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Comment Received From: Irene Gutierrez
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Comments of Environmental NGOs - Sea Space Planning Workshop

Additional submitted attachment is included below.

November 14, 2022

RE: Docket 17-MISC-01 - Workshop on Assembly Bill 525: Preparing a Strategic Plan for Offshore Wind Development

On behalf of Natural Resources Defense Council (NRDC), Humboldt Baykeeper, National Audubon Society, Center for Biological Diversity, and Environmental Defense Center, we submit these comments to the California Energy Commission (CEC) workshop on assessing sea space for offshore wind (OSW) development pursuant to Assembly Bill 525. We support responsible OSW development, which offers California a great opportunity to fight climate change, reduce air pollution, and improve reliability. We appreciate CEC's work to comply with AB 525 and offer the following comments in response to the workshop and to inform the draft strategic plan.

I. Principles for Selecting Sea Space

AB 525 requires OSW to "be developed in a manner that protects coastal and marine ecosystems." AB 525, sec. 1(m). State agencies must ensure the "avoidance, minimization, and mitigation of significant adverse impacts," as well as "monitoring and adaptive management" for OSW projects and their associated infrastructure. *Id.* When identifying suitable sea space for future phases of OSW development, CEC must consider "[p]rotection of cultural and biological resources with the goal of prioritizing least-conflict ocean areas." AB 525, sec. 2, ch. 14; Pub. Res. § 25991.2(b)(3). As part of this process, CEC must "make recommendations regarding potential significant adverse environmental impacts and use conflicts, such as avoidance, minimization, monitoring, mitigation, and adaptive management," consistent with the state's renewable energy, greenhouse gas reduction, and biodiversity goals. AB 525, sec. 2, ch. 14; Pub. Res. § 25991.2(e).

We appreciate CEC's reference during the workshop to the principles of the mitigation hierarchy and the importance of avoiding, minimizing, and mitigating impacts. Siting OSW projects in areas that avoid sensitive habitats and biologically important areas is the crucial first step to protecting marine life.

The second step is to develop floating OSW in a manner that protects local and regional biodiversity, ecosystem productivity, and abundance of marine life. Our groups have provided recommendations to avoid, minimize, and mitigate the environmental impacts of OSW

development throughout the environmental assessment and leasing process for current OSW projects (Humboldt and Morro Bay Wind Energy Areas).[1] Our concerns, as detailed in those comments, focus on secondary entanglement of marine mammals, sea turtles, sharks, and diving birds; vessel strike; underwater noise; benthic habitat impacts; collision and lighting impacts for birds and bats; cumulative impacts; and monitoring, including baseline monitoring, and adaptive management. We recommend the CEC consider these issues in the strategic plan.

We expect CEC to comply with AB 525 and provide recommendations regarding potential significant adverse environmental impacts and use conflicts as it identifies sea space for potential future OSW development.

II. Recommendations for Filling Data Gaps

In addition to considering environmental impacts, and as CEC acknowledges, there is a need for further survey and data collection at a variety of spatial and temporal scales. Data is needed on a wide array of species that occur in the California Current System (CCS) to sufficiently assess important or sensitive ocean areas and inform sea space analysis. There is also a need for additional surveys and data collection on environmental variables for preferred habitat conditions. Lastly, given the nascence of floating OSW technology and its expected use across the California coast, there is a need for empirical assessments of wildlife impacts from floating wind turbines to inform future development.

The CEC should also develop a plan for continued data integration into the sea space planning process, as the strategic plan will only capture a static inventory of research and datasets. It is critical to integrate research that is currently ongoing and may not be completed when the plan is finalized, and we urge CEC to include a strategy for incorporating those results and any updated datasets as OSW development continues off the California Coast. This should be an iterative process as new science and data become available to inform responsible OSW development.

Our specific recommendations below include further data collection to fill critical gaps for the sea space and impact assessment, as well as recommendations for assessing potential new sea space for OSW development.

A. Wildlife

Further data collection is needed for a more comprehensive understanding of wildlife populations in current and future OSW sites, including:

[1] Comments related to the Humboldt Wind Energy Area and Morro Bay Wind Energy Area, including comments on the BOEM Proposed Sale Notice, Coastal Commission Consistency Determination, BOEM Draft Environmental Assessment, and BOEM Environmental Assessment Scoping. Additional recommendations available from https://www.nrdc.org/experts/francine-kershaw/reducing-risk-entanglement-floating-offshore-wind/.

- Aerial and boat-based studies on the distribution, foraging activities, and presence, habitat, and migration patterns of large whale species, orcas (killer whales), migratory birds, and sea turtles[2]
- Aerial and boat-based studies on the distribution, population structures, foraging activities, and habitat use of small cetaceans
- Aerial, boat-based, and shore-based studies on habitat use, haul-out locations, population health, and migration patterns for pinnipeds
- Passive acoustic monitoring, satellite telemetry studies, and biolog tags to improve understanding of the distribution, presence, fine-scale habitat use patterns, and environmental drivers of suitable habitat of large whales
- Telemetry tracking information to better characterize distribution, movement, and risk for vulnerable bird and bat species and species for which transect surveys are inappropriate; this includes deploying satellite telemetry tags and altimeters on larger bodied shorebirds and seabirds, deploying radio telemetry tags on smaller-bodied birds and bats, and expanding the network of radio telemetry receiver towers offshore (e.g., on meteorological or environmental data buoys) in coordination with the U.S. Fish and Wildlife Service.
- Acoustic and radar monitoring of bats and birds to provide greater data on species presence offshore; there is a need for much greater understanding of bat distributions in the lease areas, greater understanding of the risk of turbine strikes and bird and bat mortality, and identification of species most at risk.

Additionally, we recommend the CEC consider the following as it compiles and assesses data for sea space identification:

- Regarding cetaceans, we note: (1) there are limitations of the National Oceanic and Atmospheric Administration's (NOAA's) Biologically Important Areas (BIAs) as a primary data source for cetacean habitat, and current BIAs are under review and being updated, with changes or new areas expected to be added; (2) OSW energy developments are likely to overlap with critical prey resources, particularly krill, and the potential for displacement from preferred foraging areas should be considered; (3) there is a need to understand how climate change will influence dynamic marine habitat and how other stressors on cetaceans will change as a result.
- Given the paucity of data on bat populations, the CEC should consider the relative risk to bats posed by OSW projects compared to terrestrial wind power projects (e.g., the evidence of impacts to both tree-roosting bats and cave-dwelling bats from terrestrial wind)
- Understanding the population-level cumulative impacts of OSW build out along the Pacific coast will require a method for accurately estimating the observed level of take of birds and bats of all sizes. The CEC should include an evaluation of risks and tools to document impacts to birds and bats vulnerable to population-level impacts from turbine collision, including marine radar, acoustic detectors, and collision detection technologies.

[2] Seasonal monitoring data is available for large whales and sea turtles from the CDFW Risk Assessment and Mitigation Program (https://wildlife.ca.gov/Conservation/Marine/Whale-Safe-Fisheries). CEC should include this data set for fine-scale distribution and habitat use off the California Coast.

- The sea space analysis should consider a full picture of migratory pathways for land birds and seabirds. This could be realized with the addition of satellite tracking information from Movebank and the National Aeronautics and Space Administration's Icarus project for larger bodied shorebirds, additional research and tagging of priority bird species using radio and satellite telemetry technology as appropriate, and an expansion of the radio telemetry receiver network in the offshore environment.
- The CEC should use data currently available to calculate the risk to migratory birds, especially in regard to modern turbine height. Current efforts underway at the Schatz Energy Research Center to develop a 3D CRM for pelagic seabirds in the CCS could help to better estimate how seabird flight heights affect collision risk.[3]
- In the case of avian species, there are potential population-level impacts of displacing birds from important foraging areas or migratory routes, and underwater noise from increased vessel traffic as well as turbine installation and operation poses a potential threat to diving birds. Bird species that may be particularly impacted are modeled in a recent study designed to characterize avian distribution along the CCS and inform responsible OSW development, which is critical to consider in siting, adaptive management, and monitoring.[4]
- Climate change may cause the intensification of other stressors on wildlife populations, contributing to cumulative impacts. For example, prey-switching by humpback whales in response to variations in ocean conditions is important to consider in OSW development, as whales may vary their distribution and foraging behavior between years, requiring consideration for siting and adaptive mitigation measures. Insights from climate change and predictive habitat models will be critical to understanding the appropriate timing for monitoring and construction of OSW developments, particularly during anomalous years with marine heat waves and other climate driven changes that may affect the distribution of both marine mammals and human activities.

B. Benthic habitat

There are significant data gaps related to benthic habitat, which supports biodiverse marine communities, commercially important fisheries, and nutrient cycling. Data from area benthic transects and sea bottom sampling that identifies biological activity and benthic habitat is needed to identify areas with high levels of diversity and density of species to inform appropriate sites for OSW development. This analysis should include detailed ground truthing of current mapping, and mapping in areas where data gaps exist for the substrate and their biological communities. In addition, updated biological surveys may be needed in certain areas to ensure the OSW energy development sites are selected to minimize impacts to benthic communities. These surveys will enable the drafting and implementation of robust avoidance, minimization,

[3] http://schatzcenter.org/2020/04/seabird3dstudy/

[4] Leirness JB, Adams J, Ballance LT, Coyne M, Felis JJ, Joyce T, Pereksta DM, Winship AJ, Jeffrey CFG, Ainley D, Croll D, Evenson J, Jahncke J, McIver W, Miller PI, Pearson S, Strong C, Sydeman W, Waddell JE, Zamon JE, Christensen J. 2021. Modeling at-sea density of marine birds to support renewable energy planning on the Pacific Outer Continental Shelf of the contiguous United States. Camarillo (CA): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2021-014. 385 p.

and mitigation measures to protect the benthic ecosystem. We encourage the CEC to include data from the joint USGS-BOEM-NMFS EXPRESS research project, which is working to map and characterize deep-sea habitat on the continental shelf and slope.[5]

It is also important, in identifying potential new OSW sites, to protect biogenic structural habitat, which is comprised of three-dimensional structures created by slow-growing living organisms (e.g., corals, sponges) that support a high density and diversity of marine species, and Habitat Areas of Particular Concern (HAPC), which are subsets of Essential Fish Habitat that have a particularly important ecological role in fish life cycles or are especially sensitive, rare, or vulnerable to degradation. The strategic plan should prioritize avoidance of development in these areas. We also recommend the CEC prioritize collection of fine-scale benthic habitat mapping within HAPCs before leasing occurs (in the case that these areas cannot be avoided) given the increased likelihood for conflict and environmental harm. Finer scale mapping will ensure that the necessary data is on hand to advise decision-making for any contemplated development within the HAPC.

C. Oceanographic data

The strategic plan should identify oceanographic data and predictive models that inform presence and habitat use of wildlife in the marine environment, to identify drivers of changing habitat use, and to identify oceanographic events (e.g., marine heat wave, upwelling) that may change distribution or impact population health of marine mammals.

Additionally, we recommend incorporating baseline and continued monitoring to assess impacts on the biophysical processes which encompass abiotic and biotic conditions, including the chemical, biological, physical, and ecological components. This type of monitoring will allow for assessment of adverse impacts from installation and operation of OSW farms. Traditional oceanographic sampling of the water column, including instrumentation to sample water movement, chemical components (e.g., NO2, NO3, CO2, P), water quality (e.g. O2 saturation, pH, turbidity, nutrient load), and upwelling characteristics, in spatiotemporal conjunction with benthic biological sampling, will be needed to accurately assess ecosystem conditions pre- and post-installation.

Lastly, modeling studies are needed to assess potential impacts to upwelling both of individual projects and cumulatively with other projects and the buildout of additional OSW projects. Changes to upwelling may have impacts on wildlife and other consequences for the CCS.[6]

D. Soundscape

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[5] https://www.usgs.gov/centers/pcmsc/science/express-expanding-pacific-research-and-exploration-submerged-systems

[6] For example, a recent study found that blue whales may track short-term wind-driven upwelling intensification to find foraging opportunities. Ryan, J.P., Benoit-Bird, K.J., Oestreich, W.K., Leary, P., Smith, K.B. & Waluk, C.M. et al. (2022) Oceanic giants dance to atmospheric rhythms: Ephemeral wind-driven resource tracking by blue whales. Ecology Letters, 25, 2435–2447. Available from: https://doi.org/10.1111/ele.14116

Broadband baseline soundscape recordings are needed across all four seasons on noise levels within and adjacent to the Humboldt and Morro Bay WEAs and potential new sites, vessel traffic routes, and transmission corridors to shore, and also can provide for control sites for future monitoring. Robust baseline data would also reveal the acoustical changes to the habitat as a consequence of OSW development. Changes in the soundscape are a necessary complement to behavioral studies to assess potential displacement from important habitat areas due to increased noise. It is also critical to understand sound propagation at varying distances from lease sites in specific areas, and across different frequencies to assess potential impacts.

We recommend that the CEC prioritize the need for this data on noise levels as a critical step prior to project development as well as consider the need for continuous, ongoing broadband soundscape recordings of wind energy areas throughout all phases of project development to inform adaptive management and inform mitigation measures for future projects.

E. Vessel traffic

Increased vessel traffic associated with all phases of OSW energy development poses an increased vessel collision risk for sea turtles and marine mammals. There will potentially be thousands of vessel trips in the survey and construction phases alone for existing and future OSW development.[7] It is critical to have a more recent and comprehensive understanding of vessel traffic in both WEAs as well as across all potential sites to inform sea space identification and planning and to assess how vessel traffic will increase risk to marine species.

F. Cumulative impacts

A full and adequate evaluation of potential direct, indirect, and cumulative impacts, measures to avoid, minimize, mitigate and monitor for potential impacts, and alternatives for wind development within the Humboldt WEA and Morro Bay WEA and potential new OSW sites should consider the reasonably foreseeable effects of development within individual areas and the cumulative impacts of development in the region.

Additionally, any coastal development, port upgrades, or related infrastructure that is required for project development would contribute to cumulative impacts on coastal species, including migratory shorebirds and others that depend on eelgrass and other biologically significant nearshore and coastal habitats. It is critical to protect the state's remaining eelgrass and avoid impacts to other sensitive habitats, as well as to assess the environmental impacts of the onshore development that will occur as OSW is developed. Shipping activities, transmission elements, and port-based construction and operation (including port upgrades or new deep-

[7] For site characterization alone, BOEM estimates "The number of round trips for project-related vessels over a 3-year period will range from 188–274 for 24-hour operations or 566–598 for 10-hour daily operations. An additional 21–30 round trips will be conducted over a 5-year period for the deployment, maintenance, and decommissioning of 3 metocean buoys." for both the Humboldt WEA and Morro Bay WEA (P.17, CONSISTENCY DETERMINATION For Leasing Wind Energy Areas Offshore Morro Bay, California. U.S. Department of the Interior, Bureau of Ocean Energy Management, Pacific Outer Continental Shelf Region. April 15, 2022.; P.26, CONSISTENCY DETERMINATION For Leasing Wind Energy Areas Offshore Humboldt County, California. US. Department of the Interior, Bureau of Ocean Energy Management, Pacific Outer Continental Shelf Region. January 24, 2022.).

water port construction) have significant potential to disrupt, disturb, or otherwise cause negative impacts to coastal and shoreline dwelling species and sensitive coastal and nearshore habitats.

G. Monitoring

Standardized monitoring is vital to ensuring a successful and efficient buildout of environmentally responsible OSW in California. Environmental baseline data collection and long-term environmental monitoring of OSW, at both the regional level and at specific project sites, will help explain whether and how floating OSW projects impact the surrounding environment. The CEC should incorporate baseline monitoring data into its sea space assessment, as available, and support further baseline data collection in potential OSW sites. Standardized monitoring is necessary to assess the degree to which efforts to avoid, minimize, and mitigate harm have been successful, while also enabling the adaptive management and effective mitigation of adverse environmental impacts that may occur.

III. Conclusion

We appreciate this opportunity to provide comments and look forward to reviewing CEC's materials regarding suitable sea space and other materials to inform the draft strategic plan. Should you have any questions about these comments we would be pleased to discuss in greater detail and can be reached at igutierrez@nrdc.org.

Sincerely,

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