effects of Offshore Wind Energy – Viewsheds, Recreation and Fishing
- Possible Effects of Offshore Wind Energy – Ocean and Environment
- Possible Effects of Offshore Wind Energy –Terrestrial Environment and Resources

Station 2: Waypoint Path

- Planning/Siting
- Leasing
- Permitting
- Construction
- Operations

Station 3: Policies

- Relevant Policy Overview Table

- Relevant Enforceable Policies
- Relevant Enforceable Policies
- Territorial Sea Plan, Fisheries Use Protection Standards
- Relevant Enforceable Policies

Summary of Comments and Questions

During the presentation and throughout the meeting, community members and DLCD staff engaged in an open dialog. Participants had the opportunity to share feedback, engage with staff, ask questions about offshore wind energy, and get answers from staff. Following are some of the key themes and considerations that emerged from the North Bend/Coos Bay meeting:

Need for Local Community Benefits and the Impact on Jobs and Traditional Industries

Participants at the North Bend/Coos Bay meeting were also interested in ensuring that the local community benefits from any offshore wind energy. Concerns were raised that offshore wind development would impact commercial fisheries, tourism, and other local industries.

There was a desire to use union labor to build any offshore wind infrastructure to create paying jobs for families on the coast. Some participants also wanted economic and workforce training made available. They referenced the need for more jobs that would keep the younger generation in the community.

Questions were also asked about who would get the revenue and energy. Would it go back to the community? Would the coastal grid be using the energy first? There was a strong desire to have these go back to the local community.

Funding and Affordability

Questions were asked about the costs of offshore wind energy and who would take on the costs. Concerns were expressed that ratepayers would be expected to absorb the costs and would have astronomical rate increases they could not afford. Some expressed the need for baseline data to make it affordable.

Ocean Environment, Birds, Fish, and Wildlife

Many participants in North Bend/Coos Bay reiterated their concern for fish, birds, and other wildlife and wanted to understand the impact the turbines and other infrastructure could have on their habitat. They believed there should be policies to protect birds and other wildlife.

Some Participants Wanted the Roadmap to Consider Earthquakes and Tsunamis

Because the Oregon coast is a seismically active area, there were questions about the size, location, and construction of offshore wind infrastructure and how an earthquake and/or tsunami might affect infrastructure and thus nearby communities in an emergency.

Energy Strategy

Some participants raised questions about other alternative energy sources such as solar and onshore wind. These should also be considered. Questions were asked about how much fossil fuel would be used for the project.

Cultural and Tribal Resources

Participants highlighted the need to consider potential impacts to tribes, including effects on albacore tuna, and emphasized the importance of tribal inclusion in decision-making.

Process

Some participants reiterated that voters in Coos and Curry County already voted down offshore wind. They asked why the state was going through the process again.

Comment Card Highlights

- "How will wind energy affect commercial fishing?"
- "How will decisions made about PCIP effect offshore drilling plans and permitting? Would feasibility of offshore wind be predicated on approval of port project?"
- "Coos and Curry County voters voted overwhelmingly against turbines. If you are truly working for the people, why don't you take the "exit ramp" now?"
- "What would happen to this infrastructure in large earthquakes and tsunamis? Many in this community are opposed to setting up a deep-water port due to environmental and community impacts, can this be done without a deep-water port?"
- "Who will receive this energy?"
- "If you have been tasked with following and enforcing policies, then shouldn't you close this survey since the Federal government has shut off leases?"
- "How do the kilowatt hour cost of floating wind power compare to onshore wind. Solar farms distributed solar with batteries, etc.? Should offshore wind be used to power residences and commercial buildings or should it be used for high energy industrial location only? Shouldn't we map the expected uses and plan sources accordingly."
- "How much of the cost of this project will the ratepayers have to absorb? How would revenues benefit our counties? What is the down time of a typical wind generator for maintenance or replacement?"
- "How much fossil fuels will be needed for this project? Pacwave – what is currently the process? What legislatures are getting kickbacks? Getting from clean energy?"

Attachment A: Meeting Materials

To support the community meetings a series of informational materials were developed and used at each meeting to educate community members, provide background for discussion, and help gather input. Below is a summary of the materials. Select examples can be found in the appendix.

Agenda

Meeting agendas were developed for each meeting to guide the discussions, ensure that the meetings were focused, productive, and achieved their goals.

Meeting Presentation

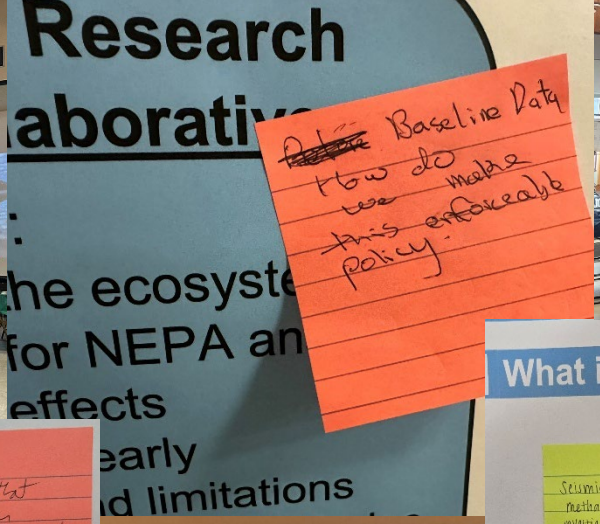
On overview presentation on Offshore Wind Energy Roadmap was presented at each meeting to provide background information and guide the discussion.

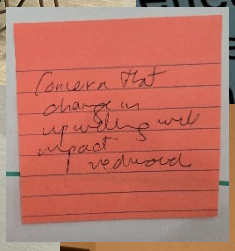
The meeting presentation for the North Coast/Seaside, Brookings, and North Bend/Coos Bay meetings can be found online on the Oregon Offshore Wind Energy Roadmap webpage or in the appendix.

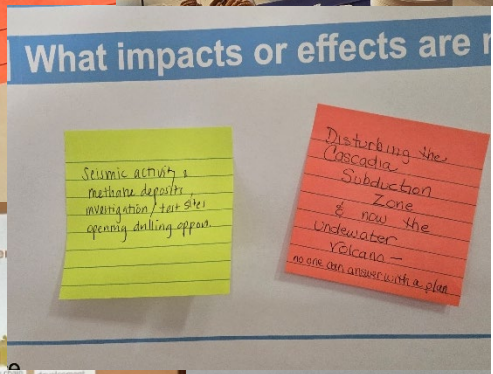
Interactive Materials to Encourage Engagement and Gather Input

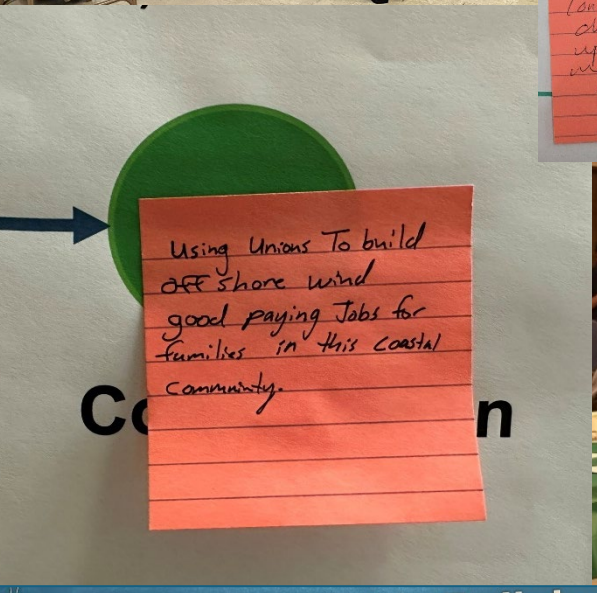
Station Display Boards and Interactive Sticky Note Exercise

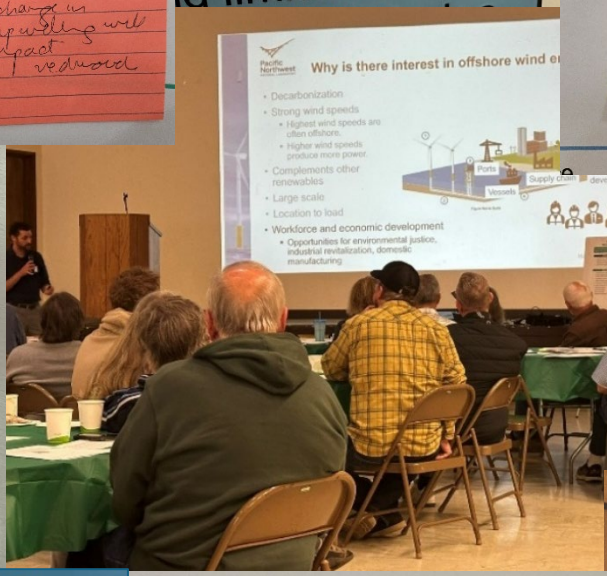
Display boards were developed to educate community members on offshore wind energy, waypoint paths, and policies around offshore wind energy. Participants were encouraged to use sticky notes to fill in gaps in the Roadmap, provide comments, and ask questions of DLCD staff.

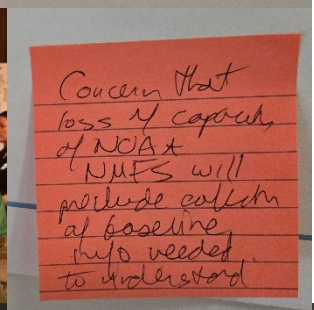


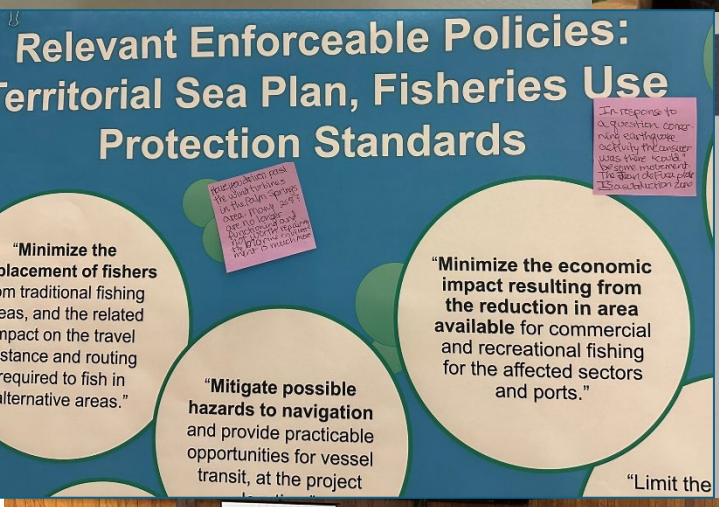


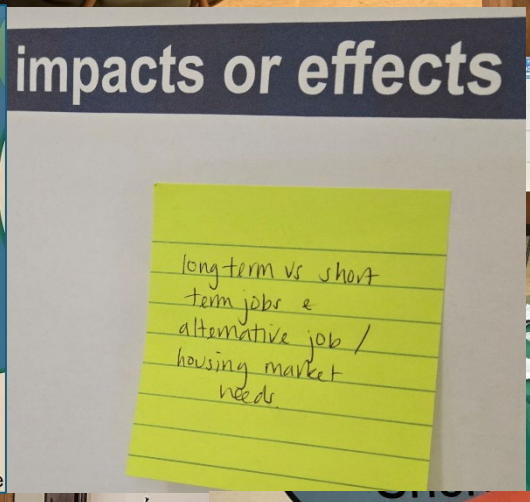


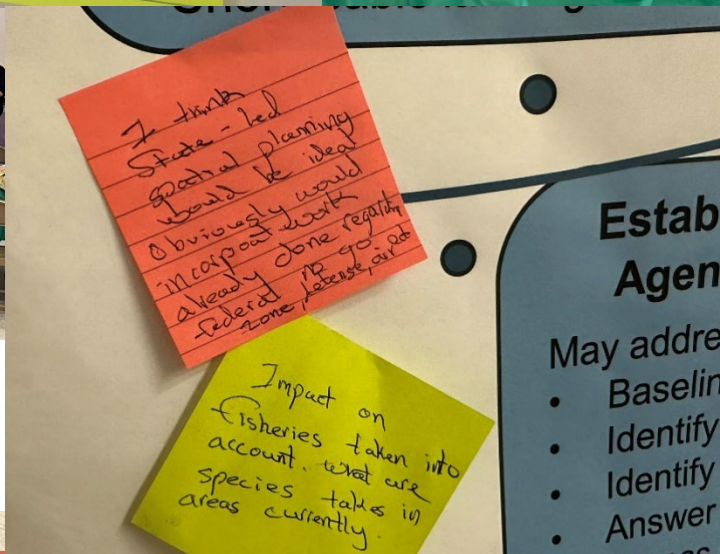








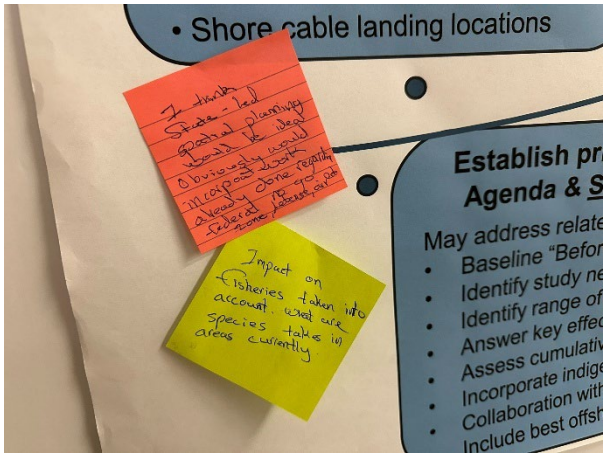




Samples of Engagement and Input from Coastal Community Meetings

Station 1: What impacts or effects are missing?

- Possible Effects of Offshore Wind Energy – Local Communities
- Possible Effects of Offshore Wind Energy – Cultural and Tribal Development
- Possible Effects of Offshore Wind Energy – Viewsheds, Recreation and Fishing
- Possible Effects of Offshore Wind Energy – Ocean and Environment
- Possible Effects of Offshore Wind Energy – Terrestrial Environment and Resources



Station 2: Waypoint Path

- Planning/Siting
- Leasing
- Permitting
- Construction
- Operations

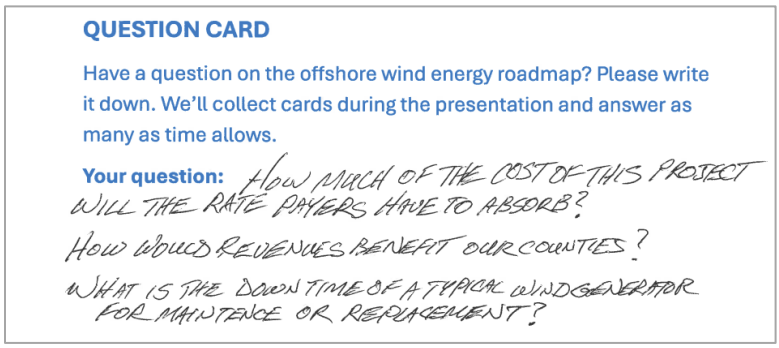
Station 3: Policies

- Relevant Policy Overview Table
- Relevant Enforceable Policies
- Relevant Enforceable Policies:
- Territorial Sea Plan, Fisheries Use Protection Standards
- Relevant Enforceable Policies

Question and Comment Card

Comment cards were provided at each meeting to enable participants to ask questions or leave comments for DLCD staff during the event. Comments were gathered and are summarized in this report.

Example of Completed Question Card


QUESTION CARD

Have a question on the offshore wind energy roadmap? Please write it down. We'll collect cards during the presentation and answer as many as time allows.

Your question: HOW MUCH OF THE COST OF THIS PROJECT WILL THE RATE PAYERS HAVE TO ABSORB?

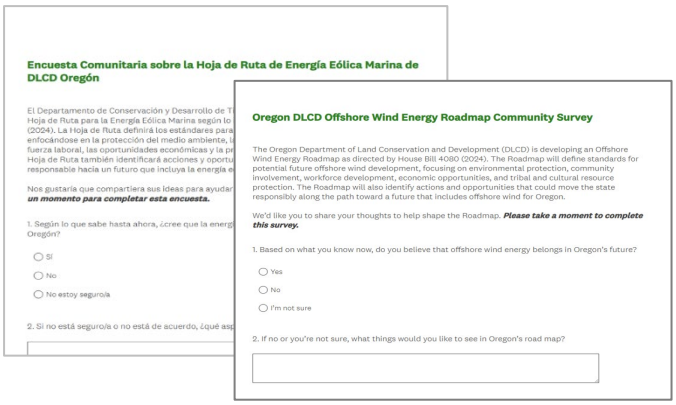
HOW WOULD REVENUES BENEFIT OUR COUNTIES?

WHAT IS THE DOWN TIME OF A TYPICAL WINDGENERATOR FOR MAINTENCE OR REPLACEMENT?

Offshore Wind Energy Survey

A survey on offshore wind energy and the Roadmap was distributed to gather input from the public. The survey was on paper at the meetings and online in both English and Spanish. While the survey was launched with the community meetings, it was designed to be open throughout the community engagement process to enable diverse community members to provide feedback throughout the process whether they attended a meeting or not. Results from the survey will be provided separately once it is complete.

Example of Paper Survey



Encuesta Comunitaria sobre la Hoja de Ruta de Energía Eólica Marina de DLCD Oregón

El Departamento de Conservación y Desarrollo de T
Hoja de Ruta para la Energía Eólica Marina según lo
(2024). La Hoja de Ruta definirá los estándares para
enfocándose en la protección del medio ambiente, l
fuerza laboral, las oportunidades económicas y la pr
Hoja de Ruta también identificará acciones y oportu
responsable hacia un futuro que incluya la energía e

Nos gustaría que compartiera sus ideas para ayudar
un momento para completar esta encuesta.

1. Según lo que sabe hasta ahora, ¿cree que la energ
Oregón?

- Sí
- No
- No estoy seguro/a

2. Si no está seguro/a o no está de acuerdo, ¿qué asp

Oregon DLCD Offshore Wind Energy Roadmap Community Survey

The Oregon Department of Land Conservation and Development (DLCD) is developing an Offshore Wind Energy Roadmap as directed by House Bill 4080 (2024). The Roadmap will define standards for potential future offshore wind development, focusing on environmental protection, community involvement, workforce development, economic opportunities, and tribal and cultural resource protection. The Roadmap will also identify actions and opportunities that could move the state responsibly along the path toward a future that includes offshore wind for Oregon.

We'd like you to share your thoughts to help shape the Roadmap. ***Please take a moment to complete this survey.***

1. Based on what you know now, do you believe that offshore wind energy belongs in Oregon's future?

- Yes
- No
- I'm not sure

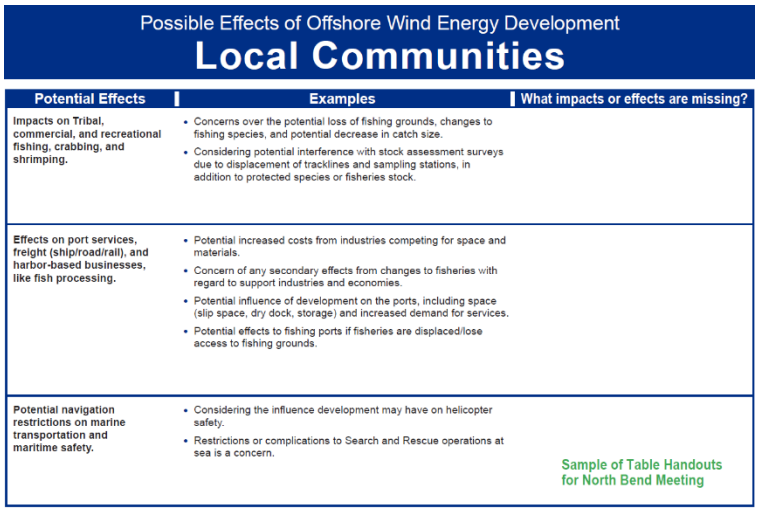
2. If no or you're not sure, what things would you like to see in Oregon's road map?

See Survey Findings section of this report for a sample.

Handouts

At the Brookings meeting handouts were provided at the tables to give community members an additional opportunity to provide input on what impacts or effects from offshore wind energy are missing from the Roadmap. The handouts focused on the following areas:

- Local Communities
- Cultural and Tribal Development
- Viewsheds, Recreation and Fishing
- Ocean and Environment
- Terrestrial Environment and Resources



Possible Effects of Offshore Wind Energy Development

Local Communities

Potential Effects	Examples	What impacts or effects are missing?
Impacts on Tribal, commercial, and recreational fishing, crabbing, and shrimping.	• Concerns over the potential loss of fishing grounds, changes to fishing species, and potential decrease in catch size. • Considering potential interference with stock assessment surveys due to displacement of tracklines and sampling stations, in addition to protected species or fisheries stock.	
Effects on port services, freight (ship/road/rail), and harbor-based businesses, like fish processing.	• Potential increased costs from industries competing for space and materials. • Concern of any secondary effects from changes to fisheries with regard to support industries and economies. • Potential influence of development on the ports, including space (slip space, dry dock, storage) and increased demand for services. • Potential effects to fishing ports if fisheries are displaced/lose access to fishing grounds.	
Potential navigation restrictions on marine transportation and maritime safety.	• Considering the influence development may have on helicopter safety. • Restrictions or complications to Search and Rescue operations at sea is a concern.	

Sample of Table Handouts for North Bend Meeting

Promotions

Individual promotional materials including graphics were developed to promote each of the community meetings. They included social media, flyers, email invitations, and news releases. In addition to the DLCD outreach lists, targeted lists were developed to promote participation of underrepresented groups. These promotions were distributed by DLCD and partners through their established communications channels. Notifications about the community meetings were advertised on the Oregon Offshore Wind Energy Webpage.

3 Focus Groups and Community-Based Partnerships

As part of Roadmap development, DLCD sought perspectives from communities along the coast. The Formation Lab led a series of focus groups and community-based partnership to ensure the coastal community is effectively engaged, diverse voices are heard and considered, and that participants will feel ownership in the outcomes of the Offshore Wind Energy Roadmap process and outcomes.

Goals

Focus groups and community-based partnerships provided an opportunity for DLCD to understand the breadth and depth of experiences of communities living and working along the Oregon Coast. The goals of the focus groups and community-based partnerships included:

- Identify communities that are not already organized and involved with the Roadmap.
- Engage potentially affected parties who may not yet be aware of or involved in the Roadmap.
- Understand the needs, values, and desires of low-income, diverse, and historically under engaged communities on the North, Mid, and South Oregon Coast.
- Understand the communication styles and preferences of low-income, diverse, and historically under engaged communities on the North, Mid, and South Oregon Coast.
- Identify potential community impacts of offshore wind development along the Oregon Coast.
- Identify potential community benefit opportunities and desires.
- Begin to answer the question: If the State of Oregon pursues offshore wind, what benefits could create positive community outcomes?

Plan Development Process

This Offshore Wind Energy Roadmap Focus Group and Community Based Organization Summary Report were developed using the following process:

- **Planning meetings:** Weekly planning meetings were conducted from March 2025 to November 2025, with staff representing the Offshore Wind Roadmap Project Management, DLCD's communications and engagement, and consultants.
- **Community-based partnerships:** An initial community-based partnership meeting was held with community-based organizations (CBO) representing the South Coast in June 2025. The meeting focused on understanding current knowledge and impressions of offshore wind development, community needs and values, past experiences with development, and communication preferences. Lessons from this initial community-based partnership meeting informed future engagement strategies. Additionally, community-based partnership meetings were conducted with north/central community-based organizations in November 2025.
- **Focus groups:** Focus groups were conducted with government partners, organizations, youth, and businesses from August 2025 to November 2025. Four focus groups were created and centered on various aspects of the offshore wind development and impact. These focus groups included: tourism, energy affordability, supply chain, and youth.

Outreach

All focus groups and community-based partnerships were conducted online via Zoom and lasted 1.5 hours. Outreach for each focus group and community-based partnership meeting followed a similar outreach process. Once the offshore wind Roadmap manager and DLCD communications lead confirmed the purpose of the community-based partnership and focus group meetings, an initial list of stakeholders was drafted. This list was vetted by Roadmap roundtable members, DLCD Coastal Division staff and occasionally, Business Oregon Regional Development staff, to ensure all appropriate interests were included. An outreach email was sent to promote the focus groups that outlined the Roadmap's origin and purpose, as well as the purpose, goals, and sample questions for the meeting. Stakeholders were contacted by phone and email up to three times.

Program Schedule

All focus groups and community-based partnerships were conducted between June 2025 and November 2025, as summarized in Table 1.

Table 1. Program Schedule for Focus Groups and Community-Based Partnerships

	Location/Focus Area	Date
Community-based partnership	South Coast	June 2025
	Mid Coast	October 2025 (scheduled)
	North Coast	November 2025
Focus group	Tourism	August 2025
	Energy Affordability	September 2025
	Supply Chain	October 2025
	Youth Focus Group	November 2025

Community Based Partnerships

Given the project's complexity and fear/distrust of government by marginalized communities, community-based partnerships focused on understanding the lived experiences of marginalized residents on the coast by connecting with staff representing social service community-based nonprofits. Staff at community-based nonprofits are most familiar with the interplay between marginalized residents' experiences, systemic resources, and community benefit needs. Given the shifting landscape of offshore wind, social service community-based organization staff were chosen as a representative party that would not be directly impacted but could speak to parties that would be directly impacted. Staff were offered a $75 visa online gift card in recognition for their time.

Community-based partnerships focused on roundtable engagement with social service CBOs representing housing agencies, food insecurity, domestic violence, Latine communities, LGBTQAI, veterans, seniors, and wraparound services. Community-based organizations representing advocacy or environmental interests were excluded, as they are well-represented in the Offshore Wind Energy Roadmap through other engagement.

While an initial approach considered dividing community-based partnership meetings by subject area (housing, food insecurity), the fact that many of the CBOs serve overlapping geographic communities and a variety of social service needs, a regional approach was pursued. Community-based partnerships were divided into three regions: North Coast, Mid Coast, and South Coast.

Each community-based partnership meeting engaged with the following communities:

- **North Coast:** Astoria, Cannon Beach, Cape Meares, Garibaldi, Gearhart, Nehalem, Netarts, Manzanita, Oceanside, Pacific City, Rockaway Beach, Tillamook, Warrentown and Wheeler.
- **Mid Coast:** Depoe Bay, Florence, Lincoln City, Newport, Toledo, Waldport's, and Yachats.
- **South Coast:** Agness, Bandon, Brookings, Charleston, Coos Bay, Gold Beach, Lakeside, North Bend, Port Orford, Reedsport, and Winchester Bay.

The first community-based partnership roundtable was conducted in June 2025. The first community-based partnerships focused on South Coast community-based organizations, as initial offshore development identified Brookings and Coos Bay as potential offshore wind development locations.

A full list of organizations who were contacted as part of the community-based partnership outreach can be found in Attachment A.

South Coast Community Based Organization Roundtable

A roundtable with South Coast social service community-based organizations was held on Zoom in June 2025. Sixteen organizations representing housing, food insecurity, youth, utility assistance, LGBTQAI+, Latine, and health equity were contacted for participation. LGBTQAI+, Latine, and health equity organizations attended the 1.5-hour roundtable. Participants were paid a $75 visa online gift card in recognition for their time. Participants were asked questions such as:

- How do you think offshore wind power could affect your community?
- What are the top issues, concerns, and challenges of the people you work with?
- Do your community members' needs change seasonally? If so, please explain.

Participants shared concerns regarding the potential effects of offshore wind development on housing affordability, human trafficking, local infrastructure, and marginalized communities. Participants shared that while job creation is crucial to the future of the South Coast, there is fear that locals do not have the training necessary to fulfill wind development jobs and that workers will be imported from other areas (whether from Oregon or another state). Housing supply and affordability are already limited, and the potential added workforce could push locals out. Participants highlighted limited transportation options and lack of a Curry County health system as areas that need to be improved before the South Coast would be ready for a large investment like offshore wind. Additionally, some participants believed that their rural communities have seen a correlation between an increase in construction activity and increases in sexual assault and human trafficking.

Some participants expressed a lack of trust in government and believed that past development has negatively affected the Oregon coast. Some participants expressed frustration of being engaged with DLCD's process as they felt their community had made their anti-offshore wind stance clear in the past

with the Bureau of Ocean Emergency Management (BOEM). Additionally, participants discussed how the BOEM process had lacked plain language and transparency. Communities along the South Coast felt engagement during the BOEM process was more about checking a box than engaging community perspectives. Participants expressed concern over the potential of relying heavily on offshore wind as an economic driver, as the South Coast had on timber production in the past because it could end up leaving their community more disadvantaged.

For participants, the long-term potential of offshore wind development feels far from their day-to-day needs. They said, that Latine communities along the south coast already struggle with food insecurity and lack of job availability, which have compounded through an increase in federal immigration activities. Many Latine community members expressed not having the mental, emotional, and financial resources to monitor long-term environmental projects. Additionally, given recent federal immigration activities many Latine community members are not interested in participating in government community engagement at this time.

North/Mid Coast Community Based Organization Roundtable

A roundtable with Mid Coast social service community-based organizations was scheduled for October 2025. Seventeen organizations representing housing, food, wrapping services, domestic violence, seniors, and veterans were contacted for participation and offered a $75 visa online gift card in recognition of their time. Since only one organization from Florence representing housing had confirmed attendance, a decision was made to combine the North Coast and Mid Coast community-based organization roundtables.

A roundtable with North Coast social service community-based organizations was held on Zoom in November 2025. Seventeen organizations representing emergency services, housing, food insecurity, youth, utility assistance, LGBTQAI+, Latine and prison re-entry were contacted for participation and offered a $75 visa online gift card in recognition of their time. Nine organizations, including the previous organization from the Mid Coast, confirmed attendance. Unfortunately, only one organization, representing the LGBTQAI+ community, showed up to the roundtable. The participants were asked questions such as:

- How do you think offshore wind power could affect your community?
- What are the top issues, concerns, and challenges of the people you work with?
- Do your community members' needs change seasonally? If so, please explain.

While it is uncommon for nine separate organizations to confirm attendance and only one shows up to a paid roundtable, it is unfortunately a common occurrence currently. Federal cuts to SNAP, homelessness service budgets and increases in immigrant surveillance have left social service providers overburdened as they struggle to fill gaps. Social service organizations are attempting to do more to support their ever-struggling communities but have less resources to do so. Long term offshore wind development engagement falls second tier to social service CBO's need to address their population's urgent health and safety needs. During follow up engagement with CBOs who did not attend, more than one attributed

their absence to emergency coordination meetings with other providers to meet their community's current mounting needs.

The North Coast organization representing the LGBTQAI+ community echoed many of these concerns and ones expressed by the South Coast community-based organizations. They stressed that it is important that government agencies meet vulnerable communities where they are—which at times also means prioritizing vulnerable communities with more urgent and pressing needs. They described healthcare services as an important north coast economic driver, while also reflecting that access to healthcare is a challenge in coastal communities.

Focus Groups

Focus groups were identified by surveying communities of interest who had yet to engage with the Roadmap process through community meetings, roundtables, or work groups, but were likely to be affected by offshore wind energy development. The focus groups were divided between:

- **Tourism:** Outreach was conducted to travel organizations, visitors' associations, and chambers of commerce across the Oregon coast to discuss coastal communities' small business and tourism economies.
- **Energy Affordability:** Outreach was conducted to energy affordability organizations and local energy providers to understand resiliency of the coastal grid, as well as risks to energy providers and utility customers along the Oregon Coast.
- **Supply Chain:** Outreach was conducted to ports and businesses who had potential interest in offshore wind supply chain development. The goal of the focus group was to identify supply chain needs, impacts, and barriers to development of offshore wind.
- **Youth**: Outreach was conducted to high schools and community colleges located along the Oregon Coast. The goal of the focus group was to understand community values, youth economic prospects, and youth visions for the future of the Coast. Youth were offered a $50 online Visa gift card honorarium for their time.

A full list of businesses, schools, individuals, and organizations who were contacted as part of the focus group outreach can be found in Attachment B.

Tourism

A focus group with tourism stakeholders was held on Zoom in August 2025. Twenty-three entities were contacted for participation, including chambers of commerce, visitors' associations, and travel bureaus. Eight organizations representing statewide, county and city tourism interests participated in the 1.5-hour focus group. Participants were asked questions such as:

- How might offshore wind affect the tourism industry and economy? What industries might be most impacted?
- How might offshore wind affect local businesses in your community? What questions do you predict local businesses having?

- What steps does the State of Oregon need to take to make a responsible and equitable decision on whether to implement offshore wind?

While much of the Offshore Wind Roadmap engagement discussed community impacts, the tourism focus group highlighted the foundational impact the coastal viewshed has on the tourism industry. A representative from Travel Oregon stated that 96% of travelers to the Oregon Coast were motivated by its scenic beauty. Tourists flock to the coast in the summer to watch the sunsets and storm watching is a large part of the winter economy. While decisions on turbine location, distance from shore, and nighttime lighting are yet to be determined, concern was expressed that they will interrupt the pristine coastal landscape. Statewide tourism stakeholders discussed advancements in recent years driving tourists to the South Coast. They expressed concern that offshore wind development's impact on the viewshed has the potential to undo their progress. Offshore wind development has the potential to negatively impact the commercial and recreational fishing industry, which are central to Oregon coastal economies. Whether disruptions to the viewshed or potential impacts on marine life, participants expressed concerns regarding offshore wind impact on the marine environment. Participants cited wildlife tours and charters (watching whales, seabird viewing, local fishing trips, crabbing) as foundational aspects of the tourism industry. If they were to be disturbed by offshore development, there would be trickle down effects on hotels, grocery stores, and the restaurant industry. In many coastal towns, restaurants and hotels are the primary employers.

While tourism stakeholders echoed CBO concerns regarding available and affordable housing, they also discussed the potential effect offshore wind construction could have on lodging taxes. Oregon has a state-mandated tax of 1.5% on the total amount charged for temporary lodging (less than 30 days). This tax applies to hotels, motels, vacation rentals, and campgrounds. The revenue was generated by the Oregon Tourism Commission (Travel Oregon) programs. In addition, most cities and counties on the Oregon Coast levy their own local transient lodging taxes. When large construction and infrastructure projects have come to the coast, companies have often rented hotels out for long term (more than 30 day) stays given the lack of housing availability. For longer than 30 days, the lodging tax no longer applies. Given that more than 60% of lodging taxes go to fund community and local services, a large construction workforce could decrease already underfunded local services. Additionally, a portion of lodging taxes go to support tourism marketing for coastal communities, and participants expressed concern that this could create a feedback loop that hinders tourism even after temporary workers have left the community.

Although coastal communities need increased funding and development, there is a deep risk in prioritizing short term needs without considering long term impacts. Participants noted that the estuaries are unique and fragile. Given how new offshore wind development still is, participants expressed concerns over the long-term impacts to the ocean, cliffsides, beaches, and marine ecosystems. Participants highlighted that there is still so much uncertainty related to the long-term effects of implementing, operating, and eventually decommissioning offshore wind. Another participant noted that they had worked in tourism during the fracking boom/bust in Texas and had seen the long-term destruction it had on housing and the tourism economy. Once an area no longer becomes known as a tourist destination, people travel elsewhere. Participants noted that long-term impacts on the

tourism economy and environment need to be better understood before moving forward with offshore wind development.

Energy Affordability

A focus group with energy affordability stakeholders was held on Zoom in September 2025. Seventeen entities were contacted for participation, representing local energy providers, statewide energy interests, and energy advocacy organizations. Seven organizations representing statewide and local energy providers participated in the 1.5-hour focus group. Additional participants declined attendance citing offshore wind's lack of federal support and likely elongated timeline. Some participants noted that because offshore wind in Oregon is not expected to advance in the near future, engagement at this step was deemed unnecessary. Participants were asked questions such as:

- What energy resiliency, reliability or affordability issues do you or those you represent face today? What energy resiliency, reliability, or affordability issues do you anticipate in the coming years?
- How could offshore wind solve energy-related problems or create new ones?
- What steps or policy interventions should the State of Oregon take to help manage risk to energy providers and customers?

Participants noted energy affordability and grid capacity as top future concerns. Right now, hydro-electric power from Bonneville Power Administration provides affordable and carbon-free power. Participants expressed concerns that Oregon is already in a projected deficit of energy production for the next 10 to 15 years, and data center development will increase while hydro-electric power may be decommissioned or become constrained by changing precipitation patterns. Rural communities are currently facing low speeds and unreliable internet access. Data centers will put further pressure on power needs and will demand stable, reliable, and high-quality energy. Some participants noted that offshore wind power has the potential to support growing demand, but they projected it would do so seven to eight times the cost. Focus group participants suggested a diverse mix of power sources (to include geothermal, small modular nuclear reactors, onshore wind), rather than focusing on one primary provider (offshore wind) could aid in grid resiliency and energy affordability.

Storage, franchise, and wheeling opportunities that emphasize local and state benefits need to be further developed before offshore wind development is considered. Participants expressed that based on the current state of knowledge, the potential financial benefits from wheeling/franchising would likely not outweigh adverse impacts to existing economic drivers on the coast such as fishing and tourism. Participants noted that given the variety of unknowns with offshore wind development (both in federal and state policy and industry), additional energy transition or upgrade efforts should be pursued before implementing offshore wind. Some participants expressed concerns that wind energy is not a dispatchable resource if it is not accompanied by a battery storage system. They also noted that historically, wind and battery storage do not couple well together. The focus group discussed scenarios that included building and supplying power to Oregon or building offshore wind in Oregon and supplying it to California. Many participants expressed little interest in developing offshore wind that would supply energy to California. Participants stressed that to move forward with offshore wind development, the

state needs to learn from national and international offshore wind development failures and further develop local and state benefits.

Supply Chain

A focus group with supply chain stakeholders was held on Zoom in October 2025. Twenty-five entities including ports and manufacturing businesses were contacted for participation. Three individuals representing Business Oregon and local manufacturing businesses participated in the 1.5-hour focus group. Many entities did not respond to outreach while additional participants declined attendance citing federal policy shifts that indicated offshore wind would not happen in Oregon anytime soon, if at all. Participants were asked questions such as:

- What should the state do before making decisions around offshore wind to help manage risks to your interests?
- What are the opportunities that feel most feasible as it relates to offshore wind in Oregon?
- What would you need to capitalize on offshore wind potential, either direct support or the supply chain industry?

Participants emphasized that Oregon's energy strategy must take a comprehensive, systemwide view of infrastructure, including transmission, substations, lines, easements, rights-of-way, permitting, and land use. They highlighted that strengthening resilience across this entire system will support both existing needs and future energy development, with some participants expressing a preference for intentionally overbuilding to ensure long-term preparedness. Concerns were raised about the vulnerability of coastal communities, which could face severe impacts during emergencies due to limited transmission capacity. As a result, the group stressed that the state should proactively invest in energy infrastructure to build redundancies and enhance reliability statewide.

Some stakeholders emphasized strong potential for both interstate and intrastate collaboration, particularly with California. Some noted that California's efforts to build port infrastructure in Humboldt present a clear opportunity for Oregon to engage in dialogue and explore supportive roles that could yield shared economic benefits. The group discussed where Oregon may be especially well-positioned to contribute to and leverage opportunities tied to offshore wind energy—such as port capacity, clean-technology innovation, metals and machine manufacturing, and services to Eureka and other coastal areas. They also stressed that Oregon should focus on its natural strengths while evaluating collaboration opportunities with California not only in offshore wind, but also in areas like transmission grids, energy markets, and broader port development, all of which will require significant regional coordination and port support.

Participants emphasized that offshore wind presents significant economic development and job-creation opportunities, particularly for Oregon's coastal and rural regions. They highlighted the work of the South Coast Energy Council—a nonprofit focused on renewable energy, economic development, and grid resilience—which is engaging local businesses and identifying firms that could support or benefit from offshore wind but may not yet see the connection. Stakeholders noted that the level of engagement required for offshore wind is like other clean energy industries, but success will depend on strong

coordination between business and labor, as well as state support to help Oregon companies service both in-state needs and opportunities in California. They urged expanding incentives for renewable-energy companies, including those involved in offshore wind, and stressed the importance of investing in rural infrastructure, port development, industrial lands, and energy improvements to strengthen local economies. Participants appreciated that the Roadmap addresses industrial and economic development alongside tribal and environmental considerations, reflecting priorities important to Oregonians. They also emphasized prioritizing local jobs and Oregon-based companies rather than large multinational firms and ensuring industries such as fishing can continue to operate alongside offshore wind. They called for a functioning, well-supported port system, strong workforce development in skilled trades and maritime fields, and community benefits that promote long-term sustainability for coastal communities.

Youth

A focus group with coastal youth stakeholders representing 16–24-year-olds was held on Zoom in November 2025. Twenty-two high schools and three community colleges were contacted for participation. Six high schools expressed interest in participation. Two students from Port Orford High School and one student from Clatsop Community College participated in the 1.5-hour focus group. Students were compensated for their time with a $50 visa gift card. Participants were asked questions such as:

- What are your community's values?
- How might economic growth on the coast affect your future and decisions about where to live and work?
- How can the state make a decision that is responsible for your future? What values do you want the state to protect?

Students emphasized the need to preserve coastal values when considering economic development opportunities. Youth participants echoed tourism stakeholders by highlighting small fishing and hospitality businesses as the main economic industries on the coast. Youth discussed the entrepreneurial and self-reliant nature of many coastal communities, given the lack of available jobs. Students shared that many young people move to larger metropolitan areas like Portland and Seattle for their prime earning years. Students shared that if there were additional well-paying job opportunities on the coast, they could envision staying there after high school or college. While students stressed the lack of future job opportunities on the coast, they cautioned that offshore wind development would need to be implemented responsibly to be received well by community members. Youth feared offshore wind development could jeopardize coastal beauty, access to water and recreation, and affordability. Youth discussed the spiritual connection they had to the beauty of the ocean and the role that natural recreation opportunities play in coastal life. Youth on the southern coast expressed current affordability concerns in their community, while north coast youth shared that Astoria has gotten more expensive as more young people have moved into the community.

Youth expressed support for offshore wind if legal protections for the climate and local communities were at the forefront. Students saw offshore wind as progress in helping reach state climate goals while

providing local, clean energy jobs. However, students feared that offshore wind development could endanger existing coastal ecosystems, the fishing industry, and local ways of life.

Latine Focus Group

A focus group centering the experiences of Latine communities throughout the Oregon coast was considered. Four organizations representing Latine communities on the North, Mid and South coast were contacted from September – November 2025. Given the increase in federal immigration activities, several engagement options were proposed to organizations including a paid survey, a virtual meeting, and an in-person meeting at the organization's existing groups. North coast Latine-serving organizations expressed concerns with instituting a survey, given their experiences of low engagement in written and digital surveys. North, Mid and South coast all noted safety concerns for in-person meetings, government distrust and fear, and lack of urgency around offshore wind development as detriments to engagement. As such, a Latine focus group was determined to be infeasible.

Common Themes

Although offshore wind could contribute to Oregon's clean energy targets and growing power demand, many participants expressed doubts that its anticipated benefits would offset the significant burdens it places on coastal communities. Coastal communities need affordable housing, long-term local economic development and increased social services. Participants expressed concerns that offshore wind would intensify existing challenges and compromise their communities' strengths. Some emphasized that the state should not trade long-term community wellbeing for offshore wind development**.** A statement made by a participant in the energy focus group echoed throughout engagement, "Offshore wind is not good, if it is not good for the coast."

Building trust takes time, but communities are stretched thin with immediate needs. Coastal communities are living day to day due to changes with the economy, social safety nets, and shifting federal and state priorities. They are focused on their community's safety, access to food, and ability to pay rent. These uncertainties all limit community members' capacity to engage, especially when offshore wind does not feel imminent. While coastal communities worry about the negative impacts of offshore wind, they currently have more pressing needs that come first. While roadmap engagement succeeded in engaging coastal communities early on, the state should consider further engagement with communities to understand ongoing and developing needs. For example, youth asked for ways to actively participate, such as advisory roles and accessible communication formats like TikTok.

There is high interest in economic development and jobs, but skepticism that offshore wind energy will deliver those benefits to coastal residents. Coastal communities have a pressing need for economic opportunity—but they have been disappointed by government entities and businesses before. Many see that offshore wind could stimulate their economies, but do not trust that those opportunities will translate into real jobs for residents. Participants noted past industries had promised economic vitality but left their communities with vacant buildings and unemployment instead. Some participants say coastal communities need more than promises; they want guarantees. Demonstrating concrete policies,

community benefit agreements, and local hiring requirements will be essential to making offshore wind beneficial.

Affordable housing is in short supply and offshore wind may make things worse. The Oregon coast already has a limited stock of affordable housing given the lack of density and persistent competition with vacation housing. Some participants worry fear that the temporary workers needed to implement offshore wind would either stress available housing supply or strain local hotels. Participants noted the ripple effects on tourism funding and social service funding that this could cause.

Participants worry that offshore wind could alter the coast's identity. Participants consistently emphasized the importance of protecting and preserving the coast's cultural, environmental, and scenic heritage. Youth and long-time resident participants highlighted their deep connection to the ocean, fishing, and the natural beauty that draws visitors and defines coastal life. Many expressed anxieties about irreversible impacts on viewsheds, wildlife, fisheries, and environmentally sensitive areas, noting that these attributes are central to both community identity and a $2.5B tourism economy. Tribal participants and other community members stressed that the coast is "one of the last great places" with clean water, clean air, and abundant food—and that once degraded, these qualities cannot be regained.

Energy affordability and resilience are important, with wind power being one piece of the energy puzzle. Participants recognized that Oregon has growing energy needs but noted that offshore wind should be considered alongside broader clean energy investments. Whether or not offshore wind proceeds, they argued that Oregon must upgrade energy infrastructure—ports, transmission lines, industrial land, and grid resilience—to meet increasing electricity demand from data centers, population growth, and the potential for dwindling hydro energy availability. There was broad acknowledgment that preparing Oregon's energy infrastructure is necessary with or without offshore wind.

Attachment A: Community Based Partnerships

- **North Coast**
  - CARE Tillamook
  - Clatsop Community Action
  - Community Action Team
  - Consejo Hispano
  - El Centro NW
  - Emergency Volunteer Corps of Nehalem Bay
  - Food Roots
  - Helping Hands Re-entry Outreach Centers
  - Lower Columbia Q Center
  - Nehalem Bay Community Services
  - North County Food Bank
  - Northwest Senior and Disability Services
  - Oregon Cascades West Council of Governments
  - Oregon Food Bank Tillamook County
  - South County Community Food Bank
  - Tides of Change
- **Mid Coast**
  - Community services consortium
  - Family Promise of Lincoln County
  - First Step Florence
  - Florence Senior and Activity Center
  - Food Share of Lincoln County
  - Newport Community Food Project
  - Northwest Coastal Housing
  - Oregon Cascades West Council of Governments
  - Our Coastal Village
  - Safe Shelter for Siuslaw Students
  - Samaritan House
  - Siuslaw Outreach Services
  - South Lincoln Resources
  - Toledo Food Share Pantry
  - UCan
  - Yachats Youth and Family Activities Program
- **South Coast**
  - The Ark Project
  - Bay Area First Step
  - Coos Bay Library
  - Coos Hispanic Allies / Coos Aliados Hispano
  - The Devereux Center
  - North Bend Senior Center
  - Oregon Coast Community Action
  - Salvation Army Coos Bay

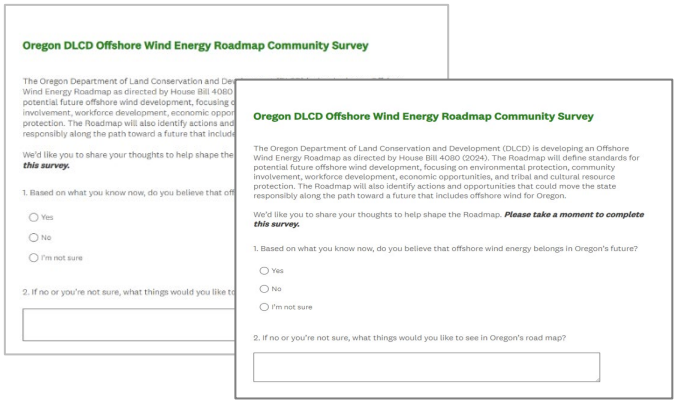
- South Coast Gospel Mission
- South Coast Health Equity Coalition
- Southern Oregon Coast Pride
- Youth Era Coos Drop

Attachment B: Focus Groups

- **Tourism**
  - Explore Lincoln City
  - Newport Chamber of Commerce
  - Seaside Visitors Bureau
  - Tillamook Area Chamber of Commerce
  - Travel Lane County
  - Astoria-Warrenton CoC
  - Bandon Chamber of Commerce
  - Bay Area Chamber of Commerce
  - Cannon Beach Chamber of Commerce
  - Eugene Cascades and Coast
  - Florence Chamber of Commerce
  - Lincoln City Chamber of Commerce
  - North Bend Visitors Information Association
  - Oregon Adventure Coast
  - Oregon Coast Scenic Railroad
  - Oregon Coast Visitors Association
  - Seaside Chamber of Commerce
  - Tillamook Chamber of Commerce
  - Tillamook Coast Visitors Association
  - Travel Curry County
  - Travel Oregon
  - Travel Southern Oregon Coast
  - Yachats Chamber / Visitors Center
- **Energy Affordability**
  - BPA
  - Central Lincoln PUD
  - Citizens Utilities Board
  - City of Bandon
  - Coos Curry Electric Cooperative
  - Douglas Electric Cooperative
  - Northwest Energy Coalition
  - ODOE
  - Oregon Just Transition Alliance
  - Oregon Public Utility Commission
  - Pacific Power
  - PacifiCorp
  - PGE
  - Tillamook PUD
  - Unite Oregon
  - Verde

- **Supply Chain**
    - AdvanTec Marine
    - Aris Hydronics
    - Avista
    - Billeter Marine
    - Business Oregon
    - DB Western
    - Englund Marine
    - Fred Wahl Marine
    - Jones Stevedoring
    - Koontz Machine
    - McGowne Ironworks
    - Northwest Native Chamber of Commerce
    - PGE
    - Port of Coos Bay
    - Port of Newport
    - Port of Portland
    - Port of Umpqua
    - Prosper Portland
    - Regional Solutions Teams
    - Sause Bros
    - SDCC
    - Tarheel
    - Vigor
    - Willamette Technical Fabricators
- **Youth Focus Group**
    - Alternate Youth Activities
    - Astoria High School
    - Bandon Senior High School
    - Brookings Harbor High School
    - Lincoln City Career Technical High School
    - Marshfield High School
    - Myrtle Point High School
    - Neah-Kah-Nie High School
    - Newport High School
    - North Bend High School
    - Oregon Coast STEM hub
    - Pacific High School
    - Reedsport Community Charter School
    - Reedsport Community Charter School
    - Siletz Valley Early College Academy
    - Siuslaw High School
    - Taft High School
    - Tillamook High School
    - Toledo High School
    - Waldport High School
    - Warrenton High School
    - Winter Lakes High School

4 Offshore Wind Energy Roadmap Community Survey



As part of the community engagement process, a survey supporting the development of the offshore wind energy roadmap was distributed to gather additional input from the public. The survey included multiple choice, ranking, and open-ended questions to help assess community priorities, identify gaps in the offshore wind roadmap process, and gain personal insights from respondents. Some respondents had the opportunity to hear a presentation on Oregon's Offshore Wind Energy Roadmap process prior to answering the survey. Some respondents participated in community meetings, round table discussions, or other community engagement opportunities.

The survey was available in both paper format and online in both English and Spanish. A copy of the English version of the survey can be found in Attachment A.

About Survey Respondents

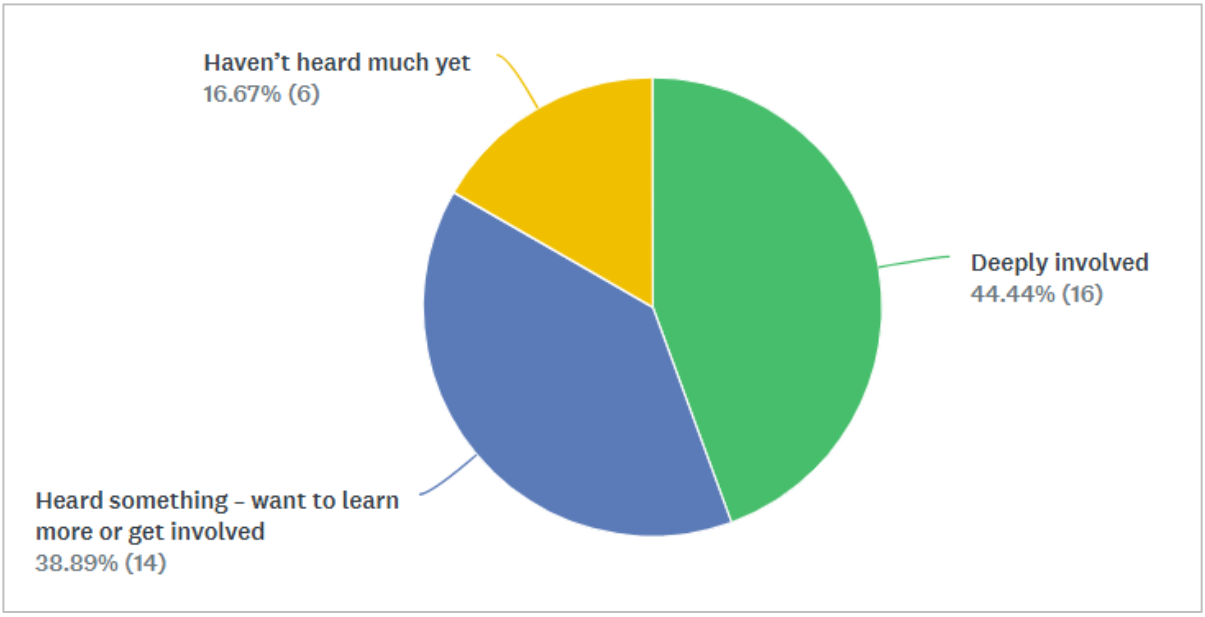
37 respondents completed the survey.

County Representation

The heaviest representation came from Coos County (55.88%), Curry County (17.76%), Clatsop County (11.76%), Lane County (2.94%) Lane (2.94%) and other community (8.82%).

Involvement in Offshore Wind Energy

More than 80% of survey respondents had some level of involvement and understanding of offshore wind energy in Oregon.

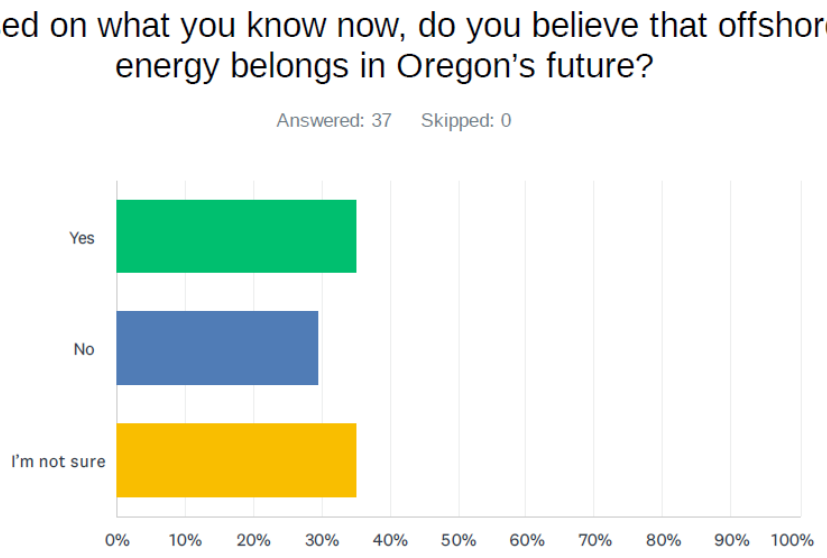


Survey Findings

Perceptions about Offshore Wind Energy in Oregon

Respondents were asked if they believed that offshore wind energy belonged in the future. Nearly 30% believed that that it did not belong, while 35% believed it did belong in the future and 35% were not sure.

These results indicate that participants are divided in their views about the future role of offshore wind energy in Oregon. Support and opposition are nearly equal, with a significant portion of respondents remaining unsure. This may suggest varying levels of awareness, differing priorities, or uncertainty about the impacts of offshore wind energy, pointing to an opportunity for future education, information-sharing, or discussion.



Highlights of What Respondents Would Like to See in the Roadmap

Common themes that emerged from respondents centered around environmental protections and impacts, renewable energy alternatives (solar mentioned most often), energy infrastructure, and facility siting.

Environmental Impacts and Protection

- "Better understanding of impacts to the environment, especially whales. Better understanding of the connection to climate change mitigation. (So far, building renewable energy has just increased energy demand, not reduced fossil fuels. This is a huge problem. Do we want to have both global climate change AND the significant impacts of offshore wind.) Better understanding of the port facilities that would need to be added to make this happen at scale (and the impacts of those facilities.)"
- "Stronger ocean protection. Protection for existing uses."
- "Environmental protection is my greatest concern. I would back wind energy 100% if there was no harm to the environment and animals."
- "More specific on enforcement of onshore and offshore impacts no harm done is not sufficient protection when talking about environmental protection of species."
- "Clear depiction of pros and cons for potential marine life, fisheries, ad visual impacts. Comparisons of environmental costs and economic benefits relative to other renewable energy options throughout the State."
- "Issues, concerns and opportunities assessment of potential environmental impacts including fisheries habitat, fishery industry harvesting methods, marine currents and predicted climate change impacts, cost of installation, maintenance and removal."

- "Environmental protection should include what species (marine mammal, whale, dolphins, porpoises as well as endangered birds species) that currently either migrate or use the area and what hazards would this development pose to them."
- "Any of the deep-sea wind development will have to have very large ports and how would that affect our estuaries especially those currently grow oysters and other shellfish. Most would have to be enlarged, causing harm to the current estuary systems."
- How will Offshore Wind Energy developments be anchored into the deep-sea bottom when we are experiencing increasingly very large wind and atmospheric rain events as our earth warms? The number of large cables used to hole these developments will pose a threat to marine life, especially as heavy winter seas could destroy the moorings and the cables would be all over the sea floor.
- "Disclosure of environmental impacts and impacts to fishing/fisheries."
- "Stronger ocean protection. Protection for existing uses."
- "More study must be done to identify problems that may occur to the ocean floor and the creatures that inhabit it."

Renewable Energy Alternatives and Offshore Wind Energy Infrastructure

- "Solar on every roof. On shore wind in appropriate places - leases at edge of agricultural fields?"
- "All of the east side of the Cascades Mountain Range is perfect for solar energy panels. The collection systems could be raised off of the ground so all animals could migrate underneath them."
- "Lack of comparison of alternative energy production what is actual costs compared to long-term mystery of wind turbines."
- "Look at other renewable energy options before this invasive start. Like solar, or wave technology."
- "…more definite plans as to how the offshore wind production would connect to the state's electrical grid. I would like to see a means of compensation for the southwest Oregon coast since it is likely that our fishing industry will be negatively affected, and that there will be a drop in tourism. How will the coastal electrical production be connected to the grid in the interior of the state…"
- "Locations of proposed sites far away from migratory marine mammals' and birds' known paths. Also, sensitivity to native Americans' ancestral locations and ceremonies."

Community Impacts

- "A full assessment of all potential and likely environmental and social impacts to be incorporated into a net benefit analysis of offshore wind that includes all potential environmental and social benefits and costs including impacts on the climate."

- "Adaptive management. Role of local government: city and county governing bodies. Empowered partners in managing costs and benefits."

Economy and Job Creation

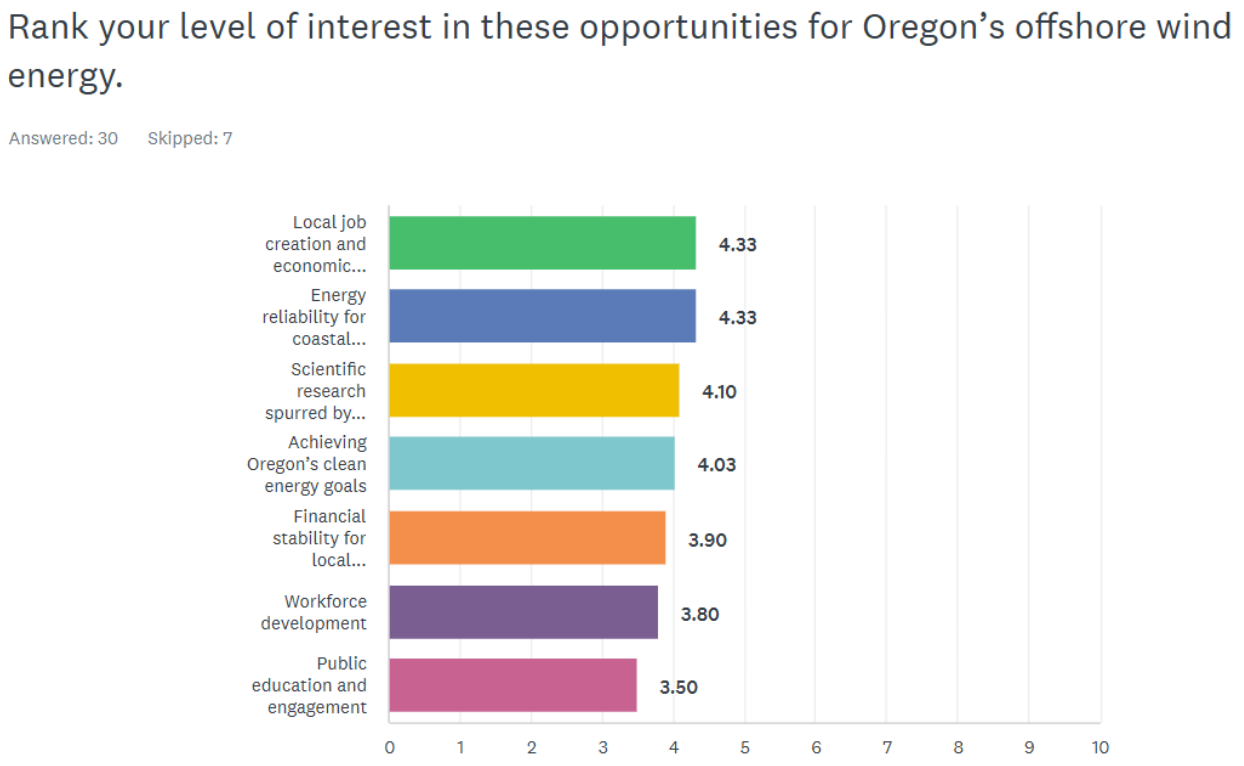
"Utilization of renewable and sustainable energy from biomass, encouraging job creation in natural resource management and locally controlled and operated, independent, transparent energy."

Other

- "Better roads along the coast stop spending all of our tax money on people who don't want to get help."
- "Tsunami considerations."
- "Tribal inputs Elaka response."

Respondents Level of Interest in Different Opportunities for Offshore Wind Energy

To better understand respondents' relative preferences, the survey asked participants to rank their level of interest in several opportunities for offshore wind energy in Oregon. Respondent's rankings are in the chart below. Local job creation and economic benefits and energy reliability for coastal communities are tied, ranking number one.

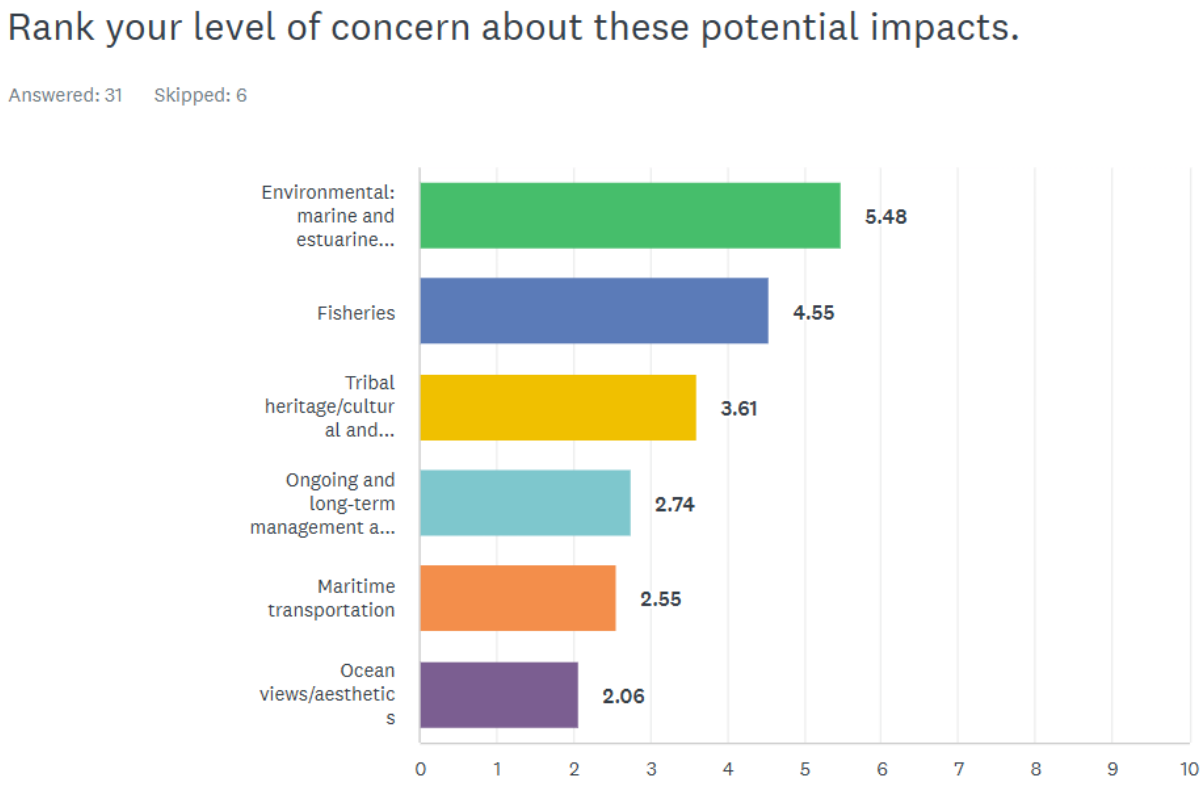


When asked to share their opinions on other opportunities for offshore wind energy in Oregon, some respondents were interested in opportunities associated with job creation and workforce development, others were not supportive of offshore wind energy development in the state.

- “Utilizing apprenticeship programs and union labor”
- "Protecting existing fishing and tourism jobs.”
- “Workforce development”
- “I don't find any of these to be opportunities for anyone in the state of Oregon”
- “Alternatives - wave energy, near shore kelp activates, biomass”

Level of Concern About Potential Impacts

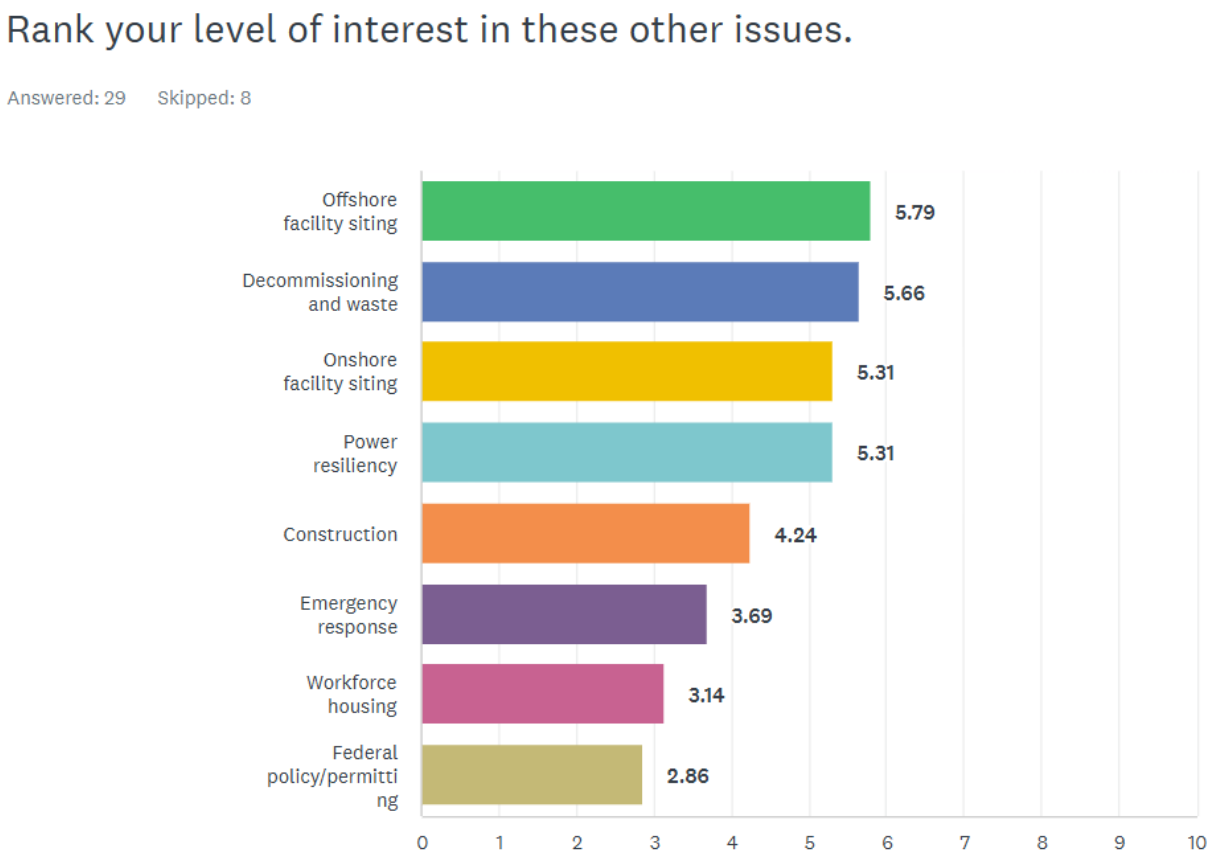
The survey asked respondents to rank their concerns about potential impacts from offshore to help clarify which issues they saw as most important. These highlight priority concerns and help guide where attention can be focused. The top concern was environmental - marine and estuarine habitats and species. This was followed by fisheries and tribal heritage/cultural and archeological resources.



Other impacts sited by respondents included economic instability from the “boom-and-bust” phases of development, impact on schools, local infrastructure, waste, monitoring, and maintenance.

Level of Interest in Other Issues

In addition, respondents were asked to rank their level of interest in other issues. The greatest interest areas were associated with the facilities needed to support wind energy. These included facility siting, decommissioning and waste, and impacts on the shipping channel.



Highlights of Comments about Interest in Other Issues

- "decommissioning plans"
- "Whether or not the shipping channel needs to be deepened and/or widened. I am opposed to any deepening and widening of the existing shipping channel."
- "Cumulative effects and monitoring costs."

Rules or Standards to Ensure Offshore Wind Energy Benefits Community

Respondents were asked to share what one rule or standard they would set to ensure offshore wind benefits the community or avoids an impact they are worried about. Comments regarding rules and standards are grouped into common themes outlined below.

Local Community Impact

Respondents were interested in prioritizing the local communities and ensuring that local communities receive the benefits of offshore wind energy first.

- "Impacts to the environment and community need to be fully understood early (before any leases) and mitigation measures identified."
- "Power would be subsidized/provided to local communities first."
- "That offshore wind does not displace existing users. That no state or federal be used to subsidize offshore wind."
- "Real life costs"
- "Prioritize addressing effects on marine life over economic benefits - i.e., if it costs more to care for the marine ecosystem then we should all pay those costs to move forward with offshore wind."

Environmental Impacts and Protection

Protection of the environment is a top priority for respondents. The state should set rules and standards to protect the environment and minimize impacts from offshore wind energy.

- "…monitors would be present and make sure that the construction does the most minimal damage possible to wildlife/environment. Whether or not the facilities are onshore or offshore the environment needs to have as little disruption as possible…"
- "Estuaries should not be damaged by any widening of the shipping channels that would be needed for these incredibly large ships that has to bring supplies to maintain these Offshore Wind developments. No Offshore Wind developments place in the path of migrating marine life (whales, sharks, seals, and sea lions).
- "No harmful impacts to marine life, animals, and the environment."
- "First priority: effect on climate change and local offshore ecosystems."

Renewable Energy Alternatives

Respondents recommended that the state investigate other alternative energy sources:

- "…fully examine and assess all possible on- and offshore impacts of construction and operation of the facilities in comparison to substitutable alternative modes of energy generation."

Data and Science-based Decision Making

Respondents shared that decision-making should be based on science and other evidence.

- "Do the science…non-partisan, transparent and inclusive research."

Cultural and Tribal Interests

Respondents noted the tribes' local knowledge and connections and expressed the need to include them in the research and decision-making process.

- "…Consult with tribes for workforce, because we will always be here as we always have."

Steps that the State Should Not Skip in the Road Map Process

To help identify potential gaps in the state's process, respondents were asked to identify what steps in the process should not be skipped when determining if offshore wind energy should be part of Oregon's future. Comments are grouped around common themes.

Economy and Workforce

- "Identifying the true economic impact to other potentially displaced ocean users."
- "Should not skip that several union workers can benefit from a project like this. An apprenticeship recruitment to put apprentices to work on Oregon coast."

Local Community Impacts

- "Making sure that financial benefits don't just accrue to the private sector, but also to the state and local communities impacted"
- "Fully funded decommissioning"
- "Do not allow development that will have to have an exception to our current land use laws."

Public Outreach and Engagement

Public outreach and engagement should be included so that impacted local community members are informed, considered, and engaged. Communications should be clear and targeted so that the average community member understands offshore wind energy road and its implications.

- "Talk to residents of coastal communities and those in the interior and seriously consider the negative/positive impacts to them. Preserve the ocean and our coastline for future generations."

Renewable Energy Sources and Environmental Impacts Versus Economic Benefits

Compare potential environmental costs to the potential economic benefits with other energy sources (solar, onshore wind, geothermal, nuclear, coal or gas-powered power generation) around the State, so that decision makers know what is being given up and gained in a comprehensive way. This analysis should go beyond Oregon to neighboring States' offshore areas.

Comprehensive Assessments on the Environmental Impacts

The state should undertake comprehensive and detailed assessments of the environmental impacts of offshore wind energy. This should be done early in the process and include cumulative the impacts on wildlife, bird species, the ocean floor.

Suggestions included mapping the ocean floor and detailing the effects to the sub sea floor installation and operation, especially regarding methane deposits and seismic impacts.

Accountability

Respondents are interested in ensuring that there are accountability and transparency in the process.

- "A third-party monitor needs to oversee construction - not a person that works for the contractor."

Recommended Actions that Oregon Could Take in the Next 5-10 Years

The comments regarding actions the state could take in the next 5-10 years to be more ready for a future that might include offshore wind, reflected similar themes:

- ✓ Focus on the environmental impacts of offshore wind energy development
- ✓ Educate and involve the community in the decision-making process
- ✓ Engage with tribal communities and get their perspectives
- ✓ Assess other renewable energy options and conservation as alternates to offshore wind
- ✓ Partner with local communities, tribes, and neighbors
- ✓ Create good paying jobs that support thriving coastal communities

Highlights of Comments About Recommendation Actions

- "Fund necessary studies to assess environment impacts and impacts to fishing jobs."
- "Provide fact-based factual information to prevent confusion and misinformation."
- "Ensure that the development of offshore wind does not occur at the expense of improving end use energy efficiency and development of distributed residential and commercial renewable energy supply…"
- "Cost-benefit analysis of ALL energy options and reduction in consumption vs supporting data centers/AI some offshore wind, some biomass, local benefits highest priority."
- "Work closely with neighboring States and Canada on these issues - Oregon is not an island, especially when it comes to migration of marine species."
- "Good paying union jobs, clean energy, make coastal communities thrive again."

Attachment A: Community Survey

What should be in Oregon's roadmap for offshore wind?

The Oregon Department of Land Conservation and Development (DLCD) is developing an Offshore Wind Energy Roadmap as directed by House Bill 4080 (2024). The Roadmap will define standards for potential future offshore wind development, focusing on environmental protection, community involvement, workforce development, economic opportunities, and tribal and cultural resource protection. The Roadmap will also identify actions and opportunities that could move the state responsibly along the path toward a future that includes offshore wind for Oregon.

We'd like you to share your thoughts to help shape the Roadmap. ***Please take a moment to complete this survey.*** **If you prefer to take the survey online:**

www.surveymonkey.com/r/DLCDOSW

1. Based on what you know now, do you believe that offshore wind energy belongs in Oregon's future?

   ☐ Yes
   ☐ No
   ☐ I'm not sure

2. If no or you're not sure, what things would you like to see in Oregon's Roadmap?

_____

_____

_____

3. My involvement to date in offshore wind energy in Oregon:

   ☐ Deeply involved
   ☐ Heard something – want to learn more or get involved
   ☐ Haven't heard much yet

4. Rank your level of interest in these ***opportunities*** for Oregon's offshore wind energy resources. Assign a number from 1 to 7 to each item, with **1 being your highest level of interest and 7 your lowest**. Use each number **only once**.

	1	2	3	4	5	6	7
Local job creation and economic benefits							
Workforce development							
Scientific research spurred by offshore development							
Financial stability for local communities							
Energy reliability for coastal communities							
Achieving Oregon's clean energy goals							
Public education and engagement							

Another opportunity: _____

5. I am concerned about these ***potential impacts***. Assign a number from 1 to 6 to each item, with **1 being your highest level of concern and 6 your lowest**. Use each number **only once**.

	1	2	3	4	5	6
Environmental: marine and estuarine habitats and species						
Fisheries						
Ocean views/aesthetics						
Maritime transportation						
Tribal heritage/cultural and archeological resources						
Ongoing and long-term management and oversight						

Another opportunity:

_____

6. I am also interested in these ***other issues***. Assign a number from 1 to 8 to each item, with **1 being your highest level of interest and 8 your lowest**. Use each number **only once**.

	1	2	3	4	5	6	7	8
Offshore facility siting								
Onshore facility siting								
Power resiliency								
Decommissioning and waste								
Construction								

Workforce housing

Emergency response

Federal policy/permitting

Another issue:

_____

7. If you could set one rule or standard for offshore wind to ensure it benefits your community, or avoids an impact you're worried about, what would that be?

_____

_____

_____

8. What is a step in the process that the state should <u>not</u> skip on the path for determining if offshore wind is part of Oregon's future?

_____

_____

_____

9. Are there any actions you recommend that the state take in the next 5-10 years to be more ready for a future that might include offshore wind? Why are these important to you?

_____

_____

_____

10. I'd like to get these questions answered about Oregon's offshore wind energy resources:

_____

_____

_____

11. My homebase (county):

    ☐ Clatsop

    ☐ Coos

    ☐ Curry

    ☐ Douglas

    ☐ Lane

    ☐ Lincoln

    ☐ Tillamook

    ☐ Another community (insert zip code): _____

12. Please keep me informed about the Offshore Wind Energy Roadmap

    Name: _____

    Affiliation (if any): _____

    Email: _____

Thank you for taking part in the survey!

Acronyms

The following acronyms have been used in this document

DLCD: Department of Land Conservation and Development

DLCD Offshore Wind Energy Roadmap

BOEM: Bureau of Ocean Energy Management

NOAA: National Oceanic and Atmospheric Administration

NMFS: National Marine Fisheries Service

APPENDIX F

TRIBAL NATIONS PERSPECTIVE

Appendix F Tribal Nations Perspective

In concert with the opening of public comment on the Roadmap, federally recognized tribes in Oregon were invited to provide statements concerning the Roadmap and the potential for offshore wind energy in Oregon. This appendix is reserved for that purpose.

APPENDIX G

RESPONSES TO PUBLIC COMMENTS

Appendix G Responses to Public Comments

G.1 Introduction

[To be created following public comment period in 2026]