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Comments on Proposed Sale Notice for Commercial Leasing for Wind on the Outer Continental Shelf in California – Docket No. BOEM-022-0017

The Environmental Protection Information Center (EPIC), Coalition for Responsible Transportation Priorities, Northcoast Environmental Center and Humboldt Baykeeper submit these comments on the Proposed Sale Notice for Pacific Wind Lease Sale 1 for Commercial Leasing for Wind Power on the Outer Continental Shelf (OCS) in California prepared by the Bureau of Ocean Energy Management (BOEM), Docket No. BOEM–2022–0017 (hereafter "PSN").

Our organizations enthusiastically support the responsible development of floating offshore wind off of Humboldt County's coast. Offshore wind energy has the potential to cut local greenhouse gas emissions, stimulate economic development by supporting well-paying jobs and local supply chains, and advance environmental justice. We are cognizant that the Humboldt wind area is one of the first floating offshore wind projects to be developed in the United States, and thus, this project serves an important role both in establishing precedent for other future wind energy projects and for learning more about how to successfully develop this technology at a scale necessary to tackle the climate crisis.

Global Warming remains an existential threat to biodiversity on earth. It is without a doubt the threats posed are real and present. The Intergovernmental Panel on Climate Change recently indicated in its Sixth Assessment Report that a 1.5-degree Celsius rise in global temperatures is inevitable if greenhouse gas emissions are not cut within the next few years. As a result, human and natural systems will experience additional severe risks and some impacts will be irreversible with a 1.5 degree Celsius rise. Therefore, It is crucial we make significant gains in the transition from fossil fuels to clean, renewable energy to meet our energy needs. According to the EPA, in the year 2020, electricity production accounted for 25% of U.S. greenhouse gas emissions, the second largest share of greenhouse gas emissions, an area to

make significant progress. However, according to the U.S. Energy Information Administration's 2021 Annual Energy Outlook report, In the U.S, greenhouse gas emissions from the energy sector are projected to increase by 2050 even when utility clean energy goals are taken into account. Immediate and ambitious action is needed if the U.S. is to meet its greenhouse gas emission reduction targets.

As a pivotal first step, the Biden administration has issued a number of executive orders and goals to tackle the climate crisis. Among them include reducing net greenhouse gas emissions by 50-52 % below 2005 levels by 2030, a necessary target if the U.S.'s actions are to be of significance. Additionally, the Biden Administration has issued executive order 14008, *Tackling The Climate Crisis at Home and Abroad* and established the *Justice40* initiative to promote equality in historically marginalized communities by establishing a goal that 40 percent of benefits from federal investments flow to underserved communities. Notably, California's Senate Bill 32, *California Global Warming Solutions Act of 2016: emissions limit,* aims to reduce greenhouse gas emissions by 40% by 2030 below 1990 levels and Senate Bill No. 100 requires the state to procure 60% of all electricity from renewable sources by 2030 and 100% from carbon-free sources by 2045.

Offshore wind is a renewable source of energy that will be needed to meet federal and state energy transition targets. If fully developed, the Humboldt Wind Energy Area has the potential to generate up to 1.6 gigawatts of energy, enough to power 560,000 homes. Our organizations welcome this PSN and hope to advance responsibly developed offshore wind power for Humboldt County.

I. BOEM Authority to Advance Responsibly Developed Offshore Wind Energy

Under the Outer Continental Shelf Lands Act (OCSLA), BOEM has the authority to establish lease stipulations and auction credits that further the Administration's goals. Specifically, lease stipulations and auction credits that incentivize investments that will increase the likelihood of successful offshore wind projects in federal waters help achieve the "expeditious and orderly development of offshore energy resources" and a "fair return to the United States," stated objectives of the OCLSA.

Additionally, OCSLA requires the Secretary of the Interior to ensure that any offshore wind project leased on the OCS "provides for...protection of the environment," and the statute defines three different components of the environment: human environment, marine environment, and coastal environment. Under 30 C.F.R. § 585.211(b)(2)-(3), as part of the competitive lease sale and issuance process, BOEM must also "evaluate the potential effect of leasing on the human, marine, and coastal environments, and develop measures to mitigate adverse impacts, including lease stipulations" and "consult to develop measures, including lease stipulations and conditions, to mitigate adverse impacts on the environment." OCSLA and its regulations define the human environment as "the physical, social, and economic components, conditions, and factors which interactively determine the state, condition, and quality of living conditions,

employment, and health of those affected, directly or indirectly, by activities occurring on the OCS."

Our organizations offers the following recommendations for lease stipulations and incentives to advance responsible development of offshore wind energy. Our goal is to mitigate impacts from development and operation on marine ecosystems, ensure maximum amount of local economic stimulation is met, and advance environmental justice.

We appreciate BOEM's consideration of these recommendations to the leasing process

II. Wildlife Protection Measures

BOEM has indicated its intent to include mitigation measures for wildlife, titled "Measures to Minimize Potential Adverse Impacts to Birds and Typical Mitigation Measures for Protected Marine Species," as part of the PSN. We support the early inclusion of mitigation measures at this PSN stage as this ensures that potential lessees and all projects completed in federal waters offer the same base minimum protections for wildlife. It reduces friction between developers and environmental activists to outline at the outset what is to be required. That said, the protections outlined in this document are insufficient to ensure that wind energy development will not impact wildlife. While project-specific avoidance and mitigation measures are typically included later in the project development process, earlier expectation setting by BOEM can help in developing projects that both deliver on the West Coast's wind energy potential while reducing impacts to wildlife.

The offshore environment, between 20–25 miles offshore, is relatively poorly studied. While we have some understanding of bird and marine mammal presence, there remain open questions about animal use of this environment. For example, Solick and Newman (2021) synthesize what is known about bats in the offshore environment as well as our existing knowledge gaps, which are considerable.

Floating offshore wind is a novel technology that has not been utilized on the West Coast of North America and only has limited worldwide application. Although we know certain features of species life histories that might suggest which species may be at risk from operation of floating offshore wind turbines, actual species interaction with offshore wind turbines and other associated structures is virtually wholly unknown. Said another way, while we can make informed guesses at how species might be affected by offshore wind operations, it is only until we have turbines in operation that we can fully understand how turbines impact wildlife in the Pacific marine environment.

Given this substantial data gap, we need to develop robust data that is transparent and shared in real time and allow for data to feedback and inform management through adaptive management provisions.

1. Developing Robust Data

The offshore environment poses challenges for the collection of data concerning wildlife interactions with wind turbines. Carcass searches, a common requirement for onshore wind projects that require a regimented search near turbines for bird and bat carcasses, are not possible in the marine environment. Thankfully, new technology presents an ability to scan for wildlife collisions with turbine blades and pair collisions with other monitoring data, such as cameras, to determine the nature of the collision and the species impacts. Multiple models of automated collision detection have been tested. Clocker et al. (2020); Clocker et al. (2021); Hu & Albertani (2021); Kang & Kang (2018); Solick & Newman (2021).

Because collision monitors and other similar technology require minor modification of the turbines, the earliest possible incorporation of this technology, as here in the PSN, makes their incorporation more feasible as some modifications may impact manufacturer warranties. Early incorporation allows for projects to negotiate and install technology in a manner that preserves manufacturer warranties, reducing risk to project developers.

2. Ensuring Transparent Data Sharing

Initial project development has fostered a culture of open data sharing and public access to data through initiatives such as the California Offshore Wind Energy Gateway, powered by Data Basin and supported by BOEM, the California Energy Commission and the California Public Utilities Commission. EPIC urges that this open data sharing continue through project development and project operation. In certain onshore projects, data is often withheld from public access as a “confidential trade secret.” As some of the first floating offshore wind projects, it is important that we review these initial projects as public experiments to learn from and improve practices both to increase the large-scale buildout of this technology and to reduce wildlife impacts at this and future projects.

3. Incorporating Adaptive Management

The “unknowns” concerning wildlife interactions with floating offshore wind are concerning. Mitigation measures for projects are often arrived at prior to project implementation through environmental impact analysis required by NEPA and the ESA. Understanding that there are likely going to be impacts that are unforeseen, a structured adaptive management program needs to be required by BOEM to develop objective, science-based processes to evaluate real time data to look for concerning trends and to determine corrective actions.

First, it is important to develop objective and biologically-meaningful “triggers” for adaptive management. These should reflect when a “significant impact” from the development and operation may occur. These impacts will be different for each species depending on their abundance and kinds of impacts. It may not be possible to initially establish appropriate risk tolerances for some species or it may occur that some species are impacted in ways not

contemplated at the outset of projects. For these, an additional body of experts should be able to weigh impacts and create new triggers or themselves trigger new project mitigations.

Second, after having been triggered, it is important that adaptive management be biologically meaningful and reduce impacts to species to the greatest way possible while averting power loss to the maximum extent possible. A well-crafted adaptive management team should be composed of experts in the field and facilitated by a neutral third party. Operational curtailment, addressed below, may be necessary as a mitigation measure.

4. Incentivizing Operational Curtailment During High-Risk Periods

We urge the incorporation of operational curtailment during high-risk periods for migratory birds that are impacted by the proposed development. Curtailment is a standard mitigation measure applied across onshore wind projects to protect both listed and unlisted species. Curtailment is applied in a variety of forms. In some instances, curtailment is applied for periods determined to be "high risk" for the species to be protected. While beneficial to protected species, this form of curtailment can both over- and under-protect, as it relies on a predictive model of species presence, not real-time data. Emerging technologies, however, are able to provide for "smart" curtailment to only initiate curtailment when species are present and at risk. Smart curtailment can be accomplished in a variety of ways. For certain larger-bodied birds, like California condor, GPS trackers can inform curtailment by initiating shutdown procedures when a bird enters a particular zone. AI image recognition, such as the "IdentiFlight" program, can be utilized to determine species presence and initiate curtailment. Other audio or visual recognition software, such as acoustic bat detectors, can likewise alert operators to protected species and initiate

5. Allowing for Credits for Advanced Mitigation

Because operational curtailment requires physically stopping energy production through stopping the rotation of turbine blades, it comes at a certain level of cost to the operator. To incentivize wind energy developers to agree to mitigate impacts through operational curtailment, bid credits should be extended for agreeing to up to 5% operational curtailment for wildlife protection.

III. Incentivizing Energy Storage and Green Hydrogen

Grid capacity constraints limit the size of initial projects in the Humboldt Wind Energy Area. The Schatz Energy Research Lab at CalPoly Humboldt estimates that grid export constraints limit the initial buildout of offshore wind in the area to 174 MW, significantly short of the total potential size, and even then, it is likely that some measure of forced curtailment will be necessary. Jacobson et al. (2022).

Energy storage can reduce curtailment from offshore wind projects by sopping up "excess" power and storing it for later use. One potential form of energy storage that is desired by the local community is "green hydrogen" production. Humboldt County's hydrogen needs are

currently met through hydrogen that is trucked into the county from around Sacramento. With projected increased hydrogen fuel needs, to meet demand by the Humboldt Transit Authority among other users, locally-produced hydrogen would be a substantial benefit to the project. In addition to fueling buses and other forms of transportation, hydrogen can also be blended into the fuel utilized at the Humboldt Bay Generating Station, reducing the greenhouse gas emissions from this power generation.

BOEM should incentivize energy storage through crediting developers who pledge to onshore include energy storage in the lease bid process.

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