Pacific Fishery Management Council

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Brad Pettinger, Chair | Merrick J. Burden, Executive Director

October 3, 2024

Katherine Segal
US Department of Energy, Grid Deployment Office
Submitted via email to OSWTransmission@hq.doe.gov

Re: U.S. Department of Energy's (DOE) Request for Information Regarding Interregional and Offshore Wind Transmission on the U.S. West Coast (RFI)

Dear Ms. Segal,

The Pacific Fishery Management Council (Council) appreciates the opportunity to offer the following response(s) to DOE's RFI. The RFI seeks information on issues related to the planning and development of electric transmission facilities to service offshore wind power generating stations on the U.S. West Coast. The stated purpose of the RFI is to gather information about siting offshore wind electricity transmission infrastructure with a particular interest on electrical cables, cable corridors, substations, transformers, converters, and other associated equipment located both offshore and onshore. For clarity, the Council assumes that offshore transmission equipment ends when power generated offshore comes ashore.

We understand that the RFI is primarily interested in input on transmission infrastructure as noted above. However, the Council is equally concerned about offshore wind generation and the unknown impacts to the ecosystem and fishing communities[1] including impacts to upwelling, larval transport, habitats, and productivity of the California Current Large Marine Ecosystem (CCE), and impacts to commercial, recreational, and subsistence fishing industries. The potential cumulative impacts to the marine environment and dependent communities from offshore wind (OSW) energy development necessitates a holistic approach so that all activities and adverse effects associated with OSW (multiple wind farms plus transmission infrastructure) are considered together. It is not only challenging, but problematic to consider transmission planning in a vacuum, as called for in the RFI.

Council Authorities

The Council has fisheries management jurisdiction in Federal waters for marine and anadromous species off the U.S West Coast and manages well over 100 species under its four fishery management plans (FMPs). This includes responsibilities for protecting the marine ecosystem, habitats, and the wellbeing of coastal communities. The Council is composed of state and Federal government representatives, a Tribal representative, and appointed citizens. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) guides much of the Council's actions. The Endangered Species Act, Marine Mammal Protection Act, and the 10 MSA National

[1] See 16 U.S.C. §1802(17)

Standards also guide the Council's actions. In addition to the four FMPs, the Council's non-regulatory Fishery Ecosystem Plan includes a vision statement that captures these responsibilities: 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 and the nation.[2] Additional background on the Council's mandates are described below, as appropriate.

Essential Fish Habitat (EFH) Authorities

As required by the MSA, the Council has identified and described EFH throughout the Pacific Coast region for all four of its FMPs (groundfish, salmon, coastal pelagic species (CPS), and highly migratory species (HMS)), and has designated habitat areas of particular concern (HAPC) for groundfish (rocky reefs, estuaries, canopy kelp, seagrasses, offshore banks, seamounts, canyons, and other areas of interest) and salmon (estuaries, submerged aquatic vegetation, spawning habitat and other freshwater habitat features). In addition, the Council has designated EFH Conservation Areas (EFHCAs) for groundfish, which are spatially discrete areas to protect sensitive habitats from the effects of some types of bottom fishing. The MSA requires the Council to comment on actions that may affect the habitat, including EFH, of a fishery resource under its authority. The MSA requires Federal agencies to provide a detailed response to the Council within 30 days of receiving the Council's recommendations [Section 305(b)(4)].

Many of the Council's previous comment letters on OSW energy development provide greater detail regarding best practices to minimize impacts to habitat and ecosystem, commercial and recreational fishing activities, and coastal communities. The page limit for this comment opportunity precludes providing the level of detail necessary for the actual implementation of OSW transmission infrastructure. We recommend consulting with Council staff at the appropriate time, to make those details available.

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1. What considerations need to be accounted for when siting transmission for offshore wind energy generation in offshore locations on the West Coast?

a. For the considerations identified, what information is currently available?

b. For the considerations identified, do any lack existing data sources to rely on? If no data sources are available, are there existing methods to collect, survey, or otherwise measure the characteristics?

Fishery Activity and Dependence on Areas

Currently available information includes commercial and recreational fisheries' catch, effort, and landings data from the National Marine Fisheries Service (NMFS), the States, and other sources.[3] Spatial data does not exist for every fishery. And even for those where it does, these datasets are not all fine-scale enough to make informed decisions on transmission siting.[4] Commercial fishing

[2] Pacific Coast Fishery Ecosystem Plan, For the US Portion of the California Current Large Marine Ecosystem (March 2022) - page 1

[3] NMFS and PSMFC are currently working on a Pacific Fishing Effort Mapping Project which will provide more detailed information on these datasets.

[4] For example, logbooks utilized by CDFW utilize 10 square mile "blocks" for catch location.

revenue data only reflects ex-vessel values, which represent dollars paid to the harvester and doesn't reflect the downstream economic value of those catches[5]. Understanding how seafood harvested in an area contributes to the economic well-being of impacted communities should be accounted for during the siting decision-making process using economic input-output models and other tools.

NMFS and the Oregon Department of Fish and Wildlife (ODFW) provided fisheries data layers for nine fisheries for inclusion into a spatial suitability model developed by the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Coastal Ocean Science. Similar efforts are underway by NMFS, the California Department of Fish and Wildlife (CDFW), and ODFW to develop fisheries data layers for future iterations of that suitability model. Washington Department of Fish and Wildlife (WDFW) mapped fisheries for the state's marine spatial plan in ocean waters off the state but 2014 was the most recent year of data included. Before any siting decisions are made, fisheries data layers for all fisheries which operate off the U.S. West Coast should be incorporated into the suitability analyses with consultation from data providers (NMFS and the States).

Fisheries management is informed by long-running datasets. Some of these are collected by NOAA surveys. Any disruption to these surveys, and datasets, could have profound impacts on the fishery management process and resulting catch limits available to our harvesters due to the precautionary principle of fishery management. Transect lines utilized in these surveys should be readily available from NOAA/NMFS.

The Bureau of Ocean Energy Management (BOEM) recently uploaded a study prepared by NMFS entitled *Socioeconomic Characterization of West Coast Fisheries in Relation to Offshore Wind Energy Development*.[6] The Council recommends this study be considered during the DOE informational gathering process to help inform future siting.

Fishermen and processors are dependent upon port-side access and availability of suitable infrastructure[7]. These needs vary by fishery. DOE should use landings data, by port or port complex, to develop an understanding of which ports service which fisheries. The OSW industry will necessarily require space in ports and harbors. Ensuring access to port facilities for the seafood industry should be accounted for.

The Council notes that available fisheries information is based on past catch, effort, and landings. In prior comment letters, the Council has highlighted the need to look to the future and has asked decision-makers in the OSW development process to consider where fisheries may operate. Changing ocean conditions, recovering fish stocks and markets, and species' distribution shifts will likely result in fisheries developing in areas with no historic activity. In recent years we are seeing more and more Pacific bluefin tuna in areas where they haven't historically been

[5] An IO-PAC model, developed by NMFS is "designed to estimate the changes in economic contributions and economic impacts resulting from policy, environmental, or other changes that affect fishery harvest."
[6] Pfeiffer L, Alkire C, Ise JL. 2024. Socioeconomic characterization of west coast fisheries in relation to offshore wind energy development. Camarillo (CA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 109 p. Report No.: OCS Study BOEM 2024-054. Interagency Agreement Number M22PG00032.
[7] This includes but is not limited to, offloading facilities, gear storage, work areas, processing facilities, etc.

encountered. As that stock continues to grow and expands its range off the west coast, it is highly likely that within the next 30 years that stock will be available to commercial and recreational fleets in areas with no current history of catch, effort, or landings.

Recreational and Subsistence Fishing

Recreational fisheries operating off the West Coast are important economic drivers for coastal communities. Subsistence fishing is culturally and socially important. Spatially explicit information on where these activities take place is lacking. While it may be appropriate, in limited circumstances, to use charter or commercial fishing spatial data to inform recreational and subsistence fishing activities, this is a data gap that needs to be better understood and taken into account when siting. We recommend direct engagement with participants in those fisheries to address these data gaps.

Sensitive Benthic Habitats and Seafloor Mapping

HAPCs and other sensitive offshore habitats include all hard substrates (bedrock, carbonate rock, boulder, cobble), habitat-forming invertebrate communities, methane seeps, canyons, mud volcanoes, and other unique features. The presence of these habitats will greatly affect the selection of suitable cable routes. Knowledge of where sensitive physical habitats are located is mainly limited to areas previously mapped at high resolution and interpreted with sufficient detail. Currently available seafloor data can be obtained from state waters mapping efforts that generated site-specific high-resolution seafloor data and detailed, site-specific substrate maps although the availability and quality may not be the same in all states. In Federal waters, recent multibeam surveys of the Cascadia Margin off Oregon and northern California generated medium-high resolution multibeam and backscatter data, though only a subset of those data were examined for substrate type, and this was limited to carbonate rock for methane seep potential. Across the West Coast, several prominent offshore features (e.g., banks, canyons, reefs) have been mapped at medium-high or high resolution. These datasets will be important for transmission planning and should be obtained ***directly*** from Federal (BOEM, NOAA, NMFS, the U.S. Geological Survey, and the National Marine Sanctuaries) and state agencies (WDFW, ODFW, CDFW, the Oregon Department of Land Conservation and Development), academic institutions, and various mapping collaborations (e.g., the California Sea Floor Mapping Program), as not all datasets are available from online portals, particularly the most recent survey data.

Several recent high-resolution seafloor surveys (e.g., Cascadia Margin, Rogue Reef, Stonewall Bank, Arago Reef) require additional processing and Coastal Marine and Estuarine Classification System substrate interpretation by seafloor geologists to locate and delineate sensitive seafloor habitats. Elsewhere on the West Coast, significant areas lack high-resolution surveys. In these areas, locations of sensitive habitats are largely unknown, such as the region shoreward of the Cascadia Margin surveys. New mapping here should also include water column mapping in consultation with Susan Merle and colleagues in the Earth-Ocean Interactions Program (a part of Oregon State University's Cooperative Institute for Marine Ecosystem and Resources Studies and NOAA's Pacific Marine Environmental Laboratory) to locate methane seep emission sites. In state waters, especially in the shallow coastal zone, there are several areas without high-resolution mapping that are known or suspected to contain substantial rock (including subseafloor rock). These areas will require new high-resolution mapping and substrate interpretation. Areas of interest for cable routing/landing should be mapped at the highest resolution possible to ensure

sensitive habitats are identified. Analysis of all existing and new high-resolution seafloor mapping data should be completed before proposing specific areas for transmission infrastructure or cable routes.

Sensitive Benthic Macrofauna

Comprehensive characterization of benthic macro-fauna communities will be necessary for locating sensitive biological communities such as corals, sponges, and chemosynthetic organisms. Identifying only the dominant communities as suggested in BOEM's guidance document[8] would likely miss these important, less abundant habitat-forming species. Knowledge of where these habitats are located will require visual surveys from remote operated or autonomous vehicles and careful benthic sampling. Successful surveys will depend on detailed seafloor habitat maps (as discussed above) and examination of existing data (e.g., NOAA Deep-Sea Coral Data Portal, NOAA/Deepsea Coral Research and Technology Program (2016) macrofaunal distribution data [9], and habitat suitability models [BOEM Poti et al 2020][10]). Lessees should consult with West Coast habitat scientists on survey design and methodologies used to explore non-extractive methods prior to any extractive methods to reduce impacts. Macro-faunal surveys should be completed prior to proposing specific areas for transmission infrastructure and cable routes.

EFHCAs, HAPC and Other Constraining Factors

EFHCAs prohibit all or some types of bottom contact fishing gear to protect sensitive benthic fish habitat. Transmission routes and infrastructure should avoid EFHCAs as well as HAPCs for groundfish (rocky reefs [i.e., all rock substrate], seamounts, canopy kelp, estuaries, seagrass) and salmon (estuaries, spawning habitat, submerged aquatic vegetation, complex channels and floodplains, and thermal refugia). Other conservation designations, such as national marine sanctuaries and state marine protected areas and managed areas provide habitat protections from anthropogenic activities. These designations may prohibit or limit cable routes and cable landing sites. Likewise, coastal rivers, streams, and wetlands that support salmon will constrain cable routes and landing sites. Subsea fiber optic cables and dredge material disposal sites will also constrain cable routes. Siting strategies should account for all constraining factors during the transmission planning stage to determine where cable routes will have the least disturbance to important benthic habitats.

Environmental Concerns

The potential impacts of noise associated with OSW developments on marine and fishery resources and Council and State managed fisheries should be considered in transmission planning. Siting of transmission infrastructure should avoid Critical Habitat for Endangered Species Act (ESA) listed

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[8] Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585

[9] NOAA Deep Sea Coral Research and Technology Program (DSCRTP) 2016. Observations of Deep-Sea Coral and Sponge Occurrences from the NOAA National Deep Sea Coral and Sponge Database, 1842-Present, version 20230620-0 (NCEI Accession 0145037).

[10] Poti, M., S.K. Henkel, J.J. Bizzarro, T.F. Hourigan, M.E. Clarke, C.E. Whitmire, A. Powell, M.M. Yoklavich, L. Bauer, A.J. Winship, M. Coyne, D.J. Gillett, L. Gilbane, J. Christensen, and C.F.G. Jeffrey. 2020. Cross-Shelf Habitat Suitability Modeling: Characterizing Potential Distributions of Deep-Sea Corals, Sponges, and Macrofauna Offshore of the US West Coast. Camarillo (CA): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2020-021. 267 p.

species, Biologically Important Areas for marine mammals, and known migratory routes of other protected species.

Turbines, offshore substations and offshore converter stations (OCS) will hold significant amounts of materials that will qualify as pollutants if they enter the marine environment. In 2021 an oil spill off the Southern California coast resulted in a roughly two-month closure of 650 square miles of marine waters to both recreational and commercial fisheries.[11] When accounting for siting of OSW transmission infrastructure, avoidance of important fishing grounds – considering prevailing wind and currents – should be considered.

The use of OCS as potential transmission infrastructure creates additional environmental concern given the lack of information on how these could impact local and regional marine communities. Presently, no OCS are operational anywhere, and only one is being proposed in the U.S. - the Sunrise Project off the east coast. Our primary concerns are the entrainment of larval fish and the discharge of heated seawater that could be more than 40°F higher than the ambient water temperature[12] and considered a pollutant when significantly higher than ambient temperature. If multiple OSW projects on the West Coast utilize OCS, these impacts could be widespread and substantial. Studies are needed to assess the effects of OCS on the marine environment and to consider methods that control/minimize the temperature of discharged seawater.

Electro-Magnetic Field Transmission

Electro-magnetic fields (EMF) produced by transmission cables may impact Council-managed species (elasmobranchs, salmon) and state-managed species (sturgeon, crustaceans, and cephalopods) that rely on these fields for orientation, navigation, foraging, and predator avoidance. Multiple West Coast salmon stocks are listed as threatened or endangered under the ESA and already constrain West Coast fisheries, so additional threats to their survival directly affect fishing and fisheries. We are not aware if field strength of electro-magnetic subsea cables has been studied on the West Coast. It will be necessary to understand the potential EMF effects on fish from multiple cables coming together at a single landing site, and to determine safe distances for landing cables away from estuaries, river mouths, and salmon-bearing streams. Furthermore, information is needed on the potential effects to EMF-sensing species when converting alternating current to direct current at OCS, and at the potential scale of OSW projects.

Buffers and Offsetting Measures for EFHCAs, HAPC, and other Sensitive Habitats

Sufficiently-sized buffers should be established to avoid adverse effects to HAPC and other sensitive habitats from installing and operating transmission infrastructure/OCS, cable routes, and landing sites, as recommended by state and Federal resource agencies. Any adverse effects that occur after avoidance and minimization measures have been implemented will likely warrant offsetting measures (i.e., compensatory mitigation). Currently available information and methods for assessing the need for, and implementing, offsetting measures varies depending upon the impact and habitat type. For instance, methodologies for successfully offsetting adverse effects on

[11] See - https://socalspillresponse.com/fisheries-closure/

[12] This is based on projected temperature of sea water discharge (88º) contained in the environmental documents for the Sunrise Project

eelgrass habitat are readily available[13], while information on similar efforts for other habitats, such as deep-sea corals or carbonate deposits, is severely limited or lacking entirely. Methodologies for assessing and offsetting adverse effects to hard substrate from fiber optic cable installation projects off California have been established and are relevant given the similarity to transmission cable installations.

Best Management Practices[14]

- All seafloor mapping and biological surveys should follow the *NMFS Greater Atlantic Fisheries Recommendations for Mapping Fish Habitat,* in consultation with West Coast habitat scientists to further delineate and classify habitat features relevant to the West Coast.
- Minimize the number of cable corridors by siting cables together if doing so does not exacerbate EMF fields in areas utilized by field-sensing species (salmon, elasmobranchs, crab).
- Cables should be buried to the extent possible, provided doing so has minimal impact to hard substrates (including subterranean) and areas important to benthic fishes and salmon. The depth at which cables are buried will depend on the ocean conditions in that immediate area and will likely differ off each state or by region. Burial will minimize potential damage to cables and fishing gears that interact with unburied cables, avoid economic harm to fishermen, prevent the loss of fishing grounds, and prevent disruption of habitat (to some degree).
- Coordinate cable installations with the fishing community to minimize repeated disruptions to fishing operations.

2. What considerations need to be accounted for when siting transmission for offshore wind energy generation in onshore locations on the West Coast?
a. For the considerations identified, what information is currently available?
b. For the considerations identified, do any lack existing data sources to rely on? If no data sources are available, are there existing methods to collect, survey, or otherwise measure the characteristics?

Aquatic habitats (wetlands, estuaries, rivers, streams) are highly sensitive to disturbances (e.g., erosion, siltation) and should be avoided or protected from all transmission infrastructure. A major concern is the potential for cable landings to affect the hydrologic function of aquatic habitats. Horizontal directional drilling (HDD) under the beach is thought to be a less impactful option for landing and crossing beaches and avoiding other sensitive habitats (e.g., kelp, seagrass), however, some shoreline environments (rocky substrate, wetland, riparian) may not be suitable for subterranean drilling. Studies should be done to evaluate the efficacy of HDD in West Coast shoreline environments before proposing specific transmission routes or landing sites. In addition, spill prevention and response plans should be developed in coordination with Federal and state agencies and other interested parties in advance of conducting any HDD. As noted under question 1, it will be necessary to understand the potential EMF effects on salmon from multiple cables

[13] https://wdfw.wa.gov/sites/default/files/publications/00714/wdfw00714.pdf
https://www.fisheries.noaa.gov/s3//dam-migration/cemp_oct_2014_final.pdf

[14] These represent best management practices as envisioned today. Perhaps this would be better labelled current thinking on best management practices. As we learn more specifics about transmission planning and infrastructure, this list would likely change.

coming together at a single landing site, and to determine safe distances for landing cables away from estuaries, river mouths, and salmon-bearing streams.

3. What environmental justice (EJ) and energy justice issues should inform how transmission is sited and implemented on the West Coast for OSW?

The Council has previously submitted detailed comments focused on EJ concerns of fishing communities related to OSW. They include but are not limited to:

- The disproportionate burdens being placed on fishing communities throughout the OSW development process and impacts to our activities resulting from potential development of OSW off the west coast;
- Seafood is touted as being integral to a healthy diet and wild-capture seafood sustainably harvested off the west coast has a very favorable carbon footprint when compared to other forms of protein and farmed seafood. U.S. harvested seafood is important to our nation's food security as evidenced during the COVID-19 pandemic. Commercial, charter, and other recreational fisheries are often the only way most Americans can access the living marine resources off the U.S. west coast. Subsistence fisheries are dependent on access for cultural ceremonies, food security, and other purposes;
- MSA National Standard 8 states that conservation and management measures shall, consistent with the conservation requirements of the MSA (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that are consistent with the best scientific information available, in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities. While the Council acknowledges that the RFI is neither a conservation nor management measure, the mandate to consider the importance of fishery resources to fishing communities weighs heavily on us. Proposed actions such as OSW developments, including transmission infrastructure associated therewith, with a potential to harm those fishery resources, are of paramount interest to the Council.

4. What specific topics about offshore wind transmission siting, technology, and benefits are not well understood by yourself or your organization?

Transporting ocean energy across the state or region may require landing sites at several locations along the coast. It's unclear if this would also require a network of energy conveyance structures at multiple latitudes in the ocean. Information on potential conveyance strategies and the spatial configuration of energy infrastructure in the ocean and onshore is not currently available to the Council. Technical information about transmission infrastructure and routing strategies has not been available to the Council. The Council is interested in understanding the number, spacing, and locations of transmission routes and landing sites as this could magnify the potential total impacts to benthic habitats and fishing. The Council also seeks to understand the feasibility of using HDD under hard substrate. This information should be made available to the Council and the public early in transmission planning.

Transmission infrastructure that lies on the seafloor or extends into the water column could act as artificial reefs, attracting sessile invertebrates, fish, and other organisms. The ecological effects of this infrastructure over many miles of seafloor have not been studied on the west coast and it's not clear if or how OSW developers would study the effect. Monitoring techniques should be developed to study and document any changes in species distribution.

4d. What specific data or information can be provided by ocean co-users for the purpose of filling knowledge gaps? How should information from ocean co-users be disseminated or shared?

All mapping data, map products (geographical information systems data), and biological survey information should be available to the public upon completion, and prior to proposing cable routes. A Coastal Marine and Estuarine Classification System substrate classification map(s) should be produced using all modern high-resolution datasets in the form of a vector polygon layer. Benthic community information (visual and sampling) collected as part of transmission siting should be summarized and provided in geographical information systems format. All datasets used to inform transmission siting should be provided or linked through a centralized data portal (e.g., the West Coast Ocean Alliance Data Portal).

While fisheries datasets provided by NMFS and the state departments of fish and wildlife will be informative, speaking to fishery participants will be instrumental in filling knowledge gaps.

5. What forms of assistance (technical assistance or otherwise) would support efficient and equitable siting and development of offshore wind transmission infrastructure?

Fishing communities are generally lacking capacity to meaningfully participate in all activities associated with OSW developments. Assistance for fishing communities and other disadvantaged ocean users that supports capacity-building would be appropriate. This assistance could be financial, technical, or process-oriented.

The Council established the Ad Hoc Marine Planning Committee (MPC) in June of 2021 "to track and advise the Council on marine planning issues and their effects on Council managed fisheries, data collection surveys, habitat, and coastal communities." This has provided interested fishery stakeholders with a venue to be informed about OSW-related activities. The Council appreciates the presentation given by DOE and the Pacific Northwest National Laboratory during the August 12, 2024, meeting of the MPC and fully supports further engagement with the MPC on OSW transmission planning. Additional targeted outreach to fishing communities who stand to be most impacted by OSW developments, including potential siting of transmission infrastructure should also be undertaken by DOE.

The Council has heard from fishing community members who participate in the Council process that clarity on the roles of all the Federal and State agencies involved, and their various jurisdictions, is greatly needed. While we are generally aware that BOEM, NMFS, the U.S. Corps of Engineers, and several other Federal agencies play a role in OSW developments, the specific roles of each remained unclear. This includes potential permitting, authorizations, etc. that fall

under the purview of each agency. It is further complicated when incorporating the various agencies from California, Oregon, and Washington that have a role in the process.

6. Do you have any additional information or thoughts you want to provide about transmission infrastructure related to offshore wind energy?

OSW energy development presents a serious challenge to the fishing and industry, to coastal communities, and to tribes. While most stakeholders embrace the need to develop new renewable energy sources, some see OSW as an existential threat that requires great caution and a methodical approach. To the extent that OSW energy transmission planning is guided by the level of support from the tribes, DOE should be aware that the Northwest Indian Fisheries Commission recently sent letters to BOEM Director Liz Klein and to Washington Governor Inslee expressing opposition to further OSW development on the West Coast until concerns about the impacts of OSW development on the marine environment and resources are addressed. In addition, the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians recently filed suit to halt the OSW leases off the Oregon coast. We acknowledge the recent postponement of the auction off Oregon may impact that lawsuit.

Thank you for consideration of our comments, and please contact Kerry Griffin (Kerry.griffin@noaa.gov; 503-820-2409) or Council staff with any questions.

Sincerely,

Brad Pettinger
Pacific Council Chair

MTC:kma

Cc: Council Members
Mike Conroy
Susan Chambers
Correigh Greene
Scott Heppell

List of Abbreviations used

DOE	Department of Energy
RFI	Request for Information
Council	Pacific Fishery Management Council
OSW	Offshore Wind Energy
CCE	California Current Large Marine Ecosystem
FMPs	Fishery Management Plans
MSA	Magnuson-Stevens Fishery Conservation and Management Act
EFH	Essential Fish Habitat
CPS	Coastal Pelagic Species
HMS	Highly Migratory Species
HAPC	Habitat Areas of Particular Concern
EFHCAs	Essential Fish Habitat Conservation Areas
NMFS	National Marine Fisheries Service
IO-PAC	Input-Output Model for Pacific Coast Fisheries
ODFW	Oregon Department of Fish and Wildlife
NOAA	National Oceanic and Atmospheric Administration
CDFW	California Department of Fish and Wildlife
WDFW	Washington Department of Fish and Wildlife
BOEM	Bureau of Ocean Energy Management
NOS	National Ocean Service
DLCD	Oregon Department of Land Conservation and Development
OSU/CIMERS	Oregon State University Cooperative Institute for Marine Ecosystem and Resources Studies
CSMP	California Seafloor Mapping Program
NOAA PMEL	NOAA Pacific Marine Environmental Laboratory
ROV/AUV	Remotely Operated Vehicles/Autonomous Underwater Vehicle
NOAA/DSCRTP	NOAA Deep-Sea Coral Data Portal
ESA	Endangered Species Act
BIAs	Biologically Important Areas
EMF	Electro-magnetic Fields
AC	Alternating Current
DC	Direct Current
HDD	Horizontal directional drilling
EJ	Environmental Justice
PNNL	Pacific Northwest National Laboratory
MPC	PFMC's Ad Hoc Marine Planning Committee
BSEE	Bureau of Safety and Environmental Enforcement
USCG	United States Coast Guard
USACE	United States Army Corps of Engineers
FERC	Federal Energy Regulatory Commission
NWIFC	Northwest Indian Fisheries Commission