

## MARINE PLANNING COMMITTEE REPORT ON MARINE PLANNING ISSUES

Part of the Pacific Fishery Management Council’s (Council, PFMC) Marine Planning Committee (MPC) October 9, 2024, meeting was dedicated to a discussion on further developing a high-level framework document for identifying key issues and potential long-term, coastwide impacts of offshore wind development on the U.S. West Coast. The main purpose of this report is to provide a status update on those discussions and to request further guidance from the Council on the draft content of the report and the next steps recommended by the MPC.

The report also provides an example of how we would organize content summarizing several key questions, data gaps, and research needs to be included in the framework document. In addition, Appendix 2 is a list of organizations that could contribute to or potentially conduct such an evaluation. The MPC requests guidance on the contents of the report, the example research and data needs table (Appendix 1) the list of organizations in Appendix 2, and next steps.

The main reason for presenting this as a status update, rather than a more thorough framework document paired with a request for more extensive comments, was the release of the National Marine Fisheries Service (NMFS) [West Coast Offshore Wind Energy Strategic Science Plan](#) (Science Plan) on October 17. The Council and MPC had received presentations on that plan but the MPC had not seen a draft of the written report. After seeing the full report, the MPC suggests that more time would better enable aligning this framework document with the NMFS Science Plan, and to consider how it could aid with creation and design of the Council’s framework document. For instance, the plan outlines six priority areas for research that can be used to organize the key issues and data gaps identified in the Council’s framework document, as described below.

The MPC discussed this concept and reported to the Council at the November 2023 and March 2024 meetings. At the November 2023 Council meeting the MPC proposed the development of a high-level, living, document for identifying and laying out means to address the information gaps needed to inform Council comments and recommendations around offshore wind (OSW) development scenarios and their associated cumulative impacts to the resources and communities that the Council manages. At the March 2024 meeting, the Council directed the MPC to continue developing the framework and to reach out to other entities that may also be considering something similar. Since then, the MPC has engaged with other organizations including the West Coast Ocean Alliance, NMFS, Department of Energy (DOE), National Renewable Energy Laboratory (NREL), and Oregon Sea Grant.

This report provides an update on the MPC’s proposed:

- purpose and objectives,
- scope of potential development scenarios,
- method for cataloging research and data gaps,
- and preliminary list of entities engaged in research relevant to offshore wind development.

The MPC requests the Council’s guidance on these sections and proposes to bring forward a completed PFMC OSW cumulative impacts framework for the March 2025 Council meeting. This

proposed timeline will allow the MPC to continue compiling OSW-related research and data needs over winter as well as incorporate any discussion and Council guidance on Agenda Item D.3 Research and Data Needs at the November Council meeting. The MPC envisions this document as a collaborative tool to engage West Coast entities working in the OSW space, promote the Council's prioritized information needs, and ensure that individual and cumulative impacts of OSW development are comprehensively considered at a regional level.

### **Purpose and Objectives**

The Council has repeatedly expressed the need for a comprehensive cumulative impacts analysis for OSW development at a regional scale that identifies the potential short-term and long-term impacts to the marine ecosystem, natural resources, habitats, fisheries, and communities under the different processes and different development scenarios. The Council conveyed this need in multiple letters to the Bureau of Ocean Energy Management (BOEM) (for example [July 2024](#), [June 2026](#), [February 2024](#), [November 2023](#), and [May 2023](#)), highlighting the importance of a holistic, West Coast-wide perspective on potential impacts.

As part of the Council's fishery ecosystem plan vision for the California Current Large Marine Ecosystem (CCE), the Council "envisions a thriving and resilient CCE that continues to provide benefits to current and future generations and supports livelihoods, fishing opportunities, and cultural practices that contribute to the wellbeing of fishing communities in the nation". As OSW is developed as a mechanism to address effects of climate change, the Council must have the information needed to understand and recommend how the Council views responsible OSW development along the CCE that balances energy needs with the known and potential impacts to fisheries, coastal communities, and the CCE. Moreover, addressing known informational and data needs could also inform future fishery management decisions in addition to OSW planning.

### **Scope of Potential Development Scenarios**

The reasons we have heard for a lack of sufficient cumulative impacts analysis to date are two-fold: (1) there is not enough known about the specific construction and operation details for particular developments during BOEM's planning and lease stages; and (2) BOEM's definition of reasonably foreseeable does not cover timelines and electricity production goals like those contemplated in California's Offshore Wind Energy Strategic Plan.

On the first, the Representative Project Design Envelope (RPDE) document focused on the California leases was released in August. It "provides estimates of the scale and number of components in a floating offshore wind facility when there is a need to describe impacts" but no Construction and Operation Plan is available. And for the second, this framework will aim to identify a range of future development scenarios to define the scope that the Council sees as necessary for meaningful evaluation of cumulative impacts.

The range of scenarios combined with information from the RPDE would provide the Council, decision makers, and the general public with an illustration of what information would be needed to identify pathways forward that minimize risk to the health and function of the California Current marine ecosystem, ecologically and economically sustainable fisheries, dependent fishing communities, protected resources, and sensitive ocean habitats.

## **Information Needs and Data Gaps**

This document is intended to catalog and characterize the existing knowledge and identify ongoing and/or planned scientific efforts as well as gaps in research that need addressing to enhance cumulative impact assessments. Upon reviewing the newly released Science Plan, it appears that many of the questions raised by the Council in comment letters align with the research priorities identified in this document. It is crucial to align the Council policy needs and goals with scientific insights regarding the impacts of offshore wind development. This integration will enhance the Council's ability to make informed decisions. The MPC proposes using the Science Plan as a framework where the Council could prioritize those efforts where offshore wind development and fisheries management would mutually benefit from additional research and information. This would allow research entities and groups to direct limited resources to address the Council prioritized needs. The following table shows the proposed format of this table which uses the Science Plan to highlight existing data deficiencies related to the interactions between offshore wind development and habitats, species, and fisheries under the Council purview.

## **List of Offshore Wind Development Research Entities and Organizations Involved in OSW Research and Planning**

The MPC is also including for reference a preliminary list (Appendix 2) of entities engaged in research relevant to offshore wind development. This list was informed based on current known consortiums and research groups that have been discussed during MPC meetings and/or engaged in the Council process. It is not exhaustive and is designed to grow and change over time. It is the MPC's understanding that states/agencies/interested entities could utilize this foundational list as a resource when considering their research priorities/activities related to potential cumulative impacts of OSW developments. Additionally, a comprehensive list of organizations and their expertise would enable the Council to identify entities working on Council topics of interest and foster collaboration that can leverage existing knowledge and resources, ensuring that efforts are complementary rather than redundant. The MPC expects to provide a more comprehensive list at the March 2025 Council meeting.

### Appendix 1: Example format of Information Needs and Data Gaps

Information Gap	Impact Category	Data Needs	Source	Documentation that may Inform
Science Plan Research Focus 4: Socioeconomic Impacts to Fisheries & Fishing Communities	Fisheries and Fishing Communities	Develop web portals for spatial revenue and fishing effort and landings data for commercial and recreational fishing.	Science Plan	PacFEM, PacFIN, NMFS, States
	Fisheries and Fishing Communities	Assess the distribution of different types of fishing effort, the potential redistribution of different types of fishing effort or changes to transit due to closed/inaccessible areas, and changes in fishing effort distribution and/or catch composition due to species distribution shifts.	Science Plan	NMFS Surveys, PacFIN, States
	Fishing Communities	Improve and customize economic impact modeling tools to be useful for analysis of the impacts of offshore wind energy on the seafood industry, tourism, local labor, and regional welfare.	Science Plan	PacFEM, IOPAC, Census
	Fishing Communities	Understand how port infrastructure development will affect different types of fishing activities.	Science Plan	Ports
	Fisheries and Fishing Communities	Evaluate strategies that avoid or minimize impacts on fisheries-related operations and assess the effectiveness of proposed mitigation efforts.	Science Plan	
	Fishing Communities	Integrate NMFS' community vulnerability indices for the U.S. West Coast with the national NMFS Social Indicators for Coastal Communities and	Science Plan	IEA State of the CA Current Status Report

		assess whether additional inputs would improve their relevance to offshore wind energy.		
	Fishing Communities	Evaluate and describe the potential for offshore wind energy development to affect the cultural identity and fishing heritage of fishing communities.	Science Plan	
	Fisheries and Fishing Communities	Understand how changes in stock assessment may result in increased uncertainty that may affect fisheries management decisions, as well as any resulting effects on fishery economics.	Science Plan	
	Ecosystem	Valuate nonmarket ecosystem services and existence values	Science Plan	
	Fisheries and Fishing Communities	Identify if fishery impacts vary depending on scale (specific port/fishery compared region-wide)	PFMC	PacFEM, PacFIN, NMFS, States
	Fisheries and Fishing Communities	Explore if there is a potential diminution in permit values attributable to OSW developments	PFMC	

PacFEM: Pacific Fishing Effort Mapping Project  
PacFIN: Pacific Fisheries Information Network  
IOPAC: Input-Output Model for Pacific Coast Fisheries  
IEA: Integrated Ecosystem Assessment

## Appendix 2: Offshore Wind Science/Research and Other Organizations Involved in OSW Research and Planning

### Pacific Offshore Wind Consortium (POWC)

<https://powc.us/>

POWC Advisory Committee: <https://powc.us/advisory/>

The Pacific Offshore Wind Consortium (POWC) is a joint effort between three research centers: the [Schatz Energy Research Center](#) at Cal Poly Humboldt, the [Pacific Marine Energy Center](#) at Oregon State University, and the [Center for Coastal Marine Sciences](#) at Cal Poly San Luis Obispo. Together, these universities are housed in and support the coastal communities in California and Oregon that are anticipated to host floating offshore wind development. The POWC will enable universities, host communities, and Tribal nations to share resources, co-develop best practices, and design comprehensive research programs that reflect the dynamic nature of the ocean environment and the diversity of community perspectives.

The consortium will advance three pillars: (i) research and innovation, (ii) university-level workforce education and professional development, and (iii) community and Tribal engagement and knowledge exchange.

- Since 2018, the **Schatz Energy Research Center** has published over 30 reports on topics ranging from transmission expansion to seabird vulnerability, in an effort to understand the feasibility of offshore wind, and to identify critical environmental and community needs that would be associated with its development. The Schatz Center works in close partnership with Tribal Nations, county services, and state government to design innovative solutions for clean power generation and energy resilience.
- Cal Poly San Luis Obispo is home to **the Center for Coastal Marine Sciences**, which has a history of interdisciplinary, applied research to address a range of management issues for the Central California Coast. Cal Poly San Luis Obispo works collaboratively with a variety of interest groups in the Morro Bay Area to promote and design effective environmental monitoring for offshore wind. The Morro Bay Wind Energy Area covers 376 square miles across three wind lease areas.
- The **Pacific Marine Energy Center (PMEC)** at Oregon State University brings more than 15 years of experience investigating the technical, environmental, and social dimensions of offshore energy, and expanding scientific understanding, engaging stakeholders, and educating students. The Hatfield Marine Science Center at OSU serves as a hub for research on potential ecological effects of offshore renewable energy, while the PacWave test site demonstrates in-water activities and potential issues associated with offshore energy projects, such as seabed surveys, cable laying, construction and operational noise, and electromagnetic fields (EMF). PMEC also conducts significant hydrodynamic and aerodynamic studies of offshore wind platforms at the Hinsdale Wave Research Laboratory.

### National Offshore Wind Research Consortium

<https://nationaloffshorewind.org/>

***Executive Director: Lyundie Hice-Dunton, Ph.D.***

The National Offshore Wind Research Consortium (NOWRDC) is a nationally focused, not-for-profit organization collaborating with the offshore wind industry to fund prioritized research and development activities to accelerate OSW deployment. It also promotes research and development activities that reduce cost and risk of offshore wind development projects throughout the U.S., reduce the levelized cost of energy (LCOE) of offshore wind in the U.S., and maximize associated economic and social benefits. Currently its focus is on East Coast offshore wind projects.

The U.S. Department of Energy (DOE) and New York State Energy Research and Development Authority (NYSERDA) formed NOWRDC in 2018 to advance OSW Research and Data through competitive grants. Since then, seven states, 10 developers, and 10 other public and independent members have joined the Consortium. It has six staff. Its members include state energy commissions, including the California Energy Commission, and state and federal agencies. It has an extensive document library detailing offshore wind energy markets and offshore wind supply chain research it has funded by state.

**West Coast Ocean Alliance (WCOA)**

<https://www.westcoastoceanalliance.org/>

***Executive Director: John Hansen***

The WCOA members include federal, state and tribal governments. It partners with other organizations, such as the Pacific Fishery Management Council (PFMC) and Columbia River Inter-Tribal Fish Commission (CRITFC), and acts as a clearinghouse for marine planning information, such as the West Coast Ocean Data Portal. It also holds summits related to tribes and specific offshore concerns, such as offshore wind or aquaculture. It has a staff of three. As such, it is unlikely to complete research on its own but could facilitate providing or sharing information for research projects.

WCOA's goals include increasing understanding of past, current and future interactions among ocean users and the ocean and coastal ecosystem; proactively engage federal, tribal, state and local authorities to assimilate current and emerging regional ocean uses; host intergovernmental forums that support open and equitable dialogue based on a common vision for the West Coast; Avoid duplication in planning by building on existing efforts; facilitate ongoing discovery of, connectivity to, and sharing of data and science from all relevant entities through the West Coast Ocean Data Portal; identify data gaps and collaborate to fill them; and more.

**Pacific Northwest National Laboratory (PNNL) – Renewable Energy**

<https://www.pnnl.gov/renewable-energy>

***Renewable Power Lead: T.J. Heibel***

Integrating renewables into the grid is a complex issue, and the public needs to understand and mitigate potential environmental impacts. PNNL's Renewable Energy section is looking at newer technologies, such as marine energy, with an eye to the need for research and development to make the most of these resources.

PNNL taps its base of atmospheric sciences, grid operations and controls, using its engineering and analytical capabilities to help overcome research and development challenges. The renewables research covers resources below ground, on the surface, and in the sky. PNNL partners with other national laboratories, industry, and universities to study renewables and make them a reality.

PNNL's facilities include an aquatic research laboratory; a systems engineering building; a bioproducts, sciences and engineering lab; a bio-acoustics and flow laboratory; and an advanced battery facility. PNNL also taps into related divisions such as its Earth Systems division, Coastal Science division, etc.

## **National Renewable Energy Laboratory**

<https://www.nrel.gov/>, <https://www.nrel.gov/wind/nwtc.html>

*Director, NREL National Wind Technology Center: Daniel Laird*

The National Renewable Energy Laboratory (NREL) focuses on science related to energy: clean technologies, integrated energy systems, etc. It has 16 research centers that explore energy systems and technologies. It also has a [National Wind Technology Center](#) (NWTc), designated as a U.S. Department of Energy national research center in 1992. More than 500 NREL researchers, scientists, analysts and support staff perform wind energy work at the NWTc.

## **Cooperative Institute for Marine Ecosystem and Resources Studies**

<https://cimers.oregonstate.edu/>

- National Oceanic and Atmospheric Administration (NOAA)
- Oregon State University

## **California Marine Sanctuary Foundation (CMSF)**

<https://www.californiamsf.org/offshorewind>

In coordination with the Ocean Protection Council and in collaboration with over 100 scientists, CMSF is leading the development of a neutral, transparent, and science-based environmental monitoring guidance for California's emerging offshore wind industry. The guidance will be developed through synthesizing and leveraging existing information to develop key environmental impact questions.

## **NOAA Fisheries / NMFS**

<https://www.fisheries.noaa.gov/region/west-coast>

<https://www.fisheries.noaa.gov/about/southwest-fisheries-science-center>

<https://www.fisheries.noaa.gov/about/northwest-fisheries-science-center>

NOAA Fisheries, particularly the Northwest Fisheries Science Center (NWFSC) and Southwest Fisheries Science Center (SWFSC), are involved in research related to OSW energy development on the Pacific Coast. The Agency recently shared its [West Coast Region Science Plan](#) (Agenda Items D.2.b, NMFS Reports 1 and 2, respectively) that outlines its OSW research priorities. Some examples of projects include the [Socioeconomic Characterization of West Coast Fisheries In Relation to Offshore Wind Energy Development](#) report, the PacFEM under development, and



identifying OSW ecosystem indicators for inclusion in NOAA's California Current Ecosystem Integrated Ecosystem Assessment's [ecosystem status reports](#), presented annually at the March Council meeting.

### **Other Organizations**

This list is not comprehensive. In addition to the organizations listed here, the Washington, Oregon, and California Sea Grants, the Pacific States Marine Fisheries Commission, and other organizations are involved in evaluating and planning for OSW energy development on the Pacific Coast.