



DLCD
Department of
Land Conservation
& Development



OCMP
Oregon Coastal
Management Program



Oregon Offshore Wind Energy Roadmap

Review Draft #2

November 2025



**Oregon Offshore Wind Energy Roadmap
SECOND FULL DRAFT**

COVER ART & TITLE PAGE

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Dear Roundtable reviewers,

This is the second draft of the Offshore Wind Roadmap, revised based on the feedback you provided on the first draft in September and October. Every draft is an opportunity to suggest substantive changes to the Roadmap, and we welcome your thoughts.

As a reminder, the review process will be:

- ~~Feedback on First Draft in September to inform a Second Draft by November;~~
- Feedback on this Second Draft to inform a Third Draft that will go out to broader public comment in January or February (of course Roundtable feedback on the Third Draft is welcomed);
- Feedback on the public comments on the Third Draft to inform a Final (Fourth Draft) in Spring
- Final adjustments to the Final Manuscript before the Roadmap is "done for now" and submitted to the Legislature.

Please provide comments by December 9th, so DLCD has time to incorporate them for the Public Review Draft.

Please note that some content for the Roadmap is still under development, notably the appendices and details about certain actions that need Department of Justice consultation. DLCD is also engaging in Tribal Consultation with Federally Recognized Tribes of Oregon, the results of which may affect some of the recommendations and language in the draft.

Comments are easiest for us to incorporate if:

- You have a cover letter or comment that gives some of your overall impressions and reasons for bigger/more global changes to the Roadmap
- Use a Word document, using track changes with suggested language you can suggest, for specific edits to the document
- It may be hard to make tracked changes on some of the figures. Give us a comment there.

Some of the areas we could really use your attention right now:

- Thoughts on document organization
 - Proposed actions or omissions of significant concern
 - "Top of the fold" summary statements for the executive summary; and
 - Near-term priority recommended actions for the executive summary
-

Acronyms

Acronym	Full Name
BFF	Bidder's Financial Form
BOEM	Bureau of Ocean Energy Management
BPA	Bonneville Power Administration
BSEE	Bureau of Safety and Environmental Enforcement
CBA	Community Benefit Agreement
CCLME	California Current Large Marine Ecosystem
CFR	Code of Federal Regulation
COP	Construction and Operations Plan
COU	Consumer-owned utilities
CZMA	Coastal Zone Management Act
DEQ	Department of Environmental Quality
DLCD	Department of Land Conservation and Development
DOJ	Department of Justice
DSL	Department of State Lands
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FACT	Fishermen's Advisory Committee for Tillamook
FINE	Fishermen Involved in Natural Energy
FOSW	Floating Offshore Wind Energy
FOIA	Freedom of Information Act
GAO	Government Accountability Office
GW	Gigawatts
GWEC	Global Wind Energy Council
HB	House Bill
IEA	International Energy Agency
IOU	Investor-owned utility
JART	Joint Agency Review Team
kWh	kilowatt-hour
LCOE	Levelized Cost of Energy
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MW	Megawatts
MWh	megawatt-hour
NEPA	National Environmental Policy Act
NGO	Non-governmental organization
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NREL	National Renewable Energy Laboratory
NROC	Northeast Regional Ocean Council
NWPCC	Northwest Power and Conservation Council
OAR	Oregon Administrative Rule
OCMP	Oregon Coastal Management Plan
OCS	Outer Continental Shelf
ODAV	Oregon Department of Aviation
ODFW	Oregon Department of Fish & Wildlife
ODOE	Oregon Department of Energy
OES	Oregon Energy Strategy
OPAC	Ocean Policy Advisory Council
OPRD	Oregon Parks and Recreation Department
ORS	Oregon Revised Statutes

OSW	Offshore Wind
PEIS	Programmatic Environmental Impact Statement
PFMC	Pacific Marine Fisheries Commission
PGE	Portland General Electric
PILT	Payments-in-lieu-of-taxes
PNNL	Pacific Northwest National Laboratory
PUC	Public Utility Commission
RFP	Request for Proposal
ROSA	Responsible Offshore Science Alliance
ROW	Right-of-Way
RWSC	Regional Wildlife Science Cooperative
S&I	Staging and Integration
SAP	Site Assessment Plan
SB	Senate Bill
SEER	Synthesis of Environmental Effects Research
SHPO	State Historic Preservation Office
SOORC	Southern Oregon Ocean Resource Coalition
TSP	Territorial Sea Plan
USACE	U.S Army Corps of Engineers
USCG	US Coast Guard
USDOE	Department of Energy
USFWS	US Fish and Wildlife Service
WCSC	West Coast Science Collaborative
WEA	Wind Energy Areas
WREN	Wind Energy-Environmental Research & Engagement Network

Glossary

Term	Definition
500-Fathom Line (State Review Boundary)	NOAA-approved outer limit for Oregon's Coastal Zone Management Act (CZMA) review of marine renewable energy projects in federal waters.
Adaptive Management Plan (AMP)	Ongoing monitoring/mitigation framework with thresholds and lifecycle accountability across project phases.
Alternative Future	A scenario defined in the Roadmap that explores different plausible end-states of state and/or federal actions on offshore wind energy (e.g., no commercial arrays; limited near-term build; phased build with port investment; supply-chain-only).
Any coastal use or resource (source: 15 CFR 930.11)	The phrase "any coastal use or resource" means any land or water use or natural resource of the coastal zone. Land and water uses, or coastal uses, are defined in sections 304(10) and (18) of the Coastal Zone Management Act, respectively, and include, but are not limited to, public access, recreation, fishing, historic or cultural preservation, development, hazards management, marinas and floodplain management, scenic and aesthetic enjoyment, and resource creation or restoration projects. Natural resources include biological or physical resources that are found within a State's coastal zone on a regular or cyclical basis. Biological and physical resources include, but are not limited to, air, tidal and nontidal wetlands, ocean waters, estuaries, rivers, streams, lakes, aquifers, submerged aquatic vegetation, land, plants, trees, minerals, fish, shellfish, invertebrates, amphibians, birds, mammals, reptiles, and coastal resources of national significance. Coastal uses and resources also include uses and resources appropriately described in a management program.
Call Area / Wind Energy Area (WEA) / Lease Area	BOEM uses a siting sequence that begins by identifying broad Call Areas, which are then refined into smaller WEAs, and then even smaller areas are auctioned as Lease Areas.
Checkpoint	A decision/evaluation point defined by the Roadmap before moving from one phase of offshore wind development to another to confirm projects meet Roadmap objectives. At each checkpoint the decision can be to proceed, proceed with conditions, gather more information, or not proceed. [CHECKPOINT IS THE TERM USED NOW INSTEAD OF EXIT OR OFF RAMP].
Climate Justice	A principle that focuses on the root causes of the climate crisis through an intersectional lens of racism, classism, capitalism, economic injustice, and environmental harm. As a form of environmental justice, climate justice means that all species have the right to access and obtain the resources needed to have an equal chance of survival and freedom from discrimination.
Community	"Community" may be defined broadly and may include communities of place, practice, cultural identity, or other organizing concepts
Community Benefit Agreement	A Community Benefits Agreement (CBA) is a project-specific agreement between a developer and a broad community coalition that details the project's contributions to the community and ensures community support for the project. Addressing a range of community issues, properly structured CBAs are legally binding and directly enforceable by the signatories. In some cases, the community benefits terms from a CBA may be incorporated into an agreement between the local government and the developer, such as a development agreement or lease. That arrangement gives the local government the power to enforce the community benefits terms.
Enforceable Community Agreement	Contractual agreements that hold parties to the agreement accountable to net community benefit (monetary and non-monetary) and are potentially required as part of state reviews.
Cumulative Effects / Baseline Studies	Information requirements to assess combined past, present, and reasonably foreseeable impacts
Effect on any coastal use or resource (coastal effect). (source: 15 CFR 930.11)	The term "effect on any coastal use or resource" means any reasonably foreseeable effect on any coastal use or resource resulting from a Federal agency activity or federal license or permit activity. Effects are not just environmental effects, but include effects on coastal uses. Effects include both direct effects which result from the activity and occur at the same time and place as the activity, and indirect (cumulative and secondary) effects which result from the activity and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects are effects resulting from the incremental impact of the federal action when added to other past, present, and reasonably foreseeable actions, regardless of what person(s) undertake(s) such actions.
Effects vs. Impacts	The term "effect" can mean either an event or occurrence that should be avoided or a benefit that the state or a community may want to capture as a result of offshore wind development
Enforceable Policies	The state statutes, rules, statewide planning goals, and local plan/code provisions the OCOMP uses in consistency reviews
Environmental Justice	A principle that embraces the principle that all people and communities have a right to equal protection and equal enforcement of environmental laws and regulations, including human health. Environmental justice recognizes that, due to racism and class discrimination, communities of color, low-income neighborhoods, and Indigenous nations and communities are the most likely to be disproportionately harmed by toxic chemicals, exposures, economic injustices, and negative land uses, and the least likely to benefit from efforts to improve the environment.

Federal Consistency Review (CZMA)	Oregon’s authority under the Coastal Zone Management Act to review federal actions, including offshore wind actions (e.g., leasing, COPs), against state enforceable policies and to concur, concur with conditions, or object. Applicants for federal permits may appeal a state’s federal consistency decision to the U.S. Secretary of Commerce.
Floating Offshore Wind Array	A project composed of multiple floating turbines operating together, with shared inter-array cables, moorings, export cabling, and substation(s).
Floating Offshore Wind Energy (FLOW)	Offshore wind energy generation facilities using turbines on floating platforms moored to the seabed, enabling development in deeper waters than fixed-bottom tech.
Good Information	High quality information that is ready to inform decisions: timely, transparent, sourced, uncertainty-labeled, and fit-for-purpose for the decision at hand. Good information is built via studies, monitoring, traditional ecological knowledge, lived experience, and data governance.
Good Neighbor Agreements	A Good Neighbor Agreement is a legally binding document describing how a facility and its neighbors will behave towards each other. Typically, a GNA addresses a specific set of impacts that a proposed or existing facility has on its neighbors, such as traffic, noise or pollution.
Just Transition	In the context of energy, Just Transition refers to a framework to shift from fossil fuel to renewable energy, or any kind of transition from an extractive economy to a regenerative economy. The transition itself must be just an equitable, redressing past harms and advancing sacredness and care, as well as ecological and social well-being. If the process of transition is not just, the outcome will never be.
Lease Area Community Benefit Agreement	Under BOEM’s guidance to receive bid credits a lease use community benefit agreement that must cover BOEM’s lease use area and must include one or multiple parties.
Least cost, least risk standard	Oregon utility planning standard where investor-owned utilities are required to meet future energy/capacity needs with an energy portfolio that minimizes total long-run costs and overall system risk (reliability, flexibility, externalities). Not simply “cheapest now”.
Meaningful Engagement	Early, continuous, and two-way involvement that can shape decisions. Meaningful engagement processes use accessible/culturally appropriate methods and close the loop on how input influenced outcomes.
Net capacity factor	The share of energy over time actually produced in real-world conditions (e.g., facility down time; times when the wind is not blowing) versus the energy that would be produced if the energy generation plant ran at full nameplate output continuously (shown as a %).
Objective	A specific, measurable statement that describes a desired accomplishment or outcome, the Roadmap aims to support (e.g., “Achieve State Energy and Climate Policy Objectives...”)
Oregon Coastal Management Program (OCMP)	DLCD’s network program that coordinates consistency reviews with state/local agencies and Tribes.
Path (Pathway)	The steps and information the Roadmap envisions on the route through offshore wind development phases and checkpoints toward different alternative futures.
Phase	A distinct stage in the sequence of an offshore wind development lifecycle from Siting, Leasing and Permitting, to Construction and Operations, and then Decommissioning or Lease Renewal. The transition from one phase to another is marked by a checkpoint.
Private Community Benefit Agreement	Historically a public CBA is a series of community benefits commitments that are contained within a development agreement (and perhaps other documents, resolutions, or permits related to the approval process). Distinguishing these commitments from routine development agreements—which frequently contain aspects that can fairly be called “community benefits”—is that these commitments result from substantial community participation by a broad-based coalition, they address a range of issues, and they are treated in the development agreement and other public documents as detailed and enforceable.
Project Labor Agreements	In the construction industry, a comprehensive agreement—a pre-hire agreement-- ensuring labor peace for a construction project by establishing ahead of time key terms of hiring procedures and working conditions, generally with reference to terms of local collective bargaining agreements in various trades. Contractors and workers do not have to be unionized in order to work on PLA projects. Public and private entities overseeing large construction projects often require PLAs to be in place in order to avoid costly delays due to labor unrest, to facilitate high-road employment practices, and sometimes to facilitate targeted hiring programs. PLAs that include targeted hiring requirements greatly facilitate achievement of targeted hiring objectives. PLAs that include targeted hiring components are sometimes called Community Workforce Agreements (CWAs). PLAs are also sometimes referred to as Project Stabilization Agreements or PSAs.
Public Community Benefit Agreement	Historically private CBA is a legally enforceable contract, signed by community groups and by a developer, setting forth a range of community benefits that the developer agrees to provide as part of a development project. private agreements are not subject to the wide range of legal strictures on governmental action.
Regional Coordination	Alignment across West Coast/CCLME partners (state/federal/tribal/local) so siting, monitoring, ports, transmission, markets, and fisheries/ecosystem measures work together.
Site Assessment Plan (SAP)	An offshore wind energy developer’s plan for site studies after lease issuance.
Statewide Planning Goals (e.g., Goals 5, 7, 13, 19)	Oregon land use goals frequently referenced for cultural resources (Goal 5), hazards (Goal 7), energy (Goal 13), and ocean resources/visuals (Goal 19).
Strategy	A named course of action the Roadmap recommends to prepare Oregon for potential offshore wind (e.g., “Prepare Oregon’s Energy System for Offshore Wind Potential”)

Stream	An ongoing, cross-phase line of work (e.g., Engagement, Information, Regional Coordination) that supports decisions at each checkpoint.
Supply Chain	The sequence or system of organizations or operations that work together to design, produce, and deliver a product or service to a market. The offshore wind supply chain refers to the companies involved in the creation and implementation of offshore wind components.
Territorial Sea Plan (TSP)	Oregon's ocean planning framework (especially Part Five) that sets standards for marine renewable energy (e.g., ecological, fisheries, recreation, visual, adaptive management, decommissioning).
Tribal Benefit [Mitigation] Agreements	The term Tribal Benefit Agreements (TBAs) has become increasingly used for agreements made through meaningful engagement with Tribes for projects on Tribal lands and those within treaty lands and culturally significant areas. TBAs differ in significant ways from Community Benefit Agreements (CBAs) by recognizing Tribes as sovereign nations, acknowledging the history and contemporary contexts of how Tribal sovereigns exist in the U.S., and providing a broader scope for negotiation given the sovereign authority of Tribal nations. In the context of the Roadmap, Tribal Mitigation Agreements refer to memorialized, enforceable agreements between affected Tribes and offshore wind project developers to respond to and address the interests of Tribes whose interests may be affected by offshore wind development, and to mitigate potential adverse effects.
Viewshed / Visual Resource Protection	Identification and protection of valued ocean views (including culturally significant views), with potential design/location standards.
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.

Summary for Policymakers: Oregon Offshore Wind Energy Roadmap

Roadmap Purpose

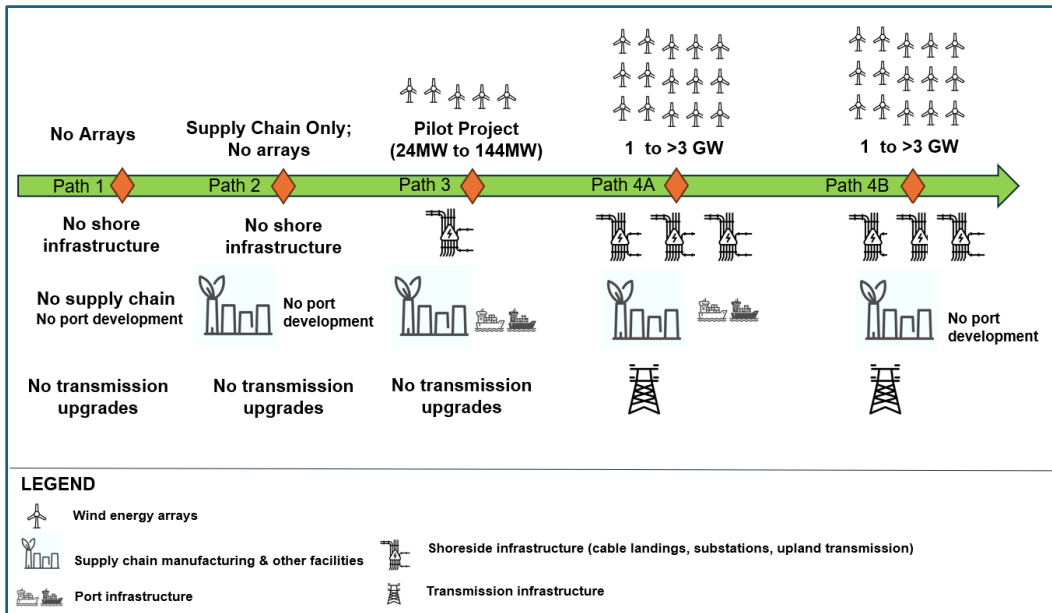
Under the direction of the 2024 Oregon Legislature through House Bill 4080, the purpose of the Oregon Offshore Wind Energy Roadmap is to, “define standards to be considered in the processes related to offshore wind development and approval”. Built on the broad engagement with interests along the coast and across the state, the Roadmap provides a framework for a future that could include offshore wind, including policy recommendations, investments or actions the state can take, and clear expectations for permitting and process steps along the path to responsible offshore wind development for Oregon.

The Roadmap is not the vehicle to decide *whether* offshore wind will be built in Oregon. Instead, it defines the conditions, processes, and standards under which offshore wind *could* proceed responsibly—protecting coastal communities, Tribes, fisheries, and ecosystems while advancing Oregon’s clean energy and climate goals. Currently, there is uncertainty in federal policy and the offshore wind industry. The Roadmap uses alternative futures to account for actions the state could take under scenarios ranging from large-scale development, scenarios of smaller-scale pilot projects or supply chain participation without hosting wind farms, or opting out entirely (See Figure ES-1).

NOTE TO REVIEWERS: SOME POTENTIAL KEY MESSAGES FOR THE EXECUTIVE SUMMARY?

1. Oregon should undertake state or local rulemaking in the near-term to address policy gaps identified in the Roadmap related to potential future offshore wind development.
2. Oregon can make good use of time by proactively leading its own siting effort to find what areas offshore are suitable with state policies and interests.
3. More still needs to be known before Oregon is ready for offshore wind, both about the effects on the ecosystem and to communities of place or practice on the coast.
4. Oregon should explore policies and investments that support regional electrical power markets and improve the coastal grid to increase resilience and reliability and be ready for the potential of offshore wind.
5. Oregon will need to increase capacity and expertise in its state agencies, local governments, and Tribal governments to be ready for offshore wind.
6. Exploring and supporting the creation of an Oregon offshore wind supply chain could reap benefits, whether or not Oregon hosts offshore wind turbines in the future.
7. Oregon should collaborate with its west coast neighbors on offshore wind supply chain opportunities and research cooperation.

Figure ES - 1. Alternative Futures Considered in the Roadmap



Pathways Toward Alternative Futures

Any of the alternative futures that involve the placement of offshore wind turbines off the coast of Oregon (Paths 3, 4a, and 4b) would involve similar phases in their overall lifecycle, and at each phase there will be information needed, meaningful engagement with communities expected, and checkpoints where decisions to move forward or not are made. The Roadmap presents pathway diagram figures that define components the “right path” to achieve offshore wind energy development for Oregon if one of these futures is pursued. A future that involves offshore wind supply chain development, without turbines located off the Oregon coast (Path 2), would follow an abbreviated and slightly different path that is also included.

The table below summarizes recommended policy actions. Additional recommendations and details are included in Section 3. The majority of policy gaps may be addressed by amending Oregon’s Territorial Sea Plan sections on uses of the seafloor and the review of marine renewable energy facilities.

Recommended Policies and Actions to Address Gaps

The Roadmap contains an Enforceable Policy Assessment and Capacity Assessment. These assessments evaluate the enforceable policies and other standards the state might use in the future when reviewing federal permits and other proposals related to offshore wind development, as well as the capacity needs of state agencies, local governments, and Tribal

governments to participate in future offshore wind-related processes. The Roadmap presents identified policy gaps that warrant consideration in follow-on formal policymaking processes.

Section 5 of the Roadmap provides specific recommended actions to better prepare Oregon for a future that could include offshore wind energy or the development of an offshore wind supply chain industry. Table ES-1 summarizes key policy gaps and recommended actions in the Roadmap.

Table ES - 1. Summary of Key Recommended Policies and Actions in the Roadmap

Roadmap Objective Area	Policy Gaps (Section 3)	Recommended Policies & Actions (Sections 3 and 5)
Meaningful Engagement & Permitting	• Lack of resources to engage fully • Unclear participation opportunities outside of formal comment opportunities • Desire for broad participation in science development and interpretation • Need for better coordination between state, communities, Tribes, federal agencies, and developers	• Fund state-led engagement capacity with a steering committee • Build partnerships with local governments, Tribal governments, and NGOs • Develop an Oregon-specific research agenda • Create an Oregon-specific offshore wind science collaborative • Participate in a West Coast Science Collaborative initiated by California • Coordinate with federal agencies and developers on engagement
Achieve State Energy & Climate Objectives	• Fragmented power procurement market increases developer risk • Path for needed transmission upgrades unclear • Reliability and resiliency value to the coastal grid from offshore wind needs to be clarified and integrated in planning • Lack of state procurement authority, least-cost/least-risk may not adequately factor in resilience/reliability and economic benefits of OSW • Relative economic development opportunities of energy generation options should be considered in planning • Need policy incentives to reduce risk for long lead-time generation sources • No guarantee that offshore wind generated off Oregon would land in the state	• Consider policies in Statewide Planning Goal 13 or energy procurement regulations to value grid resiliency/reliability and job creation • Consider policy to require OSW to connect to the OR grid first • Quantify socioeconomic benefits and job opportunities as balancing factors in cost of power • Refine Oregon Energy Strategy to account for changing assumptions, energy system benefits of offshore wind, and economic growth opportunities • Evaluate transmission and grid needs and support a statewide transmission entity for investment and planning support • Explore policy incentives for long lead-time energy resources • Coordinate regionally with CA and WA on regional power markets, supply chain, and transmission planning
Protect the Environment & Species	• Opportunity to specify additional ecological protection standards and broaden their applicability in federal waters • Need for greater clarity on adaptive management, hazards planning, emergency response, and decommissioning standards	• Conduct or require baseline/cumulative effects studies and analyses • Amend TSP for adaptive management standards, hazard/visual standards; and broader ecological protection policies • Improve Goal 7 hazard policies • Develop and pursue an Oregon offshore wind research agenda and science collaborative

Roadmap Objective Area	Policy Gaps (Section 3)	Recommended Policies & Actions (Sections 3 and 5)
	• Need for more structured uncertainty/risk management and accountability measures • Need to more clearly connect mitigation options with the definition of significant adverse effect on the environment	• Inventory suitable sea space for offshore wind based on state policies • Participate in a West Coast Science Collaborative initiated by CA • Define a framework for monitoring and adaptive management; explore enforceable mechanisms post-permitting • Clarify and strengthen accountability measures throughout the offshore wind project lifecycle • Participation with developers early in site characterization and gathering permitting information needs
Tribal Interests	• Incorporation of Traditional Ecological Knowledge and Tribal government policies in state decision-making • Need for more meaningful inclusion of Tribes in decision-making processes • Need for greater coordination between state, federal agencies, Tribes, and developers • Need for improved implementation measures around archaeological and cultural resource protection • Need for policy improvements to protect culturally significant areas and resources • Need to explicitly include Tribal cultural fishing uses in state fishery protection standards • Need for greater data access agreements and oversight. • Tribal capacity needs for full engagement in offshore wind processes	• Amend statutes (state and local) for cultural site inventory protection and require cultural site inventories • Amend TSP to recognize ceremonial/subsistence fishing and visual effects of cultural significance • Require Traditional Ecological Knowledge in reviews • Explore whether memorialized agreements with ocean users to reduce conflicts and address interests can be mandatory • Include all Nine Federally Recognized Tribes of Oregon in Joint Agency Review Teams • Require qualified marine archaeologists for certain offshore exploration • Support co-stewardship and business partnerships • Condition leases to include Tribal observers for potentially ecologically disturbing activities • Condition leases to exempt Tribal Historic Preservation Offices from archaeological credentialing requirements • Include Tribes in a state/regional research collaborative • Consider Tribal government policies comparable to state enforceable policies during offshore wind project reviews • Explore a natural resources endowment fund • Condition leases/permits to engage Tribes in overseeing ground disturbing activities • Specify data sharing agreements between state and Tribes • MOU/MOA with BOEM to outline simultaneous engagement with state and Tribes • State-convened tri-party meetings with Tribes and Developers post-leasing

Roadmap Objective Area	Policy Gaps (Section 3)	Recommended Policies & Actions (Sections 3 and 5)
Support for Coastal & Regional Communities	• Community needs to support growth pressures from a potentially large new industry on the coast • Need to clearly understand potential community effects from offshore wind energy to inform community agreements and state review decisions • Need to update visual protection standards based on community values related to offshore wind • Need for enforceable mechanisms to require community agreements • Need for state support for community agreements	• Support Tribal capacity needs to participate in offshore wind processes • Provide funding/support for local planning updates • Create a policy mechanism for Enforceable Community Agreements • Strengthen recreational protection standards • Broaden fisheries protection standards, and explore requiring memorialized agreements with fisheries groups • Explore a legislative cap on total allowable offshore wind development • State guidance and technical support for enforceable Community Agreements • Identify community investment needs to support offshore wind energy development • Define and measure community benefit and adverse effects from offshore wind with socioeconomic studies • Assess community investment needs (housing, childcare, healthcare, infrastructure) • Technical and/or financial support to local governments in amending plans and codes to address policy gaps • Establish adaptive management and accountability for long-term impacts • Include communities in state-led offshore wind spatial suitability process • Include communities in state/regional science collaboratives
Economic Opportunity & Sustainment	• No enforceable policy for local economic benefits, • Need to identify supply chain opportunities • Need to coordinate and support creation of market opportunities	• Assess investment needs for ports & industry • Clarify port development needs and coordinate with local plans • Assess supply chain market opportunities • Catalog port/industrial capabilities • Support market opportunities and partnerships • Explore business partnerships with Tribes and communities
Offshore Wind Workforce	• Need to strengthen enforceability of workforce standards and labor agreements • Need to plan for training and apprenticeship to coincide with offshore wind energy development opportunities	• Enforce labor agreements with wage/equity/safety • Expand apprenticeships & training pipelines • Integrate workforce housing/healthcare/childcare • Assess and plan for supply chain and workforce needs • Plan for workforce-linked housing and services

Next Steps to Implement Recommendations

The following are the identified near-term resource needs identified in the Roadmap, beyond existing state agency staff resource capacity:

- Meet state agency capacity needs to address offshore wind-related actions at each phase.
 - Support completion of an offshore wind research agenda for Oregon. The Roadmap contains an initial research and prioritization framework developed by the Ocean Policy Advisory Council's Scientific and Technical Advisory Committee using volunteer resources. Further work is needed with funding support for expert time and workshops to complete the agenda.
 - Update the Oregon Territorial Sea Plan through rulemaking to address offshore wind policy gaps identified in the Roadmap. The rulemaking would be undertaken by OPAC with staff support from DLCD and participation from other state agency staff resources. Additional technical studies or support may be needed to research policy options, especially updating state visual resource protection policies to account for offshore wind turbine heights, socioeconomic impacts, and public perceptions.
 - Conduct state-led Offshore wind sea space suitability spatial inventory and planning process to inform future federal agency leasing actions in federal waters. This effort would involve significant engagement with fisheries, Tribes, and coastal communities; new data acquisition to support spatial inventories; facilitation support for planning meetings; and technical support for spatial decision support modeling.
 - Explore regional energy market policies, regional transmission coordination and development, and other related actions to encourage investment and reduce risk related to emerging renewable energy technology options such as offshore wind.
 - Ensure that agency capacity is sufficient to support offshore wind involvement through multiple stages. The Roadmap contains a capacity assessment that includes state agencies, local governments, and Tribes and details capacity needs.
 - Establish and support a Fisheries Offshore Wind Planning Collaborative to be a durable venue for ongoing planning discussions with fishing communities, negotiation of memorialized agreements with offshore wind developers, and other engagement activities.
 - Establish and support an Oregon offshore wind science collaborative to gather interested parties in support of accomplishing the offshore wind research agenda and coordinating with a West Coast Science Collaborative initiated by California in support of regional offshore wind research. The Oregon science collaborative should include a framework for accepting and distributing funding to support relevant research and baseline data collection and participate in regional research opportunities.
 - Identify funding sources to support meaningful Tribal engagement in offshore wind processes.
 - Undertake various studies to support future offshore wind decision-making, including:
 - Coastal community infrastructure and support services needs assessment studies
 - Socioeconomic studies of offshore wind benefits and potential adverse impacts to coastal communities
 - Supply chain market analysis and Oregon supply chain capacity registry
 - Cumulative Impact Analysis for offshore wind development in Oregon and within the California Current Large Marine Ecosystem to support future leasing
-

Conclusion

Oregon's offshore wind future is uncertain, given shifting federal policies. However, by advancing state-led planning, engagement, and capacity-building now, Oregon can position itself to secure community benefits, protect valued resources, and ensure readiness to decide whether to move forward as a state if federal policies once again support offshore wind development.

Oregon Offshore Wind Energy Roadmap

1 BACKGROUND AND INTRODUCTION

1.1 Purpose and Background

House Bill 4080 in the 2024 Legislative session¹ defined the purpose of the Oregon Offshore Wind Energy Roadmap to, “define standards to be considered in the processes related to offshore wind development and approval”. The Roadmap considers the potential benefits of offshore wind energy the state and coastal communities would want to realize with offshore wind, as well as the unwanted adverse effects that could result if offshore wind is not developed responsibly. The Roadmap provides a framework for Oregon that could include offshore wind, including policy recommendations, investments or actions the state can take, and clear expectations for process steps along the path to responsible offshore wind development for Oregon.

Oregon is one of six western states with a 100 percent clean energy mandate, with significantly increasing demand growth projected as the state’s economy, industries, and households decarbonize. Offshore wind energy represents a significant opportunity to help Oregon meet its energy and climate goals, if it can be realized in a responsible way that protects the coastal communities, cultures, economies, and the natural environment that already brings so much value to the state. Additionally, the Oregon coast is recognized as an area of the state that faces electricity reliability and resiliency challenges, for which grid investment and new generation sources west of the Coast Range could bring system stability benefits and support community resiliency that in turn benefits the entire Pacific Northwest region. Offshore wind energy also presents a potential opportunity for economic growth and job creation for coastal communities and manufacturing areas along the Columbia River, but it is important that this growth occurs in a way that fosters the well-being of communities and aligns with their goals for the future.

House Bill 4080 identified the key topical areas that Oregon standards for offshore wind must support, including:

- Supporting local and regional coastal communities;
- The creation of economic opportunities and sustainment of existing local and regional economies;
- The creation of an offshore wind energy workforce that is local, trained, housed and equitable;
- Protection of Tribal cultural and archaeological resources, culturally significant viewsheds and other interests of Tribes;
- Protection of the environment and marine species; and
- Achievement of state energy and climate policy objectives, including energy resource diversity, reliability and resilience of state and regional energy systems.

¹ <https://olis.oregonlegislature.gov/liz/2024R1/Downloads/MeasureDocument/HB4080/Enrolled>

The Roadmap describes objectives, consistent with values and interests of the state and affected communities, and identifies the policies, processes, strategic opportunities, and actions necessary to achieve those objectives. The Roadmap identifies potential strategies for offshore wind in Oregon that would involve decision-makers at multiple levels, and the recommendations within the Roadmap are offered for consideration in subsequent legislative action, rulemaking, or other formal policymaking settings.

A significant wind resource exists off Oregon's coast, and Oregon has a growing need for new renewable energy sources to maintain a reliable electrical grid and achieve our state energy and climate policy objectives. This Roadmap recognizes that the decision to travel the path toward offshore wind development has not been made, and changing federal policies have recently withdrawn policy and financial support from continued OSW development. While the recent decision by BOEM to rescind the two Oregon Wind Energy Areas takes the process for offshore wind development back a step, it does not preclude offshore wind indefinitely for the state.

Offshore wind also faces challenges that make its future in Oregon uncertain. The community, cultural, and environmental impacts of offshore wind development for the state are still unclear, and the federally-led process of leasing and project design left many in coastal communities wanting answers to key questions and assurances that their interests and values would be protected before proceeding. The offshore wind technologies proposed for Oregon are still unproven in the depths and ocean conditions characteristic of the Pacific west coast, and development of the industry requires high initial costs and substantial port and vessel infrastructure that carries its own complexity in terms of logistics, cost, permitting, and coastal effects. Oregon's coastal grid also needs upgrades and expansion to make the most use of the new generation that could come from offshore wind, and that power needs the right energy market conditions to find accessible and reliable buyers. Much work remains to prepare the state for a future that could include offshore wind energy.

"In Oregon, we are working towards clean electricity, 100 percent clean electricity, by 2040. That means what we're doing now, we have to do more of, and we need to put new options on the table. And that means offshore floating wind as a possibility. This is an opportunity. It's also a challenge. But we have to try."

-Governor Tina Kotek ²

The Roadmap is not the vehicle for deciding whether Oregon will pursue offshore wind energy development. It does not have the authority to establish specific offshore wind policies. The Roadmap does provide recommendations for new or amended policies so Oregon can secure its interests when participating in any future decision processes related to offshore wind development. The Roadmap also considers alternative futures, including those where no offshore wind arrays are sited off Oregon or where the state only focuses on developing the supply chain opportunities to support offshore wind development elsewhere. The recommendations and alternative futures recognize that federal policy,

² <https://apnews.com/article/wave-wind-energy-floating-offshore-oregon-5dbf36ac5614639de39b5d4f68620b39>

the offshore wind industry, and experience in neighboring states are changing rapidly, and Oregon needs an adaptive approach to offshore wind energy.

Finally, this Roadmap is not intended to answer all outstanding questions about the potential benefits or adverse effects of offshore wind for Oregon, make official decisions about the state of knowledge around offshore wind effects, or commission studies or new scientific research. The Roadmap does include an initial effort toward developing a research agenda to address the uncertainties related to offshore wind specific to Oregon’s unique context, as well as recommended steps the state can take to address these uncertainties while engaging potentially affected coastal communities.

Regardless of whether offshore wind becomes a part of Oregon’s future, the recommendations in this Roadmap offer a set of best practices and policy considerations that may be useful or applicable for any kind of future energy development or other significant resource development affecting Oregon’s coast.

This Roadmap represents a snapshot in time as of 2026. There are currently no planned revisions of this Roadmap, pending additional direction from the Oregon Legislature; however, if directed, future revisions could build on this Roadmap and let it serve as a living document.

1.2 Offshore Wind Energy Roadmap Development Process

Following passage of HB 4080 (2024), the Department of Land Conservation and Development (DLCD) hired staff to lead development of the Roadmap and related policy and capacity assessments. DLCD contracted with Oregon Consensus to facilitate a Roundtable advisory group of more than 50 members representing a broad spectrum of interests related to coastal communities, energy policy, environmental protection, labor, fisheries, economic development, Tribal interests, and academia. The Roundtable also invited agency advisors from an array of federal and state agencies with roles related to offshore wind siting, permitting, and oversight.

The Roundtable began meeting monthly starting in November 2024 in a variety of in-person coastal locations and virtually online. Each meeting was open to the public, with multiple opportunities for public comment during the meetings. Meeting materials and videos were available on the DLCD Offshore Wind Energy Roadmap website³.

Prior to convening the first Roundtable meeting, DLCD met with representatives and staff of the Nine Federally Recognized Tribes of Oregon to discuss their preferences for involvement in the Roadmap development process. In addition to reserving seats on the Roundtable for each Tribe, DLCD established a separate “Tribes-Only Table” focused on direct discussion between DLCD and Tribal staff. After several discussions within the Tribes-Only Table, DLCD requested formal consultation on the Roadmap with each of the Nine Federally Recognized Tribes of Oregon.

³ <https://www.oregon.gov/lcd/OCMP/Pages/Offshore-Wind-Roadmap.aspx>

During the Roadmap development process, HB 3963 in the 2025 legislative session⁴ provided additional time to accomplish the level of engagement necessary with coastal communities, as well as review the Oregon Energy Strategy⁵.

In addition to the Roundtable, DLCD and a contractor held in-person and virtual community meetings, a set of workshops with coastal Community-Based Organizations, and several focus groups focused on coastal tourism, coastal energy systems and affordability, supply chain challenges and opportunities, perspectives from coastal youth, and the wind energy industry.

Additionally, DLCD led engagement efforts with Oregon's fishing sector, including meeting directly with Oregon Seafood Commodity Commissions, individual engagement with representatives of recreational fishing associations, and hosting virtual listening sessions for fishing communities. DLCD also created a survey that was sent to all commercial fishing license holders in the state as well as the Sportfish Advisory Committee consisting of recreational sport and charter representatives. Oregon Sea Grant provided expert input on fishing community engagement recommendations for the Roadmap.

As part of developing the Roadmap and the associated Enforceable Policy and Capacity Assessments, DLCD met with the planning staff of each city and county within the coastal zone. The purpose of these meetings was to discuss community-specific questions and concerns related to offshore wind and evaluate each jurisdiction's enforceable policies and capacity needs.

In XXXXX 2026, the Roadmap was released for formal public review and comment. A summary of comments and responses is provided in Appendix X.

1.3 Offshore Wind Background

In Oregon, the conversation around offshore wind is framed within the larger goal of expanding renewable energy to 50 percent of all electricity generated from the large utilities by 2040⁶ and to reduce emissions from Oregon's large electricity service providers to 100 percent below baseline emissions levels by 2040. These emission reduction targets are driving much of the interest in renewable energy.⁷ See the Oregon Offshore Wind Background briefing (Appendix X) for more on the current status of Offshore Wind in Oregon, the United States, and globally.

Since 1979, there has been broad scientific consensus on the impact on climate change on our planet^{8,9}. According to World Resource Institute and the International Panel on Climate Change, different global warming trajectories, ranging from 1.5°C to 5°C, can result in escalating catastrophic consequences,

⁴ <https://olis.oregonlegislature.gov/liz/2025R1/Measures/Overview/HB3963>

⁵ <https://www.oregon.gov/energy/Data-and-Reports/Pages/Energy-Strategy.aspx>

⁶ Relating to Public Utilities, SB 1547. (2016). Accessed at <https://www.oregon.gov/energy/energy-oregon/pages/renewable-portfolio-standard.aspx>.

⁷ Clean Energy Targets Bill, HB 2021. (2021). Accessed at <https://www.oregon.gov/deq/ghgp/Pages/Clean-Energy-Targets.aspx#:~:text=In%202021%20Oregon%20State%20Legislature,with%20the%20electricity%20they%20provide>

⁸ <https://nap.nationalacademies.org/catalog/12181/carbon-dioxide-and-climate-a-scientific-assessment>

⁹ World Resources Institute: <https://www.wri.org/insights/climate-change-effects-cities-15-vs-3-degrees-C>

including sea level rise, ocean acidification and hypoxia, increased frequency of extreme weather events, widespread food shortages, large scale human displacement, and large-scale ecosystem collapse.^{10, 11}

Offshore wind may be an effective way to reduce the greenhouse gas emissions driving those threats and to meet Oregon's growing electricity demand in the coming decades. Modeling conducted in support of the 2025 Oregon Energy Strategy forecasted that the total electricity demand could be approximately double the current generation capacity for the state¹². A 2019 study¹³ projected that 80 GW of new solar and wind capacity is needed to meet the Pacific Northwest's collective greenhouse gas reduction goals by 2050, which is roughly eight times the amount of solar and wind the region has added during the past 20 years (ODOE, 2022). The Northwest Power and Conservation Council (NWPCC) included modeling results in its 2021 Northwest Power Plan that projected an estimated need to add more than 350 GW of new renewables across the entire Western electric grid by 2041 to meet load growth expectations and all the various requirements of western electric utilities, including the clean energy targets of all western states¹⁴.

Ocean atmospheric conditions offshore Oregon, combined with the energy demand profile in the Pacific Northwest, are well suited for offshore wind energy. Wind speeds are especially high off Oregon's southern coast, but all areas offshore Oregon consistently have high enough wind speeds to support offshore wind energy. The map below shows the annual average wind speeds offshore Oregon along with the five electrical transmission lines and substations that connect the coast to the rest of the state. All energy demand from coastal communities is served through these connections, and there is currently no significant electricity generation west of the Coast Range.

¹⁰ World Resources Institute: <https://www.wri.org/insights/climate-change-effects-cities-15-vs-3-degrees-C>

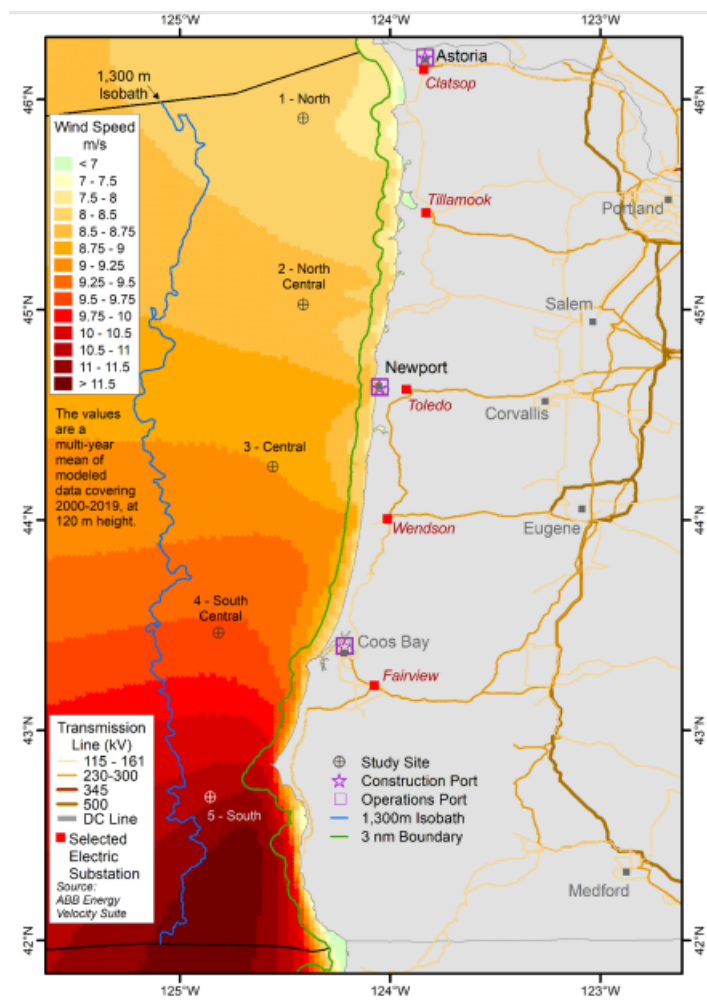
¹¹ <https://www.ipcc.ch/report/ar6/syr/>

¹² <https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf#page=28>

¹³ https://github.com/cleanenergytransition/mtc-report-EER-technical-report/raw/gh-pages/EER_Northwest_Deep_Decarbonization_Pathways_Study_Final_May_2019.pdf?raw=true

¹⁴ https://www.nwcouncil.org/fs/17680/2021powerplan_2022-3.pdf

Figure 1. Annual average wind speeds offshore Oregon along with electrical transmission lines and substations. (Source, PNNL, 2020)



1.3.1 Current Status of Offshore Wind in Oregon

In 2020, BOEM and the State committed to move forward with offshore planning in Oregon.¹⁵ BOEM led the Intergovernmental Renewable Energy Task Force, composed of state, local, federal, and Tribal government entities, to perform preliminary planning and analysis. In 2021, House Bill 3375 (2021) required the Oregon Department of Energy (ODOE) to develop a legislative report that identifies the benefits and challenges of integrating up to 3 GW¹⁶ of floating offshore wind by 2030, consistent with

¹⁵ <https://www.boem.gov/sites/default/files/documents/regions/pacific-ocs-region/BOEM-OR-OSW-Engagement-Plan.pdf>

¹⁶ 1 gigawatt (GW) = 1,000 megawatts (MW). For example, the nameplate capacity of the Bonneville Hydropower Dam is 1.2 GW (1,200 MW). Nameplate capacity indicates the maximum amount of electricity a resource is technically capable of generating at a single point in time.

After a multi-year siting process, BOEM designated two Wind Energy Areas (WEA) off the coast of Coos Bay/Reedsport and Brookings in 2024. BOEM then announced an intent to conduct a leasing auction for the two WEAs, for the purpose of exploring offshore wind energy development projects.

Coos Bay WEA:
61,204 acres (95 sq mi)
~32 miles from shore

Brookings WEA:
133,808 acres (209 sq mi)
~18 miles from shore

Legend:
 - Federal / State Boundary
 - Oregon Principal Ports
 - Coos Bay Call Area
 - Brookings Call Area
 - Coos Bay WEA
 - Brookings WEA

Scale:
 0 20 40 Miles
 0 30 60 Kilometers
 Scale: 1:1,360,000

Map Date: 2/16/2024 **PAC:** 10039
Datum: North American 1983

BOEM
 Bureau of Ocean Energy Management

Inset Map:
 Oregon
 California

Locations:
 Coos Bay
 Bandon
 Port Orford
 Brookings
 Crescent City

¹⁷ HB 3375 includes a legislative finding and declaration of a state goal to plan for the development of up to 3 GW of OSW within the federal waters off the Oregon coast by 2030. It is important to note that the state goal to plan for OSW development is not a deployment target and does not mandate or incentivize the procurement of OSW by Oregon utilities, nor does it represent either a “floor” or “ceiling” to potential OSW development off Oregon’s coast over the near or long-term.

¹⁹ https://www.opb.org/pdf/GovernorKoteklettertoBOEMDirectorKlein_1727455319170.pdf

inquiry, it illustrates how the standards and processes in this Roadmap should be inclusive of a variety of potential offshore wind proposals.

Development of the Offshore Wind Energy Roadmap began in September 2024. In July 2025, the new federal administration rescinded all Wind Energy Areas in the United States, including the two off the coast of Oregon.

1.3.2 Current Status of Offshore Wind in United States and Globally

The United States has three fully constructed and operational offshore wind energy projects totaling 174 megawatts [MW], as of October 2024²⁰. Projects under construction in October 2024 totaled 4,097 MW, and projects totaling more than 15 GW had been approved for construction by the federal government as of September 2024²¹. All of the projects on the east coast involved fixed-bottom turbines, whereas offshore wind on the west coast would most likely be floating due to the depth of the continental shelf.

In 2022, BOEM issued five leases in federal waters off California, and the winning leaseholders are currently in the process of exploring the lease areas and preparing permit applications and Construction and Operation Plans for federal, state, and local government review. The California Energy Commission, Governor Newsom, and legislature have committed to developing 2 to 5 gigawatts (GW) of OSW by 2030 and 25 GW by 2045²². Additionally, the state and developers recognized that coastal port infrastructure requires new construction and upgrades to support the specialized equipment required by industry. Two ports were identified for development into OSW hubs: Humboldt Bay and the Port of Long Beach.

Under the current federal administration, the policy approach to offshore wind has shifted. In January 2025, the White House issued an Executive Memorandum titled, “Temporary Withdrawal of All Areas on the Outer Continental Shelf from Offshore Wind Leasing and Review of the Federal Government’s Leasing and Permitting Practices for Wind Projects”²³. This Memorandum withdraws all areas of the Outer Continental Shelf (federal waters) from further leasing for the purposes of offshore wind until the Memorandum is revoked. In July 2025, the Bureau of Ocean Energy Management issued a press release declaring that all existing Wind Energy Areas, including the two offshore Oregon, have been rescinded, including the two off the coast of Oregon.²⁴ The current BOEM regulations require the establishment of “area identification” prior to any lease auction for offshore wind, so the rescission of the Oregon WEAs essentially removed a viable area identification that would allow BOEM to proceed to leasing under the regulations.

²⁰ <https://windexchange.energy.gov/markets/offshore>

²¹ <https://www.4coffshore.com/windfarms/united-states/>

²² <https://www.energy.ca.gov/programs-and-topics/topics/renewable-energy/offshore-renewable-energy/wind-toward-25-gw-offshore>

²³ <https://www.whitehouse.gov/presidential-actions/2025/01/temporary-withdrawal-of-all-areas-on-the-outer-continental-shelf-from-offshore-wind-leasing-and-review-of-the-federal-governments-leasing-and-permitting-practices-for-wind-projects/>

²⁴ <https://www.boem.gov/newsroom/notes-stakeholders/boem-rescinds-designated-wind-energy-areas-outer-continental-shelf>

As of 2025, 83 GW of offshore wind are installed worldwide, with 8 GW installed in 2024 (a decrease from 11 GW in 2023). The global offshore market grew on average by 10 percent each year in the past decade, and the total installation amount represents 7.3 percent of total global wind capacity as of the end of 2024²⁵. The countries leading development of offshore wind are China, the UK, Taiwan, Germany, and France, which together comprise 94 percent of the new additions in 2024 (GWEC Global Wind Report 2025; Global Offshore Wind Report 2025)²⁶. Specific to floating offshore wind, as of July 2025, there are five operational projects totaling 221 MW, all of which are either demonstration-scale or early commercial²⁷. The deepest installed floating wind array is the Hywind Tampen project, which is installed in 300 meters (984 ft) water depth. By comparison, the proposed theoretical depth limit for installation offshore Oregon is 1,300 meters (4,265 ft).

1.3.3 Oregon Offshore Wind Permitting Process and Roles

The regulatory and permitting process associated with an offshore wind project is complex, involving multiple entities at multiple scales of government. Within each project, there may be multiple 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.²⁸ Relevant information is reproduced in this section. See the Oregon Offshore Wind Background briefing in **Appendix X** for more on federal and state roles

Figure X outlines the collection of federal, state, and local permits, authorizations, and consultations that would be required before an offshore wind 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 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 project may take multiple years of coordinated effort, and the need for information is likely to be significant.

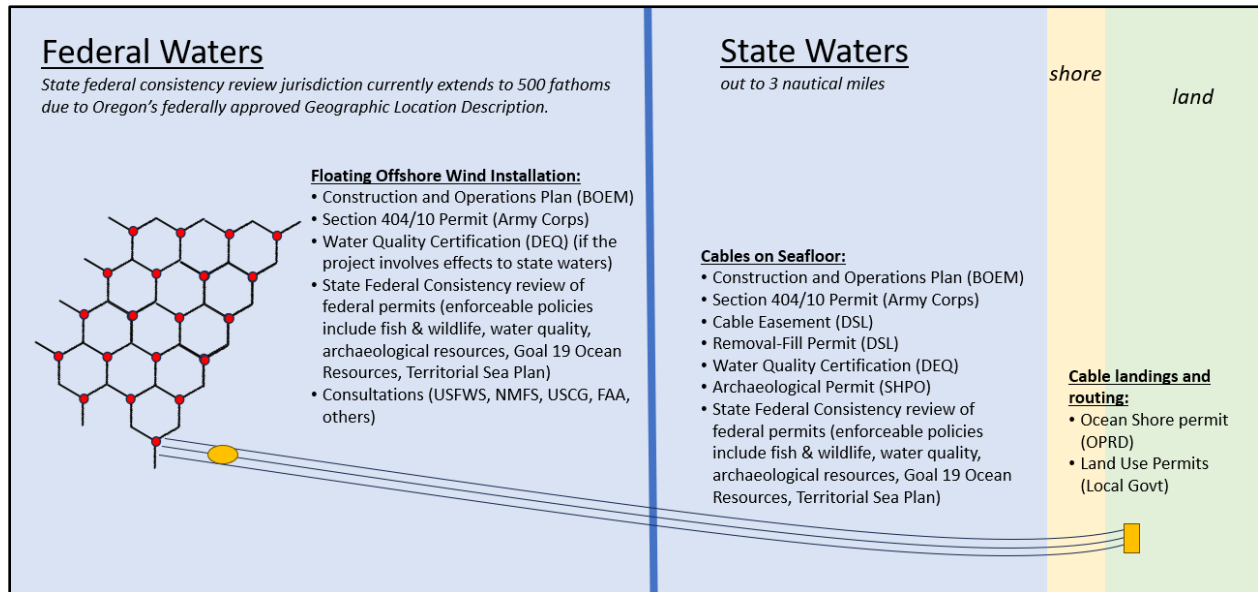
²⁵ [GWEC Global Wind Report 2025.pdf](#)

²⁶ [GWEC's Global Offshore Wind Report](#)

²⁷ <https://flotationenergy.com/how-many-floating-offshore-windfarms-are-there-in-the-world/#:~:text=Green%20Volt%20Offshore%20Windfarm,the%20future%20of%20that%20industry>.

²⁸ <https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Floating-Offshore-Wind-Report.pdf>

Figure 3. Agency Roles for an Offshore Wind Installation in Federal Waters (does not include transmission projects or shoreside facilities beyond cable landing).



Offshore Wind Projects in Federal Waters – Federal Authorities and Roles

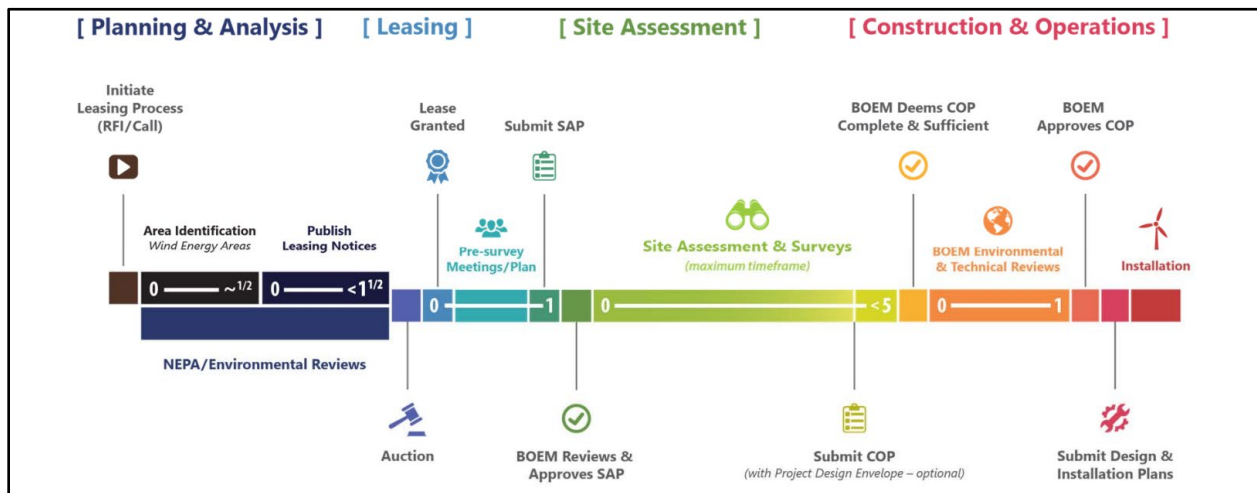
From a regulatory standpoint, offshore wind projects could be located in federal or state waters²⁹. To date, Oregon has asked the offshore wind industry to focus on federal waters adjacent to Oregon's coast³⁰. Federal waters begin where Oregon's Territorial Sea ends (state waters end three nautical miles 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.

The Federal Bureau of Ocean Energy Management (BOEM) is responsible for the leasing of ocean areas in federal waters and is the lead agency for siting and permitting potential OSW projects sited off Oregon's coast. The BOEM-led process includes preliminary planning & analysis (which may include BOEM-State Intergovernmental Task Force by state request), identification of Wind Energy Areas (Smaller ocean areas with potential for multiple projects), an auction and issuance of leases to developers, site plans and characterization, and a construction and operations plan (see **Figure 6**).

²⁹ State jurisdictional waters end three nautical miles from the westernmost point of land.

³⁰ https://www.oregon.gov/lcd/Commission/Documents/2022-07_Item-2_Directors-Report_Attachment-A_BOEM-2022-0009-0219.pdf

Figure 4. Typical BOEM Offshore Wind Energy Development Regulatory Timeline.
(RFI = Request for Information; SAP = Site Assessment Plan; NEPA = National Environmental Policy Act; COP = Construction and Operations Plan)



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 Act³¹.

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.

If an offshore wind project receives authorization from BOEM to proceed to construction and operation, 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. BSEE and BOEM (30 CFR 585.516 et seq.³²) are also responsible for ensuring offshore wind projects have adequate financial assurance (e.g., bonds) to cover project decommissioning, disaster/liability events, and the risk of default.

Oregon Regulatory Framework for Offshore Wind 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

³¹ <https://www.boem.gov/renewable-energy/environmental-consultations-offshore-renewable-energy-projects-atlantic-outer>

³² <https://www.federalregister.gov/documents/2024/05/15/2024-08791/renewable-energy-modernization-rule#sectno-citation-585.516>

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 state's review authority has been approved by the NOAA Office for Coastal Management 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 project located within federal waters or within the state's coastal zone³³. 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 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 (OCMP) 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.

Although Tribal nations within Oregon's coastal zone are not networked partners with the OCMP, OCMP recognizes and respects that Oregon Tribal nations 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 Tribal nations during Federal Consistency reviews.

An offshore wind 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.

1.4 Existing Research and Information Relevant to Oregon Offshore Wind

Offshore Wind in Oregon's Broader Energy Context

³³ <https://www.oregon.gov/lcd/ocmp/pages/coastal-zone.aspx>

In 2023, HB 3630 directed the Oregon Department of Energy to develop a state energy strategy. That report must: (1) summarize the state energy strategy and pathways to achieving the state’s energy policy objectives; (2) describe the department’s engagement process and how perspectives informed the energy strategy; and (3) recommend legislation or changes to policy necessary to implement the state energy strategy. The Strategy presents pathways to achieving Oregon’s energy policy objectives and legislative and policy recommendations and summarizes the process undertaken to develop the pathways and recommendations, including the technical analysis and engagement to inform pathways and policies.

Oregon Department of Energy (ODOE) produced an earlier study outlining the key benefits and challenges associated with developing 3 GW of floating offshore wind technology off the coast of Oregon³⁴. This study provides a comprehensive discussion of relevant information to this Roadmap and may be considered a companion document. Key benefits of offshore wind for Oregon identified in the study include:

- Scale of OSW Resource – The winds offshore Oregon have the potential to provide many gigawatts of power to the regional electricity grid.
- Generation Diversity Value – Offshore wind could play a critical role in helping the state achieve its clean energy goals, particularly because of its ability to complement other renewables during certain times of the year, like the winter months when solar is less available.
- Offsetting Land Use Impacts from Onshore Renewable Development – The development of offshore wind resources can help offset the significant amounts of onshore renewable resource development, and associated land use impacts, that will be required to achieve Oregon’s clean energy and climate goals.
- Power System Reliability – The addition of commercial-scale electricity generation projects offshore could improve the reliability of the state and regional grid, especially for Oregon’s coastal communities.
- Local Energy Resilience – The deployment of offshore wind projects could expand opportunities for additional community energy resilience projects along Oregon’s coast.
- Economic Development – The need for a skilled workforce to build and maintain floating offshore wind projects, and to develop supporting infrastructure and supply-chains, could support direct, indirect, and induced job development, especially in coastal communities where construction and maintenance activities would be based.

Key challenges identified included:

- Concerns About Adverse Effects on Coastal Communities, Existing Industries, the Environment, and Cultural Resources – Offshore wind projects have potential impacts on existing ocean and land users (e.g., fisheries, seafood processing, recreation, tourism, military activities); effects to the marine environment, cultural resources, and coastal economies.
- Siting & Permitting Complexity – Development involves a complex system of federal, state, and local rules and regulations for siting offshore and onshore infrastructure. Unquantified trade-offs and conflicting ocean uses (e.g., fishing vs. wind leasing) pose major challenges, and the

³⁴ <https://www.oregon.gov/energy/energy-oregon/Pages/fosw.aspx>

siting and permitting processes may not currently be adequate or timely to address all potential adverse effects.

- Technology Readiness & Costs – Floating offshore wind are still emerging technologies not yet deployed at large commercial scale. Higher upfront capital costs and risks associated with new floating platform designs, moorings, deep-water conditions, and the marine environment pose investment risk challenges.
- Port Infrastructure & Sea Vessels – Significant port upgrades are needed (deep-water berths, manufacturing, fabrication, assembly, heavy lifting, towing) to support large floating offshore wind projects. These infrastructure developments are time-consuming and require coordination and investment.
- Transmission Infrastructure – Major upgrades to onshore coastal grid and transmission systems are likely required to integrate gigawatt-scale offshore wind into Oregon’s grid. Without adequate transmission capacity, the value of offshore wind (and its reliability contribution) could be constrained.
- Long-Term Power Offtake Agreements & Energy Markets – At gigawatt-scale, one utility may not have the immediate need or appetite for large FOSW projects, so a consortium of buyers may be needed to commit to offtake agreements. The absence of a well-defined market framework, coordination among utilities, or formalized planning for multiple off-takers increases investment risk.

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. This guide represents a primer on the topic of offshore wind at its present state of development.³⁵

In 2024, the National Renewable Energy Laboratory published a report titled “Representative Project Design Envelope for Floating Offshore Wind Energy: A Focus on the California 2023 Federal Leases,”³⁶ which provides estimates of the scale and number of components in a floating offshore wind facility to assist in the evaluation of potential impacts from a project.

In support of offshore leasing activities, BOEM has completed many studies of environments, species, technologies, socioeconomic effects, energy systems, and infrastructure that could support west coast offshore wind. BOEM retains a repository of completed environmental and technical studies for future reference.³⁷

OCCRI Offshore Wind Summary

The Oregon Climate Change Research Institute published its 2024 biennial assessment of the state of climate change science as it relates to Oregon³⁸ that includes an overview of the current known state of

³⁵ 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>

³⁶ <https://www.osti.gov/servlets/purl/2438557>

³⁷ <https://www.boem.gov/environment/recently-completed-environmental-technical-studies-pacific>

³⁸ <https://blogs.oregonstate.edu/occric/oregon-climate-assessments/>

the science regarding offshore wind environmental and socioeconomic effects. The OCCRI report also discusses Oregon port infrastructure needs and capabilities necessary to support offshore wind development for the state (see Figure below).³⁹

A collection of studies evaluated the potential for ports in Oregon to provide the infrastructure and services necessary to support an offshore wind industry presence in the state, summarized below.

- BOEM conducted a Port of Coos Bay Infrastructure Assessment for Offshore Wind Development⁴⁰ in 2022 that evaluated key features and challenges of developing the various types of infrastructure that would be necessary to fully support OSW fabrication, integration, installation, and ongoing maintenance.
- Also in 2022, the SimplyBlue Group performed a similar study of the Coos Bay Port Infrastructure needs and challenges.⁴¹
- In 2023, NREL conducted a study of the ports along the US west coast and evaluated the impacts of developing a port network to support floating offshore wind. This study included a port-by-port evaluation of whether each would be suitable for Manufacturing & Fabrication facilities, Operations and Maintenance, or large-scale Staging & Integration facilities.⁴² This study found that Coos Bay is the only port in Oregon suitable for a full S&I facility, but other ports may be able to sustain the other types of needs depending on their physical characteristics.
- A 2023 study evaluating the impacts of developing a port network for floating offshore wind energy on the West Coast (Shields et al. 2023a)⁴³ found that the number of ports required on the West Coast to reach 55 GW of offshore wind energy by 2045 is 9 staging and integration sites (4-5 ports) and 17 operations and maintenance sites. This would require an investment of

Figure 5. Oregon Port Capabilities to Support Different Offshore Wind Development Needs. Green, yellow, and red indicate good, moderate, and unlikely candidate sites, respectively. S&I = Staging and Integration; MF = Manufacturing and Fabrication; O&M = Operation

Port location	Capabilities			Notes
	S&I	MF	O&M	
Hammond Boat Basin			X	U.S. Army Corps of Engineers maintains channel. Not much space available.
Warrenton		X	X	Water depth can accommodate barges
Astoria			X	Not much land available. Adequate water depth for operations and maintenance vessels.
Wauna				Currently in use, no land available
Port of Columbia County		X		Industrial land, deep-draft access, multiple sites
Port of Portland		X		Multiple sites
Nehalem				No maintained channel
Tillamook Bay at Garibaldi			X	4.5 m (18 ft.) deep, crew transfer vessel only for operations and maintenance, not as close to wind energy areas
Depoe Bay				Entrance channel not adequate for operations and maintenance
Yaquina River/ Toledo/Newport		X	X	U.S. Army Corps of Engineers maintains channel. A maximum of 16 ha (40 acres) may be available.
Waldport				No maintained channel
Siuslaw River at Florence				No land available
Umpqua River at Reedsport		X	X	Shallow water depth in channel
Coos Bay	X	X	X	Best option, but airport and dredging create challenges
Bandon			X	Coquille River depth is 4 m (13 ft.). Crew transfer vehicle only for operations and maintenance site.
Port Orford				No protected harbor
Rogue River (Gold Beach)			X	Crew transfer vessel only due to channel depth
Brookings Harbor at Chetco			X	Crew transfer vessel only due to channel depth

³⁹ <https://oregonstate.app.box.com/s/j85nuhy5tgieoxdnszoie8e9xotzrsz>

⁴⁰ <https://www.boem.gov/sites/default/files/documents/renewable-energy/studies/BOEM-2022-073.pdf>

⁴¹ <https://simplybluegroup.com/wp-content/uploads/2022/03/Coos-Bay-Offshore-Port-Infrastructure-Study-Final-Technical-Report.pdf>

⁴² <https://docs.nrel.gov/docs/fy23osti/86864.pdf>

⁴³ <https://docs.nrel.gov/docs/fy23osti/86864.pdf>

roughly \$11 billion. Manufacturing ports are required in addition to the staging, integration, operations and maintenance sites mentioned above. Manufacturing ports along the coast are required because offshore wind components are, in general, too large to be transported over land toward the coastline. An additional \$11-19 billion would be needed to build these manufacturing sites and the consequent local supply chain developed would reduce lifetime vessel emissions by 40% since it would eliminate the need for transporting major offshore wind components across the Pacific Ocean.

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.

- NOAA NMFS West Coast Offshore Wind Energy Strategic Science Plan⁴⁴ 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.
- Pacific Northwest National Laboratories TETHYS knowledgebase⁴⁵: TETHYS has collected more than 8,000 documents related to the environmental effects of wind energy (land-based and offshore). All documents are available in a table format via the TETHYS Knowledge Base.
- US Offshore Wind Synthesis of Environmental Effects Research⁴⁶: SEER synthesizes key issues and disseminates existing knowledge about environmental effects, informing applicability to U.S. waters, and prioritize future research needs.
- Wind Energy-Environmental Research & Engagement Network (WREN)⁴⁷: 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.

2025 GAO Report on Offshore Wind 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"⁴⁸. 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

⁴⁴ <https://www.fisheries.noaa.gov/s3//2024-10/offshore-wind-energy-strategic-science-plan-wcr-2024.pdf>

⁴⁵ <https://tethys.pnnl.gov/knowledge-base-all>

⁴⁶ <https://tethys.pnnl.gov/us-offshore-wind-synthesis-environmental-effects-research-seer>

⁴⁷ <https://tethys.pnnl.gov/about-wren>

⁴⁸ <https://www.gao.gov/products/gao-25-106998>

industry, community outreach, and regional capacity. The GAO recommended that BOEM improve oversight and stakeholder engagement and provided six key recommendations⁴⁹:

Grid implications of Offshore Wind for Oregon and the Region

The National Renewable Energy Laboratory (NREL) has completed multiple studies of the potential grid impacts of offshore wind for Oregon and the associated cost of energy. A 2019 study⁵⁰ found that by 2032, the levelized cost of energy (LCOE) for offshore wind is expected to range between \$75/MWh off the north coast of Oregon and \$50/MWh off the south coast (\$0.075-0.05 per kWh) based on their respective average wind speeds, if built at a scale of 67 x 15MW turbines with a 1GW total plant capacity at approximately 1 mile spacing. (see updated projections⁵¹). It should be noted that this cost estimate does not include the cost of any necessary port upgrades or bulk transmission (i.e., upland electrical grid) upgrades. These costs compare against a projected average Northwest wholesale price of \$0.067 per kWh based on 2024 data⁵² and the wholesale electricity rate charged by BPA to consumer-owned utilities of \$0.035 per kWh⁵³. Two separate studies found that the total net transmission system benefits of adding offshore wind to the grid would outweigh the costs of offshore and onshore transmission expenditure^{54, 55}. These studies assumed a cost of floating OSW consistent with the National Renewable Energy Laboratory's Annual Technology Baseline⁵⁶, but not all aspects of OSW infrastructure (e.g., port and manufacturing facility development) were included in the transmission cost/benefit model.

An additional factor is the compatibility of offshore wind generation with the demands on the grid in Oregon and the Pacific Northwest. Oregon currently derives approximately 40 percent of its electricity from the hydroelectric system, but in late summer this energy source can be constrained by low river flows due to depleting water resources and increasing water temperatures that require a higher amount of "spill" over the dams to maintain river flow. By contrast, offshore wind holds a more consistent production profile through the summer than hydroelectric resources (PNNL)^{57,58}. In winter months, offshore wind coincides well with peak demands in Washington⁵⁹.

Offshore wind also holds potential benefits to overall northwest grid reliability and resiliency, with the ability to stabilize coastal grids, meet energy demands, and increase resilience to disasters such as wildfires or winter storms⁶⁰. A capacity of 1 GW of offshore wind power off the Oregon coast would also

⁴⁹ <https://www.gao.gov/assets/gao-25-106998.pdf>

⁵⁰ <https://docs.nrel.gov/docs/fy20osti/74597.pdf>

⁵¹ <https://docs.nrel.gov/docs/fy22osti/80908.pdf>

⁵² <https://www.eia.gov/todayinenergy/detail.php?id=61244>

⁵³ <https://www.bpa.gov/energy-and-services/rate-and-tariff-proceedings/power-rates>

⁵⁴ <https://docs.nrel.gov/docs/fy22osti/81244.pdf>

⁵⁵ https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-29935.pdf

⁵⁶ [Index | Electricity | 2024 | ATB | NREL](#)

⁵⁷ <https://docs.nrel.gov/docs/fy22osti/81244.pdf>

⁵⁸ https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-29935.pdf; [pnnl.gov/main/publications/external/technical_reports/PNNL-37067.pdf](https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-37067.pdf)

⁵⁹ E3 offshore wind grid impact study, 2023.

⁶⁰ <https://docs.nrel.gov/docs/fy22osti/81244.pdf>; <https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Floating-Offshore-Wind-Report.pdf>

relieve the capacity of the west-east transmission lines between the coast and the rest of the state grid, which would in turn free up transmission to serve additional inland loads. (PNNL 2020) The 2021 PNNL study also found that the current regional transmission system can accommodate up to 2.6 GW of new offshore wind generation with minimal transmission investment, but the generation would need to spread across the entire north-south span of the coast to utilize the five existing transmission lines that cross the coast range. Under this scenario, the equivalent of up to 84-89 percent of coastal power loads could be served by OSW. A study commissioned in 2022 found that significant transmission upgrades would be required to support a 3 GW build-out of offshore wind generation, if development focused only on the south coast, and could require costly and long lead time efforts, potentially costing up to 1.2 billion dollars and taking 10-15 years before construction could begin. (NorthernGrid, 2022⁶¹). By contrast, a smaller scale capacity of approximately 1.1 GW may require only moderate grid infrastructure investment (\$45-68 million).

The PNNL study found that transmission congestion is the main driver of offshore wind curtailment. If the trans-coastal transmission is upgraded, power can be delivered into the Willamette Valley and curtailment⁶² of offshore wind off the coast of Oregon would be minimal. As an alternative, co-located energy storage (e.g., grid-connected batteries) on the coast could reduce offshore wind curtailment by approximately 15 percent (NREL 2021⁶³). Grid upgrades could also facilitate export of power from Oregon to California to serve evening loads, but interstate transmission congestion limits this ability presently. The sites off the southern half of the coast included in this study have higher average wind speeds than the northern sites, but they are also farther from existing coastal substations. If the cost of undersea transmission were studied, trade-offs between the cost of interconnection and capacity factors might be discovered. These studies do not capture the barriers to smaller scale transmission between the offshore wind turbines and the high voltage coastal substations, like right-of-way and reactive power support.

Economic Development Potential Related to Oregon Offshore Wind Energy

Offshore wind energy projects require substantial supporting infrastructure, including port upgrades, local supply chains, assembly and installation work, ongoing maintenance, and likely transmission grid upgrades. Coastal economies have the potential to benefit from the high-quality, well paying “family wage” jobs that contribute to a diversified economic activity. The overall job forecasts for total floating offshore wind jobs can range significantly.

A 2016 study by NREL⁶⁴ estimated the potential for jobs and economic impacts in Oregon coastal counties from two future offshore wind development scenarios: a 5.5GW and 2.9 GW total deployment between 2020-2050. Under the 5.5GW scenario, it estimated that development would add between \$1.6-2.8 billion to the gross domestic product of the coastal counties through 2050 and support 1,600 – 3,000 long-term jobs in Oregon coastal counties for the duration of the offshore wind project’s operational life. In addition, the construction phase would add 18,000-33,000 FTE job-years between

⁶¹ https://www.northerngrid.net/private-media/documents/2022_ESR_OSW_Approved.pdf

⁶² “Wind curtailment is defined here as the percent of energy not delivered, or spilled, to the electric grid relative to the possible output of the OSW site.” (PNNL, 2020)

⁶³ NREL, 2021. Evaluating the Impact of Oregon Offshore Wind Josh Novacheck and Marty Schwarz

⁶⁴ <https://docs.nrel.gov/docs/fy16osti/65432.pdf>

2020-2050.⁶⁵ The 2.9GW scenario was estimated to support 680 – 1,100 long-term jobs, with 12,000-14,000 construction-phase job-years. These estimates were found to be highly dependent on the proportion of locally sourced parts, equipment, and labor. It should be noted that these hypothetical scenarios should be refined and balanced against other factors in an offshore wind system, such as siting limitations for offshore arrays and port upgrades, transmission upgrade costs, and local supply chain capabilities.

A more recent study from 2025 by the Schatz Energy Research Center in California conducted a modeling assessment of the workforce opportunities that could result from supporting a single 1.5 GW offshore wind project.⁶⁶ An important finding of the study was not only the total number of jobs, but how the workforce needs varied by project phase and job type. Component supply chain activities accounted for approximately 60 percent of the jobs, and 76 percent of those were associated with producing the materials for fabrication and manufacturing (e.g., steel production). The extent to which fabrication and manufacturing opportunities accrue to Oregon as opposed to other places would depend on the level of corresponding manufacturing supply chain development in Oregon. The staging, assembly, and installation of the project only accounted for 10 percent of jobs, and of these 44 percent were associated with specialized vessel operations, which may be sourced outside of Oregon. Development and soft costs (including onshore electrical interconnection, site assessment, project management, and other professional services) accounted for 11 percent of jobs. Long-term operations and maintenance accounted for 18 percent of the total jobs, representing 4.92 FTEs/MW or 210 jobs lasting through the 35-year operation of the project post-construction. Of the jobs represented, approximately 40 percent constituted professional occupations such as engineering, life and physical sciences, or management.

1.5 Oregon Definitions of Success for the Roadmap

Development of offshore wind in Oregon is a complex endeavor that represents both opportunities and challenges for the state. The intent of this Roadmap is to clearly articulate what the path to offshore wind energy for Oregon could look like, and the ways the state can make best use of this time by pursuing the policies, processes, research, or planning work that aligns with our interests and values and leaves us better prepared if offshore wind development is proposed again in the future .

1.6 How to Use this Document

The Roadmap document is divided into five sections. Section 1 defines the document’s purpose and provides some background. Section 2 describes principles and four alternative futures to guide Oregon’s consideration of offshore wind energy. The principles are derived from Oregon’s coastal management policy structure, feedback from the Roadmap process, and the experience of marine renewable energy development in Oregon and other places. Section 2 also defines meaningful engagement expectations

⁶⁵ A job-year is one full time job for one year. For example, 1 person working full time for 10 years, or 5 people working full time for 2 years each total 10 job-years.

⁶⁶ <https://schatzcenter.org/docs/2025-OSW-R1-workforce-SchatzCenter.pdf>

with Tribes and communities. The alternative futures recognize that Oregon is still considering options that range from large commercial offshore wind array development to no development.

Section 3 contains an assessment of Oregon’s enforceable policies and other standards the state might use in the future when reviewing federal permits and other proposals related to offshore wind development. Section 3 discusses the potential effects of offshore wind development – both opportunities to pursue and adverse effects to manage, identifies policy gaps, and assesses the capacity needed in state, local, and Tribal governments to fully participate in offshore wind energy decision processes.

Section 4 lays out pathways to a future where A) there are offshore wind energy arrays, and B) there are no wind energy arrays, but Oregon actively pursues a supply chain role for development in other states. The pathways list the actions and information needed at each phase of the total offshore wind lifecycle to successfully move through “checkpoints” on the path from one phase to the next.

Section 5 provides recommendations to better prepare Oregon for a future that could include offshore wind energy or to employ during future offshore wind decision-making processes. The actions are organized by policy objective categories provided in HB 4080. Many of these actions are referenced in Section 4.

The appendices provide more information about specific aspects of the Roadmap, including an initial, a detailed enforceable policy analysis (Appendix A), a capacity assessment (Appendix B), an initial Oregon Offshore Wind Research Agenda (Appendix C), outcomes of community engagement efforts during the Roadmap development process (Appendix D), additional background information on offshore wind in Oregon (Appendix E) and responses to public comments received on the Roadmap (Appendix F).

2 PRINCIPLES & ALTERNATIVE FUTURES FOR OFFSHORE WIND IN OREGON

2.1 Oregon Principles Guiding the Offshore Wind Roadmap

Since time immemorial, the ocean ecosystem, fisheries, marine resources, and viewsheds have held the utmost significance to the cultural identity for many of the people who live and travel along Oregon's coast. For all communities, the environment, people, livelihoods, and human wellbeing are all interconnected. Those connections are important to understand and protect. Generally, it is important for any OSW development to occur with a good understanding of possible cumulative impacts, a sensitivity to the spatial and temporal dynamics of cultures, ecosystems, and local economies, and a recognition that the ocean is dynamic, changing as climate changes, and potential impacts may not be fully understood for some time. As OSW is considered, there are also important opportunities to create good and lasting jobs for Oregon communities while sustaining existing coastal economies and community values.

The Roadmap centers around the seven co-equal objectives identified in House Bill 4080 to guide standards and strategic actions. These objectives were identified first by Oregon's legislature and they are consistent with the values and concerns raised during community discussions through Roadmap community and Roundtable meetings.

Whether Oregon decides to pursue OSW or not, those decisions should be guided by common principles to check for consistency with the HB 4080 objectives. These principles hold that decisions regarding offshore wind energy for Oregon should be rooted in meaningful engagement, good information, regional coordination, and a commitment to checkpoints along the way to ensure projects are accountable to meeting goals holistically (See Section 2.1.1.-2.1.4).

2.1.1 Meaningful Engagement

Meaningful engagement with all affected parties is defined by two-way communication that allows for information and ideas to be shared with a broad range of constituencies, knowledge holders, and rights holders. Meaningful engagement relies on trust and good faith. Every Oregon resident should have an opportunity to engage, but particular attention should be given to those most affected by OSW (e.g., Tribes, coastal communities, and existing ocean users). The State of Oregon should be central in leading engagement efforts with Tribes, communities affected by offshore wind development (in both positive and negative ways), and others who care about how floating offshore wind is planned for, built, and operated.

By actively engaging coastal communities and making decisions about OSW energy in consideration of Oregon's diverse communities, this Roadmap aims to not only maximize the positive and minimize any negative effects of OSW energy but also maximize community participation in the benefits offered by OSW energy. Transparent, inclusive communication can encourage communities to get involved from

the ground up in OSW energy development. This approach can help address community concerns, foster a sense of ownership, and grow a willingness to participate in a collaborative and positive future.

The State of Oregon must operate consistent with state law and policy related to consultation with the Nine Federally Recognized Tribes of Oregon. The Oregon Coastal Management Program included conditions in its Federal Consistency decision for the proposed BOEM leasing action requiring developers to notify and involve Tribes in the exploration of offshore and onshore areas with potential to contain cultural or archaeological resources. A condition also required BOEM to require leaseholders to make all reasonable efforts to demonstrate two-way dialogue with Federally Recognized Tribes that could be affected by future offshore wind development, including multiple specific provisions. These conditions should be retained in future actions and modified in discussion with Tribes for any additions or amendments over time. State engagement should remain consistent with Federal standards for Tribal Consultation, and the state should co-design offshore wind engagement with Tribes. The state should also make efforts to support the attainment of adequate resources for full Tribal engagement

Meaningful engagement can range from informing to partnership depending on the type of decision and interests from people wanting to shape a decision. Opportunities for engagement should occur throughout the OSW lifecycle from planning to construction to decommissioning. Many communities have engaged already, and proponents of any future work are encouraged to build from what Tribes, communities, and others have shared in past comments.

Oregon's Responsibilities to 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 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 that would accomplish, "Protection of tribal cultural and archaeological resources, culturally significant viewsheds and other interests of Indian tribes," consistent with the directive of House Bill 4080.

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. The state's system of enforceable policies demonstrates a shared value in protecting the species, habitats, and other natural resources that enhance the lives of all who call Oregon home.

In 2001, Senate Bill 770 (SB 770) established a framework for communication between state agencies and tribes. Effective government-to-government communication increases our understanding of tribal and agency structures, policies, programs, and history. These state and tribe relations inform decision makers in both governments and provide an opportunity to work together on shared interests.⁶⁷

⁶⁷ The state statute created from SB 770 is [ORS 182.162-168](#), which followed Executive Order [EO-96-30](#). This Executive Order, established in 1996, defined a process to "assist in resolving potential conflicts, maximize key

Actions by DLCD to implement this Roadmap must adhere to Agency Policy 06-01 (Local and Tribal Government Communication Policy) and 07-02 (Policy on Government to Government Relations with Oregon Tribes).

To be meaningful, any engagement effort should:

- Provide early and transparent information on when engagement is occurring, who can participate, how feedback will be used, and when key decisions are being made—so people can plan and make informed decisions on when and how to participate. Public engagement opportunities for major process milestones should be publicized in coastal newspapers;
- Consult meaningfully with federally recognized Tribes and cultivate long-term relationships;
- Recognize the importance of Tribal sovereignty, treaty rights, cultural and natural resource interests, cultural practices such as fishing and use of the Ocean and Ocean viewsheds, Tribal economies, consultation obligations, and the concept of free, prior, and informed consent;
- Adhere to Statewide Planning Goal 1: Citizen Involvement, which calls for “the opportunity for citizens to be involved in all phases of the planning process,” and embodies this value in the permitting and consenting process for any offshore wind project;
- Include diverse modes of engagement to be as inclusive and accessible as possible—remain flexible and intentional by tailoring specific approaches to both project stage and community need. Provide high quality information and ongoing community education over time, in multiple and accessible languages with visuals as much as possible, and with access to subject matter experts, so people engage with a similar understanding of the problem to be solved and potential solutions;
- Be coordinated with state and federal agencies, tribal governments, developers, local governments and others with engagement responsibilities so engagement is efficient, effective, consistent, and accountable;
- Apply a definition of equity that is consistent with related state and federal initiatives;
- Weave engagement into existing community gatherings and venues. Partner with local groups to co-host engagement, accessible community education, and community visioning and planning activities prior to formal government review periods;
- Be clear on why engagement is happening, and what level of decisional authority is being shared (or not shared) with the people engaging;
- Create the space for multiple perspectives from the entire state, and across generations from youth to elders, to be offered and listened to by the State of Oregon and others;
- Commit to be data-driven and transparent, understanding that uncertainties will remain and cannot all be eliminated. Be clear about what is known and unknown, and how unknown information will be brought into the process in the future; and
- Be timely and accountable in providing responses and demonstrate that feedback has been received (e.g., by publishing regular summaries of feedback received, frequently asked

inter-governmental relations, and enhance an exchange of ideas and resources for the greater good of all of Oregon's citizens."

questions tools, and how feedback will shape decisions). Document which ideas were not advanced and why.

2.1.2 Good Information

Good information is based on the best available science with the understanding that perfect data and science may never be available, and that baseline environmental data is changing with anthropogenic activity and climate change (with or without OSW). Good information is high quality and ready to inform decisions because it is timely, transparent, sourced, uncertainty labeled, and fit for purpose for the decision at hand. Good information is built via studies, monitoring, traditional knowledge, and lived experience. Decisions need to include forward-looking plans to manage uncertainty and risk and consider the following:

- Use a precautionary approach⁶⁸ to decision-making when information is limited regarding potential effects to irreplaceable resources and uses.⁶⁹
- Include sufficient information to demonstrate consistency with Oregon’s statutes, rules, statewide planning goals, and other relevant state and local policies and permit authorities.
- Commit to ongoing learning through effective and relevant monitoring.
- Be adaptive in a thoughtful manner⁷⁰.
- Utilize the mitigation hierarchy⁷¹.

⁶⁸ “[I]n order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” Source: <https://www.noaa.gov/precautionary-approach>

⁶⁹ Embedded in Oregon’s enforceable policies (Statewide Planning Goal 19: Ocean Resources) is a precautionary approach, recognizing that where there is a reasonable threat of irreversible harm to an irreplaceable resource, such actions should be treated with caution, and it is the responsibility of the proponent of an action to prove the absence of harm. Territorial Sea Plan Part Five defines the Precautionary Approach as, “*The application of a planning and regulatory decision-making system that accounts for circumstances where information about marine resources and uses is limited, and there are increased levels of risk and uncertainty related to the outcome of the action. The principle of the precautionary approach is found in the Management Measures provided in Part One, section G. and in Goal 19 Ocean Resources*”.

⁷⁰ The concept of adaptive management is a risk management approach that has been described as walking “hand in hand” with the precautionary principle (Francis et al., 2007). It is predicated on the basic premise that, “if human understanding of nature is imperfect, then human interactions with nature [e.g., listing or delisting species] should be experimental” (Lee 1993, p 53). Proponents of adaptive management assert that ecosystem-based management of fisheries should incorporate scientific trial and error, with extensive monitoring regimes to investigate the effects of the management decision and plan the next iteration (Morrison-Saunders et al. 2007; Stankey, 2003). “As originally proposed by Holling (1978) and refined by Lee (1993), adaptive management treats economic uses of nature as experiments so that we may learn efficiently from experience” (Francis et al., 2007, p. 220).

⁷¹ Mitigation includes: (a) Avoid; (b) Minimize. (c) Rectify or restore. (d) Reduce or eliminate over time; (e) Compensate. Sources: <https://www.govinfo.gov/content/pkg/CFR-2002-title40-vol28/pdf/CFR-2002-title40-vol28-sec1508-20.pdf>; <https://www.oregon.gov/lcd/OCMP/Documents/TSP%20Part%20Four%20-%20Uses%20of%20the%20Seafloor%20.pdf>; <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=173482>

- Be based on an understanding of impacts and risks to the ocean and shoreline environments, and/or identify any needed studies on impacts and risks.

2.1.3 Holistic and Regionally Coordinated

Climate change, energy markets, and ecosystems do not stop at state lines. Oregon needs to coordinate with neighboring states on any OSW actions and learn from other efforts in the United States and around the world. Any Oregon action should coordinate especially with West Coast states, federal agencies, and local governments so siting, research, monitoring, policies, ports, transmission, markets, and fisheries/ecosystem measures work together.

2.1.4 Checkpoints: A Holistic Approach to Accountability

A checkpoint is a review of information and a way to check that OSW developments are consistent with objectives before development moves from one phase to the next. Checkpoints can be formal Oregon reviews or permit decisions, or can also be less formal expressions of interest or requests. Checkpoints feature clear and enforceable accountability measures and agreements with affected communities to provide assurances that standards will be upheld, interests are preserved, and benefits balance with costs.

- Consider an accounting of costs and benefits, inclusive of both the environment and coastal communities, with benefits balancing or exceeding fully accounted costs. The interests of existing ocean users, including Tribes, are recognized and included in this principle.
- Consider and integrate all phases of offshore wind development, including Siting, Leasing, Permitting, Construction, Operations and Maintenance, and Decommissioning.
- Include labor standards that foster a safe, professional, well-trained, well-supported workforce to promote quality work and community well-being.
- Consider all aspects of energy development as an interdependent system, including port infrastructure development, transmission needs, manufacturing, workforce development, transportation and shipping, community support services.
- Consider the cumulative effects of offshore and coastal energy development on environmental, social, and economic systems.

- Reflect Environmental and Climate Justice⁷² values and a Just Transition⁷³ framework.

2.2 Precursors to Successful Development of Offshore Wind in Oregon

This Roadmap does not decide whether offshore wind energy is viable or not, but it articulates the steps along a viable path to an offshore wind energy project. The Roadmap describes some of the characteristics of those steps that might increase clarity along the way:

- State leadership is essential to communicating an invitation for the OSW industry to seek development opportunities in Oregon and discuss expectations, needs, and opportunities.
- Regulatory certainty is more likely to bring investment. Transparency regarding expectations for information, mitigation measures, and community agreements will increase certainty.
- Market certainty brings investment. Offshore wind is a long lead-time investment that may necessitate market signals from the state to attract and sustain interest. Signals may include policies, incentives, financing, high quality public engagement and indicators of public support/opposition, or procurement mechanisms. For the state to offer these signals, the value of offshore wind to Oregon's energy system, climate goals, community benefit, and economic development needs to be clearly articulated.
- Offshore wind in Oregon relies on shoreside support infrastructure and port development. These developments need to be planned in advance on a local and regional level, including consistency with state and local policies and regulations.
- The siting of offshore wind arrays significantly affects the cost and feasibility of a project. Careful and thoughtful siting can identify issues early and increase confidence that a project may be viable.

⁷² Climate Justice focuses on the root causes of the climate crisis through an intersectional lens of racism, classism, capitalism, economic injustice, and environmental harm. Climate justice supports a Just Transition for communities and workers away from a fossil fuel economy and focuses on making the necessary systemic changes to address unequal burdens to our communities and to realign our economy with our natural systems. As a form of environmental justice, climate justice means that all species have the right to access and obtain the resources needed to have an equal chance of survival and freedom from discrimination. As a movement, climate justice advocates are working from the grassroots up to create real solutions for climate mitigation and adaptation that ensure the right of all people to live, learn, work, play, and pray in safe, healthy, and clean environments

⁷³ Just Transition is a framework for a vision-led, unifying, and place-based set of principles, processes, and practices that build economic and political power to shift from an extractive. Economy to a Regenerative Economy. This means approaching production and consumption cycles holistically and waste free. The transition itself must be just and equitable, redressing past harms and creating new relationships of power for the future through reparations. If the process of transition is not just, the outcome will never be. Just Transition describes both where we are going and how we get there. The Just Transition framework focuses on stopping the bad to build the new by divesting from the exploitation of labor and extraction of resources and investing in cooperative labor and regeneration. Just Transition challenges the dominant worldview of colonialism, consumerism, and the concentration of power governed through violent force and advances a worldview of sacredness and care, as well as ecological and social well-being governed through deep democracy. (<https://climatejusticealliance.org/wp-content/uploads/2020/06/ProtectRepairInvestTransformdoc22x.pdf>)

- Offshore wind development requires a trained workforce that has adequate access to family-affordable housing, primary and secondary public education, family medical and hospital care, and other essential services.
- Early community engagement and education can build trust and repair damage caused by other historical examples of development that have not met community interests.
- Offshore wind is a regional opportunity for the west coast and a strategic investment for the nation. An efficient industry requires regional cooperation with California and Washington regarding transmission infrastructure, supply chain development, and port capabilities.
- State investment should champion investment in coastal communities, monitoring and research, and infrastructure to support the integrated system that would be needed to realize an offshore wind industry that is consistent with Oregon’s interests and values.

2.3 Alternative Futures

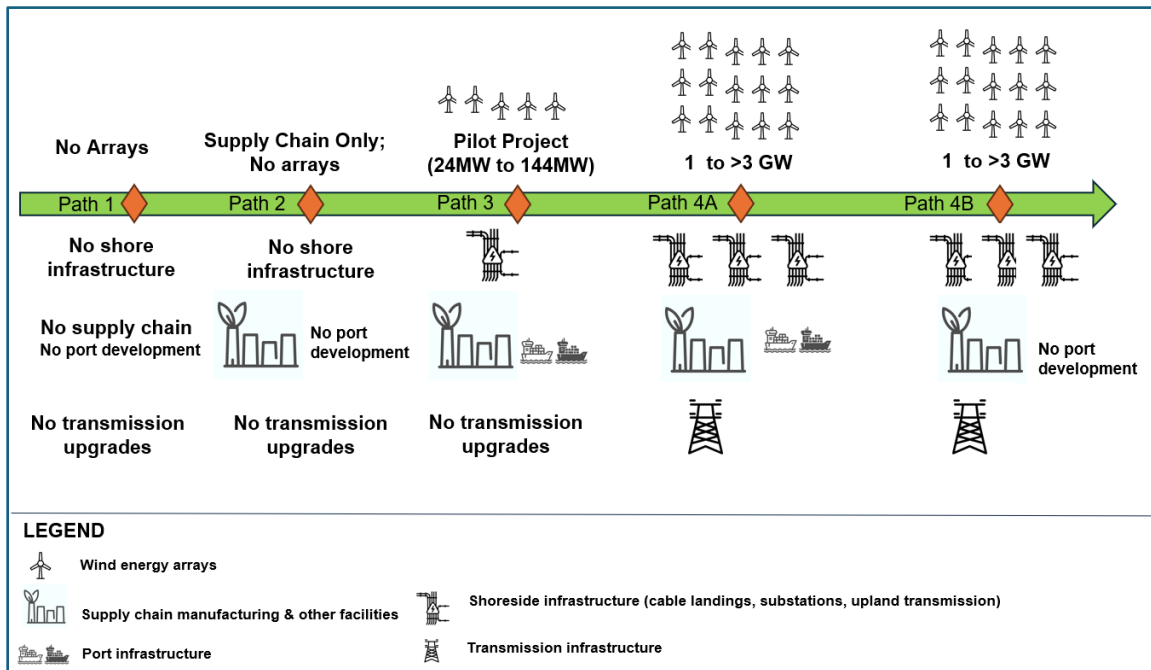
Rather than describe the path to a single future that envisions a full offshore wind presence in Oregon, this Roadmap considers an “atlas” of multiple alternative futures for Oregon and its coast. Each alternative future presents varying benefits and tradeoffs to be considered in strategic planning, and the pathways to these futures may look different. Offshore Wind Roadmap Roundtable participants were asked to imagine versions of alternative futures:

- A future with wind turbines off the Oregon coast; and
- A future without wind turbines off the Oregon coast.

For both futures, Roundtable members were asked to identify the characteristics of each future where they would have “no regrets”. Additional alternative futures were included and refined through continuing discussion (Figure X).

Consistent with the intent of House Bill 4080 Section 4, of the Roadmap further defines the path that includes offshore wind energy development and explores the necessary elements along that path. A pathway is also included for a future wherein Oregon does not pursue offshore wind energy for itself but participates in the industry elsewhere through supply chain development.

Figure 6. Alternative Futures Considered in the Roadmap.



2.3.1 Path 1: Oregon does not participate in offshore wind in any way

Under this future, Oregon elects not to attract marine or terrestrial elements of offshore wind energy development. Oregon also does not take policy or investment action to support the development of a supply chain industry for offshore wind development elsewhere. Under this scenario, Oregon would pursue meeting its energy demand and greenhouse gas reduction goals through other forms of electricity generation development, as described in the 2025 Oregon Energy Strategy⁷⁴. The absence of offshore wind as a generation option would place greater reliance on other emerging technologies, such as enhanced geothermal, solar plus storage, nuclear power, or potentially other ocean energy technologies such as wave energy. Energy needs may also be met through importing electricity from other states in the region. The Oregon Energy Strategy describes a need for expanded and upgraded transmission infrastructure across the state. The Energy Strategy also recognizes the need for a coordinated regional electricity market to allow intra-regional power trading a regional transmission coordination body to foster and maintain the reliability of a larger interconnected grid. Under this alternative scenario, it is unclear whether or how improvements to the coastal grid infrastructure would be prioritized to address coastal community grid reliability and resiliency needs. Coastal power utilities would likely continue to purchase electricity from the Bonneville Power Administration, though the cost of that power may change as demand on the Columbia River hydroelectric system increases and rates adjust accordingly (the existing 20-year Regional Dialogue Contracts with BPA are due to expire in 2028).

Also under this scenario, the State would not actively seek to develop market opportunities or support manufacturing, fabrication, or port upgrades intended to supply offshore wind developments in other

⁷⁴ <https://www.oregon.gov/energy/Data-and-Reports/Pages/Energy-Strategy.aspx>

states such as California or in international markets overseas. New or existing industries in Oregon may still act independently to meet these opportunities as they emerge, but the state would not actively amend policy, make investments, or conduct other interventions to build an offshore wind support economy. Oregon coastal communities and ports would instead develop other new opportunities or focus on sustaining existing economic drivers such as fishing, tourism, recreation, mariculture, agriculture, and timber.

Although this scenario assumes Oregon takes no actions to encourage offshore wind development, it would still be possible for future federal leasing actions to occur in the Outer Continental Shelf for offshore wind development. Individual developers may also make unsolicited lease requests in federal waters or propose to develop offshore wind projects on state submerged lands within the Territorial Sea. If either of these were to occur, Oregon would use its existing permit authorities and enforceable policies in the review of future proposals.

Markers of Success:

- Oregon sustains existing coastal economic sectors while avoiding potential detrimental effects to state coastal resources or uses that may result from the presence of an offshore wind installation and associated support facilities on the Oregon coast.
- Oregon has found other sources of renewable energy to meet its climate goals.
- Even without offshore wind as a driver, Oregon continues to collaborate with California and Washington on regional energy supply and demand issues, and monitoring changes to the California Current Ecosystem.

Considerations/Consequences/Tradeoffs:

- The economic development and jobs from offshore wind are located elsewhere.
- The state must rely more heavily on alternative sources of non-greenhouse gas-emitting electricity sources to achieve its energy and climate goals.
- Alternative energy sources to meet state demands may be less likely to be located on the coast due to land use or other constraints, in which case the incentive to invest in grid upgrades that provide additional energy reliability and resiliency for the coast could be less.
- If other renewable energy generation alternatives are not readily available, Oregon may have less control over the types of energy sources it accesses to meet its climate goals and future energy needs.
- Under existing laws, an OSW developer may still propose a project at any time, even if the state decides not to attract OSW. BOEM and/or the state would be obligated to consider such a proposal. If the state does not plan for OSW, it is possible that it may nevertheless come to the state.

2.3.2 Path 2: Oregon participates in activities related to offshore wind (e.g., supply chain) but does not host an offshore wind array

Under this future, Oregon invests in developing business opportunities and system upgrades ancillary to an offshore wind presence in Oregon but does not elect to pursue or support the presence of offshore

wind arrays off Oregon’s coast. An offshore wind supply chain encompasses the entire ecosystem of businesses and processes involved in designing, manufacturing, transporting, installing, and maintaining offshore wind turbines and their associated infrastructure, from raw materials to delivering electricity to the grid. It includes the production of components like blades, towers, and nacelles, as well as the construction of substations, installation vessels, mooring systems, anchors, and transmission cables that bring the power to shore. Oregon may also capitalize on the ocean science, marine engineering, and other strengths of its research universities to provide scientific and technical support to offshore wind projects. For example, Oregon’s PacWave wave energy pilot project could be used to provide information to inform decisions about the potential effects of OSW. Wave energy conversion devices require mooring systems and subsea power cabling systems not unlike those involved in the FOSW energy systems. Research conducted at the wave energy test facility can be used to help inform the decision-making process for floating wind energy production. Oregon’s maritime sector may also provide services within the region, including operations, maintenance, research and development, and transportation and logistics such as port staging or production of specialized vessels to support projects in the region.

To capitalize on these opportunities, the state would actively develop market opportunities, connect them to matching capabilities within the state, and potentially support the expansion of existing capabilities through policies, investment, or other interventions. However, the state would not prioritize or invest in offshore wind siting, policy amendment, research, or other proactive measures to prepare for a future that may include offshore wind.

Because this future scenario assumes no offshore wind is developed off the coast of Oregon, many of the elements in Path 1 would also apply. This includes the need to pursue other methods to achieve its energy and climate goals, uncertainty about whether or how improvements to the coastal grid infrastructure would be prioritized to address coastal community grid reliability and resiliency needs, and the potential for offshore wind to be proposed off Oregon’s coast independent of state planning.

Markers of Success:

- Oregon achieves some economic benefits providing shore-side support for other West Coast OSW developments, while avoiding detrimental effects to state coastal resources or uses that may have resulted from the presence of an offshore wind installation and associated support facilities on the Oregon coast.
- If Oregon eventually decides to pursue or support offshore wind generation off the coast, investments in port and other facility upgrades now may mean the state is that much closer to having the OSW development and support infrastructure (depending on the supply chain opportunities realized).
- Even without offshore wind as a driver, Oregon continues to collaborate with California and Washington on regional energy supply and demand issues, and monitoring changes to the California Current Ecosystem.

Considerations/Consequences/Tradeoffs:

- It is unclear whether sufficient opportunity exists from the California projects for Oregon supply chain businesses given CA and WA are already signaling investments in their own supply chain development.
- Absent an intent to locate wind turbines off the Oregon coast, the need and value of port upgrades is uncertain.
- Absent new energy generation west of the Coast Range, it is not clear whether the Oregon coast electrical grid would pursue upgraded transmission and grid infrastructure to improve energy resiliency.
- State public investments may be required to attract and support an offshore wind supply chain opportunity.
- If supply chain development requires new onshore construction and/or port development, the associated potential impacts to onshore or estuarine habitat or environment would need to be evaluated against state enforceable policies.

2.3.3 Path 3: Oregon pursues a pilot scale offshore wind project

Under this future, Oregon invests in one or more pilot offshore wind arrays. The purpose of a pilot would be to test new technologies or approaches, build experience working through the state review and permitting process, design monitoring and adaptive management strategies, and build familiarity with the presence and potential effects of turbines in Oregon before committing to a large-scale project.

Territorial Sea Plan (TSP) Part Five includes a general policy for renewable energy facilities that directs agencies to, “Limit the potential for unanticipated adverse impacts by requiring, when resource inventory and effects information is insufficient, the use of pilot projects and phased development to collect data and study the effects of the development on the affected resources and uses.”

Examples of pilot-scale projects exist in Oregon’s coastal history and in other states in recent years. In December 2012 USDOE awarded funding for seven proposed OSW demonstration projects, including one offshore of Oregon⁷⁵. In May 2013 BOEM received an unsolicited request for a commercial wind lease from Principle Power, Inc. proposing a 30MW pilot-scale floating OSW project with 5 6MW turbines floating in 300-400 meters (1,000-3,000 ft) of water 15 nautical miles from shore and a subsea cable to connect the power to onshore infrastructure planned for the port of Coos Bay⁷⁶. Principle Power received a grant from the USDOE to support development of the Wind Float Pacific project⁷⁷ and obtained a finding from BOEM that there was no competitive interest in the proposed lease area. Ultimately, the developer did not obtain a power purchase agreement for the project due to two investor-owned utilities rejecting the above-market price of power⁷⁸, funding from USDOE ended, and BOEM stopped processing the project lease request in 2018⁷⁹. Because the project did not proceed to

⁷⁵ https://www.energy.gov/eere/wind/offshore-wind-advanced-technology-demonstration?nrg_redirect=462172

⁷⁶ <https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/OR/WindFloat-Pacific-Lease-Request.pdf>

⁷⁷ https://www.energy.gov/eere/wind/offshore-wind-advanced-technology-demonstration?nrg_redirect=462172

⁷⁸ <https://www.utilitydive.com/news/doe-backed-floating-wind-project-may-lose-funding-as-utilities-reject-power/401496/>

⁷⁹ <https://www.boem.gov/renewable-energy/state-activities/oregon-activities>

the permitting phase, it is not known whether it would have been found consistent with state policies, but the scoping comments for the project in July 2014 indicate that the project in its early phases received both support and scrutiny about potential effects to the environment and the fishing industry⁸⁰.

The PacWave wave energy testing facility operated by Oregon State University (OSU) is an example of a novel ocean energy project that is aligned with state policy preferences to use pilot-scale projects to collect information that may be relevant to determining project effects on a commercial scale. This open ocean wave energy test facility consists of two sites off Newport. PacWave North is designed to test smaller prototype wave energy converter (WEC) devices and successfully performed one such test in 2012.⁸¹ Installation and operation of PacWave North includes limited exemptions under TSP Part Five, section E, although future developers seeking to test there must obtain any applicable authorizations. PacWave South is in deeper waters and is grid-connected, offering testing for up to 20 full-scale WECs in four berths with independent export cables and a maximum power output of 20MW⁸². OSU received a lease from BOEM in February 2021⁸³. Unlike OSW, the Federal Energy Regulatory Commission (FERC) is the lead federal agency for this marine hydrokinetic project and in March 2021, FERC issued OSU a license to build and operate the PacWave South test facility. This was the culmination of extensive collaborative workgroup discussion in a regulatory process that spanned nearly 10 years. Construction of PacWave South was completed by early 2025, and grid-connected testing of most wave energy converter (WEC) device types will be allowed (including point absorbers, attenuators, oscillating water column) for developers to inform and improve upon device readiness ahead of commercial scale operations.

Another factor to consider is that California's planned development of offshore wind in its five existing lease areas would likely already serve the same research and experiential function as a pilot array offshore Oregon. However, it is not known whether or when offshore wind projects may be realized in California or when research and monitoring outcomes would be available and useful to answer Oregon's information needs such that further development in Oregon could be considered. A variant of this alternative future would be for Oregon to coordinate with California on the environmental monitoring and research to be conducted around its offshore wind projects, and to consider active investment in supporting research that could answer questions relevant to Oregon.

Callout: Maine Offshore Wind Research Lease

In 2021, BOEM received an application from the State of Maine for a renewable energy research lease to accommodate an array of floating offshore wind turbines (Research Array) on the OCS offshore the

⁸⁰ <https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/OR/Consolidated-BOEM-Scoping-Comments-WindFloat-Pacific-Project-May-29-2014---July-28-2014.pdf>

⁸¹ <https://pacwaveenergy.org/north-test-site/>; https://www.energy.gov/eere/water/pacwave-offshore-wave-energy-test-site?nrg_redirect=323711

⁸² <https://pacwaveenergy.org/south-test-site/>

⁸³ <https://www.boem.gov/renewable-energy/state-activities/oregon-activities>

coast of Maine. The project would consist of 12 floating turbines generating up to 144 MW of energy. Also in 2021, Legislative Document 336⁸⁴ directed the Maine Public Utilities Commission to enter into contract negotiations for a power purchase agreement for energy generated from the Research Array should the state's application be successful. The state's intent is to position itself as a hub for floating offshore wind development in the region, while advancing a set of informed best practices and standards for commercial-scale floating offshore wind projects in the Gulf of Maine for use in planning, permitting, and constructing commercial-scale projects in a fashion that optimizes coexistence with traditional marine users and the ecosystem.^{85,86} BOEM granted the Research Lease in August 2024. The State of Maine designated Pine Tree Offshore Wind, LLC as the operator for the research lease.

As a research lease, the state's designated operator would propose and conduct research regarding environmental and engineering aspects of the proposed project. This information will be made public and used to inform future planning, permitting, and construction of commercial-scale floating offshore wind projects in the region. In April 2025, the developer of the project announced that the project has been paused and negotiations around the long-term power purchase contract were suspended, citing, "recent shifts in the energy landscape that have in particular caused uncertainty in the offshore wind industry." The state commented publicly that, "'Offshore wind, including the research array, is an important part of Maine's long-term energy future, and [the state] will continue to work on responsible offshore wind research and development to advance economic and environmental benefits for Maine.'"⁸⁷

Markers of Success:

- May attract federal funding under federal administrations interested in advancing offshore wind technology and research.
- The Territorial Sea Plan states a preference for pilot scale or phased development projects in cases where there is a lack of data available about the effect of the project on marine uses and resources. A pilot would allow direct measurement of effects.
- Visual resource effects could be directly measured, and Oregonians would have an opportunity to experience the visual effect on a smaller scale before considering a larger project.
- A pilot project could potentially navigate the state and federal permitting process with greater ease and provide an example for future full-scale projects.

Considerations/Consequences/Tradeoffs:

- A pilot project may be redundant to full-scale development planned in California and the information that may be gained.
- The Gulf of Maine Floating Research Array, if realized, may also supply many of Oregon's information needs motivating a preference for a pilot project. However, the marine species and oceanic conditions off the Atlantic Coast are substantially different than those in Oregon, so the

⁸⁴ <https://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0142&item=3&snum=130>

⁸⁵ <https://www.federalregister.gov/documents/2022/08/19/2022-17922/research-lease-on-the-outer-continental-shelf-ocs-in-the-gulf-of-maine-request-for-competitive>

⁸⁶ <https://www.maine.gov/energy/initiatives/offshorewind/researcharray>

⁸⁷ <https://www.wbur.org/news/2025/04/02/pine-tree-offshore-wind-offshore-wind-pause-trump-markets>

research findings from Maine may not be compatible with the west coast. It is also uncertain whether the Maine research array will proceed.

- Mitigation may be required that impacts the design of arrays constructed, such as limiting heights to avoid view shed impacts.
- A small collection of turbines would not necessarily answer Oregon questions about potential impacts related to a larger array, including effects in a particular site.
- The industry has stated that they are not interested in investing in a project of less than 1GW in capacity due to the large costs and risks. The state may need to be an investor to reduce project risk.
- Assuming the research array sells what power it produces in addition to supporting research, the cost of power from a smaller array would be expected to be higher than a large array. Power procurement may not be consistent with state ratepayer protection policies absent legislative direction.

2.3.4 Path 4a: Oregon hosts an offshore wind industry, with major port development

Under this future, one or more offshore wind array, each array with multiple turbines, would exist off the coast of Oregon. The overall scale of how much offshore wind could be located off the coast of Oregon has not been set in policy, but House Bill 3375 (2021) did establish a planning goal of up to 3 GW of offshore wind. It is important to note that the state goal to plan for OSW development is not a deployment target and does not mandate or incentivize the procurement of OSW by Oregon utilities, nor does it represent either a “floor” or “ceiling” to potential OSW development off Oregon’s coast during the near or long-term. Path 1a and 1b explore three different development scenarios:

1 GW: Assuming a standard size of 15 MW per turbine, this “start smaller” scenario would be comparable to an array of approximately 67 turbines at a 7x rotor diameter (approximately 1 nautical mile spacing)⁸⁸. This amount could be broken up into more than one array and, based on the existing capabilities of coastal grid infrastructure, would require the least amount of transmission system upgrades. Based on conversations with offshore wind industry representatives, 1 GW represents the smallest total amount that would attract development from a cost-risk standpoint and create a large enough pipeline of work to spur supply chain economic development. Some members of fishing communities have also suggested that a smaller total amount of development may be more acceptable, if carefully sited, because it could provide relative certainty that the total effects from space loss would be limited.

2.6 GW: This capacity amount is based on a PNNL study⁸⁹ that found this is the maximum amount the existing Oregon coastal grid could absorb without substantial transmission upgrades. This scenario would assume offshore wind arrays are distributed coastwide to access existing transmission

⁸⁸ <https://docs.nrel.gov/docs/fy20osti/74597.pdf>; <https://docs.nrel.gov/docs/fy22osti/80908.pdf>, slide 12

⁸⁹ <https://docs.nrel.gov/docs/fy22osti/81244.pdf>

substations without running longer export cables from the south coast. This amount of capacity equates to approximately 173 15MW turbines.

Greater than 3 GW: This capacity amount would “start bigger” with offshore wind energy development and assumes that the limitations on development will not be based on an arbitrary amount of power produced but would instead be based on the limits of environmental, social, economic, cultural, space-use conflict, and other standards and policies of the state. This alternative would be expected to require substantial infrastructure needs both onshore and offshore.

Depending on the size and spatial distribution of the project or projects, upgrades would be required to the local coastal grid infrastructure as well as potentially the transmission lines between the coast and the rest of the state.

Path 1a would also include port upgrades to accommodate a turbine integration facility and other support facilities, invite supply chain and manufacturing opportunities, and support transmission upgrades as needed. As described in Section 1.4, previous studies assessed the port capabilities within Oregon and found that the deep draft development port in Coos Bay is the only location potentially suitable to host a large-scale Staging & Integration facility that could assemble turbines and foundations (Shields et al., 2023)⁹⁰. It is also assumed that this facility would provide ongoing maintenance support if turbines needed to be towed to shore for repair or maintenance during the project operational years. According to a 2022 Port Infrastructure Study, development of a marine terminal facility in Coos Bay would cost approximately \$475 million. This cost does not include the costs to expand and maintain the navigation channel to accommodate vessels and activities linked to OSW staging and integration. Other ports in Oregon may also support offshore wind through manufacturing support, material laydown space, and mooring of crew transfer vessels or potentially larger vessels during installation of moorings, cables, or other components.

Aspects of port development⁹¹ could include:

- Modification of the existing Federal Navigation Channel to be wider and deeper to support transport of offshore wind floating foundations. The scale of modification needed is similar to that proposed for the Port of Coos Bay Intermodal Port proposed shipping container terminal project, encompassing dredging of over 30 million cubic yards of sand and bedrock from the bay bottom. Projected costs exceed \$550,000,000⁹². However, depending on the development of turbine foundation options, the needed modification could surpass the PCIP proposed

⁹⁰ Note: One Roundtable member suggested that should the bedrock surface underlying the Umpqua estuary, be sufficiently deep to allow dredging without necessitating bedrock dredging that has been identified as necessary for navigation channel modification in the Coos Estuary, this harbor may be more be a more suitable and cost-effective location for OSW integration and staging operations. Further study would be needed to assess the feasibility of this concept. Additionally, the Umpqua River is designated in state rule as a shallow draft development estuary, meaning that under current state policy the navigation channel cannot be deeper than 22 feet. (Source: <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3067>)

⁹¹ <https://oregonstate.app.box.com/s/j85nuhy5tqieoxdnszoie8e9xotzrsz>;
<https://www.boem.gov/sites/default/files/documents/renewable-energy/studies/BOEM-2022-073.pdf>;
<https://simplybluegroup.com/wp-content/uploads/2022/03/Coos-Bay-Offshore-Port-Infrastructure-Study-Final-Technical-Report.pdf>; <https://docs.nrel.gov/docs/fy23osti/86864.pdf>

⁹² <https://www.portofcoosbay.com/channel-modification-project>

modifications. Modification of the navigation channel would require an exception to Statewide Planning Goal 16 and be subject to state Federal Consistency review relative to its potential effects on the ecosystem of the Coos Bay Estuary and other relevant policies related to wildlife, archaeological resource protection, and local planning requirements.

- Dredging to create permanent “wet storage areas” for the temporary placement of completed turbine foundations within the estuary.
- Addressing identified effects to the Southwest Oregon Regional Airport in Coos Bay, including potential hazards to air navigation represented by turbines and shoreside integration cranes that previous studies found are likely to pose significant challenges to development.

Other ports in Oregon, California, or Washington may also support offshore wind through manufacturing support, material laydown space, and mooring of crew transfer vessels or potentially larger vessels during installation of moorings, cables, or other components.

Transmission improvements are beyond the scope of permitting for an offshore wind project, but transmission grid considerations are included in this Roadmap.

Markers of Success (Benefits):

- An investment in clean energy helps increase local jobs.
- Workforce development and education create generational benefits.
- Addition of a substantial electricity generation source west of the Coast Range, and the associated upgrades to transmission grid infrastructure, would benefit coastal energy resiliency. Benefits would be present if power lands on the Oregon Coast grid, regardless of where that power is sold.
- Ports may be expanded, updated, and electrified, representing new economic opportunities.
- The offshore wind industry achieves coexistence with conservation, fisheries, and other uses.
- Development is limited to an amount that does not result in significant adverse effects to the California Current Large Marine Ecosystem and coastal communities based on state and federal law and policy.
- Decommissioning leaves no trace because responsibilities and expectations are clearly defined through the permitting process.
- Scientific monitoring for offshore wind projects leads to a co-benefit of a better understanding of the ocean system.
- Oregon addresses its responsibilities to clean energy and climate change mitigation by contributing to decarbonization of the future energy mix.
- Impacts to the ocean and shoreline environment are understood, or impacts will be adaptively managed and are fully mitigated, with accountability measures for unexpected adverse effects that may emerge over time.
- Existing ocean users are not impacted or are fully mitigated for impacts.
- Cultural resources are protected and affected Tribal communities are engaged and empowered with decisions.
- Benefits balance with or exceed costs, with full accounting;

Considerations/Consequences/Tradeoffs:

- Potential for detrimental effects to state coastal resources and uses (e.g., environmental/ecological, economic) that may be revealed over time.
- Mitigation may be required that impacts the design of arrays constructed, such as limiting heights to avoid view shed impacts.
- Potential for significant environmental impacts to natural and cultural resources associated with Port of Coos Bay development. Modification of the navigation channel depends on a land use decision whose outcome is uncertain due to the scale of potential impacts to ecological and cultural resources, and placement of large cranes for an S&I facility on the North Spit is a recognized challenge due to interference with the regional airport.
- Coastal communities may not be able to support the rapid growth required to support a new workforce (housing, water, social services, etc.).
- State public investments may be required to attract and support an offshore wind industry.
- Cost of power to Oregon ratepayers may rise if such costs are determined to be prudent by Oregon energy regulators.

2.3.5 Path 4b: Oregon hosts an offshore wind industry with no major port development

Under this scenario, offshore wind arrays are permitted offshore Oregon in federal waters, but no Staging & Integration (S&I) capability is developed in Coos Bay. Support activities would be limited to those that can be achieved without Federal Navigation Channel modification or disruption of the regional airport, such as manufacturing and fabrication, material staging for installation of cables, mooring lines, anchors, or large vessel moorage.

It is uncertain whether the lack of a local S&I port facility would make offshore wind development in Oregon technically or economically infeasible. In California, the Port of Long Beach S&I development project is planned to support the integration and installation for the Morro Bay lease area, which would require towing floating turbines more than 200 miles around Point Conception. The former south coast Wind Energy Areas in Oregon are within approximately 100 miles of the planned Humboldt heavy-lift port project⁹³, and Oregon offshore areas may be able to be supported by either the Humboldt port or the industrial ports in Tacoma or Seattle. However, port development requires significant financial investment, and the feasibility of development is dependent on reliable availability of funding, which may be subject to political decision-making. In 2025, USDOT funding for the Humboldt port project was rescinded, and while the project continues to move forward with California state investment, the effect of funding uncertainty on a scenario that relies on this project may be less feasible or introduce delays in availability of the Humboldt port to also serve Oregon.

According to industry experts consulted in the development of the Roadmap, a rule of thumb is that each turbine is assumed to require replacement or servicing of its major components at least once during its operational life. Experience from the Kincardine floating OSW project in Scotland suggests that

⁹³ <https://humboltdbay.org/humboldt-bay-offshore-wind-heavy-lift-marine-terminal-project-3>

these activities would require towing the turbine away from its installed location back to a port where this maintenance and replacement can be performed safely. Long towing distances would add significant operational cost to the project and increase the wear on some components. Additionally, weather conditions are a significant consideration for at sea operations, with a need for calm weather windows for transporting turbines, and there would likely be seasons of the year when a long journey is not feasible.

Markers of Success (Benefits):

- Significant impacts to coastal communities and estuaries from major port development are avoided.
- An investment in clean energy helps increase local jobs.
- Workforce development and education create generational benefits.
- Addition of a substantial electricity generation source west of the Coast Range, and the associated upgrades to transmission grid infrastructure, would benefit coastal energy resiliency. Benefits would be present if power lands on the Oregon Coast grid, regardless of where that power is sold.
- The offshore wind industry achieves coexistence with conservation, fisheries, and other uses.
- Development is limited to an amount that does not result in significant adverse effects to the California Current Large Marine Ecosystem and coastal communities based on state and federal law and policy.
- Decommissioning leaves no trace because responsibilities and expectations are clearly defined through the permitting process.
- Scientific monitoring for offshore wind projects leads to a co-benefit of a better understanding of the ocean system.
- Oregon addresses its responsibilities to clean energy and climate change mitigation by contributing to decarbonization of the future energy mix.
- Impacts to the ocean and shoreline environment are understood, or impacts will be adaptively managed and are fully mitigated, with accountability measures for unexpected adverse effects that may emerge over time.
- Existing ocean users are not impacted or are fully mitigated for impacts.
- Cultural resources are protected and affected Tribal communities are engaged and empowered with decisions.
- Benefits balance with or exceed costs, with full accounting;

Considerations/Consequences/Tradeoffs:

- Potential for detrimental effects to state coastal resources and uses that may be revealed over time.
- The total amount of offshore wind-related jobs would be diminished compared to an alternative that includes major port upgrades. The 2025 Schatz workforce analysis estimated approximately 10 percent of jobs come from S&I facility operation, plus construction jobs for an S&I port, and

an uncertain number of jobs lost during Operations and Maintenance activities for those maintenance actions that must be accomplished at a port facility).

- Assuming there is still significant job growth from other aspects of offshore wind development not related to construction and operations of a shoreside Staging & Integration facility, coastal communities may not be able to support the rapid growth required to support a new workforce (housing, water, social services, etc.). Alternatively, a reduction in total jobs may mean that communities may be better equipped to accommodate other workforce growth that may be less temporary or transitory in nature (e.g., fabrication, manufacturing, maintenance).
- Mitigation may be required that impacts the design of arrays constructed, such as limiting heights to avoid view shed impacts.
- Technical and economic feasibility of offshore wind arrays would likely be adversely affected by the lack of a nearby port for staging & integration and operational repairs.
- State public investments may be required to attract and support an offshore wind industry. Cost of power to Oregon ratepayers may rise if such costs are determined to be prudent by Oregon energy regulators.

Callout: Should Oregon Place Preemptive Limits on the Scale of Development?

During Roadmap development, the Roundtable and other members of the public considered the question of whether the state should establish via legislation a cap on the total Gigawatt capacity of offshore wind development or total number of turbines allowed off Oregon, as an early limitation on the pace and scale of development. HB 3375 established a planning goal for development of up to three gigawatts of floating offshore wind energy within federal waters off the Oregon Coast, which corresponds to the target capacity amounts used in the BOEM siting process. This planning goal is neither a mandate for a procurement target nor a cap on the total amount allowed.

While many members of the fishing community expressed a strong preference for a future without turbines for Oregon, some others offered that a cap on development would give the seafood sector some measure of confidence and certainty for future fishing activities. This could 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, while also reducing some of the opposition to offshore wind development that has been fueled by uncertainty about how much total development might occur if allowed to begin. A limit on the scale of development may be considered to be more consistent with policies in the Territorial Sea Plan that favor a pilot or phased approach to novel marine renewable energy development, to obtain adequate information and data and measure the effects, and which set area limits on the total amount of development allowed within state waters⁹⁴. In conversations with OSW industry representatives, it was made clear that the economic risk of smaller pilot-scale projects (described as “anything less than one gigawatt”) is too great to be of interest, and it was pointed out that many of the state’s uncertainties about offshore wind effects may only be answerable through full-scale development of a turbine array. Others in the conversation held the view that no arbitrary cap should be established,

⁹⁴ Part Five of the Territorial Sea Plan established a limit on the total amount of area within the territorial sea that is to be built or committed for renewable energy facilities be limited to two percent of the total area of the territorial sea (within 3 nautical miles of shore), and no more than 1 percent of the area within a 60 nautical mile arc from the Columbia River estuary, the Newport estuary, and the Coos Bay estuary. This policy is currently not approved for use in federal consistency reviews and would not apply to projects in federal waters as written.

but rather the total scale of development should be emerge more naturally based on factors such as economic feasibility, turbine and transmission capabilities, visual effects, cumulative effects to the California Current Large Marine Ecosystem, and cumulative effects to ocean users such as the fishing industry.

Ultimately, participants in the Roadmap process could not reach consensus regarding whether the state should establish a cap on development capacity. This question may warrant further exploration through more formal policymaking processes.

3 POLICY ASSESSMENT: ADDRESSING OBJECTIVES AND SEIZING OPPORTUNITIES

3.1 Policy Assessment Overview

As part of fulfilling the requirements of House Bill 4080 Section 4, 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 assessment is twofold:

1. To identify existing state policies relevant to the development and approval of future offshore wind projects. This information may be informative to prospective developers, project applicants, or federal agencies.
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 project review.

The full Enforceable Policy assessment is included as Appendix A to the Roadmap and includes in-depth discussion of offshore wind effects of concern, benefits communities want to capture via policy, an overview of existing state policies relative to the Roadmap objectives, and a detailed policy gap analysis table.

Section 8 contains a summary of a capacity assessment directed by House Bill 4080 Section 4(2), which identifies staff capacity needs for *“agency capacity to address reasonably foreseeable effects to state coastal uses and resources that would result from offshore wind energy development.”*

The policy assessment was structured around a compilation of effects to coastal resources and uses that are either reasonably anticipated or uncertain but possible to be evaluated as part of a future review. The term “effect” is based on the term “effect on any coastal use or resource” defined within the federal regulations governing a state’s authority to review federal actions under the Coastal Zone Management Act⁹⁵. In the context of this Roadmap, an effect can mean either an event or occurrence that should be *avoided* or a benefit that the state or a community may want to *capture* as a result of offshore wind development.

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 federal leasing and permitting actions. Under the Federal Consistency regulations⁹⁶, coastal effects include impacts in five major categories: natural

⁹⁵ 15 CFR 930.11(g), [https://www.ecfr.gov/current/title-15/part-930#p-930.11\(g\)](https://www.ecfr.gov/current/title-15/part-930#p-930.11(g))

⁹⁶ [eCFR :: 15 CFR Part 930 -- Federal Consistency with Approved Coastal Management Programs](#)

resources, cultural resources, coastal economies, aesthetics, and recreation/public access. The review includes evaluation of direct and indirect impacts, including consideration of cumulative (impacts that add up) and secondary impacts (impacts that occur later in time or farther removed in distance) in or outside of the coastal zone that have 'reasonably foreseeable effects' on coastal resources or uses.

Federal Consistency review outcomes must be based on the “enforceable policies” of the state that have been approved by the NOAA Office for Coastal Management.⁹⁷ 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 enforceable 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.

The list of effects was developed from the following sources:

- Effects identified during the PacWave permit scoping process⁹⁸ (with amendments to be applicable to offshore wind instead of wave energy devices)
- Effects identified in public and agency comments during the BOEM leasing Federal Consistency review in 2024⁹⁹
- Section 3 of the Offshore Wind Roadmap Considerations document (2023)¹⁰⁰
- Responses to the Roadmap Roundtable online survey conducted in December 2024
- Individual staff conversations and research into potential offshore wind 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 Offshore Wind Roadmap Roundtable, a core team of state agencies, Oregon’s Ocean Policy Advisory Council working group, local government planning staff¹⁰¹, attendees of three public meetings along the Oregon coast, engagement efforts with fishing industry representatives], consultation with the Nine Federally Recognized Tribes of Oregon, and other community focus group engagement conversations.

[Note for Reviewers: Some of the engagement activities described above are still underway. This paragraph was written from the perspective that these activities will be completed before the Roadmap is released for formal public comment.]

⁹⁷ <https://www.oregon.gov/lcd/ocmp/pages/enforceable-policies.aspx>

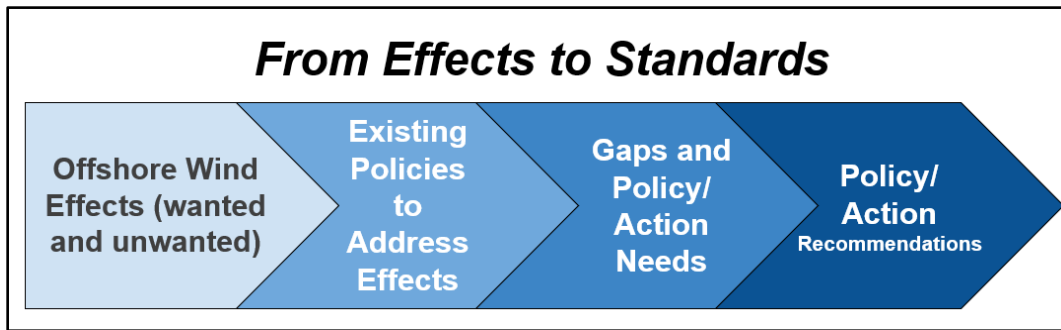
⁹⁸ https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20140916-5198&optimized=false

⁹⁹ https://www.oregon.gov/lcd/OCMP/FCDocuments/OSW-FC-Public-Comments_COMPLETE.pdf

¹⁰⁰ https://oregonconsensus.org/wp-content/uploads/2024/04/Considerations_Oregon-FOSW-Roadmap-with-Exit-Ramps_04262024_final.pdf

¹⁰¹ Between November 2024 and May 2025, DLCD staff met with coastal communities that included 7 counties and 22 cities.

Figure 7. Enforceable Policy Assessment Methodology



Once the reasonably anticipated effects from offshore wind development in Oregon were relatively well understood, DLCD staff compared the effects against existing enforceable policies of the Oregon Coastal Management Program and identified areas where policy gaps may exist to address those effects in future offshore wind permit reviews. The assessment identified many strengths in Oregon’s suite of enforceable policies, which are discussed in Appendix A. However, through the process, gaps and opportunities for improvement were also identified. DLCD shared the results of this analysis with the Roundtable for initial feedback and engaged the services of the Environmental Law Institute to review the list and identify key policy gaps.

The full Enforceable Policy Assessment, including a discussion of key effects and important existing policies, may be found in [Appendix A](#) of the Roadmap.

What are Enforceable Policies?

The Oregon Coastal Management Program (Program) is made up of 40 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.

3.2 Identified Policy Gaps and Opportunities

The policy gaps and opportunities identified in the Enforceable Policy Assessment are summarized in Table 2 below.

Table 1. Policy Gaps and Opportunities Identified in the Enforceable Policy Assessment (Appendix A)

Potential Gap	Related Policies and Notes	Roadmap Objective Area
Consider ways to reflect the needs of the citizens of Oregon and the Nine Federally Recognized Tribes of Oregon that could provide more meaningful standards of engagement.	Statewide Planning Goal 1	Meaningful Engagement Tribal Interests
To ensure the incorporation of tribal communication, consider enhancing the Joint Agency Review Team (JART) composition to include all Nine Federally Recognized Tribes in Oregon. In addition, the JART components and procedures found in Territorial Sea Plan Parts Four and Five should be improved, expanded, and clarified (e.g., timing, number of meetings, etc.).	Territorial Sea Plan Parts Four and Five	Meaningful Engagement Tribal Interests
To the extent allowable by law, the state should consider during the Federal Consistency review of an offshore wind project's COP whether any dependent or interrelated shoreside infrastructure also demonstrates consistency with state enforceable policies. The state should consider a "but for" test to determine whether a shoreside or estuary development proposal would have independent utility absent the offshore wind project, and if the answer is not, include those related development actions in the evaluation.	TBD pending input from DOJ	
Consider establishing policies around Community Benefit Agreement or similar agreements. This may include developing a definition of "Community Benefit" and providing an overarching state policy with standards to be used in a collaboratively developed community-specific agreement. Other considerations may include establishing a standard set of agreements to incorporate in a community-specific contract; standards that ensure that net benefits outweigh costs to affected communities; non-monetary values and benefits are included; and voluntary or with cost and time values included. These policies, if successful, may provide the legal basis for an enforceable community benefit agreement being a requirement for Federal Consistency review of an offshore wind project Construction and Operations Plan or potentially a shoreside port infrastructure improvement.	House Bills 2021 and 4080 Local plans and codes Others TBD OAR 660-023 ¹⁰² , Oregon's new solar siting rules found in OAR 660-023 contain requirements for community benefits and could be a model on which to establish a similar net community benefit policy for offshore renewable energy.	Support Communities Economic Opportunity Workforce Energy
Statewide Goal 7, Hazards, 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.	Statewide Planning Goal 7 Local plans and codes	Support Communities

¹⁰² https://www.oregon.gov/lcd/LAR/Documents/20250213_660-023.pdf

Potential Gap	Related Policies and Notes	Roadmap Objective Area
Viewshed protections touch all coastal communities. Local jurisdictions have authority to establish visual effect policies for shoreside development, while visual effect policies for development in the ocean are within the jurisdiction of the state. Territorial Sea Plan Part Five identifies high value visual resources and includes strong protection policies that would be applicable to offshore wind; however, these policies were originally designed around lower height wave energy facilities. The policies also do not explicitly mention culturally significant views to Tribes or establish separate criteria that would guide decisions affecting these views. Part of this review may look at establishing locations where visual impacts are minimized; identify design standards that minimize visual impacts on scenic resources; or establish a total viewscape impact limit. Any review that may lessen protections for visual resources should engage local government to identify regional viewsheds of the ocean valued by coastal communities.	Statewide Planning Goals 5 and 19 Territorial Sea Plan Part Five Local plans and codes	Support Communities Tribal Interests
Add Oregon Department of Aviation (ODAV) regulations that address hazards to aviation standards to the enforceable policies of the coastal management program for use in Federal Consistency review. Also add HB 2375 (2025), regarding offshore wind component lighting requirements.	Refer to programs implemented in New Jersey and Texas	Support Communities
Consider amending the recreational resource protection standards in Territorial Sea Plan Part Five to make them more generally applicable in an offshore wind scenario located in federal waters. The inventory of recreational uses in Part Five is based on a map of the Territorial Sea. Ensure the standards cover effects to state recreational uses in federal waters or onshore resulting from an offshore wind project.	Statewide Planning Goal 19 Territorial Sea Plan Part Five	Support Communities
Applicability of the fisheries use standards in the Territorial Sea Plan Part Five to offshore wind development in federal waters should be considered. This may include amending 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.	Territorial Sea Plan Part Five ORS 506	Support Communities
Establish guidance describing how impacts to fishing (commercial and recreational) and the benthic environment should be avoided or minimized. This may include the following: locations where fishing impacts are minimized; reduced size of project footprint; designs to maximize existing access to fisheries or improve habitat; schedules for when installation and maintenance can occur; suggested changes to transit due to closed areas; changes in fishing effort/distribution due to space use and species distribution; deployment limits in popular fishing areas; fishing exclusion zones around equipment to minimize gear entanglement; or minimize interactions of moorings and equipment such as biofouling, perching, and haul-out.	Statewide Planning Goal 19 Territorial Sea Plan Parts Four and Five ORS 196, 273, 274, 496 and 506 OAR 141 Refer to programs implemented in New Jersey and Texas	Support Communities Environment

Potential Gap	Related Policies and Notes	Roadmap Objective Area
Explore establishing protective standards for facilities (harbor/port) serving the commercial fishing and recreational boating industries. Generally, assess the distribution of different fishing efforts (commercial and recreational) to evaluate needed changes to transit due to closed areas, potential moorage space conflicts with offshore wind vessels, and changes in fishing effort/ distribution due to space use and species distribution.	Local plans and codes Refer to California Coastal Act Section 39234	Support Communities
Explore ways in which the tenets of fisheries management in the Food Fish Policy (ORS 506.109) may be supported and strengthened by developing clearer enforceable language in TSP or other new or existing policy for use as an enforceable policy for protection of fisheries uses.	Territorial Sea Plan Parts Four and Five ORS 506 Refer to programs implemented in Rhode Island (see 650-RICR-20-05-11.10.1(C))	Support Communities Economic Opportunity
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.		Tribal Interests Support Communities Environment
For a long time, the intention has been to update the state's suite of enforceable policies for Federal Consistency to include current energy facility regulations found in ORS 469 and add energy facility siting standards found in OAR 345. Since these regulations could be used with onshore components (e.g., transmission upgrades), this should be prioritized. ORS 757 is another consideration to add to the suite of enforceable policies, which require utilities to develop wildfire protection plans. The following are some sections from OAR 345 for consideration: * Threatened and Endangered Species, 345-022-0070 * Scenic Resources, 345-022-0080 * Historic, Cultural and Archaeological Resource, 345-022-0090 * Recreation, 345-022-0100 * Waste Minimization, 345-022-0120 * Wildfire Prevention and Risk Mitigation, 345-022-0116 * Need Standard for Non-generating Facilities, 345-023-0005 * Least-Cost Plan Rule, 345-023-0020	ORS 469 and 757 OAR 345	Support Communities Economic Opportunity Workforce Tribal Interests Environment
In Territorial Sea Plan Part Five, explore the potential of making memorialized agreements with affected ocean users a durable requirement rather than an encouraged action.	Territorial Sea Plan Part Five	Support Communities

Potential Gap	Related Policies and Notes	Roadmap Objective Area
Strengthen the enforceability of the labor standards in HB 4080 for use in Federal Consistency review or other enforceable state review mechanisms.	House Bill 4080 DLCD working with third-party legal consultants and labor member legal experts on recommendations.	Economic Opportunity Workforce
Through intentional Tribal consultation with the Nine Federally Recognized Tribes of Oregon, consider amending existing policy (e.g., Goal 19 and TSP Part Five Policies B.4.g.2-5) with a clear definition of "cultural resources" and include protection or avoidance guidelines. Also consider protection of cultural practices and culturally significant sites (e.g., harvesting sites) that may not be protected, in addition to defining "sensitive ecological resources" or similar terminology that is interpreted clearly through and reflective of Tribal worldviews (the concept of natural resources as cultural resources). Consider establishing a probability map or site inventory of local Tribal cultural resources as part of a 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.	Statewide Planning Goal 19 Territorial Sea Plan Part Five	Tribal Interests
Add recent rulemaking in OAR 660-023-210, Cultural Areas, to the coastal program's suite of enforceable policies and any local embodiments. The new rules also include OAR 660-023-0195(6), which may be adaptable for onshore components of an offshore energy project.	Statewide Planning Goal 5 OAR 660 Local plans and codes	Tribal Interests Support Communities
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.	ORS 192	Tribal Interests
Amend the information requirements in Territorial Sea Plan to specifically require applicants to seek traditional ecological knowledge via consultation and include traditional ecological knowledge for areas potentially affected by an offshore wind project.	Territorial Sea Plan Parts Four and Five	Tribal Interests

Potential Gap	Related Policies and Notes	Roadmap Objective Area
In the Territorial Sea Plan, the Ecological Resources Protection Standards contain vague fish, wildlife and habitat references that could be reassessed and updated with modifications and clarification based on the current best available science. These references include, but are not limited to, the following: * Specific inclusion of seabirds and migratory species * Seasonal/migratory timing considerations * Specific benthic habitats (e.g. coral habitat, methane seep sites) to avoid * Acoustic impact considerations and electromagnetic field impacts * Other adverse ecological impacts on marine resources	Territorial Sea Plan Parts Three, Four and Five	Environment Support Communities
Consider establishing protective standards that would require projects to avoid, minimize, or mitigate marine pollution effects of antifouling coatings or species composition effects of invasive organisms related to project structures and service vessels (e.g., biofouling, ballast water).	Statewide Planning Goal 19 Territorial Sea Plan Part5 ORS 496	Environment
The scope of Territorial Sea Plan Part Two or Part Five should be expanded to include survey activities that occur in preparation for an energy project application between the leasing and permitting stage. Standards should address survey plan requirements, equipment used for surveying, geotechnical exploration, and meteorological information during surveying processes, abandonment of buoy anchors (e.g., railroad wheels and other buoy anchors), entanglement risk, and other standards necessary to avoid or minimize adverse effects from survey activities.	Territorial Sea Plan Part Five ORS 496 and 506 Refer to programs implemented in New Jersey	Environment
In the Territorial Sea Plan, consideration should be given to establishing protection standards for the ongoing long-term survey activities where information obtained is essential to fisheries management and natural resources protection. These survey activities are existing and ongoing activities that produce valuable long-term data series and could be impacted by offshore energy development.	Territorial Sea Plan Parts Two, Four and Five	Environment Support Communities
To provide additional protective measures to sensitive areas and species, consider adopting ODFW Rules for Marine Reserves and Protected Areas (OAR 635-012) and OPRD Rules for Marine Reserves and Marine Protected Areas (OAR 736-029) as enforceable policies. In addition, Oregon's Sensitive Species Rule (OAR 635-100-0040) and Oregon's Threatened and Endangered Species List (OAR 635-100-0125) should be considered for adoption as enforceable policies.	Territorial Sea Plan Parts Three, Four and Five ORS 496 and 506 OAR 635 and 736	Environment
Establish guidance on avoidance and minimization of impacts to terrestrial wildlife and botanical resources during new construction and upgrades to existing 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. This may include establishing location-based measures that would require avoiding migratory routes or important/sensitive habitats; scheduling	Statewide Planning Goals 17 and 18 ORS 390, 469 and 496 OAR 345 and 736 Local plans and codes	Environment

Potential Gap	Related Policies and Notes	Roadmap Objective Area
installation and maintenance to avoid sensitive periods; or recommendations to minimize effects during operation.	Refer to programs implemented in New Jersey and Texas	
Consider expanding existing rules that prohibit introduction of invasive species in waters of the state to include the territorial sea and estuaries. ODFW implements rules to prohibit introduction of invasive species in freshwater systems, but the risk of invasive species being introduced at sea and estuaries appear to be lacking. Address risks offshore from vessel operations and imported materials and onshore from construction/ disturbance and transport of materials in terrestrial, riparian, wetland, freshwater systems.	Territorial Sea Plan Part Five OAR 635	Environment
Under the Territorial Sea Plan, improve the geographic reach of the area-specific ecological protection policies. Currently they are described based on spatial zones delineated within the Territorial Sea. If made more general or based on resource types found in the area, the criteria may be more broadly applicable in federal waters. If the meaning of “shoreland facility” is interpreted narrowly, that leaves a gap in Part Five’s coverage regarding related onshore infrastructure and activities.	Territorial Sea Plan Parts Four and Five	Environment
Consider addressing vessel operation impacts (e.g., collisions, strikes, noise) and seasonal considerations (e.g., in water work periods in ocean considering species presence or fisheries uses) as it relates to offshore energy development. This may include looking at traffic corridors, speed limits, vessel size, and mammal avoidance procedures.	Territorial Sea Plan Parts Four and Five ORS 830	Environment Support Communities
Consider expanding and including water quality requirements throughout various existing enforceable policies. Include requirements in the Territorial Sea Plan that specify water quality effects beyond ecological effects. This can also be expanded in Goal 19 to specifically reference water quality. Consider updating existing or adding new policies where they may be applicable to water quality and are identified as such including ORS 465, Hazardous Waste, and ORS 783, Ballast Water. In addition, include OAR 340-143, Ballast Water, as an enforceable policy.	Statewide Planning Goal 19 Territorial Sea Plan Parts Two, Four and Five ORS 465 and 783 OAR 340	Environment
Establish a stand-alone state-based water quality standards and permit that would evaluate whole project compliance with water quality standards and laws in a manner similar to Clean Water Act Section 401. This would be applicable regardless of any Federal permit A conservative review of this strategy will be necessary based on the potential location of an offshore energy project in the ocean.	ORS 468b OAR 340 Refer to programs implemented in Texas and New Mexico	Environment

Potential Gap	Related Policies and Notes	Roadmap Objective Area
Consider clarifying water quality standard ambiguity found in DEQ rules (e.g., OAR 340-141) for oil spill response in order to account for small facilities. The rules have a 10k gallon limit to be a "facility" and may not consider multiple smaller turbines as a facility (see also ORS 468b). This amendment may include updates to existing or addition of new but related enforceable policies.	ORS 468b OAR 340	Environment
Make submerged cable standards more geographically comprehensive and detailed. Develop a policy that includes a minimum width/separation established (see OAR 141-083). In addition, easements for cables have a broad range of widths with 15 feet being the standard minimum width for land-based easements. DSL will need to make it clear and include a minimum width for the cables in the Territorial Sea in the planned rulemaking of OAR 141-083, which will begin in Fall 2025. Amending the Territorial Sea Plan Part Four with clearer limitations and more detailed guidance for transmission cables, including separation and protection/shielding, could complement rulemaking of OAR 141-083.	Territorial Sea Plan Part Four OAR 141 Refer to programs implemented in California	Environment
Consider establishing and prioritizing location of cable landings, including creating criteria on how to choose those landing spots, and whether there should be separation or collocation with cables. This may involve exploring existing or needed protections in Goals 17 and 18 regarding onshore and cable transmission. Engage local government regarding their concerns and issues involving cable landings, since some local plans do not have provisions for cable landings or are concerned with compatibility and location (e.g., near residential and park developments).	Statewide Planning Goals 17 and 18 ORS 390 OAR 736 Local plans and codes Refer to programs implemented in California	Environment
The Territorial Sea Plan should include further details regarding the necessary elements of a decommissioning plan. As part of this, the state should consider establishing a policy around decommissioning and major repair of equipment during project operation, to provide reasonable assurance that the project is using (feasible) equipment that can be successfully removed and decommissioned (reuse, recycle or disposal), during project operation. Please note that the decommissioning requirements in Territorial Sea Plan Part Five and OAR 141- 141 imply a preference for natural and native habitats to artificial habitats.	Territorial Sea Plan Parts Three, Four and Five	Environment Support Communities
Establish an Emergency Response Plan requirement that would cover both man-made (e.g., failure) and natural hazards and response actions in case of an emergency. Plan requirements should include notification and coordination procedures, mitigation, removal of equipment (e.g., turbine, anchor and mooring system, cables, and substation), and remediation/restoration.	Territorial Sea Plan Parts Four and Five ORS 274	Environment Support Communities

Potential Gap	Related Policies and Notes	Roadmap Objective Area
Consider developing siting standards requiring onshore or offshore projects to avoid geologically unstable areas or otherwise minimize overlap and mitigate for effects adverse ecological effects. Work with local communities to determine whether geological standards would be necessary for land-based components to avoid geologically unstable areas.	Statewide Planning Goal 7 Territorial Sea Plan Part Five Local plans and codes Refer to programs implemented in North Carolina	Environment Support Communities
Within the ecological resource protection standards in Part Five of the Territorial Sea Plan, define the role of mitigation and adaptive management in the definition of “Significant Adverse Effect for Ecological Resource Protection” and whether mitigation/adaptive management measures may be used to achieve the protection standard.	Territorial Sea Plan Part Five	Environment
Consider amending the Adaptive Management Plan requirements under Part Five of the Territorial Sea Plan to provide further details, standards, and expectations for ongoing collaboration, monitoring, reporting, and mitigation measures through the lifecycle of the project. This could include a framework that addresses decision rules, mitigation/compensation triggers, operational change triggers, cooperative frameworks for reviewing incoming information, implementation plan and resources for long-term state oversight, and similar. In addition to ongoing monitoring requirements and a regular reporting and collaboration framework, the state should require clear response and accountability measures in the Adaptive Management Plans required under Part Five of the Territorial Sea Plan. Explore instituting Adaptive Management Plans as contractual agreements directly with developers to provide necessary evidence that the project can achieve state policy standards.	Territorial Sea Plan Part Five Refer to programs implemented in New Jersey, New York, Rhode Island, Massachusetts and Connecticut	Environment Support Communities
Consider applying standards found in ORS 543A, Reauthorizing and Decommissioning Hydroelectric Projects standards to offshore energy by amending existing water quality policies. This would allow agencies such as DEQ to look, not only at water quality, but other water related requirements of state law.	Territorial Sea Plan Parts Four and Five ORS 468b and 543A OAR 340	Environment

Potential Gap	Related Policies and Notes	Roadmap Objective Area
<i>Oregon's offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon</i> 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 project's lifespan within the Federal Consistency review window, weakening the foundation for a robust environmental monitoring plan. To [remedy] this, new environmental and community impact data may be required." The information requirements in the TSP should include 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. " (Baldinger, et. al., 2025 ¹⁰³)	Territorial Sea Plan Part Five	Environment Support Communities
Territorial Sea Plan Part Five Policy B.4.g, Special Resources and Uses Review Standards, needs detail regarding what "minimization" means. Although defined as "to reduce and avoid the effect to the extent practicable", generally, it would benefit from more details or useful examples of what minimizing means (except for visual effects and fisheries standards).	Territorial Sea Plan Part Five Refer to programs implemented in Texas	Environment
Revisit policies within Part Five that were not approved for use in Federal Consistency reviews by the NOAA Office for Coastal Management, to determine whether modifications to policy language may render them more likely to be approved for use.	Territorial Sea Plan Part Five	Environment
Encourage energy grid reliability and resilience through existing policies such as Statewide Planning Goal 13 and Part Five of the Territorial Sea Plan. Goal 13 was not written to govern or direct the production of energy, but rather its conservation. Explore amending Goal 13 or its local embodiments to address development of alternative energy sources and adding energy grid reliability/resilience with the recommendation to local governments to develop an energy resilience plan (see HB 3630 (2023)). In addition, together with the resource and use inventory and special resource and use standards found in the Territorial Sea Plan Part Five, include a requirement to address energy grid reliability/resilience (e.g., Policy B.4.d and B.4.g.2-5).	Statewide Planning Goal 13 Territorial Sea Plan Part Five House Bills 2021 and 3630 Local plans and codes	Energy Support Communities

¹⁰³ https://ir.library.oregonstate.edu/concern/technical_reports/6w924n013

Potential Gap	Related Policies and Notes	Roadmap Objective Area
Explore and consider the potential - both in terms of existing policy and the data required to compare what is gained and lost - for the state to have a power procurement authority. This would provide greater investment certainty for development and allow the state to place additional expectations alongside power purchase agreements (e.g., research funding, community agreements, etc.). Part of this consideration is looking at existing Public Utility Commission (PUC) standards that are only applicable to in-state procurement by Investor-Owned Utilities and other Oregon energy policies to encourage greater investment in long lead-time resources, including offshore wind.	ORS 757 OAR 860 House Bill 2021 Refer to programs implemented in Maine, California and Rhode Island	Energy Economic Opportunity Workforce
Clarify and amend how energy storage facilities (e.g., battery energy storage systems) can occur in farm/forest resources lands and other applicable areas. For farm/forest zones, the ORS/OAR does not clearly define this use, and previously explored options include 1) folding it into definition of utility facility ORS 215.275, 2) adding specific criteria under utility facility, or 3) modifying OAR 660-033-0130 regarding power generation facilities.	ORS 215 OAR 660 Local plans and codes	Energy Support Communities
Consider establishing a policy requiring offshore marine renewable energy projects to directly benefit Oregon coastal grid reliability/resiliency. This policy could functionally result in a requirement that offshore wind projects off the coast of Oregon connect to the coastal grid first rather than be routed offshore to interconnect in other states where the grid benefits to coastal communities would be diminished or nonexistent. Alternatively, this policy could stipulate that energy transmitted to other states from wind projects off Oregon would apply towards satisfaction of Oregon's renewable energy goals.		Energy Support Communities

4 PATHWAYS TOWARD AN OREGON OFFSHORE WIND

FUTURE

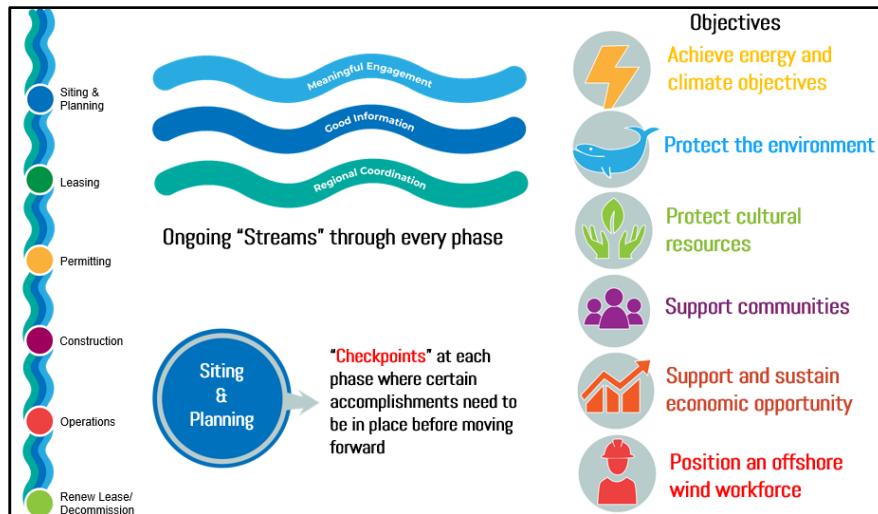
Any of the alternative futures that involve the placement of offshore wind turbines off the coast of Oregon (Paths 3, 4a, and 4b) would involve similar phases in their overall lifecycle, and at each phase there will be information needed, meaningful engagement with communities expected, and checkpoints where decisions to move forward or not are made. This section describes each of those phases of development and the likely accomplishments needed at each phase to inform a decision to A) move forward to the next phase, or B) iterate, pause, or exit movement forward until additional information is available, with possibility for a full stop. Combined, the pathway diagram figures in this section represent the “right path” to achieve offshore wind energy development for Oregon if one of these futures is pursued. Section 5 of the Roadmap describes in greater detail recommended actions that correspond with aspects of the pathway diagrams in this section.

A future that involves offshore wind supply chain development, without turbines located off the Oregon coast (Path 2), would follow an abbreviated and slightly different path than the one shown here. A separate discussion of the necessary elements of this path appears in Section X.

Each pathway diagram represents a phase of the offshore wind lifecycle containing elements associated with the objectives identified in House Bill 4080 and “streams” of ongoing work that are important throughout all of the phases of OSW development and connect back to the Principles in Section 2¹⁰⁴. Each phase also contains a “checkpoint” where energy developers, federal agencies, state agencies, Tribes, and others look at information, proposed plans, and permits, to decide whether to A) move forward, B) require additional information or adjustments to plans, or C) not move forward.

¹⁰⁴ Note: While House Bill 4080 listed “Effective Stakeholder Engagement” as an objective that the standards in the Roadmap must support, the Roundtable discussions recognized that effective and meaningful engagement is an ongoing responsibility that best fits a “stream” cutting across lifecycle phases.

Figure 8. The Parts of a Pathway Diagram.



Ongoing streams of work through all phases of offshore wind development



Stream 1: Meaningful Engagement

An ongoing publicly accessible process that follows meaningful engagement principles is essential, and there also needs to be accountability built into decisions when they are made so parties can move forward with some certainty at the end of a process. See Section 2.1 for further discussion of the meaningful engagement principle.



Stream 2: Good Information

Different types of information are needed at different points along the path to understand the effects of offshore wind development, inform good decisions, and adaptively manage over time. See Section 2.1 for further discussion of the "Good information" principle.

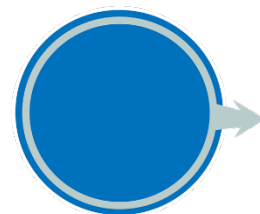


Stream 3: Regional Coordination

There is value in coordinating with neighboring states and federal agencies so regional opportunities can be realized, and the potential effects and opportunities related to offshore wind are understood in a regional context, both onshore and offshore. See Section 2.1 for further discussion of regional coordination principles.

Checkpoints where Oregon can influence how and whether to move forward

During each phase, there is a checkpoint where energy developers, federal agencies, state agencies, Tribes, and others look at information, proposed plans, and permits, to decide whether to A) move forward, B) require additional information or adjustments to plans, or C) not move forward. This section further describes the information needed, process steps, and expectations from the State of Oregon at each checkpoint. Currently, those checkpoints include:



- Siting information is complete enough for BOEM to proceed with Leasing [Note: there is currently no formal checkpoint during the Siting phase based on current policies];
- The Federal Consistency review conducted prior to Leasing;
- The Federal Consistency review and required state permits prior to Permitting;
- Project design remains consistent with permit conditions during Construction, such that supplemental Federal Consistency review is not required;
- Project operations remain consistent with permit conditions during Operation; and
- The Federal Consistency review and required state permits prior to Lease End or Renewal stage.

Checkpoints vs. “Exit Ramps”

In 2023, a series of informal conversations between affected and interested parties around the topic of Oregon offshore wind was instrumental in the decision by the 2024 legislature to pass HB 4080. Those informal conversations culminated in the creation of a set of “Considerations” for an Oregon Offshore Wind Energy Roadmap that contains “exit ramps”¹⁰⁵. An exit ramp refers to “information, conditions, or feedback that warrant a pause or reconsideration in the decision-making process for planning, investigating, constructing, and/or maintaining OSW turbines, cables, landing sites, substations, energy storage, and transmission systems.” The Considerations document included example issues that could warrant a pause or reconsideration of offshore wind development in Oregon.

It was envisioned that exit ramps should be accompanied by a clear state process for gathering additional information or input, requesting adequate time for Oregon agencies and the public to engage in federal processes, and/or delaying action, though it was recognized that the formal federal process may not have a mechanism to recognize or accommodate a state exit ramp.

During development of the Roadmap, the concept of exit ramps was discussed frequently in the context of the pathways described in this section and the state’s authority to implement an exit

¹⁰⁵ https://oregonconsensus.org/wp-content/uploads/2024/04/Considerations_Oregon-OSW-Roadmap-with-Exit-Ramps_04262024_final.pdf

mechanism throughout the phases of an offshore wind project¹⁰⁶. The concept of “checkpoints” emerged as a way to consolidate unresolved issues at key junctures of the offshore wind development lifecycle that best align with potential opportunities by the state to play a formal role in whether and how a project moves forward.

The phases of offshore wind development are:

- **Siting & Planning (shown in blue)**: Suitable areas to explore offshore wind development are identified¹⁰⁷, relevant information is gathered, and Oregon is prepared for the potential of offshore wind development;
- **Leasing (green)**: Energy developers identify their interest in leasing one or more sites identified in the Siting & Planning phase. Developers who win a lease then collect data and assess the feasibility of developing a wind array on the leased area. Prior to the granting of leases, Oregon determines if the site investigation activities are consistent with its state policies. The site investigation step is separate from the decision to permit development. Leasing may occur through a formal federal siting process or via an unsolicited lease request.
- **Permitting (yellow)**: Having explored selected sites, lease holders prepare a Construction and Operations Plan (COP) for building and operating an offshore wind array and its related cabling to shore. Federal, state, and local agencies review and may approve those portions of the project that are under their authorities. Oregon reviews the entirety of the project, under its Federal Consistency authority, and decides whether the issuance of a federal permit to construct and operate the project in federal waters is consistent with state policies. Oregon separately decides whether to issue any needed easements or permits for portions of the project that occur within the state’s sovereign territory onshore and submerged lands out to 3 nautical miles offshore (See Section 1.4).
- **Construction (purple)**: Once federal and state agencies have issued relevant permits based on the COP and other information, the lease holders can decide to begin construction;
- **Operations (red)**: When construction of all components (turbines and associated cables, substation, and transmission infrastructure) is operational, the energy facilities are

¹⁰⁶ https://www.oregon.gov/lcd/OCMP/Documents/OSW-Roundtable_April-MeetingMats.pdf (PDF page 33)

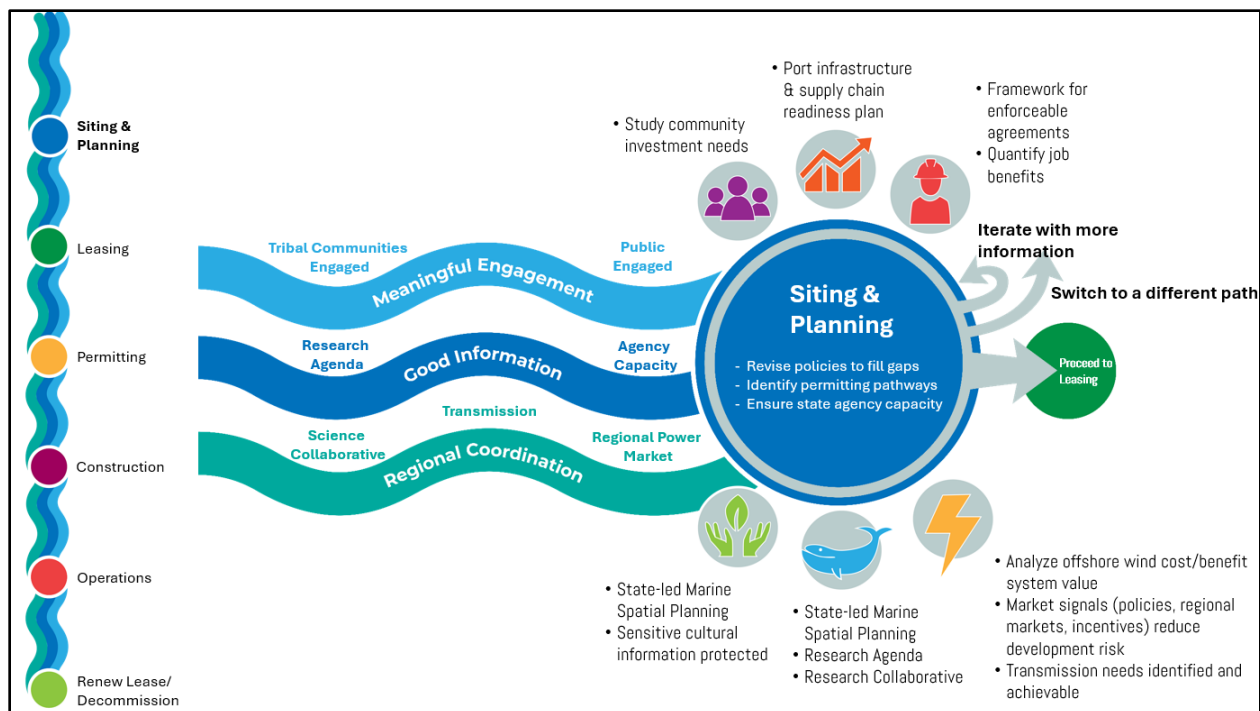
¹⁰⁷ Note: Multiple options exist Site identification. Under the typical federally-led leasing process, BOEM leads the siting process through designation of one or more “Call Areas” from which an “Area Identification” for leasing occurs. This process occurs in coordination with an Interagency Task Force including state, federal, and local input. Once a leasing area is identified, BOEM solicits bids in a competitive lease auction process for eligible bidders. Under this process, BOEM cannot proceed with a lease auction until a leasing area has been formally identified. Alternatively, companies may submit an Unsolicited Lease Request for a location of their choosing, and BOEM may choose to issue a lease if it determines through a formal process that there is no competitive interest in the proposed site. In recent years, states like California and New York have led “sea space suitability evaluations” to identify the areas most compatible with state priorities before a BOEM siting process occurs.

operating consistent with permit conditions and other agreements, regular operations commence and ongoing monitoring begin.

- **Lease ends (lime):** At the end of the lease, the owner may seek to have it renewed with updated infrastructure and conditions or the project is decommissioned. Decommissioning would require the removal and, if necessary, the restoration of disturbed habitats. If the lease is renewed, the renewal application would trigger a new Federal Consistency review by the state.

4.1 Offshore Wind Siting and Planning

Figure 9. Offshore Wind Siting and Planning Phase



4.1.1 Description of the Siting and Planning Phase

This entire phase is focused on “getting ready” prior to any ocean leasing process. This is the time to consider strategic planning for supply chain capacity, transmission, or barriers to purchasing any future power. It is also the time to invest in the research and planning to identify areas that are more or less suitable for offshore wind development, including the current and potential future needs of directly affected coastal communities. Finally, it is a time to affirm the policies the state will use to review a project and to design the frameworks for engagement and negotiation with potentially affected communities. There will be a balance at this phase between A) conducting research on potential effects and benefits of offshore wind and building the state agency capacity to permit and support offshore

wind with B) not making these investments too early so that information is still relevant and aligning with the likely demand for offshore wind development. The Roadmap development process identified the following actions and information important to have in place at this phase, including:

- An established science collaborative connected to neighboring states that is guided by a research agenda built in consultation with Tribes, developers, communities, state agencies, and others;
- Early investment in better understanding “baseline” conditions in the ocean and “potential effects” that could inform future cumulative effects analyses, enforceable community agreements, or other decisions;
- Marine spatial planning in federal and state waters that identifies more or less suitable parts of the ocean for offshore wind development based on critical habitat and species, critical ocean uses, critical cultural viewsheds, and shore cable landings;
- Updated enforceable policies and other state policies so Oregon can improve its permitting capacity and predictability for offshore wind development;
- A framework for enforceable agreements such as project labor agreements, community benefit agreements, etc. to ensure as many of the benefits of offshore wind development accrue to the communities most impacted by that development; and
- Clear signals from the State of Oregon regarding its level of interest in offshore wind development such as identifying the need for offshore wind in state energy strategies and policy, investments in Port or supply chain infrastructure, clear understanding of environmental and socioeconomic effects, and/or commitments to purchase energy developed offshore.

These are not simple actions. It may not be feasible to fully know what effects to fisheries and other ocean resources might be so early in the process. There is less federal investment in some of these topics in 2025 than there were in prior years.

Currently, there is no formal “checkpoint” that signals whether or not Oregon is ready to move from broader siting and planning to more site-specific leasing consideration. However, BOEM has historically indicated that the siting recommendations and preferences of nearby affected states are an important factor in lease area identification on the Outer Continental Shelf¹⁰⁸. If a siting process were to result in a failure to identify areas likely to be found consistent with the state’s enforceable policies or interests, or if a state-led siting process were to identify areas where leasing is desirable, a formal letter from State leadership to BOEM communicating these findings may serve to influence a federal decision whether or not to pursue leasing.

¹⁰⁸ For example, in 2022, Governor Brown provided a letter to BOEM with early recommendations on where to focus the selection of Call Areas for leasing off Oregon, and in 2024 BOEM honored a request from Governor Kotek to postpone leasing until this Roadmap had been completed.
(https://www.opb.org/pdf/GovernorKoteklettertoBOEMDirectorKlein_1727455319170.pdf)

4.1.2 Strategies and Actions for the Cross-Cutting Streams at the Siting and Planning Phase



- Identify resource needs to support state-led ongoing engagement, as opposed to relying on BOEM to lead engagement.
- Build community engagement partnerships with other agencies, local government staff, and non-governmental organizations to combine resources and facilitate consistency in messages to communities.
- Clarify community participation expectations in Joint Agency Review Teams and other regulatory processes at the state and local level, and document these opportunities in policy or guidance



- Develop Oregon OSW research agenda.
- Baseline research of “before” conditions and cumulative development capacity.
- Establish OR multi-party science collaborative.
- Engage Tribes to incorporate indigenous/TEK.



- State-level coordination of supply chain opportunities across Pacific coast.

4.1.3 Strategies and Actions for each Objective at the Siting and Planning Phase



Achieve clean energy mandates

- Complete State Energy Strategy.
- Pursue grid investment that would complement future OSW development and coastal resilience
- Facilitate creation of a regional electricity sharing market to address developer economic risk, improve grid resilience and reliability, and lower total grid operation system costs.
- Consider benefits and drawbacks of state procurement authority for long-lead time energy sources.

- Use Marine/Coastal Zone spatial planning to identify sufficient sea space for offshore wind energy (to be accomplished during this phase before proceeding to Leasing).



Protect the environment

- Use Marine/Coastal Zone spatial planning to produce inventory of sensitive habitats and other avoidance areas (to be accomplished during this phase before proceeding to Leasing).
- Revise Part Five of Territorial Sea Plan to improve ecological protection standard.
- Refine an Oregon Research Agenda and participate in state/regional science collaborative on offshore wind.



Protect cultural resources

- Include culturally significant viewscape standard in Territorial Sea Plan policies.
- Establish Tribal expectations regarding engagement, research agenda participation/collaboration, and other siting and planning efforts.
- Address Tribal capacity needs to participate in siting and other offshore wind-related work.



Support coastal communities and towns

- Update Oregon's visual resource inventory and further study Tribal and local community values surrounding visual resource effects.
- Conduct socioeconomic studies to better articulate the costs and benefits of offshore wind development to communities.
- Evaluate areas and facilities important to maintaining the fishing industry as a critical support for coastal communities.
- Explore enforceable policy opportunities around cost/benefit to local community wellbeing and economic effects.
- Continue education and engagement across all phases
- State conducts studies on necessary complementary investments (infrastructure, housing, social services) to identify investment needs under different scenarios.



Create economic opportunities and sustain existing economies

- Identify state investment needs in local supply chain manufacturing capacity, focused first on California and international markets.

- Assess the importance/value of existing infrastructure already in use by existing industries (fishing, tourism) and plan to maintain existing uses without competition from new industries.

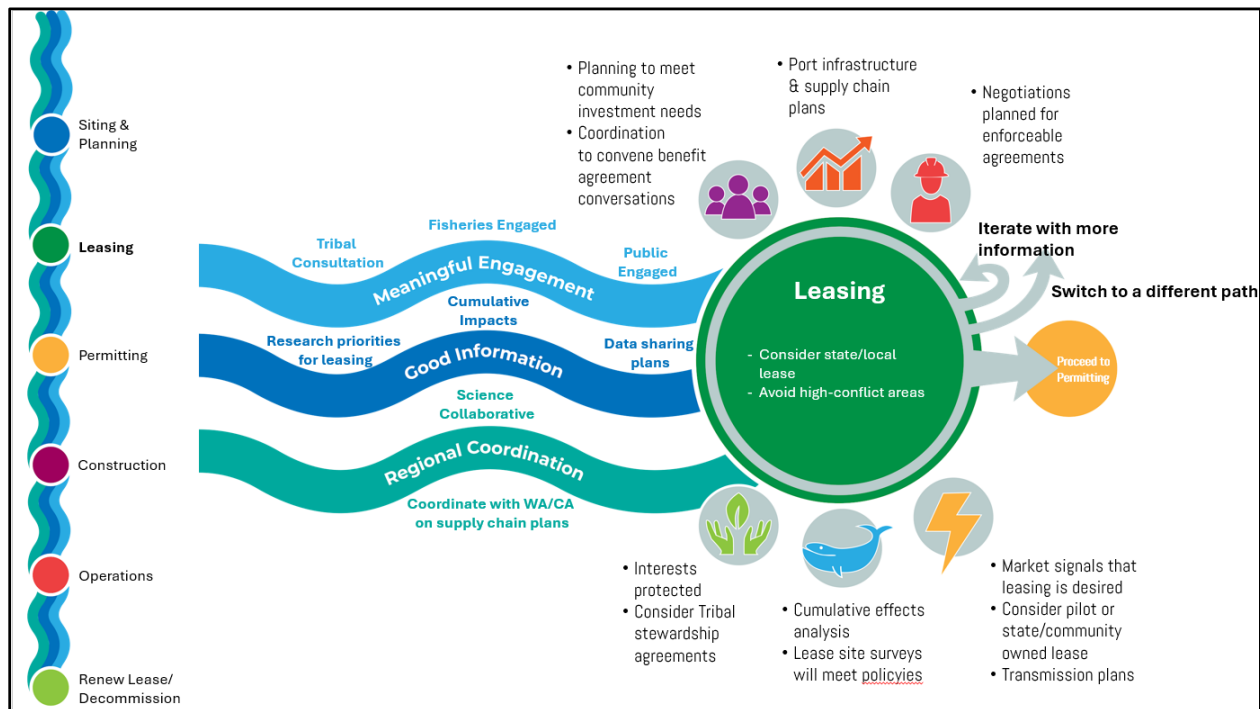


Develop Oregon's offshore wind energy workforce

- Establish enforceable policies around workforce and labor provisions, agreements, and enforcement mechanisms.
- Fulfill agency capacity needs to participate in siting, policy updates, and other offshore wind-related work.

4.2 Federal Leasing of the Outer Continental Shelf for Offshore Wind Exploration

Figure 10. Offshore Wind Leasing Phase



4.2.1 Description of the Leasing Phase

Leasing is the phase where more specific information is gathered on the areas that have *potential* for OSW development. Leasing is a process led by BOEM that begins with conversation, identifies larger “call areas” based on wind energy potential and least conflict with existing ocean uses and environment, narrows to “wind energy areas”, and then ultimately results in a lease auction. The Roadmap

development process identified the following elements important to have in place at this phase (see Sections 4.2.2 and 4.2.3 below for more detail), including:

- The science collaborative is identifying research priorities to address leasing opportunities and concerns and can advise the state regarding the effects of a leasing decision.
- Oregon has started coordination with Washington and California on supply chain plans.
- Engagement frameworks are guiding critical conversations with Tribes, fisheries, and the public and the State of Oregon are actively shaping those engagements with BOEM and others.
- Community and environmental effect concerns have been identified.
- A preliminary cumulative effects analysis has been completed.
- Mechanisms for managing risks and uncertainties are clear (e.g., research, mitigation, and adaptive management).
- A process and plan exists for convening communities in discussion toward development of enforceable Community Agreements (See Section 5.5.4).
- Port infrastructure and supply chain planning is underway.
- Clear request from the State of Oregon for leasing and working with BOEM during the leasing process.
- The leasing proposal includes a feasibility evaluation for routing of cables from the proposed lease area to an onshore grid interconnection.

This is the stage where coastal communities, Tribes, and others may want certainty around potential impacts and the configuration of future OSW development. However, some of that information may not be available until developers and permitting agencies conduct surveys and complete reviews. It is unclear whether all of the support projects (e.g., onshore transmission upgrades or shoreside facilities) would be reviewed at the same time as the permit for an offshore wind array. There may not be a clear mechanism for considering the entire system as a single “decision package” as part of a cumulative effects analysis. This is further discussed in Section 5.5.3.

The State of Oregon has a formal checkpoint at the Leasing stage. It conducts a Federal Consistency review of any BOEM lease auction. Oregon can find a lease “inconsistent” with state enforceable policies, “consistent”, or “consistent with conditions”. The State’s consistency review may be limited to the auctions authorized by the lease (i.e., to survey and exploration actions, and not the full construction of OSW arrays and associated infrastructure).

Typically, a developer would need to be a key convener of negotiating community agreements, but until a lease is issued there is no developer to take on this role. While the state supports conversations between developers and communities early and often, it may be inefficient or confusing for multiple developers without leases to begin these conversations too early. At the leasing stage, early work can begin to identify potentially affected communities that need to be included in future conversations with leaseholders, once they have been identified.

4.2.2 Strategies and Actions for the Cross-Cutting Streams at the Leasing Phase



- Meaningful engagement is underway with Tribes, the fishing industry, coastal communities, and the public generally.



- The Oregon OSW research agenda (See Section 5.3.2.3) is funded and being implemented specific to priority information needs to support and inform leasing.



- State-level coordination of supply chain opportunities across the Pacific coast.

4.2.3 Strategies and Actions for each Objective at the Leasing Phase



Achieve clean energy mandates

- Consider a pilot or state/community-owned lease.
- Address affordability and buyer security, exploring models like Joint Purchasing Agreements
- State of Oregon proactively invites a lease.
- Update transmission plans.
- Manufacturing and supply chain feasibility begin planning for availability of materials and equipment necessary to progress into subsequent phases of surveys (vessels, equipment, staff) and eventually development (supply chain planning).



Protect the environment

- Avoid leasing in high-value or high-effect areas.
- Complete a cumulative effects assessment inclusive of current ocean uses and lease areas.
- Secure ongoing state input on site characterization studies.
- Clarify mitigation measures to avoid and reduce harm from survey and other leasing activities.
- Implement the Oregon OSW research agenda.



Protect cultural resources

- Avoid leasing in high-value or high-effect areas.
- Complete a cumulative effects assessment inclusive of current ocean uses and lease areas.
- Secure ongoing state input on site characterization studies.
- Clarify mitigation measures to avoid and reduce harm from survey and other leasing activities.
- Establish Tribal engagement plans with leaseholders.



Support coastal communities and towns

- Avoid leasing in high-value or high-effect areas that may affect existing economic drivers.
- Complete a cumulative effects assessment inclusive of current ocean uses and lease areas.
- Oregon's enforceable policies protect traditional ocean uses (TSP Part Five). Any potential impacts to fishing should also consider impacts to secondary and support industries, such as seafood processing and commercial fishing suppliers.
- Explore comprehensive planning and investments to meet infrastructure, housing, and social service needs;
- Begin community conversations around community benefits;
- Establish fisheries engagement plans with leaseholders.
- Cable landing feasibility information provided as part of leasing proposal, including transmission cost considerations.



Create economic opportunities and sustain existing economies

- Clarify port infrastructure needs and integrate with existing estuary and shoreland protection policies.

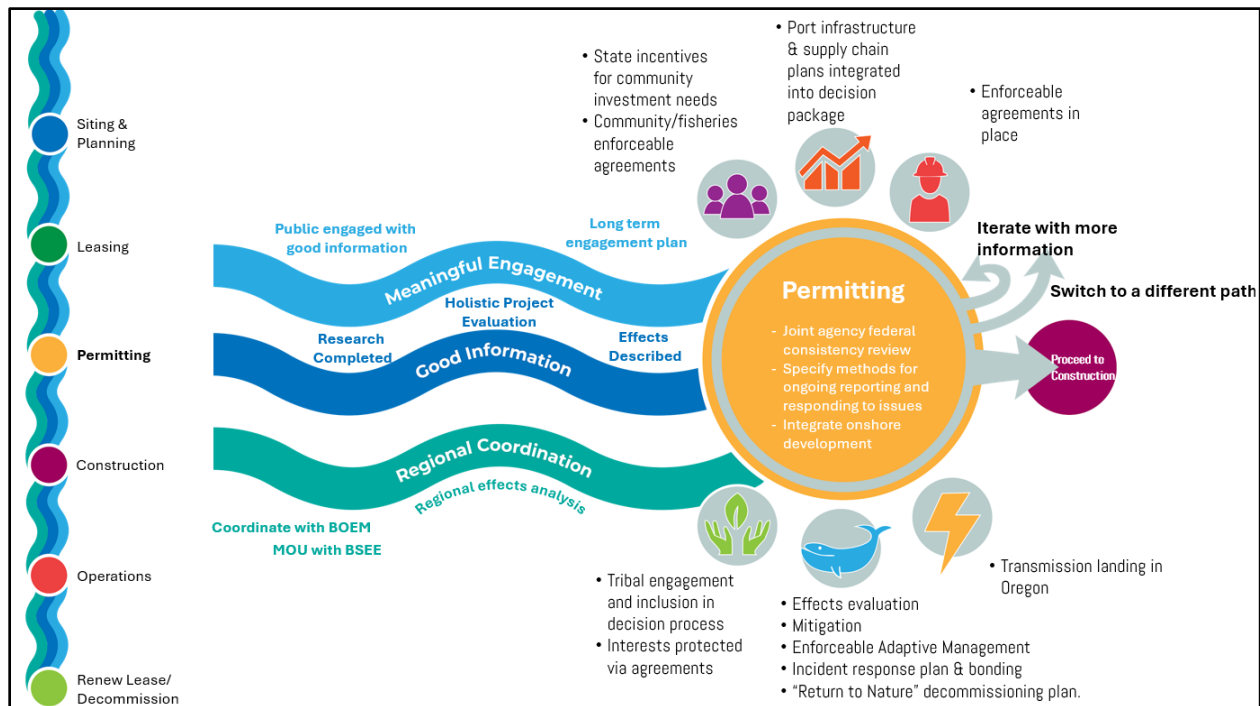


Develop Oregon's offshore wind energy workforce

- Begin convening community conversations around workforce and labor provisions, agreements, and enforcement mechanisms.
- Explore incentives for complementary investments in workforce infrastructure needs (e.g., housing and services).
- State conduct studies on necessary complementary investments (infrastructure, housing, social services) to identify investment needs.

4.3 Permitting Phase of an Offshore Wind Project

Figure 11. Offshore Wind Project Permitting Phase



4.3.1 Description of the Permitting Phase

- This phase encompasses the period of time between issuance of a lease and a decision whether to approve a Construction and Operations Plan and other associated permits for a specific project. (estimated as up to five years for COP preparation, plus 1-2 years for the permitting process). With a final lease approved, OSW energy developers will begin conducting the studies needed to develop a Construction and Operations Plan, which includes the required permit applications and technical analysis needed to approve construction. The Roadmap development process identified the following actions and information important to develop and have in place at the end of this phase (see Sections 4.3.2 and 4.3.3 below for more detail), including.
- The research needed to inform required environmental and community impact reviews will be completed during this phase to support a permitting decision at the conclusion of the phase..
- Oregon has completed a regional effects analysis with Washington and California and regional coordination with BOEM and the Bureau of Safety and Environmental Enforcement (BSEE).
- Tribes, fisheries, and the public have been engaged with good information throughout, and a plan is in place for ongoing engagement.
- The interests of Tribes have been protected via agreements.
- The effects of planned construction have been evaluated, and mitigation requirements have been established.
- Through the Federal Consistency review of the COP, the state establishes an adaptive management plan with enforceable mechanisms, an incident response plan with sufficient

bonding and accountability measures, and decommissioning plan that is sufficiently bonded and includes a “Return to Nature” vision for after the project. The Federal Consistency review at this phase is the state’s last formal opportunity to apply its policies and influence the project until the project lease ends, so it is important to establish ongoing roles, responsibilities, and coordination expectations at this phase.

- Landing of OSW energy in Oregon has been incentivized.
- There are enforceable community benefit, fisheries, and labor agreements in place;
- The state has incentivized community investment needs.
- Port infrastructure and supply chain plans are integrated into the final decision and permit packages.

This is the stage where coastal communities, Tribes, and others are likely to want full certainty around potential impacts and the configuration of future OSW development. While the permitting process requires applicants to provide information about the reasonably foreseeable effects of the project, it may remain true that some effects would not be fully understood until a project is in existence and can be monitored. The final configuration of a project may also be subject to adjustment based on real-world considerations during the Construction phase (e.g., unexpected technical impracticalities regarding mooring and cable placement). To manage these residual irresolvable risks, federal and state agencies may employ an adaptive management framework to monitor for unexpected conditions or effects and respond in a way that reduces, eliminates, or otherwise mitigates unexpected emerging effects. Because the Federal Consistency review of the federal permits is the state’s last formal opportunity to exercise its policy authority over the project during its operation, it is important that adaptive management and incident response plans be fully developed as part of the permitting process, complete with ongoing enforceable mechanisms for accountability and coordination with the state. It is also important that there be a plan for ongoing public information sharing and Tribal coordination during project operations, established as part of the permit.

It is unclear whether all of the support projects (e.g., onshore transmission upgrades or shoreside facilities) would be reviewed at the same time as the permit for an offshore wind array. There may not be a clear mechanism for considering the entire system as a single “decision package” as part of a COP review decision by the State.

The State of Oregon has a formal checkpoint at the Permitting stage. DLCD conducts a Federal Consistency review of BOEM’s approval of a COP in consultation with relevant state agencies, local governments, and Tribes. Oregon can find the COP “inconsistent” with state enforceable policies, “consistent”, or “consistent with conditions”. If the state ultimately finds the project inconsistent with its enforceable policies, the project would not be able to obtain its necessary federal permits absent a successful appeal to the US Secretary of Commerce that the national interest objectives of the project outweigh its coastal effects.

While the state has no formal ongoing role to regulate the project after the Federal Consistency review of the COP, there may be new ways during the permitting phase that the state could establish an ongoing role, including:

- Adaptive management or monitoring plans that contain prescribed agreed-upon monitoring, ongoing information sharing, and other actions as conditions of state concurrence;
- Monitoring of implementation plans to provide assurance that the project is being carried out in a manner that is consistent with enforceable policies;
- Federal Consistency condition that plan designs stay consistent with consistency reviews and federal permit applications; and/or
- A requirement for enforceable agreements, where those agreements may be required as evidence of consistency with a state enforceable policy (e.g., fisheries protection standards in Part Five of the Territorial Sea Plan, community benefit agreements, and labor agreements).

4.3.2 Strategies and Actions for the Cross-Cutting Streams at the Permitting Phase



- Meaningful engagement with Tribes, fisheries, coastal communities, and the public generally continues, and there is a plan for ongoing engagement after permitting.
- Publicly-accessible information clearly communicates the proposed project, its likely effects, and the measures in place to adaptively manage the project, respond to incidents in a coordinated and accountable way, and decommission the project at the end of its lifecycle.



- The Oregon OSW research agenda has been implemented enough to provide federal, state, local, and Tribal governments with the information needed to make permitting decisions and evaluate the proposed project against relevant policies.
- Information about community effects from the project is at a level that communities can enter into informed agreements with project developers to avoid, minimize, mitigate, or compensate for effects and provide a net neutral or net benefit to communities.
- Support infrastructure and project needs are identified and understood enough to support investment and permitting for those efforts.



- Pacific states have ensured a regional effects analysis has been completed.
- There are regional agreements with BOEM, BSEE, and Pacific states for consistent implementation.

4.3.3 Strategies and Actions for each Objective at the Permitting Phase



Achieve clean energy mandates

- Coordinate transmission permitting with OSW COPs.
- Consider incentives to land power in Oregon to benefit coastal grid resiliency.



Protect the environment

- Develop a complete inventory of foreseeable effects to species, habitats, and ecosystems. This includes impacts to and effects on species, habitats and ecosystems are inventoried across all affected areas, from pelagic offshore surface waters where the turbines would be placed, to the benthos where cables are set, through the territorial sea, estuary habitats etc. until it hits land and enters the existing grid.
- Responsibly manage residual risk and uncertainty by applying the mitigation hierarchy, developing an enforceable monitoring plan, and developing an enforceable Adaptive Management plan.
- Account for shoreside support development in total-project decision.
- State permit/Federal Consistency decisions must follow ecological protection standards.



Protect cultural resources

- Complete inventory of foreseeable effects to communities, and seafood species and habitats.
- Responsibly manage residual risk and uncertainty by applying the mitigation hierarchy, developing an enforceable monitoring plan, and developing an enforceable Adaptive Management plan.
- Account for effects to species, habitats, and ecosystems from shoreside support development in total-project decision.
- State permit/Federal Consistency decisions must follow ecological protection standards.
- Establish expectations for Tribal involvement in Adaptive Management Framework and associated ongoing stewardship.



Support coastal communities and towns

- Complete inventory of foreseeable effects to communities, and seafood species and habitats, in recognition of broader consideration of the relationship between coastal communities and natural resources.
- Responsibly manage residual risk and uncertainty by applying the mitigation hierarchy, developing an enforceable monitoring plan, and developing an enforceable Adaptive Management plan.
- Account for shoreside support development in total-project decision.
- State permit/Federal Consistency decisions must follow ecological protection standards.
- Establish a method (e.g., hotline) for reporting issues.
- Have enforceable community agreements in place for affected communities.
- Ensure complementary investments in community needs (e.g., housing, infrastructure, social services).
- Continue meaningful community engagement in decision-making, built on best available information.
- Local governments review portions of the project within their jurisdiction and make land use and other permitting decisions.



Create economic opportunities and sustain existing economies

- The state invests and provides incentives to ensure supply chain certainty.

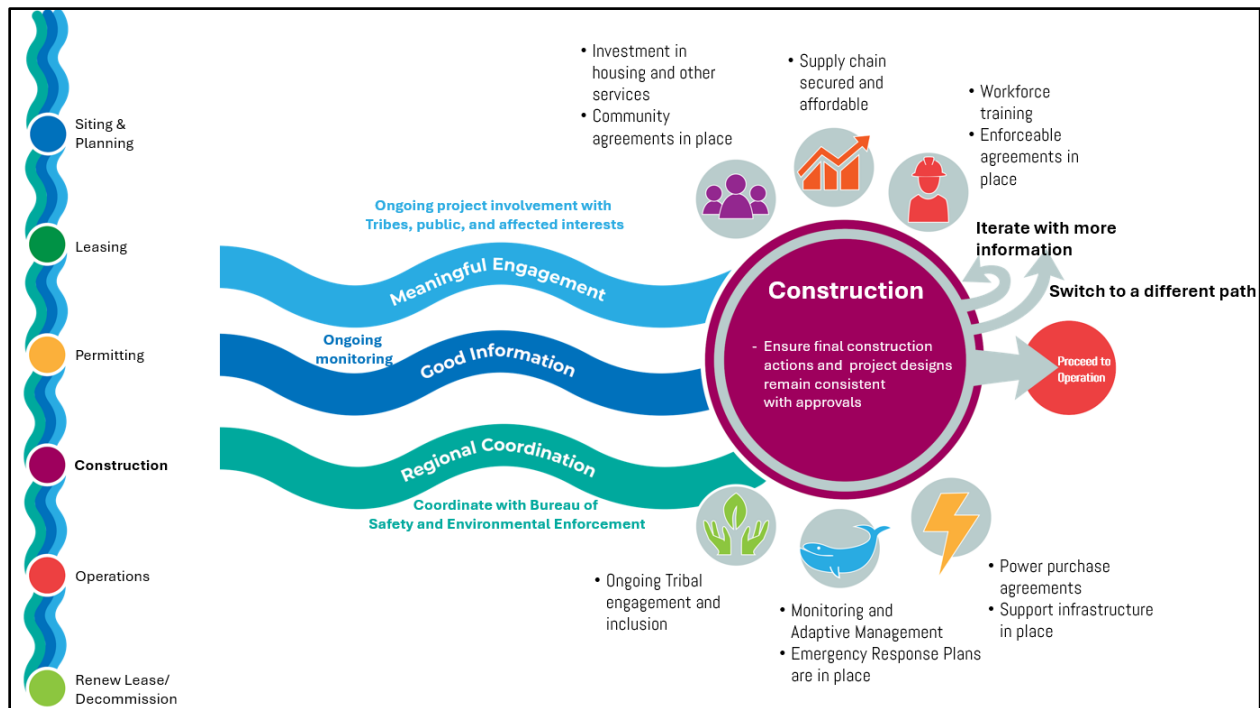


Develop Oregon's offshore wind energy workforce

- Have enforceable benefit agreements, including project labor agreements, in place.
- Incentivize complementary investments in workforce needs (e.g., housing, infrastructure, social services).
- Begin workforce training, apprenticeships, and recruitment.

4.4 Construction Phase of a Permitted Offshore Wind Project

Figure 12. Permitted Offshore Wind Project Construction Phase



4.4.1 Description of the Construction Phase

After years of planning and permitting, this is the phase after all permits and authorizations have been obtained (including community agreements) and the project is preparing for and undergoing construction. Early steps in this phase include submitting final design & installation plans, but the main activity in this phase is construction, which includes monitoring of and reporting on various activities. The OSW energy developer will be submitting its final design and installation plans, handing off reviews from BOEM to the Bureau of Safety and Environmental Enforcement (BSEE), and beginning the process of installation. The Roadmap development process identified the following actions and information important to have in place at this phase (see Sections 4.4.2 and 4.4.3 below for more detail), including:

- Ongoing project involvement with Tribes, public, and affected interests;
- Coordination with BSEE;
- Monitoring and adaptive management plans;
- Emergency response plans
- Power purchase agreements;
- Supporting infrastructure for OSW is in place;
- Workforce training is underway;
- Contracting is occurring with local maritime and coastal businesses for services;
- Community and other enforceable agreements are in place;
- Investments are occurring in housing and other services; and
- The supply chain is secure and affordable.

The State of Oregon does not have a formal checkpoint after the Permitting stage through the duration of the project authorization (the federal lease), unless activities relate to a permit issued by the state for activities occurring within the state’s jurisdictional coastal zone (i.e., within the Territorial Sea or onshore where permit authorities exist). One exception to this would be if a previously reviewed project permit undergoes an amendment subject to federal approval, such that the modified project would have an effect on any coastal use or resource in a way that is substantially different than the description or understanding of the effects previously reviewed by the state. In this case, the modification of the project would constitute a “major amendment” that is a new federal action subject to supplemental Federal Consistency review.¹⁰⁹ According to the Federal Consistency regulations, “The determination of substantially different coastal effects . . . is made on a case-by-case basis by the Federal agency after consulting with the State agency, and applicant. The Federal agency shall give considerable weight to the opinion of the State agency.” One possible example of this exception potentially coming into effect for an offshore wind project would be if the final design plans propose significant modifications to the location or configuration of project components such as anchors or subsea cables.

The Federal Consistency regulations in 15 CFR 930.65¹¹⁰ also provide that previously reviewed activities may also qualify for remedial actions if the State determines that a federal permit is not being implemented or is having an effect on coastal uses or resources substantially differently than originally described, if that difference makes the project no longer consistent with the enforceable policies of the state. This may result in the Director of the NOAA Office for Coastal Management requiring the applicant to submit a new or amended federal consistency certification to the state, or comply with the originally approved certification.

As described in the previous phase, while the state has no formal ongoing role to regulate the project after the Federal Consistency review of the COP, there may be new ways during the permitting phase that the state could establish an ongoing role.

4.4.2 Strategies and Actions for the Cross-Cutting Streams at the Construction Phase



- Meaningful engagement with Tribes, fisheries, coastal communities, and the public generally continues after permitting as final designs are completed and as construction is ongoing.



¹⁰⁹ <https://www.ecfr.gov/current/title-15/section-930.51>

¹¹⁰ <https://www.ecfr.gov/current/title-15/section-930.65>

- The Oregon OSW Research Agenda continues after the permitting phase to monitor implementation of the project and inform adaptive management actions.
- Clear information sharing and coordination agreements are in place to support ongoing state awareness of project status and potential effects.



- There are regional agreements with BOEM, BSEE, and west coast states (WA, OR, CA) for consistent implementation.
- Regional supply chain coordination is in place to support offshore wind fabrication and installation efficiently along the west coast.

4.4.3 Strategies and Actions for each Objective at the Construction Phase



Achieve clean energy mandates

- Power purchase agreements are in place to secure a market for the power to be produced and provide greater economic certainty for developers.
- Support infrastructure (e.g., necessary grid upgrades) is sited, permitted, and financed for construction.



Protect the environment

- Implement Adaptive Management Plan.
- Conduct ongoing monitoring throughout construction.
- Define prescribed response actions for unanticipated effects.
- Require mitigation of unintentional or discovered harms.



Protect cultural resources

- Implement Adaptive Management Plan for cultural resource effects.
- Implement hotline for concerns.
- Implement/enforce Tribal agreements.
- Conduct ongoing monitoring.
- Define prescribed response actions to unanticipated effects.
- Require mitigation of discovered harms.



Support coastal communities and towns

- Implement Adaptive Management Plan for fisheries effects.
- Establish and maintain hotline for concerns.
- Implement/enforce fishery agreements.
- Conduct ongoing monitoring.
- Define prescribed response actions to unanticipated effects.
- Require mitigation of discovered harms.



Create economic opportunities and sustain existing economies

- Implement Adaptive Management Plan.

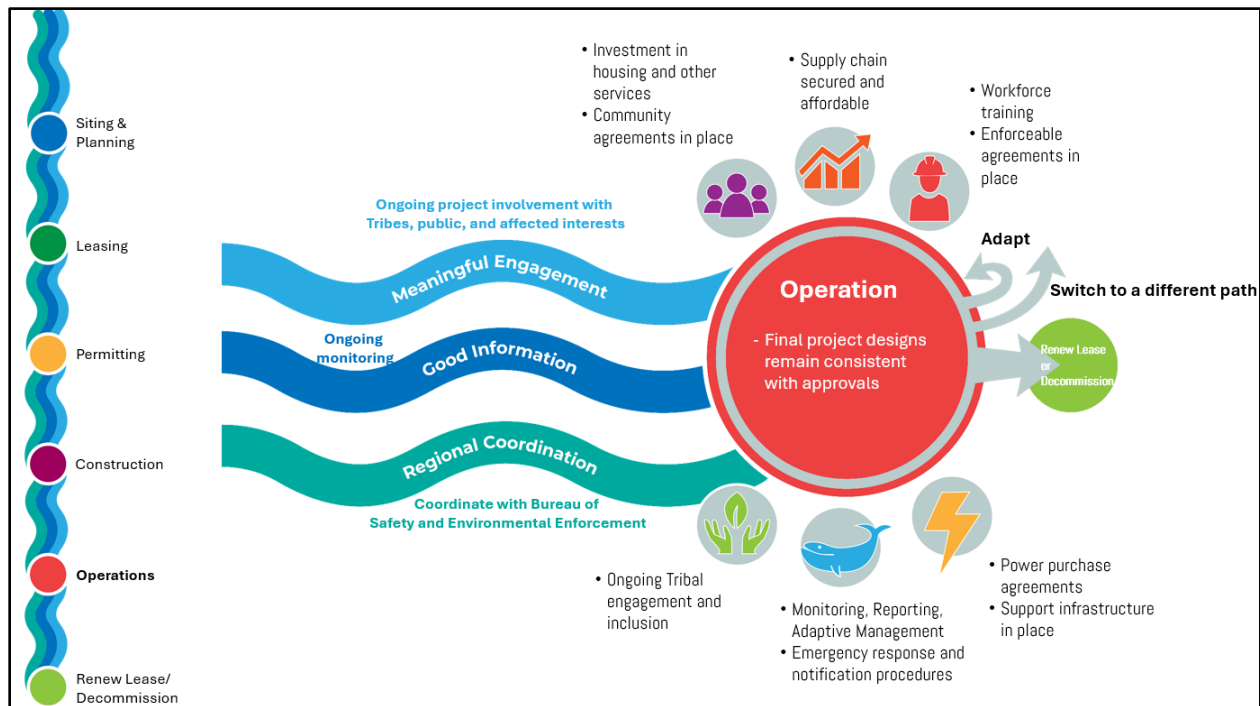


Develop Oregon's offshore wind energy workforce

- Implement and enforce workforce agreements.

4.5 Operation Phase of an Offshore Wind Project

Figure 13. Operation Phase of an Offshore Wind Project



4.5.1 Description of the Operation Phase

- The OSW arrays, floating infrastructure, cables, and shoreside infrastructure have been built and the arrays are generating energy at this operations phase. This phase extends until project authorizations are renewed or projects are decommissioned, which may be approximately 30 years. The Roadmap development process identified the following actions and information important to have in place at this phase (see Sections 4.5.2 and 4.5.3 below for more detail), including:
- Ongoing project involvement with Tribes, public, and affected interests is occurring;
- Coordination with BSEE is occurring;
- Monitoring and adaptive management are occurring;
- Emergency response plans with clear notification procedures;
- Power purchase agreements are in place;
- Supporting infrastructure for OSW is in place;
- Workforce training is underway;
- Contracting is occurring with local maritime and coastal businesses for services;
- Community and other enforceable agreements are in place and functioning as designed;
- Investments are occurring in housing and other services; and

There needs to be transparency and accountability in event of an accident or other harm to the environment, cultural resources, community, or other protected ocean uses. Under federal regulations, the 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.¹¹¹) are also responsible for ensuring offshore wind projects have adequate financial assurance (e.g., bonds) to cover project decommissioning, disaster/liability events, and the risk of default.

If designed based on best practices in the permitting phase, an Adaptive Management process provides a way for the state to maintain an ongoing role in learning from monitoring data, revising the understanding of effects of the project, and taking action when necessary to mitigate any unexpected outcomes. Essential to a successful process is a documented and previously agreed-upon framework for state participation alongside federal partners, clearly prescribed monitoring measures in the permitting phase, and prescribed response measures that provide options to adjust the project if needed. The adaptive management process and associated data must also be accessible to the public.

It is unlikely that, once installed and operational, the discovery of new information during Adaptive Management would have the ability to result in removal of the project before the ~30-year lease period is complete. Adaptive management is more suited to gathering information that may be used to inform site management during operation and implement achievable response actions as necessary or trigger other mitigation measures (e.g., curtailment, predictive maintenance based on sensor data, adaptive control strategies to adjust turbine operation in real-time to optimize power output, reduce structural fatigue, and adapt to grid frequency changes to improve overall efficiency, or habitat restoration elsewhere to offset an impact to species at the project site) .

4.5.2 Strategies and Actions for the Cross-Cutting Streams at the Operations Phase



- Meaningful engagement with Tribes, the fishing industry, coastal communities, and the public generally continues, and there is a plan for ongoing engagement throughout operations.



- The adaptive management and monitoring framework is providing ongoing information about potential effects to the environment and ocean uses during operation.

¹¹¹ <https://www.federalregister.gov/documents/2024/05/15/2024-08791/renewable-energy-modernization-rule#sectno-citation-585.516>

- Monitoring provides information to validate estimates of regional effects.
- Reporting is occurring as appropriate to satisfy the conditions and requirements of project authorizations.
- There are regional agreements with BOEM, BSEE, and Pacific states for consistent implementation.

4.5.3 Strategies and Actions for each Objective at the Operations Phase



Achieve clean energy mandates

- Energy produced by OSW is documented and reported.



Protect the environment

- Energy produced by OSW is documented and reported.
- Implement Adaptive Management Plan.
- Conduct ongoing monitoring.
- Define prescribed response actions to unanticipated effects.
- Require mitigation of discovered harms consistent with the adaptive management plan and BSEE regulations (supported by an MOU between Oregon and BSEE).
- Hotline for environmental concerns.



Protect cultural resources

- Implement Adaptive Management Plan for cultural resource effects.
- Implement hotline for concerns.
- Implement/enforce Tribal agreements.
- Conduct ongoing monitoring.
- Define prescribed response actions to unanticipated effects.
- Require mitigation of discovered harms.



Support coastal communities and towns

- Implement Adaptive Management Plan for fisheries effects.
- Implement hotline for concerns.
- Implement/enforce fishery agreements.
- Conduct ongoing monitoring.
- Define prescribed response actions to unanticipated effects.
- Require mitigation of discovered harms.



Create economic opportunities and sustain existing economies

- Implement Adaptive Management Plan.

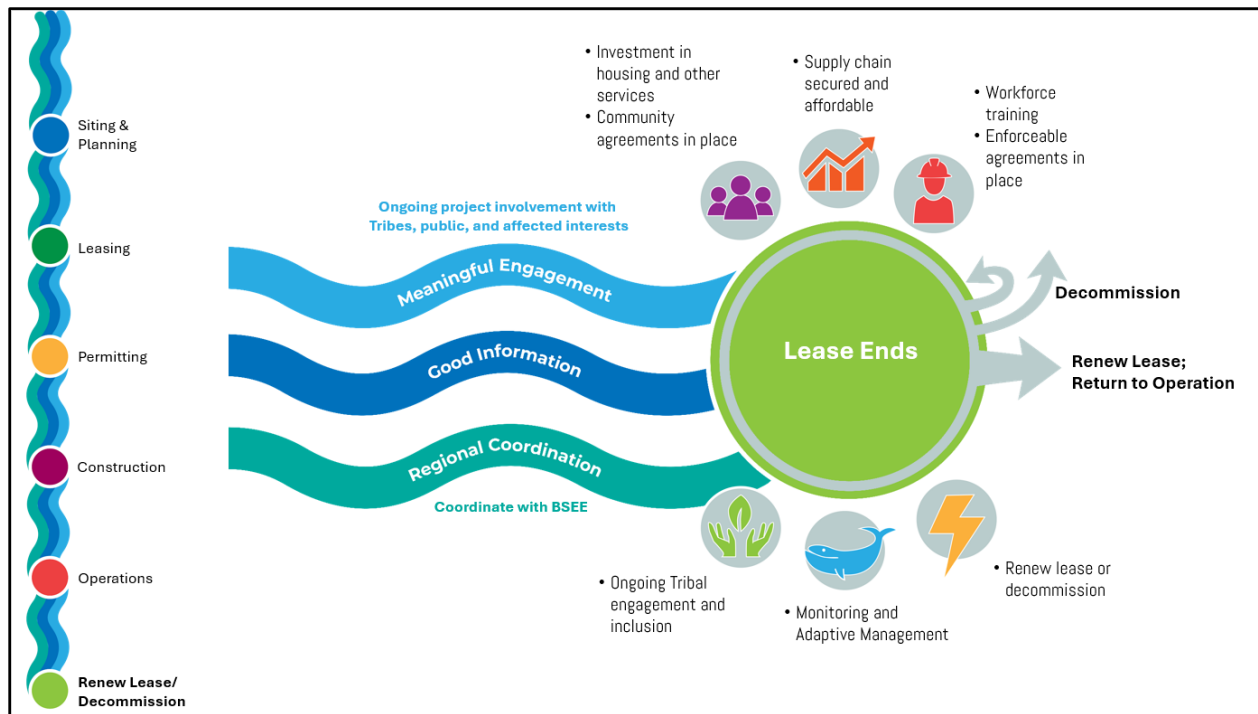


Develop Oregon's offshore wind energy workforce

- Implement and enforce workforce agreements.

4.6 Lease Renewal Phase

Figure 14. Lease Renewal/Decommissioning Phase of an Offshore Wind Project



4.6.1 Description of the Lease Renewal Phase

At the end of the 30-year lease, the OSW farm owner/operator will decide whether to renew the lease or decommission the project. If the lease will be renewed, BOEM and all the associated processes will begin again from the “Leasing” phase. There may be replacement of some infrastructure, or not. If the OSW farm owner/operator decides to decommission the OSW project, then the decommissioning steps come into play.

During this phase, the state would have an opportunity to review any lease renewal decision against state enforceable policies, using its Federal Consistency authority. If the information collected during the operating years suggests that renewal of the project would be inconsistent with state policies, the state would have the opportunity to object to lease reissuance. It will be important for the state to consider during the permitting and adaptive management phases whether potential effects are likely to be reversible if the project is removed after a period of years.

The Roadmap development process identified the following actions and information important to have in place at this phase (see Sections 4.6.2 and 4.6.3 below for more detail), including:

- Ongoing project involvement with Tribes, public, and affected interests;
- Coordination with BSEE;
- Detailed review of monitoring and adaptive management information in support of a lease renewal decision Federal Consistency review;
- Review lease or decommission; and

- If decommissioning is the chosen path, perform a Federal Consistency review of a federally-approved Decommissioning Plan to ensure the proposed action is consistent with enforceable policies, including provisions to remove infrastructure and “return to nature” actions for restoration.

4.6.2 Strategies and Actions for the Cross-Cutting Streams at the Lease Renewal Phase



- If lease is renewed, engage communities in Federal Consistency review of a lease renewal decision by BOEM.



- The information obtained throughout the Operation phase provides an understanding of the effects of the project’s existence and supports a decision whether to renew the lease or proceed to decommissioning.



- During the lease renewal decision, an updated regional cumulative assessment reconsiders the project in the context of other existing projects and conditions within the California Current Large Marine Ecosystem.
-

4.6.3 Strategies and Actions for each Objective at the Decommissioning Phase



Achieve clean energy mandates

- If lease will be renewed, evaluate actual energy production at the site and determine whether improvements can be made to maximize efficiency.



Protect the environment

- If lease renewal is proposed, effects are found to be consistent with state enforceable policies. Adaptive Management Plans and other operational plans and conditions are adjusted as needed based on lessons learned.



Protect cultural resources

- Engage and consult Tribes on the decision whether to renew a lease or proceed to decommissioning during the Federal Consistency review process.
- If the lease renewal is proposed, amend Tribal agreements as needed to address ongoing effects.



Support coastal communities and towns

- If the lease renewal is proposed, renew and amend Community Agreements as needed to address ongoing effects.



Create economic opportunities and sustain existing economies

- If lease renewal is proposed, evaluate effects of project continuation on coastal economies based on information gained during operation of the initial lease.

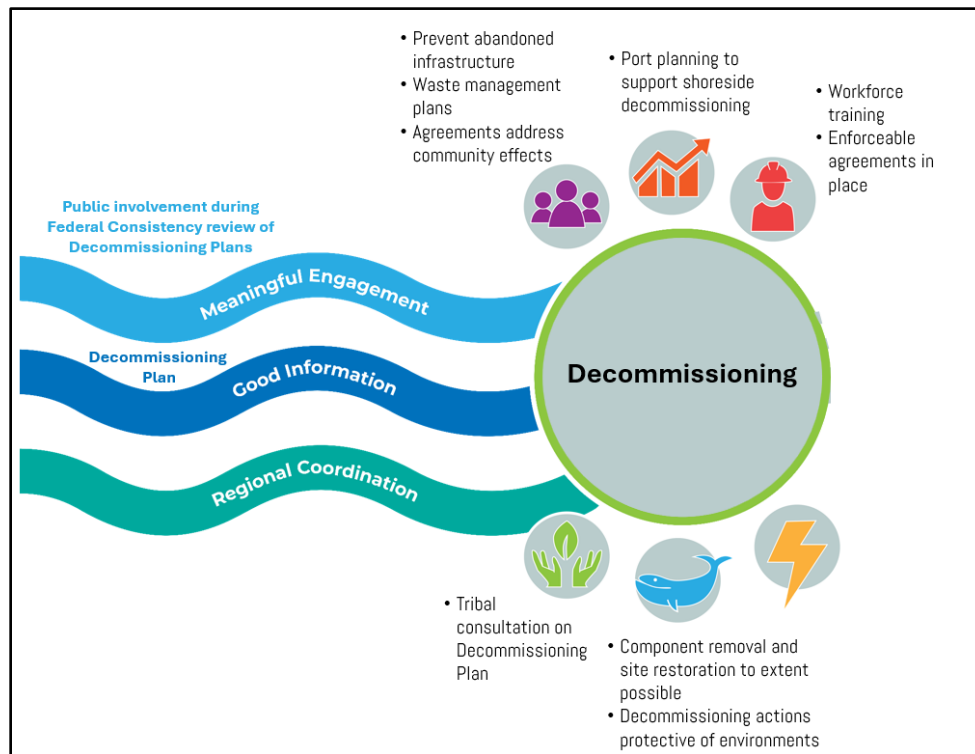


Develop Oregon's offshore wind energy workforce

- Update Project Labor Agreements as appropriate.

4.7 Decommissioning Phase

Figure 15. Decommissioning Phase of an Offshore Wind Project



4.7.1 Description of the Decommissioning Phase

When the project finally reaches the decommissioning phase, it is expected that this will constitute a new federal approval action subject to state Federal Consistency review. While the state requires a Decommissioning Plan to be in place during the Permitting phase, covering elements like the expected as-left conditions of the project site after equipment removal, environmental safeguards during decommissioning activities, protection of existing ocean users, and waste management plans, it may be the case that circumstances or policies will have changed in the ensuing years of project operation. A Federal Consistency review at the Decommissioning stage would allow the decommissioning action to be reviewed in detail to provide assurance that it will be performed in a manner that satisfies state enforceable policies.

The Roadmap development process identified the following actions and information important to have in place at this phase (see Sections 4.6.2 and 4.6.3 below for more detail), including:

- Ongoing project involvement with Tribes, public, and affected interests;
- Coordination with BSEE;
- Detailed review of monitoring and adaptive management information in support of a lease renewal decision Federal Consistency review;
- Review lease or decommission; and
- If decommissioning is the chosen path, perform a Federal Consistency review of a federally approved Decommissioning Plan to ensure the proposed action is consistent with enforceable

policies, including provisions to remove infrastructure and “return to nature” actions for restoration.

4.7.2 Strategies and Actions for the Cross-Cutting Streams at the Decommissioning Phase



- Communicate in advance and throughout activities about the timing and extent of activities that may affect other users of that space (at sea or onshore). Engage communities in Federal Consistency review of a Decommissioning Plan approval decision by BOEM and/or BSEE.



- When the project reaches the Decommissioning phase, sufficient planning information is available to support Federal Consistency review and provide reasonable assurance that decommissioning will proceed in a manner consistent with state enforceable policies, including the as-left conditions of the project site.



- When the project is decommissioned, west coast states coordinate as necessary to support project decommissioning, equipment dismantlement on shore, and waste management from project components. This may include arranging the necessary port capabilities, waste dispositioning strategies, or other aspects of decommissioning that require a regional approach.
- Coordinate with BOEM and BSEE on decommissioning expectations and requirements.

4.7.3 Strategies and Actions for each Objective at the Decommissioning Phase



Protect the environment

- The Decommissioning Plan is consistent with state enforceable policies and the environment and species are protected. This would include removal of all infrastructure from the seafloor to the extent practicable to return conditions to a pre-project state. Require mitigation of discovered harms.



Protect cultural resources

- Consult with Tribes during the Federal Consistency review to ensure that decommissioning actions protect Tribal interests.



Support coastal communities and towns

- Ensure that decommissioning plans consider local community effects and relevant enforceable policies related to decommissioning activities, shoreside infrastructure needs, waste management, and effects on existing economies.
- Prevent abandoned infrastructure through the Decommissioning Plan and the financial assurance/bonding requirements established during the original Permitting phase. This would include removal of all infrastructure from the seafloor to the extent practicable to return conditions to a pre-project state and avoid adverse effects on fisheries that may return to their previous uses in the project area.



Create economic opportunities and sustain existing economies

- During decommissioning planning, engage with coastal ports and industry service providers to understand and support capacity needs to accomplish decommissioning and project dismantlement.

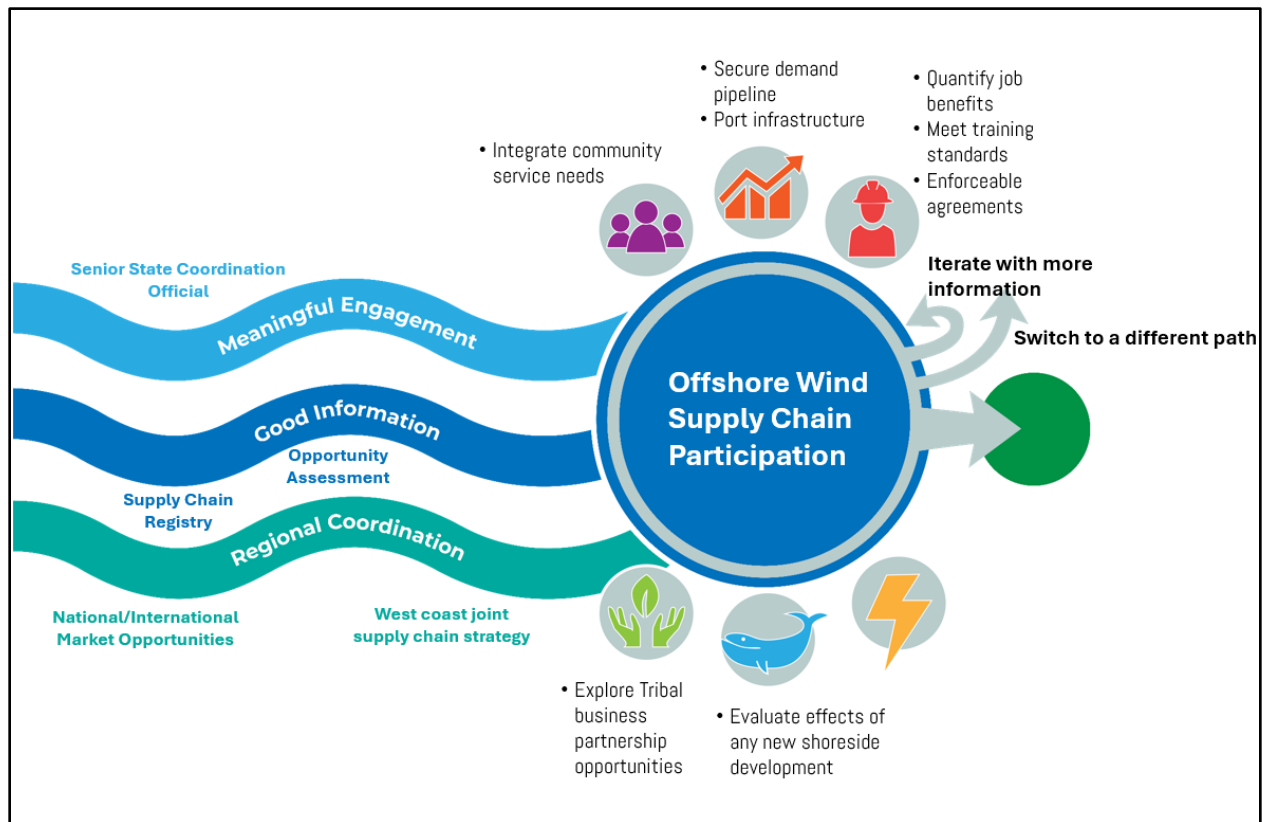


Develop Oregon's offshore wind energy workforce

- During decommissioning planning, develop workforce plans for activities specific to the decommissioning phase and implement necessary training and workforce development.

4.8 Alternative Future: Pathway to a “Supply Chain Only” Outcome

Figure 16. Elements of a “Supply Chain Only” Alternative Future



4.8.1 Description of the Pathway to a “Supply Chain Only” Outcome

Under this path, Oregon decides to not pursue any offshore wind energy development. Instead, the state participates in the development of supply chains that support development of OSW projects regionally, nationally, or internationally. The supply chain is an acknowledged bottleneck to offshore wind expansion globally, and the state has the potential to dedicate effort toward developing the industrial capabilities to assist in meeting this demand.

The Supply Chain future represents a sub-component of the other paths that include offshore wind arrays off Oregon, but it does not include the additional siting, research, operation, and project planning phases involved in full-scale offshore wind development. However, many of the early lifecycle components from the other paths would remain similar, especially those concerning community engagement responsibilities, mitigating shoreside effects of coastal development, establishing community and workforce agreements, Tribal engagement and involvement, and coordination across the state and region. Missing from this path would be actions such as state-led sea space suitability siting, fulfillment of an Oregon offshore wind research agenda, regional collaboration on cumulative ecosystem-scale offshore wind research, the leasing and permitting stages of an offshore wind project, and onshore grid infrastructure improvements to accept offshore wind power.

Any new development within the coastal zone requiring a federal permit – including port development, navigation channel modifications, or upland development that may affect coastal resources or uses – would trigger a Federal Consistency review and likely other state and local permits and authorizations. This path is depicted as a single lifecycle phase that begins with coordination and planning and proceeds into the development and realization of an offshore wind supply chain industry as a new economic presence in Oregon.

The Roadmap development process identified the following actions and information important to have in place to achieve this path, including:

- Understanding the market opportunities that are well-suited to Oregon’s marine and industrial strengths and expertise.
- Evaluating where existing facilities are available or where new construction may be subject to environmental review.
- Employing state leadership to coordinate across the region and internationally and foster market opportunities for Oregon;
- Coordinating and cataloging existing supply chain industry capabilities within the state and identifying state intervention needs;
- Engaging with local communities prior to development proposals and during any project regulatory reviews;
- Establishing the necessary workforce development and enforceable agreements consistent with state standards;
- Exploring opportunities for business partnership with Tribes and local communities to participate;
- Identifying port infrastructure needs and coordinating development consistent with state and local land use planning processes;
- Understanding and supporting community essential service needs to support supply chain industry and workforce growth.

For more detailed information regarding the steps above, see the corresponding actions in Section 5 of the Roadmap.

4.8.2 Strategies and Actions for the Cross-Cutting Streams for a “Supply Chain Only” Path



- Support state-led ongoing engagement with supply chain industries, local communities and Tribes to develop supply chain plans, community development plans, and project development proposals and reviews.



- Understand the market opportunities that are well-suited to Oregon’s marine and industrial strengths and expertise.
- Evaluate where existing facilities are available or where new construction may be subject to environmental review.
- Understand workforce needs and associated community support service needs associated with new industry growth where supply chain opportunities exist.



- State leadership-level coordination of supply chain opportunities across region, nationally, and internationally.

4.8.3 Strategies and Actions for each Objective for a “Supply Chain Only” Path



Achieve clean energy mandates

- No specific actions identified.



Protect the environment

- For any new supply chain infrastructure or facilities with reasonably foreseeable coastal effects, ensure through project permit reviews that environmental effects are understood and mitigated consistent with state and local enforceable policies.



Protect cultural resources

- Include culturally significant viewscape standard in Territorial Sea Plan policies.
- Establish Tribal expectations regarding engagement, research agenda participation/collaboration, and other siting and planning efforts.
- Address Tribal capacity needs to participate in siting and other offshore wind-related work.



Support coastal communities and towns

- Conduct socioeconomic studies to better articulate the costs and benefits of supply chain industry development for local communities and potential effects to be addressed through project reviews or community agreements.
- Evaluate areas and facilities important to maintaining the fishing industry as a critical support for coastal communities.
- Explore enforceable policy opportunities around cost/benefit to local community wellbeing and economic effects.
- Engage communities in supply chain development planning and project reviews.
- State conducts studies on necessary complementary investments (infrastructure, housing, social services) to identify investment needs to support a supply chain industry.



Create economic opportunities and sustain existing economies

- Identify state investment needs in local supply chain manufacturing capacity, focused first on California and international markets.
- Assess the importance/value of existing infrastructure already in use by existing industries (fishing, tourism) and plan to maintain existing uses without competition from new industries.



Develop Oregon's offshore wind energy workforce

- Establish enforceable policies around workforce and labor provisions, agreements, and enforcement mechanisms.
- Establish workforce training and project labor agreements for supply chain infrastructure and facility projects and the operation of supply chain industry businesses.

5 STRATEGIES AND ACTIONS

Within Oregon’s current policies, there are important gaps that, if filled, could better protect the connections between people, the environment, and the economy (see Section 4).

This section describes possible the strategic actions that, taken together, could help Oregon a path to responsible future offshore wind development that makes the most of the opportunities available to the State while staying consistent with the policies, interests, and values of Oregon and our communities.

5.1 Objective: Effective Engagement

Meaningful engagement means providing information, listening to concerns, having back and forth dialogue that seeks to toward mutually beneficial and agreed upon goals and actions as possible. This involves two-way communication needed for meaningful engagement, and the opportunity and commitment to open that two-way communication.

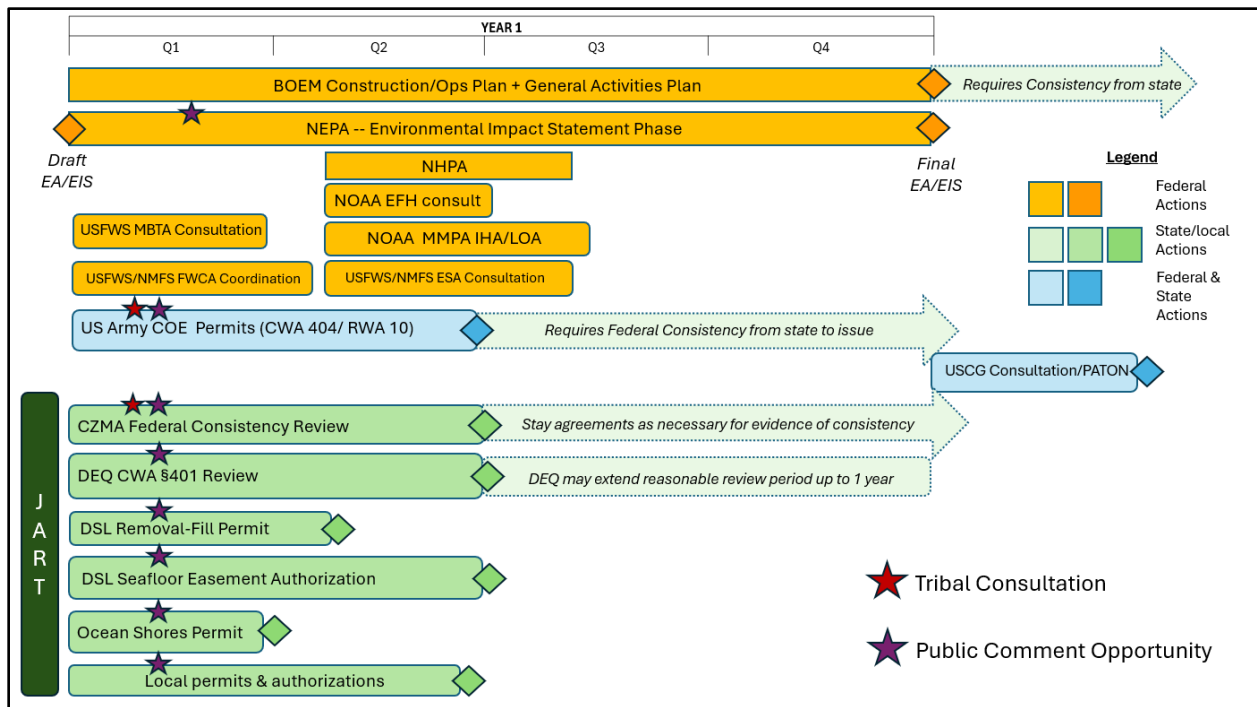
Specific actions include:

- Identify and fulfill the resource needs of state agencies in charge of convening engagement;
- Coordinate with federal agencies and developers on outreach and engagement efforts to retain state involvement and reflect state interests in community engagement;
- Build community engagement partnerships with other agencies, local government staff, and non-governmental organizations to combine resources and facilitate consistency in information to communities;
- Clarify community participation expectations in Joint Agency Review Teams and other regulatory processes at the state and local level, and document these opportunities in policy or guidance; and
- For state-led engagement activities, establish and consult an ongoing body/steering committee to guide engagement.
- Public engagement opportunities for major process milestones should be publicized in coastal newspapers.
- Provide clear public comment response logs to build trust in formal permitting and other decision-making processes.
- Operate consistent with state law and policy related to consultation with the Nine Federally Recognized Tribes of Oregon

The state should engage in continual public information sharing early in the process and throughout all phases of offshore wind and/or supply chain development. This includes multiple opportunities for public engagement and information throughout the pre-permitting and permitting stages. There are formal opportunities for public input during the state Federal Consistency review of federal permits and during the state and local permits and authorizations related to portions of an OSW project that occur within state territory (subsea cables in the Territorial Sea, cable landings, shoreside support facilities, etc.). Informal engagement and information sharing occurs throughout the process (e.g. online

information, direct discussions, other). Figure X depicts the multiple permitting processes and consultations that would be involved in the decision whether to approve an offshore wind project. This process would occur after leasing has occurred and the leaseholder has conducted years of site investigation and permit application development. The stars indicate the opportunities for public and Tribal comment on individual permits and authorizations. (Figure X).

Figure 17. Timeline for federal, state/local, and combined actions for the pre-permitting and permitting stages of offshore wind development. Stars represent potential opportunities for Tribal consultation and public comment on state actions.



Between a leasing action and the permit review process, the BOEM regulations provide for a period of up to five years for a leaseholder to conduct site investigation activities and prepare a Construction and Operations Plan (COP) application. During this time, the state should:

- Implement three-party ongoing engagement between the state, Tribes, and the project developer; (Section 5.4.11)
- Participate in a West Coast Science Collaborative initiated by California and provide regular public updates on the status of regional uncertainty management efforts and the state offshore wind research agenda; (Section 5.3.2)
- Engage an Oregon-specific science entity focused on OSW that is transparent to the public. (Section 5.3.2)
- Provide regular public updates on characterization activities being conducted by the leaseholder, either through OPAC or via separate public meetings; (Section 5.3.2)
- Provide guidance and technical support to Community Agreement conversations between potentially affected communities and leaseholders; (Section 5.5.1)
- Participate in an Offshore Wind Energy Fisheries Collaborative. (Section 5.5.2)

During the Federal Consistency review of a COP, the state should continue the above activities and also conduct additional public engagement directly on the coast, beyond what is required in the federal regulations governing these reviews. The state should also seek formal consultation with the nine federally recognized Tribes of Oregon and seek information about how effects of the proposed project intersect with established policies of Tribal governments (Section 5.4.7).

If a project permit is approved, the state should participate in or host periodic public information updates throughout the construction and operation stages, either through OPAC or via a separate agency-hosted venue.

5.2 Objective: Achieve State Energy and Climate Policy Objectives and Clarify the Paths to Development

Oregon is one of six western states with a 100 percent clean energy mandate. HB 2021 mandates that Oregon’s investor-owned utilities (IOUs) reduce greenhouse gas emissions associated with electricity sold to Oregon consumers to 80 percent below baseline emissions (average 2010-2012) levels by 2030, 90 percent below baseline emission levels by 2035, and 100 percent by 2040. Utilities have predicted Oregon’s energy demand will increase by more than 20 percent during the next five years. This increase in demand will result in challenges in meeting clean energy mandates and force the state to think critically about the costs to customers.

5.2.1 Strategy: Articulate the Value of Offshore Wind to the State and Set the Stage for Future “Market Signals” that Oregon is Interested in Pursuing Offshore Wind

5.2.1.1 Action: Complete coastal and state-wide socioeconomic studies to quantify and articulate the economic costs and benefits and job opportunities from offshore wind for Oregon

Many of the potential benefits that could derive from offshore wind energy do not fit the traditional model of “least cost, least risk” measures of prudence that govern large utility energy portfolio investment¹¹². Similarly, the potential economic benefits and jobs offshore wind may represent an additional incentive that should be formally quantified and considered. The state should support additional study of the potential costs and benefits of offshore wind energy to inform future policy and investment decisions based on existing projects. The Oregon Energy Strategy (OES) includes recommended Clean Energy Action 3, which is to, “Report on developments in emerging technologies, including long-duration storage, enhanced geothermal, floating offshore wind, and small modular

¹¹²

https://secure.sos.state.or.us/oard/displayDivisionRules.action;JSESSIONID_OARD=NoJmykJTTL0TElgiOfcGYP6cGU9ngT_r8X3tmkkQWoekcv6QcMSI-1271601078?selectedDivision=4519

nuclear reactors, to identify the role they can play in meeting the state’s electricity needs; also explore opportunities for pilot programs in the near-term.” This Roadmap endorses this recommendation with a further recommendation that this analysis considers holistic costs and benefits beyond meeting the state’s energy needs alone. The cost/benefit analysis should consider realistic scenarios of the amount of economic benefit and jobs that might actually accrue to Oregon if an offshore wind energy presence is developed compared to other non-greenhouse gas-emitting energy alternatives. The analysis should also seek to estimate the potential relative energy costs to Oregon power consumers and the regional energy market effects if power produced in Oregon is purchased by other states.

5.2.1.2 Action: Continue to refine the Oregon Energy Strategy in future iterations to account for changing conditions related to offshore wind and the regional energy market

The Oregon Energy Strategy’s reference model included assumptions that resulted in it not including offshore wind energy in Oregon’s future energy mix. These included an assumption that California fully realizes its goal to develop 25 GW of offshore wind by 2045, cost models that showed alternative emerging technologies (e.g., enhanced geothermal) outperforming offshore wind on cost by small projected margins¹¹³ (thus leading to offshore wind to not appear in the current strategy to fulfill the portion of future energy demand that could be served by emerging technologies), and a coarse “pipeline model” representation of the actual state grid infrastructure that does not account for real transmission and market costs and access capabilities. The model might also be refined through consideration of other beneficial factors such as economic development and grid reliability/resilience value of different electricity generation alternatives. As currently presented in the reference case, the offshore wind industry may perceive that the state is less interested in pursuing opportunities to continue exploring offshore wind or in seeking to provide the market signals the industry has expressed a need for in order to consider investment in Oregon. This Roadmap recommends that the OES be periodically reassessed with updated modeling to test and refine the baseline findings and evaluate whether other strategic considerations or actions might emerge over time based on updated assumptions.

¹¹³ According to the Oregon Energy Strategy Technical Report, approximately 1.6GW of capacity is assumed to come from enhanced geothermal power as an emerging technology (<https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf>). This portion of the total capacity need could be filled by any emerging technology, but according to discussions with ODOE staff, geothermal was the least cost option and consequently was apportioned the entire amount. The cost difference by 2050 is estimated to be \$58 per MWh for enhanced geothermal compared to \$61 per MWh for offshore wind according to NREL data used in the technical modeling ([Index](#) | [Electricity](#) | [2024](#) | [ATB](#) | [NREL](#)) (the 2021 PNNL analysis of offshore wind projected cost estimated approximately \$50-75 per MWh. This represents a relatively small margin by which enhanced geothermal outcompetes offshore wind. Through further study, a more holistic analysis that includes economic and job opportunities from building out the supply chain, valuation of potential benefits to coastal grid reliability and resiliency, and consideration of other infrastructure costs such as transmission needs for each option, might affect the relative competitiveness and role of offshore wind in the Oregon Energy Strategy.

5.2.1.3 Action: Evaluate energy infrastructure needs more holistically to determine what role OSW and other renewables can play in improving energy resilience and reliability.

Considering the grid system value of increased coastal energy resiliency from adding energy generation closer to coastal loads¹¹⁴, reduction of east-west grid congestion over the Coast Range, and greater overall resource reliability and predictability of offshore wind compared to other renewable resources may increase the relative value of offshore wind compared to other renewable resources if holistically evaluated in energy rate regulation and policies. The state should conduct studies of its grid infrastructure to more clearly identify and quantify the potential benefits of improved grid resilience and reliability. The analysis should attempt to articulate the full value of these benefits to lives, property, and community well-being as additional factors to consider in future energy policy, regulation, and investment decision-making.

5.2.2 Strategy: Prepare Oregon's Energy System for Offshore Wind Potential

5.2.2.1 Action: Support investments and planning for grid infrastructure to increase resilience and facilitate new energy options

Coastal transmission upgrades are a recognized need that must be addressed if offshore wind energy is to be available in Oregon and the greater region. The degree of need varies according to the scale of OSW development and where the power lands on the coast. The Oregon Energy Strategy includes a recommendation for Clean Energy Action 1, which is to, "Establish a state transmission entity with the authority to (1) identify and designate transmission corridors; (2) pursue partial siting and permitting approvals for future projects in those corridors; and (3) provide direct financial support through state bonds for projects that are determined to benefit the public interest." Policies that contribute to expanded transmission infrastructure have the potential to increase coastal grid resiliency under scenarios that both do and do not include offshore wind development. Expanded energy potential and grid infrastructure improvements along the coast have the potential to generate new investment and industry, which may bring economic benefits but may also have cascading impacts to housing and infrastructure similar to those already identified by communities with OSW development.

5.2.2.2 Action: Coordinate with California and Washington on supply chain opportunities, regional power market opportunities, and transmission planning related to offshore wind

The state should continue to explore ways to work with neighboring states to increase the regional connectivity of the grid and expand the electricity market to a scale that can more easily buy, sell, and transfer power across the west coast and compensate for variability in renewable power availability (e.g., when the sun is not shining or the wind is not blowing). Proponents of a regional power market assert that it would provide greater cost stability and reduce the risk of investing in generation sources like offshore wind while increasing the overall efficiency of the grid by matching power demand and

¹¹⁴ Note: Examples of energy grids in Europe with a high proportion of renewable energy suggest that balancing the intermittent nature of wind power requires sufficient storage and demand-side management to maintain grid stability. These supporting needs should also be considered in a holistic evaluation of grid resiliency and reliability benefits. Source: <https://www.enlit.world/library/the-european-energy-grid-challenges-and-the-startups-shaping-a-resilient-future>

supply across a larger area¹¹⁵. A regional market could also facilitate the region as a whole to meet its decarbonization goals. Consideration should be given to how a regional power market relates to Oregon Renewable Portfolio Standards and attainment of the clean electricity goals in HB 2021, particularly the effect on Oregon lands and resources if greater overall energy development is needed to support both Oregon’s goals, the goals of other states, and new demands on the grid such as data centers.

5.2.2.3 Action: Explore potential economic incentives, energy planning policies, procurement frameworks and authorities, or other amendments to Oregon energy policy that might attract and facilitate long lead-time resources such as offshore wind.

The Oregon Energy Strategy includes a number of recommended actions to incentivize and facilitate investment in renewable energy technologies that are either still emerging or whose value is based on more factors than the traditional “least cost, least risk” regulatory model used by the PUC. Recommended Action 3 is to, “Report on developments in emerging technologies, including long-duration storage, enhanced geothermal, floating offshore wind, and small modular nuclear reactors, to identify the role they can play in meeting the state’s electricity needs; also explore opportunities for pilot programs in the near-term.” Offshore wind is among a class of emerging energy technologies that requires large capital investment and long lead-times, which necessitates policy and market incentives to reduce risk and encourage the maturity of these technologies. The Roadmap echoes this recommendation.

Action 6 in the Energy Strategy is to, “Direct the OPUC [Oregon Public Utilities Commission] to investigate opportunities to modify utility business models and ratemaking practices to enhance marketplace competition and thereby lower costs in utility planning and resource procurements.” This recommendation could lead to the PUC reforming its regulations to incentivize opportunities such as large-scale generation projects like offshore wind.

5.2.2.4 Action: Consider policy that would require offshore wind energy offshore Oregon to connect to the Oregon Coast grid

A potential future scenario exists where due to the electricity demand and cost of OSW, the power may be purchased by a neighboring state or utility. If this were to occur without first connecting to the Oregon coastal grid, Oregon coastal communities would not receive direct energy resilience benefits that could come from having a new source of electricity generation west of the Coast Range, and the state at large would not benefit from the potential reduction in east-west transmission congestion that could facilitate more renewable energy growth east of the Coast Range. The state should consider implementing a policy that requires an offshore energy project to provide direct grid resilience benefit to coastal power users.

¹¹⁵ <https://portlandtribune.com/2025/10/14/the-wests-power-grid-could-be-stitched-together-if-red-and-blue-states-buy-in/>

5.2.3 Strategy: Identify Investment and Planning Needs

5.2.3.1 Action: Clarify port infrastructure development needs and integrate with existing estuary management plans and other applicable enforceable policies

The state should continue to investigate the role and necessity of a major port development project to the technical and economic feasibility of potential future offshore wind energy development offshore Oregon. The technology and development options for the offshore wind ecosystem continue to evolve, and there may be future options to support offshore wind turbine staging, integration, and operational maintenance at sea or utilizing floating wharf infrastructure that does not require major estuary modification or pose challenges to existing critical infrastructure (e.g., the Coos Bay Regional Airport). Further information could help to refine the alternative futures considered in this Roadmap.

5.2.3.2 Action: Assess complementary community investment needs under different scenarios

Development of an offshore wind industry in Oregon would necessitate investment in coastal community capacity to support workforce development. The state should work to proactively assess these community needs and associated costs (e.g., housing, infrastructure, social services) under different scales of offshore wind energy development to better understand the challenges and investment required.

5.2.3.3 Action: Study the opportunities and challenges associated with different models of offshore wind ownership (investor-owned vs. public-owned vs. community-owned vs. other)

[Note for Reviewers: This topic is still being researched and considered.]

5.2.3.4 Action: Conduct Supply Chain and Workforce Assessment and Planning (relates to actions in another section of the Roadmap)

Development of an offshore wind industry requires a trained and ready workforce and establishment of a supply chain of raw materials and components. The state should coordinate or participate in supply chain and workforce assessment and planning based on realistic timelines of when these critical aspects of the system would be needed.

5.3 Objective: Protect the Environment and Species (Marine, Terrestrial, Estuarine, Freshwater)

Any OSW development would need to be consistent with Oregon's enforceable policies meant to conserve wildlife (e.g., birds, fish, invertebrates, marine mammals, etc.), their habitats (e.g., sand, reefs, corals, essential fish habitats, etc.), and the ocean processes that are fundamental to highly productive ocean waters. Oregon's policies, and the expectations for offshore wind review and standards, apply to all areas potentially affected by OSW development, including landing sites on the coast, estuaries, and pelagic/deep ocean sites.

5.3.1 Strategy: Strengthen State and Local Government Policies, Processes, and Capacity to Address Environmental Effects from Offshore Wind

5.3.1.1 Action: Amend Oregon's Territorial Sea Plan (and other policies as applicable) to Address Gaps

The state should work with the Ocean Policy Advisory Council (OPAC), relevant state agencies, and the legislature as necessary to complete rulemaking that addresses the policy gaps and opportunities identified in this Roadmap. These activities should be completed in the near-term before the resulting policies might be needed in future leasing or permit reviews.

5.3.1.2 Action: Support Agency Capacity for Building Expertise in Offshore Wind Effects

As described in the Offshore Wind Energy Capacity Assessment (see section 3.4 and Appendix B), participation in offshore wind energy siting, leasing, and permitting processes requires substantial investment of resources from state agencies, Tribes, and local governments. To address these capacity needs, the state should seek legislative action to provide adequate capacity support so the state and its partners can build the necessary technical expertise to participate fully in future offshore wind-related activities and accomplish other near-term actions identified in the Roadmap.

5.3.1.3 Action: Monitor changes to federal environmental protection standards and adopt new state policies as needed to maintain existing levels of protectiveness

Oregon enacted a "no backsliding" policy through the Oregon Environmental Protection Act (HB 2250) in 2019¹¹⁶, which directs state agencies to maintain baseline federal environmental standards even if those standards are weakened at the federal level. This law currently applies to the Federal Clean Air Act, Safe Drinking Water Act, and Federal Water Pollution Control Act. ORS 468.149¹¹⁷ requires that if a change to federal environmental law makes standards less protective of public health or the environment, the Oregon Health Authority and Environmental Quality Commission must maintain state standards that are at least as protective as the original "baseline federal standards". The state should consider expanding this policy to maintain baseline standards and respond to changes in other federal environmental protection standards, such as for species and habitats.

¹¹⁶ https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2019orlaw0138.pdf

¹¹⁷ https://www.oregonlegislature.gov/bills_laws/ors/ors468.html

5.3.2 Strategy: Responsibly Manage Uncertainty and Risk

Embedded in Oregon’s enforceable policies (Statewide Planning Goal 19 and Territorial Sea Plan Part Five) is a precautionary approach¹¹⁸, recognizing that when information is limited or where there is significant uncertainty regarding the potential adverse effects of a proposed action. It is the responsibility of the proponent of an action to provide verifiable information supporting the absence of significant harm. Multiple enforceable policies in Oregon also articulate a mitigation hierarchy¹¹⁹, starting with the foremost principle of avoiding harm and then being well prepared to minimize, rectify, reduce or eliminate over time, and finally compensate for remaining unavoidable impacts. OSW development would need to be consistent with Oregon’s enforceable policies related to the mitigation hierarchy.

Territorial Sea Plan Part Five contains extensive information and inventory requirements to assess the potential individual and cumulative effects of marine renewable energy projects. However, Part Five also recognizes that perfect certainty may not be possible, and that an adaptive management approach may be a viable way to address irreducible uncertainties that may only be answered when a project is installed in the water.

Although the state’s CZMA review role of a federal COP ends once concurrence is given that the COP is consistent with state enforceable policies¹²⁰, the state has an opportunity to establish conditions on its concurrence for any aspects of the project where additional actions or information are needed to demonstrate consistency with the policies. Oregon should use this mechanism of conditional concurrences to require and prescribe an adaptive management plan and framework that defines monitoring requirements and prescribes the response an applicant or federal agency needs to take – developed in coordination with relevant state agencies - if the information emerging once the project is operating indicates unexpected or unacceptable conditions or effects.

If designed based on best practices in the permitting phase, an Adaptive Management process provides a way for the state to maintain an ongoing role in learning from monitoring data, revising the understanding of effects of the project, and taking action when necessary to mitigate any unexpected outcomes. Essential to a successful process is a documented and previously agreed-upon framework (documented at the Permitting phase of the project prior to COP approval) for state participation alongside federal partners, clearly prescribed monitoring measures in the permitting phase, and

¹¹⁸ https://www.oregon.gov/lcd/OCMP/Documents/TSP_Part5_PublicationVersion_correctedEPs_01172023.pdf (see Definitions and Terms)

¹¹⁹ 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>;

¹²⁰ Other state or local authorizations related to subsea cables and onshore infrastructure may provide additional means for ongoing regulatory oversight, but these authorities would not extend to an offshore facility in federal waters.

prescribed response measures that provide options to adjust the project if needed. The adaptive management process and associated data must also be accessible to the public.

During the COP review, the state should require a full Adaptive Management Plan and seek to require a contractual agreement between the state and the project owner that memorializes the plan – on the basis that absent such measures, the state does not have sufficient evidence to determine that the project is consistent with enforceable policies. If the Adaptive Management plan and framework are included in a contractual agreement, that agreement would become enforceable under law separately from the state’s Federal Consistency authority under the CZMA. This approach would constitute a novel approach to ongoing state involvement in a project after its formal project review role ends at the issuance of a project permit. Additionally, as mentioned in Section 4.3.3, under the federal regulations¹²¹ the state may seek a supplemental Federal Consistency review for a previously reviewed project if the effects of the action are not implemented in a way that is consistent with enforceable policies, or if it is having an effect on any coastal use or resource substantially different than originally described and, as a result, is no longer consistent with the management program.

It is unlikely that, once installed and operational, the discovery of new information during Adaptive Management would have the ability to result in removal of the project before the ~30-year lease period is complete. Adaptive management is more suited to gathering information that may be used to inform site management during operation and implement achievable response actions as necessary or trigger other mitigation measures (e.g., curtailment, predictive maintenance based on sensor data, adaptive control strategies to adjust turbine operation in real-time to optimize power output, reduce structural fatigue, and adapt to grid frequency changes to improve overall efficiency, or other mitigation measures to offset an impact to species at the project site). At the end of the lease period, the state would have an opportunity to review any lease renewal decision against state enforceable policies, using its Federal Consistency authority. If the information collected during the operating years suggests that renewal of the project would be inconsistent with state policies, the state would have the opportunity to object to lease reissuance. It will be important for the state to consider during the permitting and adaptive management phases whether potential effects are likely to be reversible if the project is removed after a period of years.

There also needs to be transparency and accountability in event of an accident or other harm to the environment, cultural resources, community, or other protected ocean uses. Under federal regulations, the 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.¹²²) are also responsible for ensuring offshore wind projects have adequate financial assurance (e.g., bonds) to cover project decommissioning, disaster/liability events, and the risk of default.

¹²¹ See 15 CFR 930.65.

¹²² <https://www.federalregister.gov/documents/2024/05/15/2024-08791/renewable-energy-modernization-rule#sectno-citation-585.516>

5.3.2.1 Action: Identify Suitable Sea Space for Development Led by State Interests and Policies

The BOEM-led offshore wind siting process from 2019-2024 attempted to incorporate different interests, perspectives, and sources of information available at the time to identify wind energy areas (WEAs). Two Wind Energy Areas were identified offshore Oregon, but the process ultimately failed to proceed to leasing. The Roadmap sees an opportunity to pursue a state-led integrated spatial planning process that could encourage and include new information, widen the scope of site suitability analysis to the entire Oregon coast, integrate offshore (including both state and federal waters) and onshore suitability considerations, and identify early in the process those areas that might be more or less challenging to demonstrate consistency with state enforceable policies later in the permitting process. The benefits of this effort would be greater regulatory certainty for developers and a stronger emphasis on avoidance as a means to address effects of concern. Another benefit may be to identify applicable policies currently in place as well as potential additional policies needed to secure the state's interests and move forward responsibly, should offshore wind energy be proposed off Oregon in the future.

Once state agency roles are identified and resources are allocated to pursue this effort, DLCD should convene, guide, and/or drive an effort to update spatial planning information for the entire Oregon coast, inclusive of:

- Federal waters;
- The territorial sea; and
- Onshore and estuarine areas (e.g., for infrastructure, transmission, navigation or port utilization, habitat mitigation needs).

Marine/Coastal Zone spatial planning should identify areas of the ocean where Floating Offshore Wind energy (OSW) infrastructure is either: A) likely consistent with state policies and goals, B) potentially consistent based on meeting conditions and further review, or C) less suitable or inconsistent with state policies. A desired outcome of the effort would be to reveal areas that are viable for development, areas where the state would require additional information, and areas where development may be more challenging when accounting for applicable state standards. BOEM retains leasing authority on the Outer Continental Shelf in federal waters, but information from the state regarding anticipated future constraints is an important input to federal risk-based decision-making.

A spatial planning effort may be combined with a process to update content and standards in Parts Four and Five of the Territorial Sea Plan, which may include spatially applicable standards that could be proactively projected into areas of federal waters within the state's review jurisdiction. Rather than constitute a "zoning" process for federal waters, the output of the Marine/Coastal Zone spatial planning process may constitute more of an "inventory" of policy-based suitability risks based on the current research and information available.

If resources are available, the state could support the sea space suitability analysis by partnering with other researchers (e.g., NOAA, academic institutions) to deploy research buoys to monitor ocean conditions and by investing in geophysical surveys to improve the state's understanding of seabed topography and habitats of unique or sensitive nature, thereby reducing risks and enabling earlier wind farm designs. These measures could serve both the state's planning effort and a potential offshore wind interest.

This effort will require resources from government, nonprofit, and business sectors. First, the state should assess the costs associated with a marine/coastal spatial planning effort, including determination of which agencies and partners would be involved and what resources would be needed. A fiscal impact analysis is outside the scope of the Roadmap but may be developed under the state legislative process if this recommendation is pursued.

In order to successfully identify suitable sea space, the spatial planning process should explicitly define a goal of finding an amount of space suitable for a specified amount of energy production capacity. The process should invite OSW industry participation and expertise to identify feasibility needs and constraints. The process should be inclusive of multiple forms of knowledge (government, university, and private business information; traditional knowledge; and lived experiences from traditional ocean users) and coordinated with planning efforts in California and Washington.

The state should communicate the results of its sea space suitability evaluation process to BOEM to inform any future federal siting and leasing processes. This holds true even if, upon completion of the state process, no suitable sites are found, which may serve to dissuade a federal leasing effort considering the likelihood that a chosen site will eventually be found inconsistent with state enforceable policies during a future Federal Consistency review.

5.3.2.2 Action: Develop and Pursue a Research Agenda for Oregon

For Oregon to determine that an offshore wind presence off the coast of Oregon is consistent with state enforceable policies, a number of state and region-specific research needs have been identified. At the direction of the Ocean Policy Advisory Council, a Scientific and Technical Advisory Group volunteer sub-working group reviewed the current literature around the state of the science for floating offshore wind, coupled with uncertainties and effects of concern specific to Oregon and the California Current Large Marine Ecosystem. Additional feedback was obtained through consultation with the Offshore Wind Energy Roadmap Roundtable that advised in the development of this plan. This review culminated in the creation of an initial set of Research Agenda Recommendations and a framework for further prioritization, included as **Appendix X** of this Roadmap.

The manner in which these uncertainties and questions are resolved may take a myriad of routes, including:

1. Collection of new data from comparable projects and ecosystems around the world that can provide new information regarding the likelihood or severity of an effect of concern;
2. Collection of new data or information specific to Oregon or the CCLME regarding species, habitats, uses of ocean resources, or community socioeconomic effects, which may be measured against relevant state policies;
3. Implementation of an Adaptive Management and monitoring program that can identify changes resulting from an OSW installation offshore Oregon. This strategy would need to be coupled with sufficient baseline information to detect a change and a specified plan of action post-permitting to respond to unexpected changes.

The Oregon offshore wind research agenda should be accomplished in coordination with other research efforts around offshore wind in the US and particularly on the west coast as part of the West Coast Science Collaborative described in this subsection.

Timing of Research Needs

Before leasing, Oregon should work to improve our understanding of the cumulative capacity of the California Current Large Marine Ecosystem to accommodate offshore wind technology from both environmental and socioeconomic perspectives. Further leasing offshore Oregon should not progress until a cumulative impact assessment has been completed. This cumulative assessment can be conceptual in nature¹²³, and need not answer all questions or uncertainties about a specific configuration or technology of a future project in the lease area. Sensitivity analysis of the relative effects from a range of likely project proposals should be included to account for uncertainties that may not be able to be answered before a full project proposal is available, or before a project is installed and the actual effects can be monitored directly. Sensitivity analysis could also include scenarios related to potential changes to ocean species and habitats. The cumulative assessment could provide a basis to evaluate successive individual project proposals relative to the overall capacity “budget” of the region to accommodate the environmental, economic, and social effects of that project. The cumulative assessment could also evaluate viable development scenarios that are less than the maximum development “budget” scenario.

The research agenda timing is also important to the completion of a state-led spatial planning and sea space suitability effort. Some information about the presence of uses and resources important to the state, and the potential effects to those resources, would identify those parts of the potential development areas that are of greater or lesser concern relative to state policies. Spatial planning can also inform the spatial dimension extent of cumulative impacts.

The research and information needs for spatial planning during the next 4-5 years should be focused more on the “inventory” of valuable resources than the potential effects and benefits from a project on those resources. A cumulative impact assessment prior to leasing would then address a range of potential effects under different development scenarios.

Before the state issues a decision that a floating offshore wind project is consistent with Oregon Enforceable Policies, specific questions identified in the Research Agenda relevant to state enforceable policies must be resolved, such that they provide sufficient evidence that the project will

¹²³ For example, a cumulative impact assessment might be based on a “Project Design Envelope” that provides a range of likely technology and design options for a typical floating offshore wind array, coupled with known information about the proposed lease area before more detailed site characterization work has been performed. A cumulative analysis at this phase of the lifecycle will not be able to resolve all uncertainties related to environmental, social, or economic effects of an individual project in the lease site, nor would it be able to anticipate adaptive management measures, community agreements, or other measures that may mitigate the potential effects of a project. However, it may be able to provide reasonable assurance that a generalized new project, combined with other known projects and factors such as upwelling, species migration paths, cumulative area excluded from fishing, and species population effects from cumulative habitat effects, and changing ocean conditions, can fit within the “ecosystem budget” of the California Current Large Marine Ecosystem. The state would require a more comprehensive cumulative and project-specific effects evaluation as part of the Federal Consistency review of a project permit following the leasing phase.

be consistent with state enforceable policies. If research needs are not met at the time of COP review, the state may either extend the period of review until the necessary information is provided or may object to the project. In the event of objection, the project would not move forward barring a successful appeal to the US Secretary of Commerce.

Oregon should begin coordinating with the West Coast Science Collaborative (see section 5.3.2.3) upon its launch) to meld research needs and seek efficiencies in region-wide research efforts.

Oregon supports the early collection of baseline information at a level of resolution to be useful in future development. However, absent Wind Energy Areas to focus a baseline information need, it is likely not efficient to collect fine-scale information about seafloor habitats. Through the course of state-led sea space suitability planning (Section 5.3.2), broad priority areas may be defined (e.g., high wind potential, low conflict zones, examples are the prior WEAs) where it may be appropriate to initiate scalable, habitat-focused baseline data collection that can be refined later if WEAs are designated. Oregon should seek to coordinate with any relevant California baseline research efforts, that are underway or proposed, to promote data compatibility and standardization, facilitating smoother collaboration and supporting efficiency and accuracy.

OPAC and the Oregon Department of Energy should remain engaged in offshore wind research in future years and update the Research Agenda as the state of the science and the industry evolves. OPAC should work with relevant state agencies and other entities to stay abreast of offshore wind technology advancements relevant to Oregon and apply updated knowledge to the research agenda.

Adaptive management planning should be completed prior to permitting for individual OSW projects. State enforceable policies in Part Five of the TSP do require adaptive management plans, but the level of detail of the plan and the thresholds for management actions are not well defined in the policy. The Adaptive Management Plan should include sufficient specificity and “triggers” to provide the state the greatest ability to respond to unexpected effects after the state role in federal permitting decisions has passed.

Funding Support Needs:

The first iteration of a Research Agenda included in Appendix X is incomplete and requires dedicated resources to capture the current state of knowledge relative to the uncertainties and research needs identified.

The funding and implementation of a cumulative impact assessment is uncertain. Based on experience with the Programmatic Environmental Impact Statement (EIS) that was initiated after California’s first leasing round, it is unlikely that a federal agency will lead a cumulative assessment effort prior to leasing in Oregon. Similarly, the offshore wind industry is unlikely to invest in a significant cumulative assessment effort when it is not known which development companies would proceed to a lease. To address this challenge, the State of Oregon should work with the new West Coast Science Collaborative or one of the regional universities to lead a cumulative assessment, supported by a variety of funding sources including the state.

Absent this investment by the state, it is unlikely that a leasing decision would be supported by a cumulative impact assessment. The fallback position would be for the state to proceed with leasing

without a cumulative assessment, on the knowledge that cumulative impacts are required to be included with a project application to be consistent with existing state enforceable policies. Without this assessment, the state could object to the project under its CZMA Federal Consistency authority, and the lease would eventually be forfeited by the developer. This was the strategy taken during the 2024 BOEM leasing decision.

5.3.2.3 Action: Establish a Research Collaborative to build Oregon-specific scientific consensus and coordinate with other west coast states

Funded by the 2024 California legislature, the California Ocean Protection Council has begun the process of establishing a West Coast Science Collaborative (WCSC) dedicated to addressing the regional science and research needs associated with offshore wind development. The WCSC is following the example of the Regional Wildlife Science Cooperative¹²⁴ (RWSC) on the east coast, incorporating fisheries impacts and also including the model of the Responsible Offshore Science Alliance (ROSA)¹²⁵.

The RWSC is hosted by the two Regional Ocean Partnerships on the Atlantic coast, the Northeast Regional Ocean Council (NROC) and the Mid-Atlantic Regional Council on the Ocean (MARCO), with support from the Coastal States Stewardship Foundation.

[Note for reviewers: The proposed structure of the WCSC is currently under development as of September 2025. Additional information will be included when it is available.]

The benefits of joining the WCSC include:

- The WCSC can guide the prioritization and funding of research activities consistent with an Oregon and regional research agenda. This could result in collaborative interstate research efforts that make the most of limited funding and avoid overlapping or duplicative work. There may also be synergies where a research effort in one state could be slightly modified or expanded to address the needs of another state and increase the relevance of the science overall.
- State agencies responsible for making permitting decisions and assessing OSW effects relative to state policies will be able to benefit from the collective wisdom of the WCSC to support science-based decision-making.
- The WCSC has the opportunity to seek scientific consensus among those interests and organizations who will eventually participate in state decision-making through public processes, consultation, or other involvement. This may include state and federal agencies, tribes, fishing communities, academia, environmental non-government organizations, and other interested parties. If successful, the WCSC can be a place for vetting of the science and provide a forum for discussing remaining concerns or uncertainties collectively.

¹²⁴ <https://rwsc.org/>

¹²⁵ <https://www.rosascience.org/>

- The WCSC can integrate multiple types of knowledge, including traditional and indigenous ecological knowledge from Tribes, lived experience from ocean users such as fisheries, and the specific needs of affected communities.
- A regional science entity could play a key role in developing a cumulative impact assessment as described in the Research Agenda action above.

Action Option 1:

The State of Oregon should create a multi-party science collaborative, similar to one starting in California, that brings together state and federal agencies, Tribal staff, university researchers, fisheries users, and other non-governmental interests to be a clearinghouse for the state of the science and direction of resources toward priority research areas. This state body should both act as an independent science collaborative for Oregon and represent Oregon's interests in the WCSC led by California. The Department of Land Conservation and Development should lead the Oregon-specific science collaborative under direction of the Oregon Ocean Policy Advisory Council. The state should also consider a policy mandating consultation with a state science entity when making significant state decisions related to offshore wind energy development, such as procurement, leasing, permitting, etc.

Action Option 2:

Oregon state agencies with relevant expertise (e.g., ODFW, DSL, DEQ, DLCD) should participate in the WCSC led by California. To support representative participation, Oregon state agencies should convene regular meetings with multiple parties within Oregon, report the activities and findings of the WCSC, and gather feedback to advise on state interests. The Ocean Policy Advisory Council could serve as a convening body for interacting with the WCSC and discussing state-specific science and research needs similar to the function of a state-led offshore wind science collaborative; however, this work would have to be balanced with OPAC's other priorities.

Funding Support Needs:

Action is needed by the Legislature to fund and direct Oregon's creation of a science collaborative. As an interim (or permanent) step, the Legislature could support state agency involvement in the California-led WCSC until the appropriate time to consider forming a state-specific science collaboration body if and when offshore wind in Oregon is reinitiated.

There would be added benefit for a fund to be established that would allow the state to join effort with other states on specific research activities and gain cost efficiency of research that would benefit both the state and the region. The Oregon Ocean Science Trust may represent a vehicle for funding offshore wind research or serve as a model for a separate dedicated entity focused on offshore wind energy science and research needs.

5.3.2.4 Action: Funding Support for an Oregon Offshore Wind Research Agenda and Oregon Offshore Wind Energy Science Collaborative

The state should establish a funding mechanism to support implementation of an Oregon Offshore Wind Science Collaborative and an associated Oregon Offshore Wind Research Agenda. Such a fund could follow the model of the Oregon Ocean Science Trust, which was established through Senate Bill 747 in 2013 and is designed to collect and distribute funding to promote ocean and coastal knowledge, research, and monitoring. It is recommended that the mechanism allows third-party grants, donations, or gifts to supplement funding support. An initial focus of an Oregon Offshore Wind Science Collaborative should be to build on the volunteer-led research agenda efforts in this Roadmap and refine state science priorities through a resourced effort.

5.3.2.5 Action: Define a Framework for Monitoring and Adaptive Management Specific to Offshore Wind

For portions of an offshore wind energy project in federal waters, once the state has issued a Federal Consistency decision at the COP phase (prior to construction), there is no formal mechanism under CZMA for the state to hold ongoing oversight or enforcement of the project in the event that effects are different than anticipated or if there is an incident such as turbine component failure. Under the CZMA regulations, a state cannot rescind a decision that a project is consistent with state policies if the effects are later found to be different from those anticipated during the permitting phase.

Part Five of the Territorial Sea Plan requires developers to provide a Monitoring Plan and an Adaptive Management Plan. The purpose of the Monitoring Plan is to, “provide for the implementation of a routine standardized monitoring program for potential impacts on specific resources as specified by the resource inventory and effects evaluation”. The Adaptive Management Plan is intended to, “provide a mechanism for incorporating new findings and new technologies into the operation and management of the project”. The Adaptive Management Plan is required to include performance standards and adaptation measures built on the monitoring requirements such that, “When the monitoring results show that the performance standards are not being met due to the operation of the facility, adaptation measures designed to bring the operation into compliance with the performance standard will be applied to the operation of the project.”¹²⁶ (TSP Part Five)

The PacWave wave energy test facility project led by OSU¹²⁷ provides an example of an Adaptive Management Framework tied to a suite of monitoring plans and mitigation measures designed for a project area off Newport, Oregon¹²⁸. Before a license application was submitted to the Federal Energy Regulatory Commission, OSU collaborated extensively with relevant state and federal agencies to identify multiple uncertainties with the novel project and develop achievable mitigation and monitoring measures to address several potential risks. The state should build on this work to develop adaptive

¹²⁶ https://www.oregon.gov/lcd/OCMP/Documents/TSP_Part5_PublicationVersion_correctedEPs_01172023.pdf

¹²⁷ https://www.oregon.gov/lcd/OCMP/FCDocuments/5.C.2_PacWave_FERC_Vol_III_Appendices_E-O_20190530.pdf

¹²⁸ https://www.oregon.gov/lcd/OCMP/FCDocuments/5.C.2_PacWave_FERC_Vol_III_Appendices_E-O_20190530.pdf

management plans for offshore wind energy projects that are incorporated into the project permits and enforceable by the federal agencies overseeing project activities after permitting. The state should also explore the additional step of instituting Adaptive Management Plans as contractual agreements directly with developers to provide necessary evidence that the project can achieve state policy standards. By making these provisions contractually obligated, the state may have an additional enforcement mechanism and not have to rely exclusively on federal oversight of the permit.

In addition to ongoing monitoring requirements and a regular reporting and collaboration framework, the state should require clear response and accountability measures in the Adaptive Management Plans required under Part Five of the Territorial Sea Plan. These measures would be triggered if ongoing monitoring indicates the existence of unanticipated actual effects of project operation compared to the expected conditions.

During a future amendment of Part Five, the state should consider amending the Adaptive Management Plan requirements to provide further details and standards regarding the expectations for ongoing collaboration and mitigation measures.

5.3.2.6 Action: Clarify and Strengthen Accountability Measures for Offshore Wind Energy Projects throughout Their Entire Lifecycle

At the federal level, following BOEM's approval of the COP, BOEM hands off lead agency duties to BSEE. During construction and operations, BSEE oversees the implementation and maintenance of safety management plans developed by the leaseholder¹²⁹. BSEE also monitors the leaseholder's management and evaluation of structural integrity and critical safety systems to ensure that the facilities are responsible for the operational life of the lease. The agency may conduct scheduled and unscheduled inspections to determine whether the leaseholder is in compliance with laws, regulations, and the terms and conditions of the lease, among other things. BSEE may also conduct investigations if an incident (such as a fire), injury, or fatality occurs. The agency may also take enforcement action, such as issuing noncompliance notices, cessation orders, suspension of operations, and certain lease suspensions, if necessary.¹³⁰

Enforceable policies should be updated so that any emergency response jurisdictions, actions, and post-emergency remedies are clear and timely between the state, BSEE, BOEM, and other relevant federal agencies. 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. The emergency response plans required under Part Five of the Territorial Sea Plan¹³¹ should also require timely notification from project operators in the event of an incident. The state should also separately develop timely notification and involvement procedures for

¹²⁹ <https://www.ecfr.gov/current/title-30/chapter-II/subchapter-B/part-285>;

<https://www.federalregister.gov/documents/2023/01/31/2023-00871/reorganization-of-title-30-renewable-energy-and-alternate-uses-of-existing-facilities-on-the-outer>

¹³⁰ [GAO-25-106998, OFFSHORE WIND ENERGY: Actions Needed to Address Gaps in Interior's Oversight of Development](#)

¹³¹ https://www.oregon.gov/lcd/OCMP/Documents/TSP_Part5_PublicationVersion_correctedEPs_01172023.pdf

affected local jurisdictions and Tribes. Accountability between the State of Oregon, Tribes, OSW developers, and communities needs to consider construction, maintenance, decommissioning, and waste management throughout.

Memorialized agreements with communities and affected ocean users should also include durable lines of communication, grievance processes, and compensation measures for economic or other harms. Enforceable Agreements and accountability measures are further discussed in Section 5.3.1.

Callout: Vineyard Wind Blade Incident in Rhode Island and Massachusetts

Once an offshore wind project has been leased and authorized for construction by BOEM, responsibility for oversight of the project is transferred to the federal Bureau of Ocean Safety and Environmental Enforcement (BSEE). In July 2024, a blade failure on one turbine at the Vineyard Wind project—under construction about 15 miles off the coast of Martha’s Vineyard, Massachusetts—caused one of three turbine blades to break off. Debris, consisting primarily of foam insulation and fiberglass pieces, washed up on local beaches. Local communities expressed concern about the potential impacts of the debris to the environment, marine life, and human health. BSEE sent a team to investigate the incident, according to officials. BSEE called for Vineyard Wind to cease power production and construction and conduct a risk analysis for personnel working in the area. One month following the failure, BSEE allowed Vineyard Wind to resume installation of turbine towers and nacelles and subsequently called for an analysis of the environmental harm caused by the blade failure. While Vineyard Wind conducted debris removal following the blade failure, which the manufacturer attributed to a manufacturing flaw. A year from the incident, BSEE has not completed an official investigation of the environmental and health effects from the blade failure.

A 2025 Capstone project by the OSU Masters of Public Policy Program noted that, “While BSEE was onsite two days after the incident and issued the necessary suspension orders to cease operations while the incident response was underway, their communication to the state and local communities was viewed as insufficient, evidenced by U.S. Representative William Keating’s (MA-9) letter to the agency expressing concern over their lack of communication at the behest of many of his constituents.” The study further documented conflicting answers as to whether BSEE would require or coordinate cleanup efforts in state waters and territory.

In addition to its direct oversight authority, BSEE is responsible for calculating the total amount of financial assurance a lessee is required to provide as part of lease execution. “If these funds are not enough to cover a potential response, the available funds are dispersed by the Office of Natural Resources Revenue (ONRR), with a priority for covering environmental and safety concerns first, as detailed in the MOU between the three agencies (BOEM 2017)” (OSU, 2025).¹³², ¹³³, ¹³⁴

¹³² <https://www.theverge.com/features/760555/vineyard-wind-turbine-blade-break-nantucket>

¹³³ <https://www.gao.gov/assets/gao-25-106998.pdf>

¹³⁴ Baldinger, L. Buys, C., Deines, M., Foley, A., Gustafson-Mecham, C., Harlan, R., Heide, S., Lawson, M., McCaslin, B., Mobley, L., Najam, B. A., Neleyun, G., Nelson, D., Okumu, G., Patrick, E., Rauch, P., Sepulveda, C., Tamplin, S. & Tapia, R. (2025). *Oregon’s offshore wind governance: Policy analysis, process evaluations, and the future of offshore wind development in Oregon* (Unpublished student report). School of Public Policy, Oregon State University. Report prepared under the direction of Drs. Valerie Berseth and Hilary Boudet.

5.3.2.7 Action: Establish Clear Decommissioning Expectations and Require Adequate Financial Assurance for Decommissioning and Incident Response at the Permitting Phase

Another aspect of accountability is related to the importance of sufficient financial assurances and bonding to address incidents that may occur and to support full decommissioning of a project years after the leasing and permitting lifecycle phase. The existing federal regulations¹³⁵ require financial assurance funding to be in place at both the leasing and project authorization phase, as well as decommissioning requirements that also include financial assurance based on the estimated cost of facility decommissioning¹³⁶. Unless otherwise authorized by BOEM¹³⁷, the federal decommissioning regulations require lessees to: (1) Remove or decommission all facilities, projects, cables, pipelines, and obstructions; (2) Clear the seafloor of all obstructions created by activities on your lease, including your project easement, or grant. Lessees may request that certain components remain in place, for example to convert the component to an artificial reef or otherwise be toppled in place.

The state should review the adequacy of these measures as part of its Federal Consistency review, with the following considerations in mind:

- The state should clarify its policies around project decommissioning to require the full removal of project components to the maximum extent practicable¹³⁸, with the purpose of avoiding potential future effects on ocean users such as fisheries. These standards should be applied to Federal Consistency reviews of COPs and future federal Decommissioning authorizations;
- Financial assurance and bonding required by BOEM and/or BSEE must be sufficient to fulfill developers' Decommissioning Plans provided to the state during its Federal Consistency review of the Construction and Operations Plan, considering uncertainties in inflation rates and potential complications;
- Include waste management plans within Decommissioning Plans that evaluate options for dismantling and dispositioning project components throughout project operation and at the end of a project lease, to inform an assessment of the adequacy of financial assurance.

5.3.2.8 Action: Involve State Agencies Early in Site Characterization Activities, Looking Ahead to Uncertainty Management Needs

Following leasing, there is a period of up to five years when the leaseholders conduct site investigation and characterization activities in the lease areas and potential cable corridors to shore as part of developing their project applications to federal and state agencies. The state should be involved early in any post-leasing data collection plans with developers, to increase the likelihood that the information collected may meet the requirements in the Territorial Sea Plan and other state enforceable policies. 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 ensure developers understand

¹³⁵ <https://www.federalregister.gov/documents/2024/05/15/2024-08791/renewable-energy-modernization-rule#sectno-citation-585.516>

¹³⁶ <https://www.ecfr.gov/current/title-30/part-285/subpart-I>

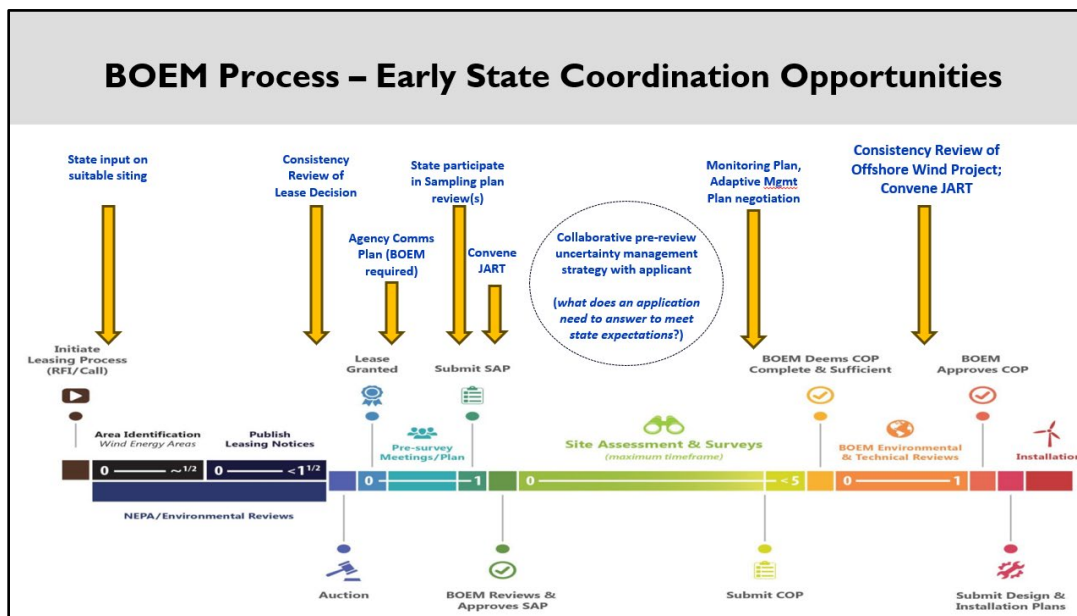
¹³⁷ <https://www.ecfr.gov/current/title-30/chapter-II/subchapter-B/part-285/subpart-I/subject-group-ECFR73f535d05e8b5d9/section-285.909>

¹³⁸ Territorial Sea Plan Part Five currently states, "A decommissioning plan should identify how the project owner will restore the site to the natural condition that existed prior to the development of the site, to the extent practicable." (Source:

https://www.oregon.gov/lcd/OCMP/Documents/TSP_Part5_PublicationVersion_correctedEPs_01172023.pdf)

the information needs the state will have during its Federal Consistency review of a Construction and Operations Plan, years after a lease is issued. Similar conditions should be included in any future offshore wind leasing actions.

Figure 18. Early state coordination opportunities to manage project uncertainty and risk.



5.3.3 Strategy: Recognize the Effects of Shoreside Development as an Essential Component of an Offshore Wind Presence in Oregon

5.3.3.1 Action: State reviews of offshore wind authorizations should consider the cumulative effects of dependent or interrelated shoreside and in-estuary development

The construction, installation, maintenance, and grid interconnection of an offshore wind energy project depends on associated port infrastructure and capabilities to exist within a technically and economically feasible distance of the project location. Development projects to improve existing facilities and capabilities (e.g., Staging & Integration port upgrades, navigation channel modification, transmission infrastructure installation/upgrade) would represent additional effects to state coastal uses and resources that would not exist but for the proposed offshore wind project. To the extent allowable by law, the state should consider during the Federal Consistency review of an offshore wind project's COP whether any dependent or interrelated shoreside infrastructure also demonstrates consistency with state enforceable policies. The state should consider a "but for" test to determine whether a shoreside or estuary development proposal would have independent utility absent the offshore wind project, and if the answer is not, include those related development actions in the evaluation. Offshore wind developers should coordinate with the developers of support projects on the timing of permit applications to present a single holistic "decision package" for state review consideration. Projects that

have separate utility – such as fabrication or manufacturing facilities that could support offshore wind projects in other places – may be reviewed individually.

5.4 Objective: Protect Tribal Cultural and Archaeological Resources, Culturally Significant Viewsheds, Subsistence Activities, and other Interests of Tribes

Note on this Draft: The State of Oregon is currently requesting formal consultation with the federally recognized Tribes in Oregon focused on the contents of this section and the Roadmap in general. The contents of this draft are subject to change based on the outcome of formal Tribal consultations.

Any OSW development would need to be consistent with Oregon’s enforceable policies meant to protect both A) the physical, cultural resources, gravesites, historic sites, and B) the locations that support cultural practices such as gathering first food and spiritual and religious sites. Federal and state governments have an obligation to establish meaningful consultation and collaboration with Tribal governments in the development of federal and state policies that have Tribal implications to strengthen the Government-to-Government relationships with Tribes.

5.4.1 Strategy: Protection of Culturally Significant Viewsheds

5.4.1.1 Action: Amend Part Five of the Territorial Sea Plan to Include Visual Effects of Cultural Significance to Tribes

Through a rulemaking process to amend Territorial Sea Plan Part Five, the visual resource protection policies may be amended to include specific consideration of culturally significant viewsheds for Tribes and to update the geographic areas that qualify as Class I viewsheds. The state may also consider additional qualifying criteria within Class I viewsheds to find the balance between visual resource protection values and the actual visual expression of potential turbines offshore. While DLCD’s Policy Agenda for all rulemaking, including the Territorial Sea Plan, must receive concurrence from the Governor’s office and the Land Conservation and Development Commission, an amendment could identify and inventory viewing locations of cultural importance to Tribes and establish criteria specific to the effects of offshore wind development on those views; however, it should be noted that the outcome of any rulemaking cannot be pre-determined.

Some Tribes may prefer to protect information about the specific location of viewpoints of cultural significance while simultaneously protecting those places from unacceptable visual impact. A challenge for future legislative action would be the process and methods by which culturally sensitive information can be protected from public disclosure. This may be accomplished by including new visual resource standards for culturally significant views separately from identification of those sites, which could occur

as a need arises. This approach may further challenge a state-led sea space suitability process. Another challenge will be how to incorporate rediscovery of information about important locations that may be discovered in the future.

5.4.2 Strategy: 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 uses by Tribes.

Action: Protect Natural Resources as Cultural Resources by Implementing the Actions Identified in Section 5.3 (Protect the Environment and Species) These actions include:

- 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;
- Define a Framework for Monitoring and Adaptive Management Specific to Offshore Wind, including an implementation plan and resources for long-term state oversight;
- Clarify Accountability Measures in the event of emergencies, failures, or other unforeseen harms;
- Involve State Agencies Early in Site Characterization Activities, Looking Ahead to Uncertainty Management Needs;
- Amend Oregon’s Territorial Sea Plan [and other policies as applicable] to Address Gaps Identified in the Roadmap;
- Support Agency Capacity for Building Expertise in Offshore Wind Effects;
- Identify Suitable Sea Space for Development Led by State Interests and Policies, which recommends exclusion of development in fishing areas and habitats important to Tribes;
- Monitor changes to federal environmental protection standards and adopt new state policies as needed to ensure “no net loss” of standards.

5.4.3 Strategy: Protection of Archaeological Resources, including Underwater Villages

5.4.3.1 Action: Place conditions on any future offshore wind leasing or permitting consistent with the coordination and oversight conditions used in the 2024 BOEM leasing decision.

During the Federal Consistency review of the proposed BOEM leasing action in 2024, the state employed the above policies to negotiate a number of conditions related to the protection of archaeological resources.

5.4.3.2 Action: Require Qualified Marine Archaeologists for Certain Offshore Exploration Activities

During any future Federal Consistency reviews of offshore wind leasing, the state should interpret the enforceable policies under ORS 97 and ORS 358 such that in order to have sufficient evidence of

consistency, a marine archaeologist equipped with the knowledge and experience necessary to perform their work in seafloor environments is necessary to be present on survey vessels when conducting geotechnical exploration around certain land forms where there is familiarity from Tribes that the location of the bore may be important. The state should also require an Oregon Qualified Archaeologist (marine or other) to be present when cores are opened onshore.

5.4.3.3 Action: Include the Opportunity for Tribal Observers during Potentially Ecologically Disturbing Activities Offshore

During any future Federal Consistency reviews of offshore wind leasing or Construction and Operation Plans, the state should include a condition that Tribes be allowed the opportunity to have observers aboard vessels for activities with potential to disturb ecological resources. (e.g., sensitive marine resources like ocean floor habitats, corals, inhabitants, migrating whales). The condition should include that Tribal observer requests must be accommodated by project developers to the extent possible, and when not possible, developers must make demonstrable efforts to provide alternate means such as remote observation. Lack of funding should not be the primary rationale for not accommodating Tribal observer requests.

5.4.3.4 Action: Reduce Federal Barriers to Tribal Archaeological Participation through Credentialing Requirements

During any future Federal Consistency reviews of offshore wind leasing or projects, the state should include a condition that Tribal Historic Preservation Officers (or equivalent as assigned by a Tribe) and their designees are exempt from federal credentialing requirements for qualified archaeologists, on the basis that THPOs are their own experts on places of Tribal historic or cultural significance.

5.4.4 Strategy: Protection of Areas Used for Cultural Practices

5.4.4.1 Action: Encourage Local Policies to Protect Cultural Sites

The state through DLCD could encourage and potentially support local governments to establish agreements with Tribes to communicate about potential impacts to cultural resources and options for minimizing and mitigating impacts. Local governments may choose to model their coordination strategies after Coos Bay Estuary Policy 18, which requires the protection of cultural sites in addition to archaeological and historical sites, in consultation with Tribes.

5.4.4.2 Action: Seek legislative action to amend state statutes and rules to exclude cultural resource areas from public disclosure when necessary.

The current draft of the new state rule implementing Goal 5 would require local governments to accept a designation of a cultural area proposed by a Tribe. The local governments would retain the responsibility to run a public process to determine whether a proposed action is compatible with Goal 5 based on an economic, social, environmental and energy (ESEE) analysis.

In discussions with Tribal staff for this Roadmap, participants expressed concern with the idea of local governments keeping an inventory of cultural areas identified by Tribes. Instead, there was a preference for the State Historic Preservation Office (SHPO) to be the keeper and protector of cultural area designations, similar to the way SHPO maintains a database of archaeological resources that are

protected by state law and not subject to disclosure. However, SHPO does not have the resources to take this on at this time. Current state laws do not protect cultural resources from disclosure in the same manner that archaeological resources are protected under ORS 192.345.

5.4.4.3 Action: Require Cultural Site Inventories as Part of the Offshore Wind Process

The state should preemptively conduct 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.

5.4.5 Strategy: Protection of Tribal Fishing

5.4.5.1 Action: Explicitly Include Tribal Fishing Uses in State Fishery Protection Policies

Territorial Sea Plan Part Five fisheries use protection standards specifically reference commercial and recreational fisheries, which is assumed to include Tribal commercial and recreational fishing, but the standards do not explicitly include Tribal ceremonial or subsistence fishing uses. An amendment to Part Five should consider explicitly including these Tribal fishing uses.

5.4.5.2 Action: Develop Model Memoranda of Agreement between offshore wind developers and Tribal governments related to Tribal fishery impacts.

The 7C Fishermen's Working Group effort in California is convening a space where fishing communities are meeting with developers, state agencies, and federal agencies to build a framework for ocean user agreements. Oregon should consider a similar process after any future leasing stage; however, prior to that time, the state can begin early informal workshops with Tribes and fishing communities to discuss their interests in a future negotiation, share information from other states, and begin to develop a model framework and language that clarifies and communicates their interests. DLCD should host a workshop to explore model language that could be used in future Memoranda of Agreement between offshore wind developers and Tribal governments related to Tribal fishery impacts

5.4.5.3 Action: Amend the Territorial Sea Plan Part Five 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.

See Section 5.5.2 for more information.

5.4.5.4 Action: Amend the Territorial Sea Plan Part Five policy around memorialized agreements to make them a firm requirement rather than an encouraged action. Regardless of an explicit policy change, the state should in practice seek evidence of consistency with the fisheries protection policies through memorialized agreements as it has done in past projects.

See Section 5.5.2.4

5.4.6 Strategy: Use Indigenous and Traditional Knowledge in State Decision-Making

5.4.6.1 Action: Incorporate Traditional Ecological Knowledge in the Territorial Sea

Indigenous and traditional knowledge is a recognized source of relevant information and evidence when the state is conducting reviews of offshore wind-related projects, both offshore and onshore for offshore wind support facilities. The state is open to incorporating these kinds of knowledge into the formal state review process. The state should amend the information requirements in Territorial Sea Plan Part Five to specifically require applicants to seek traditional ecological knowledge via consultation and include traditional ecological knowledge for areas potentially affected by an offshore wind project in the developer's application to the state.

5.4.6.2 Action: Include Tribes in a Research Collaborative to build Oregon-specific scientific consensus and coordinate with other west coast states.

The State of California is currently developing a research collaborative that would include state agencies, universities, tribes, fishing groups, and other interests in a shared "science governance" organization. The purpose of the organization would be to assess the state of the science, identify research needs, and interpret new information relevant to the California offshore wind development as it comes in, with an ultimate goal of building a shared scientific understanding and a resource that state agencies could consult when making permitting decisions. The Roadmap process for Oregon is exploring whether a similar model would be appropriate to follow in our state. Such a collaborative would include Tribal representatives and seek to integrate Indigenous and Traditional Knowledge. Tribal capacity to participate in a research collaborative is a significant challenge that the state or others should address through capacity grants or other methods to compensate Tribes for their participation in an ongoing collaborative process.

5.4.6.3 Action: Conduct state-led marine/coastal zone spatial planning to identify suitable sea space for offshore wind development

The Roadmap process is considering whether to recommend a state-led spatial planning process, inclusive of federal waters, the territorial sea, and onshore and estuarine areas. A desired outcome of the effort would be to reveal areas that are viable for development, areas where the state would require additional information, and areas where development may be more challenging when accounting for applicable state standards. The process should be inclusive of multiple forms of knowledge (government, university, and private business information; traditional knowledge; and lived experiences from traditional ocean users) and coordinated with planning efforts in California and Washington.

5.4.7 Strategy: Tribal Engagement Expectations in Future Offshore Wind Processes and Inclusion in Offshore Wind Decision-Making

5.4.7.1 Action: Tribal Government Policy Consideration During State Federal Consistency Reviews

Through Federal Consistency, an additional procedure should be implemented requiring that any relevant policies of Tribal governments that correspond to similar enforceable policies regarding offshore energy of the state will be considered during the review of a proposed project. Formal feedback or determinations from the Nine Federally Recognized Tribes in Oregon regarding whether the proposed project is consistent with existing Tribal government policies will be considered. While the state can't make decisions based on policies of other governments, it can use Tribal government policies as guidance on how to implement its own policies (e.g., ecological protection policies).

5.4.8 Strategy: Opportunities for Co-stewardship and Business Partnership

5.4.8.1 Action: Natural Resource Endowment Fund

The state should explore mechanisms by which it could secure funding from offshore wind developers to establish a natural resource endowment fund, similar to the \$10,000 per MW of nameplate capacity contribution the State of Maine requires as part of its power procurement process for offshore wind. This fund should be dedicated toward ecosystem restoration or mitigation needs that arise through an adaptive management process and should seek co-stewardship opportunities with Tribes in the implementation of restoration measures supported by the fund. The state should develop a prioritization framework to direct funding decisions.

5.4.8.2 Action: The state should include conditions strongly encouraging or requiring (depending on regulatory capability) that Tribes be engaged in overseeing any ground disturbing activities associated with offshore wind development and compensated for this service.

Ground disturbing activities on land or at sea related to offshore wind exploration and development have the potential to uncover or damage archaeological resources or other historical artifacts of interest to Tribes. A potential opportunity exists to simultaneously improve the protection of these resources and provide economic opportunities for Tribes by obtaining services from their historical protection staff to oversee ground disturbing activities performed by the leaseholder.

5.4.9 Strategy: Tribal Mitigation Agreements

There is at least one existing example of a separate Tribal Benefit Agreement (here renamed Tribal Mitigation Agreement) between an offshore wind energy developer on the east coast and a Tribe within the project's sphere of effect. The terms of this agreement are confidential, but a similar concept may be a way to address Tribal interests related to an offshore wind project in a direct and enforceable way.

See Section 5.4.4 for discussion and actions related to the establishment of Community Agreements between offshore wind developers and affected communities. Tribal agreements are separate from other community agreements, but there may be opportunities to combine efforts while considering the unique interests of Tribes. Section 5.5.4 recommends key tenets, guidelines, and actions around the use

of community benefits and other enforceable agreements for Oregon. Two of the key early themes of this group discussion included:

- 1) The term “community” may be defined in diverse ways, and it may be necessary for a developer to enter into agreements with multiple communities of place or practice, including Tribes;
- 2) The term “Community Agreement” does not necessarily mean direct financial compensation, but could include other types of benefits a community or Tribe wants to see, including investment agreements, labor agreements, protective measures, or other commitments.

Currently, the state has no known mechanism to require the development of community agreements as part of a federal consistency review of an offshore wind project. This has been identified as a policy gap in Section 3, and DLCD is consulting with DOJ regarding potential policy options to establish a community net-benefit policy that may provide a basis to require Community Agreements as part of the Federal Consistency review of a COP. [Note: It is uncertain whether the state has the legal ability to require separate agreements on behalf of Tribal sovereign governments to satisfy state enforceable policies. DLCD is currently consulting with the Oregon Department of Justice for further guidance.] .

5.4.10 Strategy: Data Collection, Monitoring, and Access

5.4.10.1 Action: Data Accessibility Conditions in Federal Consistency Reviews

During the 2024 BOEM leasing Federal Consistency review, the state was able to secure a condition requiring the following provisions for data collection and sharing. Similar conditions at minimum should be required in all future leasing or project reviews:

- Share the data and reports included in a Site Assessment Plan (SAP) or Construction and Operations Plan (COP) submission resulting from site characterization and site assessment activities with the Oregon DLCD concurrent with submittal to BOEM, unless information therein is exempt from disclosure under the Freedom of Information Act (FOIA) (5 USC § 552) and the regulations contained in 43 CFR part 2 and at 30 CFR § 585.114. In that case, the leaseholder will provide Oregon DLCD with a redacted copy of the survey reports.¹³⁹
- To the extent practicable, leaseholders should share survey data with Oregon DLCD upon request for purposes of data verification. This data would be shared with the State as a confidential submission. Oregon DLCD would follow any necessary protection requirements for proprietary information.
- Public Availability of Collected Information: Per federal regulation 30 CFR § 585.114, documents and data resulting from research, surveys, and other data collection efforts conducted during the leasing phase by leaseholders that are subject to the Freedom of Information Act will be publicly available to the maximum extent feasible.
 - Accommodate requests from the Oregon DLCD for state agency staff to observe survey activities to the extent feasible.

¹³⁹ While this bullet reflects the condition the state placed on BOEM during the 2024 leasing review, for all future reviews, the state should seek the maximum amount of site characterization information permissible by law.

5.4.10.2 Action: Memorandum of Agreement/Memorandum of Understanding between the state and Tribes for data sharing agreements, subject to applicable information protection requirements.

The state should enter into MOAs/MOUs with interested Tribal governments regarding data sharing post-leasing. These agreements should address interests regarding 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). Agreements should also address resource needs around hosting large datasets.

5.4.11 Strategy: State Role in Sovereign Communications between Tribes and Federal Government

5.4.11.1 Action: The state should seek an MOU with federal agencies (notably BOEM) to clearly outline expectations for simultaneous engagement with state and Tribal representatives, with clearly defined goals and expectations for those interactions.

Tribes, the State of Oregon, and the Federal Government all have varying sovereign interests in the uses and resources of the coastal zone. While the offshore wind 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 best serve our mutual interests. Examples of these phases and aspects include:

- Before leasing areas of the outer continental shelf for offshore wind exploration, notably during the state’s Federal Consistency review of the federal leasing action;
- Before approval of a Construction and Operations Plan by BOEM and the associated permits by the US Army Corps of Engineers, during the state Federal Consistency review of these permits and authorizations;
- In the event of an inadvertent discovery of archaeological resources, either offshore within state waters or onshore within state jurisdiction;
- In the event of a disaster response overseen by the US Coast Guard or the Bureau of Safety and Environmental Enforcement.

5.4.12 Strategy: Tri-Party Communication with Tribes, State, and Developers

5.4.12.1 Action: Require Ongoing Communication Between the State, Tribes, and Developers

The state should include a condition for any future federal leasing actions that stipulate regular meetings between leaseholders, state agency staff, and designees of affected federally-recognized Tribes. This stipulation shall be reflected in the Agency Communications Plan and Tribal Communications Plan required by BOEM as part of leasing. Based on conversations with the Nine Federally Recognized Tribes of Oregon as part of developing this Roadmap, there is an interest in greater alignment with both the state and offshore wind developers regarding expectations for project design, survey activities, and project effects. This direct coordination should occur in the years-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 COP.

A model for state-Tribal-applicant ongoing communication for a coastal project may be found in the Jordan Cove Liquid Natural Gas export terminal project that was proposed in recent years. In the time preceding and during the state review of that project, the Governor’s Office convened a quarterly meeting between relevant state agencies and affected Tribes to share information and perspectives. The Oregon Coastal Management Program has also convened meetings between state agencies, with invitations for Tribal involvement, to discuss significant coastal development projects subject to CZMA Federal Consistency review (e.g., the 2024 BOEM leasing review and the forthcoming Coos Bay Pacific Coast Intermodal Project).

5.4.12.2 Action: Expand Tribal Participation in the Joint Agency Review Teams

The JART requirements currently do not include all of the Nine Federally Recognized Tribes of Oregon as presumptive members. The state should consider amending Parts Four and Five of the Territorial Sea Plan to include all potentially affected federally recognized Tribes in the Joint Agency Review Team (JART) process rather than only the coastal Tribes.

5.4.13 Strategy: Tribal Capacity Needs to Support Offshore Wind Engagement

5.4.13.1 Action: Support Tribal Capacity Needs

In order to participate in an ongoing engagement process for offshore wind planning and development, there is a recognized need for increased Tribal staff capacity. [Note to Reviewers: DLCD is seeking feedback from Tribes regarding capacity needs. The capacity assessment will be updated in future revisions based on feedback received.]

Options to address this capacity need could include:

1. Capacity grants from federal, state, or third-party
2. Cost recovery support
3. Direct support from the Legislature for Full-Time Equivalent staff

5.4.14 Strategy: Protection of Tribal People During Implementation of Offshore Wind Projects

5.4.14.1 Action: Safety and Missing and Murdered Indigenous People Protection Plans

[Note: the draft recommendation below has not yet been discussed with Oregon Federally-Recognized Tribes and requires Tribal review and review by the Oregon Department of Justice. It is provided here as an initial concept to support ongoing consultations and discussions.]

The California Assembly Bill 525 Strategic Plan¹⁴⁰ reported that, “Consultation with tribes and review of relevant research indicates a sharp increase of violence and missing Native American people during an influx of nonlocal workforce supporting the development of a new industry. 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 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 Council¹⁴¹ reported that in June 2023, the Yurok Tribal Court published a report outlining recommendations for preventing MMIP in Humboldt and Del Norte Counties as a result of OSW development.¹⁴²

The state of Oregon should require a Tribal-led safety and Missing and Murdered Indigenous People (MMIP) Protection Plan, with defined protocols to keep Native peoples safe before, during, and after the development project, be part of the Construction and Operations Plan Federal Consistency review. It is unclear whether the state currently has a legal basis to require this plan as an enforceable policy; however, if a community net-benefit policy concept (described in Section 5.5.4) is successful, the state may be able to require the development of a Tribal Safety and MMIP plan as part of demonstrating consistency with this policy.

5.5 Objective: Support Coastal and Regional Communities

5.5.1 Strategy: Protect and Sustain Coastal Communities and Existing Uses

5.5.1.1 Action: Update Oregon’s visual resource inventory and further study community and Tribal values surrounding visual resource effects

Oregon should update its visual/scenic resource inventory in a way that tries to balance identifying large enough areas for viable OSW development, an emphasis on protecting viewsheds important to Tribes, and the “wildness” and scenic value is important to residents and that draws people from around the world to recreate on Oregon’s coast. This may be integrated with the TSP Part Five amendment action. See Section 5.5.1 for further information about this recommended action.

¹⁴⁰ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=257404>

¹⁴¹ https://www.nrdc.org/sites/default/files/2025-05/CA_Offshore_Wind_R_25-05-A_06_locked.pdf

¹⁴² <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>

5.5.1.2 Action: Socioeconomic studies to support offshore wind decision-making

The state should conduct or support socioeconomic studies to better understand and articulate the potential benefits and adverse effects of offshore wind development to recreation, tourism, and local economies resulting from offshore wind development in Oregon— including any shoreside development proposals. The state should work through Business Oregon to conduct studies that identify community effects – both positive and negative – that may result from offshore wind development. Such studies should involve public input. In addition to potential adverse community effects that might require mitigation, the studies should consider social, community, and environmental benefits that could occur with the implementation of a well planned and executed offshore wind project.

The timing of this work may depend on the results of state-led sea space suitability identification process to focus efforts on the most likely affected communities. This study would serve both to provide technical support for community benefit agreement negotiations and to inform state review of offshore wind projects against a future community wellbeing net-benefit policy if one is implemented as recommended in the Roadmap.

5.5.1.3 Action: Assess community needs to support offshore wind development

In addition to the socioeconomic studies described in the action above, the state should assess the community infrastructure and services (e.g., housing, infrastructure, social services) needed to support an offshore wind workforce on the coast. This assessment should be at a level of detail that can support future Community Agreement negotiations between communities and offshore wind developers (Described in Section 5.5.4).

5.5.1.4 Action: Support Local Governments in Amending comprehensive plans and codes to address Identified Gaps

The state should support adequate funding for local jurisdictions to address the gaps identified in the Enforceable Policy Assessment of this Roadmap prior to the permitting phase of a potential future offshore wind energy project or onshore/port developments that would support future offshore wind activities. See the Capacity Assessment in Section 3.4 for more information.

5.5.2 Strategy: Protect and Maintain Optimum Management and Uses of Oregon's Fisheries

5.5.2.1 Include Fishing Communities in Effective and Precautionary Offshore Wind Area Siting

A consistent theme from fishing community engagement in the development of this Roadmap was that the best way to meet the needs of fisheries if offshore wind proceeds in Oregon is through early and effective two-way engagement during the process of selecting offshore areas to lease for potential development.

Section 5.3.2 recommends a state-led sea space suitability planning process to identify offshore areas that would be most compatible with state enforceable policies. Fishing community members who engaged with the Roadmap process expressed a strong willingness to participate in such a process. The state should engage with all sectors of the fishing industry and related secondary industries to address data gaps in the BOEM siting process, including voluntary definition of important areas or acquisition of commercially available datasets.

5.5.2.2 Action: Assess the use of existing state fisheries protection policies in TSP Part Five for Tribal community impacts and amend as necessary to explicitly consider Tribal ceremonial and subsistence fishing uses in addition to commercial and recreational fishing.

The state should amend the Territorial Sea Plan as necessary to clarify that the fisheries use protection standards apply to all fishing uses, including Tribal ceremonial and subsistence fishing.

5.5.2.3 Action: Amend the Territorial Sea Plan Part Five 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.

Currently, the generally applicable fisheries use protection standards focus on the minimization of adverse effects to fishing users from renewable energy development, while more stringent standards apply to areas within the territorial sea that have been formally designated as “Resources and Uses Conservation Areas” or “Resource and Use Management Areas” that presumptively exclude these areas unless the applicant can demonstrate that the project will have no reasonably foreseeable adverse effects on areas important to fisheries. The standards for Conservation Areas further require that there be no practicable alternative site. For a project located in federal waters, it is not clear that these exclusionary policies would apply because they are outside of the formally zoned areas within the territorial sea, although areas in federal waters may have similar high value to state fishery uses. If these exclusionary policies were made more broadly applicable to types of environments rather than specified zones, they would be more clearly applicable in future Federal Consistency reviews of renewable energy projects within the state’s Geographic Location Description, which currently extends beyond state waters to a depth of 500 fathoms¹⁴³.

5.5.2.4 Action: Amend the Territorial Sea Plan Part Five policy around memorialized agreements to make them a firm requirement rather than an encouraged action.

Part Five of the Territorial Sea Plan encourages memorialized agreements between renewable energy applicants and traditional ocean users to address topics of concern or potential conflict. One notable example of this policy in action was an agreement between the Fishermen Involved in Natural Energy

¹⁴³ Note: The DLCD Oregon Coastal Management Program plans to submit an application to the NOAA Office for Coastal Management 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).

committee and Oregon State University as part of the process of developing the PacWave wave energy testing facility off the coast of Newport. Regardless of an explicit policy change, the state should in practice seek evidence of consistency with the fisheries protection policies through memorialized agreements as it has done in past projects.

5.5.2.5 Action: 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.

If an offshore wind leasing process in federal waters off Oregon returns in the future, Oregon should follow the example of the state-led “7C Fishermen’s Working Group” in California, which has convened fishing interests, state and federal agencies, and offshore wind leaseholders into conversations focused on the development of a template for memorialized agreements to “work collaboratively towards a common strategy to avoid, minimize, and mitigate impacts to the fishing industry [from offshore wind energy development] in a consistent and equitable manner”. Senate Bill 286 in the 2024 California legislative session codified into state law the establishment of the California Offshore Wind Energy Fisheries Working Group. Oregon should follow a similar model of engagement to facilitate the development of memorialized agreements that can serve as evidence of consistency with the state enforceable policies protecting fishery uses. Agreements should include clear incident response procedures, enforceable grievance processes, and arbitration frameworks similar to those described for Community Agreements in Section 5.5.1.

5.5.2.6 Action: Include Fishing Community Perspectives in an Oregon Offshore Wind Research Agenda, Oregon-Based Science Collaborative, and the California-Led West Coast Science Collaborative

As described in Section 5.3.2, this Roadmap recommends the establishment of an Oregon-specific multi-party science collaborative whose purpose would be to oversee an Oregon Offshore Wind Research Agenda and continue to evaluate the changing state of science and uncertainty regarding offshore wind effects specific to the uses and resources of Oregon. This state-specific body could interact with the new West Coast Science Collaborative initiated by the State of California in support of its offshore wind development plans to incorporate regional science needs and integrate research efforts along the Pacific west coast. In developing an Oregon offshore wind science collaborative, the state should engage fishing communities and invite their participation, to incorporate experiential observations from ocean users and address the uncertainties and perceived risks of fishing communities.

5.5.2.7 Action: Sustain Ongoing Engagement with Fishing Communities through Support of Fishing Community Groups Focused on Marine Energy

Fishing communities in Oregon are central to the state’s coastal economy and cultural heritage. Their knowledge and perspectives are critical pieces of an equitable, transparent, and responsible offshore wind energy planning process. To build trust and strengthen collaboration, Oregon should adopt practices that sustain long-term engagement, provide clear and structured pathways for fisheries input, and recognize diverse voices within the fishing industry, including commercial, recreational, Tribal, and related support sectors.

Sustained engagement with Oregon’s fishing communities is critical to ensuring that offshore wind energy development is approached with transparency and fairness. The recommendations below highlight best practices for strengthening fisheries input into state processes, drawing on lessons learned from past Oregon experiences (e.g., PacWave), comparative state models in California and New York, and emerging research on stakeholder engagement (Braunbauer *et al.* 2023; Reilly-Moman & Leslie 2025). Collectively, these practices point to the need for Oregon to establish durable structures for two-way engagement that serve fishing community interests, and continue throughout project lifecycles, and can evolve alongside offshore wind development.

Establishing and Sustaining Engagement with Fishing Communities

- Partner with fishing community groups (e.g., Fishermen Involved in Natural Energy (FINE), the Fishermen’s Advisory Committee for Tillamook (FACT), Southern Oregon Ocean Resource Coalition (SOORC), Newport Fishermen’s Wives, Charleston Fishing Families, and others) to strengthen their capacity to serve as engagement and local advisory venues.
- Meet fishing communities where they already gather by attending meetings with existing networks (e.g., PFMC meetings, Commodity Commissions, Oregon Coast Anglers, Midwater Trawlers Cooperative).
- Hold in-person meetings along the coast at venues where fishing communities gather, complemented by virtual options to reduce participant barriers. Offer participant support when soliciting input.
- Establish a statewide communication hub or listserv to ensure consistent two-way information sharing between state agencies, developers, and fisheries stakeholders.
- Identify and support neutral conveners (e.g., Oregon Sea Grant) to facilitate unbiased engagement and education with diverse fishing communities and sectors.

Establishing an Offshore Wind Energy Fisheries Working Group

- Convene a structured working group with representation from commercial, recreational, and Tribal fisheries, as well as secondary industries (e.g., processors and distributors) and coastal ports. Include representation from state and federal agencies, science and research partners, fisheries NGOs, and developers.
- Create clear expectations for working group members to avoid engagement fatigue. Develop a charter outlining framework, goals, and time expectations to promote accountability and transparency. Include feedback from participants to finalize the charter.

- Create a flexible participation structure. Enable working group members to engage according to their capacity, skills, and interests, including contributing to tasks or forming subcommittees as appropriate.
- Resource the group with facilitation, travel and participation support, and technical expertise to ensure thorough and sustained participation.
- Draw on models from California and New York by providing direct compensation to working group members and creating dedicated funding mechanisms supported by state and developer contributions.

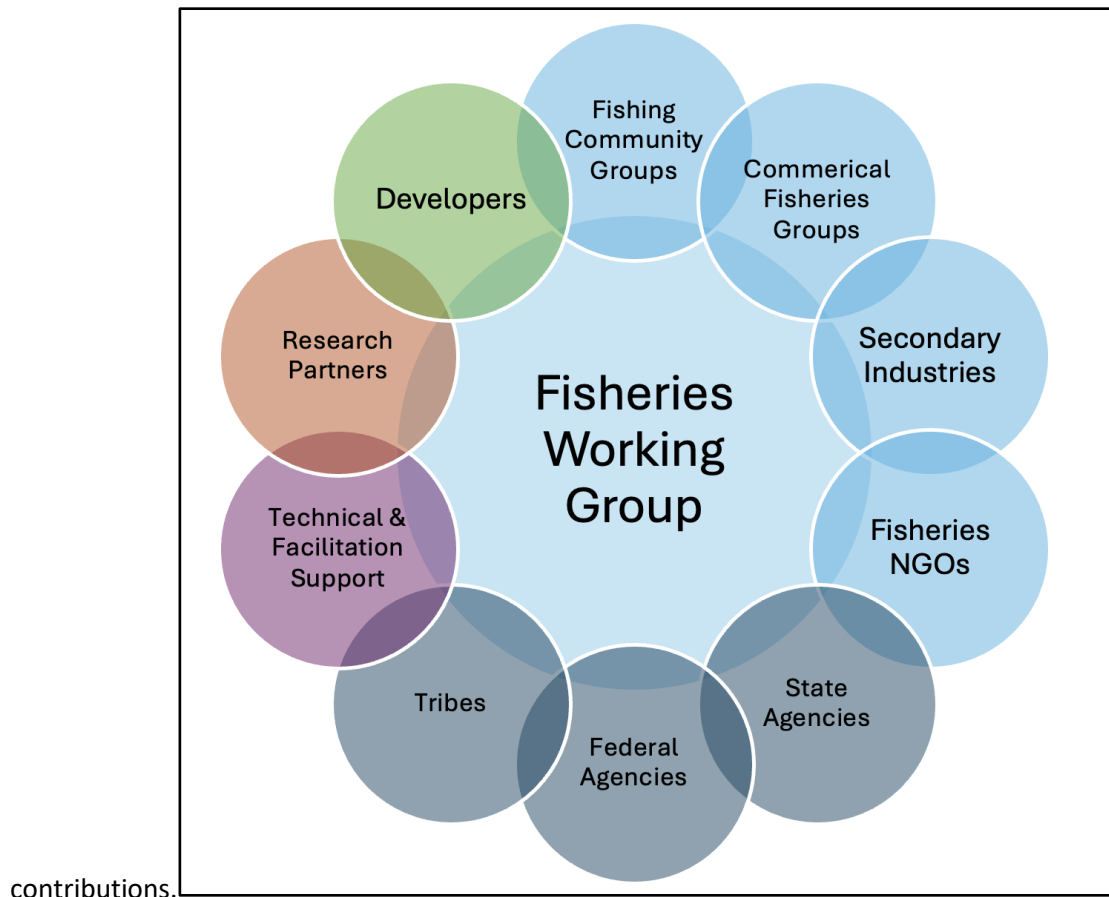


Figure 19. Recommended components of a Fisheries Working Group, illustrating the different constituents, partners, and support roles that contribute to effective collaboration and engagement. Fishing communities include commercial, recreational, and Tribal.

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Including Fishing Perspectives in Science and Research Collaboratives

- Ensure fishing community representatives are invited to participate in Oregon's offshore wind research agenda and science collaborative.
- Incorporate experiential knowledge, such as changes in species distribution, ocean conditions, and gear interactions, into state funded research design and monitoring frameworks.
- Establish a framework to inform representatives how their input is incorporated into research questions, methods, and findings and acknowledge when input is *not* included.

- Create pathways for collaborative research projects where fishing vessels and crews can directly support data collection.
- Coordinate with regional science collaboratives to align research questions and ensure Oregon fisheries' priorities are represented regionally.
- Provide capacity support such as travel stipends or compensated participation to lower barriers for fisheries stakeholders to engage meaningfully in science collaboratives
- Designate the Fisheries Working Group as an advisory body to Oregon's offshore wind research agenda, ensuring fishing community priorities are carried forward consistently.

Framework and Support for Engagement

Oregon should create a long-term, state-supported fisheries engagement framework that combines local-level dialogue, a formal Fisheries Working Group, and integration of feedback into siting, research, and management. This framework should be backed by dedicated state funding, neutral facilitation, and clear channels for transparent communication. By institutionalizing fisheries engagement in this way, Oregon can ensure that fishing communities remain active partners and have agency in decision-making as the state explores offshore wind energy as an energy resource.

5.5.3 Strategy: Recognize the Effects of Shoreside Development as an Essential Component of an Offshore Wind Presence in Oregon

See Section 5.3.3 where this Strategy is also discussed.

5.5.4 Strategy: Enforceable Community Agreements to Support Coastal Communities

Community benefits from offshore wind development can take multiple forms depending on the community affected, the needs and interests of that community, and the nature and scale of effects that benefits are intended to mitigate. It is important to recognize that community benefits focused solely on financial compensation or investment are just one tool for addressing and securing community interests. Utilizing a comprehensive Community Benefit Agreement or other legally enforceable agreements can also address other aspects of an offshore wind project such as protective measures and commitments or monitoring/mitigation measures not otherwise required under a permit or policy. It is also important that any agreement has clear enforcement mechanisms that may reach beyond the permitting phase of a project into the construction, operation, and decommissioning phases.

While direct financial compensation should be a last resort for damages to the property or livelihoods affected by an OSW project, there may also be instances where funding on the front end for research, community engagement, or other early investments can be a useful part of a community agreement

that promote community well-being. It is also important to incorporate the concept that projects with generational impact should have generational oversight, benefit, and mitigation of impacts.

In the best-case scenario, the state of Oregon should consider supporting groups, Tribes, and local governments in developing and utilizing a comprehensive Community Benefit Agreement (CBA) or other legally enforceable agreements to address other aspects of an offshore wind project such as protective measures and commitments or monitoring/mitigation measures not otherwise required under a permit or policy. It is also important that any agreement has clear enforcement mechanisms that may reach beyond the permitting phase of a project into the construction, operation, and decommissioning phases. In this approach, the State of Oregon could help collate several agreements into a “book of agreements to protect and preserve the diverse interests and stakeholders.

Under the existing federal leasing process for offshore wind, BOEM instituted a multiple-factor auction format by which a leaseholder may obtain “bidding credits” by committing to make qualifying monetary contributions toward achieving beneficial community outcomes. In its final sale notice for the proposed Oregon leases, BOEM offered bidding credits for bidders who entered into community benefit agreements or invest in workforce training or supply chain development. BOEM offered a 15 percent workforce training and/or supply chain bid credit, a 5 percent Lease Area Use CBA bid credit and a 5 percent general CBA bid credit, for a total credit of up to 25 percent of the total lease bid amount. It is important to note that these community benefit agreements do not serve as mitigation measures for the impacts of offshore wind. In discussions with BOEM staff, it was explained that the bidding credits offered during leasing represented the “floor” for the total amount of community benefit that may ultimately result from an offshore wind project, and any additional community benefit agreements would either be the result of voluntary action by the leaseholder or result from other applicable state or federal requirements.

BOEM Proposed Bidding Credits for Oregon

In the Final Sale Notice for the Oregon WEAs, BOEM stated that it will grant bidding credits to bidders that commit to one or more of the following, subject to review of the bidder's BFF and Conceptual Strategy.

- i. Supporting workforce training programs for the floating offshore wind industry or supporting the development of a domestic supply chain for the floating offshore wind industry, or a combination of both; or
- ii. Establishing a Lease Area Use Community Benefit Agreement (Lease Area Use CBA) with one or more communities, stakeholder groups, or Tribal entities whose use of the geographic space of the Lease Area, or whose use of resources harvested from that geographic space, is expected to be impacted by the lessee's potential offshore wind development; or
- iii. Establishing a General Community Benefit Agreement (General CBA) with one or more communities, Tribes, or stakeholder groups that are expected to be affected by the potential impacts on the marine, coastal and/or human environment (such as impacts to visual or cultural resources) from activities resulting from lease development that are not otherwise addressed by the Lease Area Use CBA.

There are multiple different types and structures for community benefit agreements. The Roadmap Glossary includes definitions and distinctions for differing types of agreements, including Community Benefit Agreements, Public Community Benefit Agreement, Private Community Benefit Agreement, Lease Area Community Benefit Agreement, Good Neighbor Agreement, Project Labor Agreement, and Tribal Benefit/Mitigation Agreement. The Roadmap uses the broad term “Community Agreement” to mean a legally binding, negotiated agreement between a project proponent/developer and a community, often represented by a coalition of community group(s), outlining benefits they will receive in return for their support or non-opposition of a project.

The discussion and negotiation of community benefits and other enforceable agreements (Community Agreements) require ample time, broad participation, good information, and resources to organize and support community participation. The state can play an important role in convening and supporting these conversations.

Tenets of Community Agreements for Offshore Wind:

1. The term “Community” may be defined broadly and may include communities of place, practice, cultural identity, or other organizing concepts.
2. Community Benefits processes and outcomes should be consistent with the following *Core Values*:
 - a. Inclusivity
 - b. Transparency
 - c. Public Leverage
 - d. Accountability/Oversight
 - e. Equity for people who need the most support (e.g., working families, low-income people, veterans, seniors, Latinx people, and workers who speak limited English)
 - f. Community Benefit Agreements are not intended to be a panacea to address all potential effects of offshore wind. Some effects may only be able to be addressed through avoidance.
 - g. Communities – especially fishing communities - are not interested in being “bought out” of a multi-generational way of life.
3. Multiple communities may have different community agreements that could be combined in a “book of agreements”.
4. It is important to provide for community capacity early (before leasing) to build coalitions, identify clear needs, and engage on a level playing field. This may include pre-development grants, support for trusted intermediaries, or support for technical/legal assistance to communities. Developers and/or third-party organizations should consider moderating community meetings early in the process to introduce Community Benefit Mechanisms.
5. Community Agreements should have enforceable mechanisms that allow remedies after the permitting phase. Examples of enforceable mechanisms may include:
 - a. Contracts denoting mutual agreement, where parties to the contract have the ability to seek enforcement or remedy through the court system or an agreed alternative dispute resolution;
 - b. Host agreements;
 - c. Grant agreements with public entities;
 - d. Leases and operating agreements with public entities;
 - e. Power purchase agreements involving an energy utility or public regulator;

- f. The same project may have both private agreements and public agreements.
 - g. Enforceable mechanisms should have measures that provide access to information necessary to monitor whether the agreements are being upheld, without requiring action through the courts.
- 6. Community agreements need not be just financial in nature and may include other types of agreement such as:
 - a. Protective measures;
 - b. Prescriptive Mitigation actions;
 - c. Monitoring actions;
 - d. Behavioral agreements (e.g., engagement, data sharing, response to harm);
 - e. Investments in infrastructure, human capacity, or other community needs;
 - f. Revenue sharing agreements;
 - g. Information access agreements (related to enforcement);
 - h. Emergency response notification, processes, and procedures;
 - i. Liability agreements.
- 7. Community agreements should be adaptive and open to revision and review over time as conditions change or community needs change. Some community needs may not present themselves for years after the permitting process. An agreement may include parameters on how to renegotiate/revise the agreement, exits clauses, community endowments overseen by the community, mediation support agreements, or other elements to govern the ongoing maintenance of the agreement over time.
- 8. Community agreement conversations may be weaved into existing community plans and conversations wherever possible (e.g., community health improvement plan processes, economic development planning, land use plans, capital improvement plans).
- 9. The role of the state may include:
 - a. Provide legal mechanism to require or incentivize development of enforceable agreements
 - b. Support conversations between affected communities and project developers
 - c. Technical and financial support of communities or third-party coalitions
 - d. Review Community Agreements relative to any relevant enforceable policies or procurement/grant requirements during Federal Consistency reviews or other formal authorization processes related to an offshore wind project.
 - e. Act as party to a benefit agreement, distinct from other conditions of concurrence under the state's Federal Consistency authority. Acting as party to an agreement may provide additional mechanisms for state involvement and enforcement after the federal permitting phase of a project.
- 10. Community Agreements should not strictly bind communities from withdrawing support if warranted. Examples of conditions that may trigger the "fair" withdrawal of support from a project include: a) Conditions change and agreements don't change to match; or b) Terms of agreements are not honored.
- 11. Balancing Needs with Long-Term Goals: Offshore wind projects span decades, making it challenging to address short-term community needs while planning for long-term outcomes. Projects with a generational impact should have generational oversight and benefit.
- 12. Some risk will remain even if there is a benefit agreement. It is important to consider whether the remaining risks are likely, acceptable, and reversible.
- 13. Informational events and opportunities can provide a venue where interested communities can meet one another and start to build common coalitions.
- 14. Community Agreements should include human rights and safety assurances, including a requirement for Tribal-Led Safety & Missing, Murdered, and Indigenous People (MMIP) Protection Plans for workforce influx (California DOJ's MMIP model is a precedent).

15. Community Agreements may include revenue-sharing with Tribal and local governments for housing, childcare, workforce development, and safety resources.
16. Community Agreements may be an opportunity to secure power affordability and market viability measures, such as Joint Purchasing Agreements or other buyer aggregation tools so energy costs don't fall on rural and low-income ratepayers.

Resource Needs to Support Community Agreement Engagement and Negotiations

It is important to provide for community capacity early (before leasing) to build coalitions, identify clear needs, and engage on a level playing field. Capacity is also needed on an ongoing basis to support the negotiations, which may require significant time and information about community needs or effects on communities from offshore wind development. To identify the affected communities at the outset, there is also a need for community outreach, notice procedures, access to facilities, notetaking, translation services, and meeting support that will also require resources early in the process. There are also potential state resource needs related to providing technical resources, relevant information to community needs, ongoing monitoring and enforcement of community agreements, if the state is a party to those agreements. To increase community capacity and transparency, the state should support the inclusion of community liaisons/navigators and facilitation grants to help small towns and Tribes engage in community agreement conversations.

Important Historical context of CBAs:

The first legally-binding Community Benefit Agreement arose out of a community coalition effort in Los Angeles to ensure the development of the Staples Center (See Staples Center CBA) ensure benefits to local residents-- such as first source hiring, job training, public park construction, affordable housing development, and a living wage policy—were made as a legal condition to development.

In essence, community benefit agreements arose out of community stakeholders advocating to ensure local private development balanced both the needs of the developer and impacted communities. One of the attorneys involved in the Staples Center CBA was Julian Gross, one of a handful of experts who shared their expertise with the roadmap subcommittee in the development of this recommendation.

Case Study: AGREEMENT BETWEEN THE OREGON FISHERMEN'S CABLE COMMITTEE, INC., AND TYCOM NETWORKS (US) INC (example)

An agreement between Oregon Fishing vessel owners and the Tycom Network that aims to create co-existence between vessel owners and the installation of submerged fiber optic cables. The agreements aim to ensure communication between the signatory parties aimed to “minimize risk to, interference with and/or interruption of commercial fishing activities and of submarine fiber optic cable operations.”

Case Study: Vineyard Wind Tribal Benefits Agreement with Mashpee Wampanoag Tribe

The Vineyard Offshore team and the Mashpee Wampanoag Tribe began engaging in 2016 during the initial stages of developing Vineyard Wind 1. According to the press release “The cornerstone of this collaboration is the creation of the Mashpee Wampanoag Tribe Offshore Wind Community Fund. The Fund will support various initiatives including scholarships, wastewater projects, language

reclamation, workforce training, and importantly, tribal capacity to engage with offshore wind projects.” The agreement was formally ratified February 14, 2024.¹⁴⁴

Case Study: Humboldt Project Labor Agreement

The Humboldt Project Bay, Harbor, Recreation, and Conservation District signed a project labor agreement with the State Building and Construction Trades of California that included key provisions such as local hire or coastal community members and tribal members, targeted hire of disadvantaged workers, small business utilization goals, and ensuring apprenticeship training and union wages.¹⁴⁵

Case Study: Broadway Corridor Community Benefit Framework and CBA

The Broadway Corridor, which encompasses the downtown Portland U.S. Postal Service site, is a key opportunity site for high-density employment, mixed-income housing, and signature city attractions and amenities.

Prosper Portland, the city of Portland’s economic development agency, put together a steering committee that developed a community benefits framework that received public input, and ultimately developed and RFP and interviewed and evaluated several prospective developers interested in developing the parcel of land.

Once a developer was selected, a coalition of labor, community, and business approached the Developer and Prosper Portland to negotiate a Community Benefits Agreement to further advance community-oversight, accountability, and further ensure local workforce, apprenticeships, small business, and local housing opportunities from the development.¹⁴⁶

5.5.4.1 Action: Explore creation of new enforceable policies to require large-scale coastal development have a net benefit to coastal communities

There is currently no policy in the state that would require the presence of a CBA to find a project consistent with enforceable policies during the review of an offshore energy project. While east coast states have not been able to require CBAs as part of their federal Consistency reviews, they have been able to require fisheries compensatory agreements. The Coastal Zone Management Act (CZMA) does not allow states to require payment to a state to offset coastal effects, but if a state has a mitigation policy for a coastal effect to a specific use, then a voluntary agreement between an affected community and company that is negotiated outside the formal review process can be used by the state as evidence that the project satisfies the policy and consequently provide Federal Consistency concurrence. Absent a voluntary agreement that adequately mitigates a reasonably foreseeable effect, the state would be in a position to determine there is insufficient evidence to verify consistency with the “no unmitigated adverse effect” policy. Therefore, it has become the expected norm for prospective OSW development companies to seek voluntary agreements for states that have fisheries mitigation policies.

¹⁴⁴ <https://mashpeewampanoagtribe-nsn.gov/news/2024/3/21/mashpee-wampanoag-tribe-and-vineyard-offshore-forge-historic-tribal-benefit-agreement>

¹⁴⁵ <https://lostcoastoutpost.com/loco-media/loco-media/blog/post/37340/Humboldt%2BBay%2BPLA%2B8.3.23.clean.pdf>

¹⁴⁶ <https://www.broadwaycorridorpx.com/about-us>

A “community wellbeing policy” could essentially apply the same framework that has allowed fisheries compensation agreements to exist and support communities at the state level by creating an additional motivation for companies to pursue community agreements. This approach to amplifying CBAs through the state’s Federal Consistency review does not limit the ability for a community and developer to enter into a CBA that includes provisions beyond what the state would require for concurrence with state policy.

The State of Oregon should update its enforceable policies and take other actions to require or incentivize the development of Community Agreements that provide benefits to the communities most impacted by OSW development. This includes:

- Expectations that community benefit, or similar enforceable agreements be negotiated with impacted communities and how those agreements will be negotiated;
- Labor standards with preferences for local employment, wages, and other elements consistent with the labor standards in HB 4080 and similar land-side energy development; and
- Expectations that Tribal benefit, or similar enforceable agreements be negotiated with impacted Tribes and how those agreements should be negotiated.

Oregon’s new solar siting rules in [OAR 660-023](#)¹⁴⁷ contain requirements for community benefits and could be a model on which to establish a similar net community benefit policy for offshore renewable energy. The rules require all applications for a new solar generating facility in solar resource areas to identify how the project will contribute to addressing community needs and benefits, and they empower local counties to approve community benefit proposals submitted by the applicant when substantial evidence in the record demonstrates that the proposed contributions meet standards for meaningfulness and reasonableness, will serve to help improve a community’s social health, well-being, and functioning, and community engagement in the development of contribution proposals.

Section 4 of the Roadmap identifies potential options for how a net community benefit policy could be incorporated into the state’s enforceable policy suite for either project development in the ocean or shoreside support projects **[Note for Reviewers: this concept is still being explored by DLCD in consultation with legal consultants and OR DOJ].**

As part of demonstrating consistency with a community benefit policy, should one be established, the state should require that project proponents develop a clear statement of community impact that can help to establish the connection between community agreements and the effects-based policies they are intended to meet. This community impact statement may also serve to help communities in benefit negotiations.

5.5.4.2 Action: Promote and Pursue Enforceability and Accountability for Community Agreements

Community agreements should have enforceable mechanisms that allow remedies after the permitting phase. In implementing potential state enforceable policies around Community Agreements, the state

¹⁴⁷ https://www.oregon.gov/lcd/LAR/Documents/20250213_660-023.pdf

should seek evidence of consistency via enforceable agreements (e.g., contracts, memoranda of understanding, or other enforceable mechanisms) with affected communities. Absent sufficient evidence of consistency, the state would be in a position to object to a proposed offshore wind project under its CZMA Federal Consistency authority due to unmitigated coastal effects. This outcome presupposes that the state has relevant enforceable policies in place (See Section 4).

Once an agreement is in place with contractual or other enforceable mechanisms, those mechanisms would continue to be effective past the completion of the state's Federal Consistency review of the project authorizations, and the agreements would be enforceable by the parties to the agreements without direct involvement from the state.

Additionally, the State of Oregon, including relevant local government and ports, should explore how it could advance community benefit agreements and other legally enforceable agreements through contracting for any upgrades related to offshore wind development for ports, and other infrastructure improvements or land transfers. In these scenarios, local, state, and port governments could possibly be the owner of the project and therefore may have ability to agree to community agreements.

5.5.4.3 Action: State Support and Guidance for Convening Community Agreement Negotiations

Community Benefit negotiations should involve primarily affected communities and developers; however, ongoing research has indicated that the involvement of third-party organizations functioning as conveners, trusted brokers, community advocates, or capacity builders can improve outcomes for affected communities.

The state should be involved in future Community Agreement conversations; however, the state should be mindful of the many roles it could be playing as it relates to offshore wind. Because the state could eventually act as a reviewer of Community Agreements against future enforceable policies focused on community net benefit, it is important that it maintains neutrality and trust among all parties in any negotiation. Rather than directly lead community negotiations as a convener or facilitator, the state should support the involvement of a facilitator or trusted-third party convener to ensure inclusiveness, transparency, and collaboration in the potential development and negotiation of a Community Agreement.

If the state has authority over defining the communities for which a community net-benefit enforceable policy would apply, the state may use its Federal Consistency role to elevate communities not otherwise included and secure a role in the conversations through that recognition.

The state, via its Coastal Management Program, should develop a framework and guidance for community benefit and other enforceable agreement processes, relative to relevant enforceable policies. The state may provide other support for community benefit negotiations in the form of capacity grants or direct technical assistance, or the state may advocate for developers to provide funding for community capacity as part of the BOEM lease agreement.

5.5.4.4 Action: Explore Community Agreement Requirements in Power Procurement Policies

The state should explore options within power procurement policies and processes to create a framework, Request for Proposal, and selection process for power off-taking that would include community agreement requirements. The state should consider adopting policies that could further create market signals to build offshore wind with conditions for community benefit agreements. For example, the state of Oregon could adopt an Energy Procurement policy that offtakes offshore wind energy and other renewable energy resources. That policy could include the creation of a steering committee, that includes local government, tribes, state agencies, and diverse stakeholders. The review and selection of energy could look at qualities such project soundness, cost (impact to ratepayers), project delivery/timelines, and community benefits in the form of legal agreements (Tribal, community, good neighbor, etc.).

The state could also explore adopting market-incentives that include the requirement of broad stakeholder engagement and inclusion of community benefit agreements and Tribal Benefit Agreements.

Another policy approach could be expedited permitting for projects with broad support from local government, tribes, and diverse stakeholders in a “book of agreements”.

5.5.4.5 Action: Fulfill the Resource Needs for Community Agreement Capacity

The state should explore mechanisms by which to support communities in engagement with community agreement conversations. One option would be to consider establishing a fund for pre-development grants, support for trusted intermediaries, or support for technical/legal assistance to communities. Another option would be for the state to negotiate inclusion of these community engagement and community agreement support activities as bid credits under a future BOEM multi-factor auction framework, or as conditions for the developer on any future lease sales, but it is unclear how the state would have a policy against which to object to leasing if this support is not included. Other financial options may warrant exploration, such as payments in lieu of taxes (PILT), franchise fees for existing public infrastructure right-of-ways or transmission, construction bonds or other bonding mechanisms to raise fees, or other direct revenue raising measures.

5.5.4.6 Action: Conduct Community Needs Assessments to Support Future Community Agreement Negotiations.

See Section 5.2.3 for more information.

5.6 Objective: Support the Creation of New Economic Opportunities from Offshore Wind Under Alternative Futures

Exploration and development of identified supply chain opportunities are common elements of alternative futures with or without turbine arrays being located offshore Oregon (Paths 2, 4a, and 4b). The scale of the opportunity is likely to be different if Oregon does not host an offshore wind energy presence and would rely on the timing and needs of development in other places like California, British Columbia, or overseas. The actions identified in this section recognize the uncertainty regarding the scale of the supply chain opportunity and are intended to facilitate the identification and assessment of the opportunity and match it with Oregon's industrial and research strengths.

Oregonians should benefit to the greatest extent possible from the economic opportunities associated with OSW development and generation, including opportunities from manufacturing components and vessels, providing maintenance and operations offshore, workforce training, portside services, cutting edge research and development, and supporting power and utility operations onshore. Oregon should also 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 OSW energy industry.

In order for Oregon to realize the market potential of a supply chain industry to support offshore wind energy development in the region and across the world, investment in establishing a local and/or regional supply chain to support the industry is needed. Oregon has an opportunity to support efforts to develop a local supply chain that can fabricate, manufacture and produce components and associated equipment at a scale necessary to serve anticipated OSW projects.

5.6.1.1 Action: Senior state official to coordinate with California and Washington regarding supply chain fulfillment for the west coast

Establish public and private sector leads to shepherd and coordinate economic development programs for offshore wind over the long-term. This should involve a senior level State official or body to coordinate across State agencies and implement Statewide economic development programs for offshore wind. This should also be complemented by a private sector lead outside of State government that focuses on offshore wind energy-related business development, either through an existing or new initiative

5.6.1.2 Action: State-led supply chain market opportunity assessment, inclusive of California and international markets

The state should lead an assessment that identifies local supply chain companies and matches their capabilities to existing and expected opportunities. The objective of the assessment would be to garner supply chain insights to inform future strategic state-level investments, initiatives and policies that will enable companies throughout the supply chain to make more targeted and meaningful connections and partnerships. The assessment should involve coordination with other states and international markets to understand the nature and scale of supply chain needs that Oregon may be able to serve. Business

connections could also be helped by creating an Oregon Offshore Wind Supply Chain Registry to identify firms with readiness to provide manufacturing, vessel, and support services to the offshore wind industry that could benefit existing businesses and help identify positive opportunities for collaboration.

5.6.1.3 Promote relationships between Oregon businesses and interstate or international markets

After completion of an Offshore Wind Supply Chain Opportunity Assessment, the state should support the creation of Oregon-specific market opportunities in offshore wind supply chain servicing through relationships, business intelligence, and market analysis.

5.6.1.4 Action: Understand and Prepare for Future Port Development Needs to support Offshore Wind

Oregon can develop a Port Readiness Plan that identifies investment needs related to supply chain development in concert with other port needs to support offshore wind assembly, manufacturing, installation, and maintenance. Oregon should coordinate with other west coast states on a coastwide port development plan to meet the potential future needs of the offshore wind industry, considering different build-out scenarios. There are also coordination opportunities with other development proposals for Coos Bay, such as the proposed Port of Coos Bay Intermodal Container Facility project, to align future needs. All port development plans should be integrated with existing estuary management plans and other applicable enforceable policies.

5.7 Objective: Position Oregon to have an Offshore Wind Workforce that is Housed, Trained, and Equitable

5.7.1 Strategy: Strengthen and Enforce Labor and Safety Standards

The state should amend policies as necessary to strengthen and enforce labor and safety standards, especially by strengthening the HB 4080 labor standards as part of Oregon’s enforceable policies. Labor and workforce safety standards should also be consistent at sea with those standards on land. Additionally, the state should establish a framework and enforceable policy basis for Community Agreements, inclusive of project labor agreements and other workforce-related agreements (See Section 5.5.4.

5.7.2 Strategy: Match Workforce Development with Workforce Needs

5.7.2.1 Action: Develop a workforce development and training plan

This action is also discussed in Section 5.2.3.4. If offshore wind planning in Oregon proceeds to Leasing, or if the state is successful in identifying supply chain opportunities that may result in significant workforce demand, the state should assist in the coordination and development of a workforce

development and training plan. The plan should focus on matching workforce development with workforce needs and ensure Oregon has an OSW workforce development and training strategy in place for when the time is right. The plan should also coordinate workforce development needs with Port and Supply Chain readiness needs.

To address workforce training needs, the state should promote pre-apprenticeship programs in community colleges and high schools—particularly NABTU’s Multi-Craft Core Curriculum—as a low-cost, barrier-free approach for coastal and statewide residents to gain exposure to a career in the building trades, receive the soft and hard skills needed to enroll in an apprenticeship program, and ultimately have a preferred entry to a union apprenticeship program of their choice. Currently, the Oregon Coast Community College utilizes the Multi-Craft Core Curriculum as part of their Pre-apprenticeship for Construction Trades (PACT) program.

The plan should also include community safety and well-being considerations, including a Murdered and Missing Indigenous Peoples (MMIP) training program that would be mandatory for all contractors and workers performing work on offshore wind development and supply chain projects.

5.7.2.2 Action: Assess community policy and investment needs to support a future offshore wind workforce, including housing, infrastructure, and social support services

See Section 5.5.1.3 for more information.

5.7.2.3 Action: Assess the compatibility of Port and Supply Chain readiness needs with local policies and estuary plans and seek solutions

See Section 5.6.1.4 for more information.

6 GOVERNMENT CAPACITY ASSESSMENT

Oregon House Bill 4080 (2024) directed DLCD/OCMP 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”. The capacity assessment was developed in consultation with the network of state agencies, local governments, and Tribal governments with jurisdiction or sovereign interest in the coastal zone to gain insight INTO their needs if offshore wind energy projects were to be developed off the coast of Oregon. State agency partners were surveyed to forecast staffing needs and expertise required for effective program operation, with 11 agencies participating. Local government partners from seven coastal counties and 23 cities identified capacity needs such as increased staff, funding, and various other resources. As of November 2025, Tribal governments’ capacity needs are still in development.

Since HB 4080 did not provide specificity regarding “capacity”, DLCD took a holistic approach. DLCD asked state agencies, local governments, and Tribal governments to consider the entire lifecycle of offshore wind energy development, and in some cases were asked to consider separate and distinct phases of a project and other related projects such as shoreside development, and all aspects of their capacity, including staff, expertise, and other resources. The process involved surveying each partner group separately, through email and meetings.

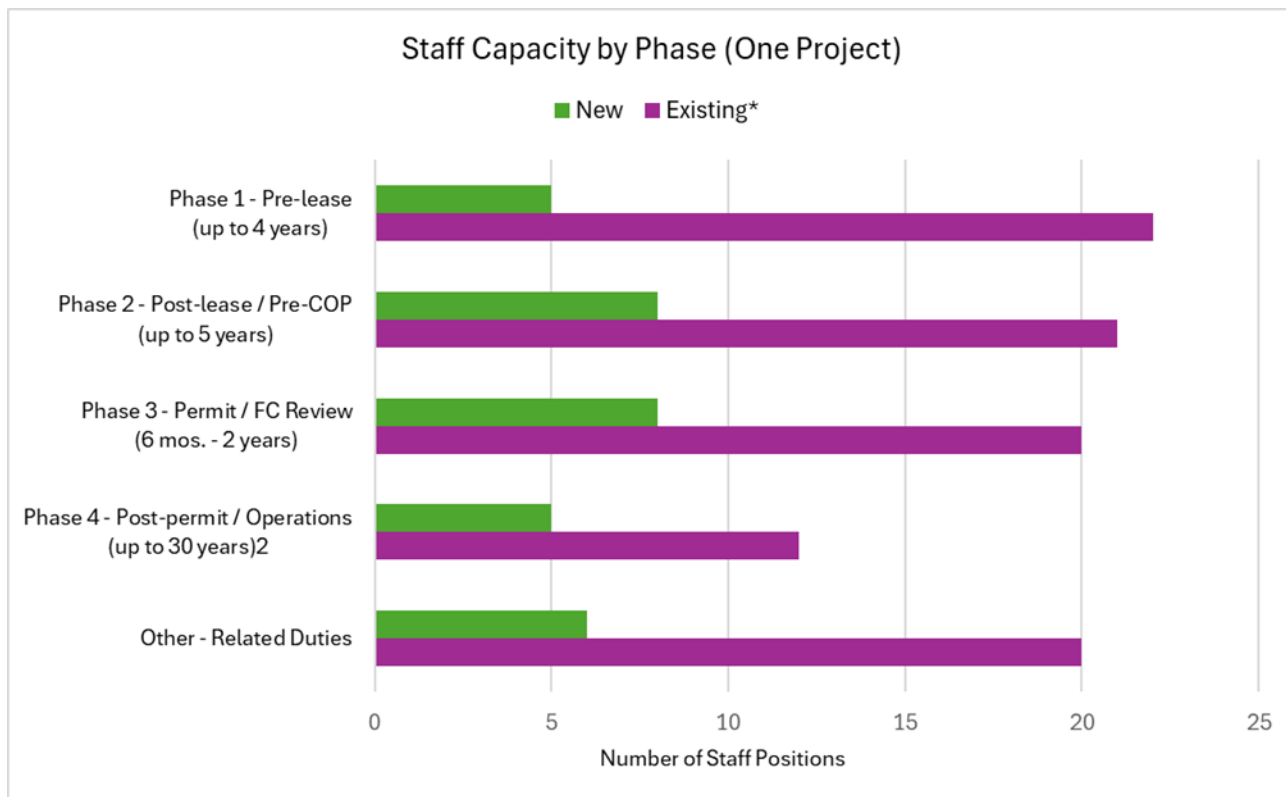
STATE AGENCIES. Regarding the state agency assessment, which yielded the most data for this assessment, partner agencies were asked to strive for a model of stability and forecast staffing levels that offered a team with sufficient expertise and a program that ran smoothly. Agency capacity needs vary depending on their level of involvement, whether they have permit authority or their review supports Federal Consistency reviews led by DLCD, or both. 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. The following are general observations from the state agency assessment:

- 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 throughout the lifetime of an offshore wind energy project, regardless of whether one project or two concurrent projects are occurring.
- Two agencies proposed reallocating the duties of five existing staff in order to perform necessary duties in the review of the development. 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.
- These four agencies proposed new staff: DEQ, 1 position; ODFW, 1-4 positions; DSL, 5-6 positions; and OPRD, 2 positions.
- Some agencies, such as DSL and OPRD, considered using limited duration employees, whether in existing or new positions.

The state agency assessment looked at capacity needs for different phases of one offshore wind project and two concurrent projects. The phasing scenario includes array, cables, and onshore components of a project, but excluded shoreside manufacturing and support port facilities. Phase one (up to four years) includes pre-leasing activities such as rulemaking, additional marine spatial planning, participation in a regional science collaborative, or participation in future BOEM siting processes. Phase two (up to five years) begins after leasing has occurred and ends prior to an application for the Construction and Operations Plan (COP), and 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 three (six months to two years) occurs upon the submittal of a formal application of any permit under agency authority and Federal Consistency but prior to a Federal Consistency decision. Phase four (up to 30 years) occurs after Federal Consistency decisions and relevant permits have been issued and may include effective oversight of active offshore wind development operations, monitoring, and future decommissioning. Regarding 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 figure below outlines the estimated staffing needs for one offshore wind project, broken down by phase. It shows both current and new staff requirements, specifying the number of positions needed. Each of these positions would have varying levels of involvement that may not equate to full-time work for that particular phase of development. This figure also shows the 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. The data for both 1) existing staff whose current duties include offshore wind-related work and 2) existing staff where duties would need to be reallocated from other agency functions have been grouped together.

Figure 20. State Agency Staff Capacity Needs by Phase (Single Project Scenario)



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

LOCAL GOVERNMENTS. Coastal counties and cities experience capacity issues, whether it is lack of staff, funding or other resources (e.g., engagement and outreach resources), which lead to significant challenges. An offshore wind development proposal would strain the local county or city systems. 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 facets such a project would have on a community, local government staff provided a variety of suggestions that includes: 1) increase in staff capacity whether as new staff, contract staff (e.g., planning consultants), or shared staff with specific knowledge or skill; 2) funding for additional staff capacity; 3) 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); 4) 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; and 5) resources that support engagement and outreach.

TRIBAL GOVERNMENTS. The effect that offshore wind energy development may have on the Nine Federally Recognized Tribes in Oregon 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. As noted above, Tribal governments' capacity needs are still in development as of November 2025.

In summary, the capacity assessment process involved collaboration with various partners to understand and address the potential impacts and benefits of offshore wind energy development in Oregon. 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. Each state agency, local government, and Tribal government provided unique insights and considerations based on their roles and responsibilities in the coastal zone, highlighting the importance of collaboration and proactive planning for sustainable energy development.

Refer to Appendix B [under development] for more information regarding capacity assessment data gathered from state, local, and Tribal governments.