



**Via E-Mail: [humboldtoffshorewind@boem.gov](mailto:humboldtoffshorewind@boem.gov)**

Regional Supervisor  
Office of the Environment  
Bureau of Ocean Energy Management  
760 Paseo Camarillo, Suite 102  
Camarillo, California 93010

**Re: Humboldt Environmental Assessment**

September 13, 2021

Dear Sir/Madam:

We write to you on behalf of the members of the Business Network for Offshore Wind (the Network) and to provide comments concerning the Bureau of Ocean Energy Management (BOEM)'s [request for scoping comments](#) to inform the environmental assessment (EA) that is being prepared regarding future commercial wind lease issuance on the Pacific Outer Continental Shelf (OCS) off the coast of Humboldt County, California.

The Network is the largest national non-profit organization solely focused on the development of the offshore wind industry and its supply chain. The Network convenes business and government, both domestically and internationally, to expand the U.S. offshore wind industry and the supply chain supporting it. The Network empowers its members with the education, tools, and connections necessary to participate in this globally booming industry.

The Network also uses the voice of its members to educate and support federal, state, and local policies to expand the deployment of offshore wind. Many of the key market players advancing offshore wind towards deployment in California (and all other U.S. waters where offshore wind is being contemplated or developed) are active members of the Network. These member organizations have been collaborating with the Network for years on California policy issues impacting offshore wind. The California Wind Energy Association (CalWEA) has been a key partner with the Network in advancing offshore wind in the state. The Network's Floating Offshore Wind Working Group is continuing, in a collaborative fashion, to build upon the solid foundation that the Network's previous work has established.

The Network facilitates information exchange between mature international offshore wind markets, the rapidly expanding U.S. East Coast fixed-bottom offshore wind industry, and the cutting-edge U.S. Pacific floating offshore wind sector. Since 2018, the Network has engaged with stakeholders and policymakers to elevate the profile of offshore wind in California, including the Public Utilities Commission (CPUC), California Energy Commission (CEC), Independent System Operator (CAISO), State Lands Commission (CSLC), Coastal Commission (CCC), and others, as well as [Assemblymember David Chiu](#), sponsor of the AB-525 offshore wind legislation, which would establish the planning needed for deploying offshore wind in federal waters off the California coast.

The Network applauds BOEM's actions to advance offshore wind off the California coast. This has included collaboration with the State of California in extensive data gathering and initial engagement with ocean users, tribes, local communities, federal partners, and the general public. These efforts have resulted in the identification of the Humboldt Wind Energy Area (WEA).

Offshore wind is now a nationwide industry in the U.S. The Humboldt WEA – along with the Morro Bay Call Area, which is situated along California's Central Coast – are key drivers of the sector's westward expansion into U.S. Pacific waters. Although international markets have been the innovators and principal drivers of the maturation of fixed-bottom offshore wind, the U.S. is now poised to emerge as a global trendsetter in deploying floating offshore wind. By moving forward with the Humboldt WEA EA, and conducting leasing offshore California during 2022, BOEM brings this goal one step closer to being realized.

The Humboldt WEA is near some of the [best offshore wind resources](#) found along the entire U.S. Pacific Coast. Estimated average wind speed (on a mean annual basis) is approximately 9.2 meters per second (about 20.6 miles per hour), which exceeds some commercial deployments in Europe. The wind resources in the Humboldt WEA are strong and consistent, meaning that an offshore wind facility deployed in this area has the potential to generate a greater amount of electricity during more hours throughout the year. The nature of these wind resources, and the offshore location away from wildfires, means that offshore wind deployments off Humboldt would enhance the resiliency of the onshore electricity grid. The Humboldt WEA has an estimated potential installation capacity of approximately [1.6 gigawatts \(GW\)](#), which is enough to power [more than 500,000 homes](#).

The Network applauds BOEM for advancing the offshore wind leasing process off the coast of California. The Network also underscores the importance of BOEM maintaining the tremendous momentum that is now driving U.S. offshore wind forward in the Atlantic Ocean, Gulf of Mexico, Pacific Ocean, and elsewhere. BOEM can sustain this pace of progress – and by implication enhance investor confidence in the U.S. offshore wind market – by steadily advancing a consistent supply of additional offshore wind lease areas for auction and conducting leasing off the California coast during 2022. By continuing to signal to the domestic and international offshore wind supply chain that the U.S. is ready to put steel in the water, BOEM keeps the U.S. in the international offshore wind conversation and solidifies the U.S. leadership position in floating offshore wind.

BOEM must keep pace with California's need for significant quantities of clean energy and the rapid expansion of the global offshore wind industry. The California Energy Commission's (CEC) [Offshore Renewable Energy website](#) makes clear that offshore wind "is poised to play a large role in helping California meet its renewable energy goals." An [analysis of SB-100](#), the 100 Percent Clean Energy Act of 2018, shows that 10 GW of wind power generated offshore California could help the state meet its carbon-free target by 2040.

However, the U.S. offshore wind market is not developing in a vacuum. Emerging and mature global offshore wind markets are experiencing spectacular growth. Global investment in the offshore wind sector reached a record [\\$30 billion USD](#) during 2020. Without a continued supply of additional offshore wind lease areas in U.S. waters, surging global demand and competition for

offshore wind project components, services, and raw materials could draw attention away from the U.S. market, preventing the U.S. from reaching its state and federal offshore wind targets. The intensity of global competition could also decrease the percentage of U.S.-sourced offshore wind project components and services, which in turn would preclude the U.S. from realizing the full economic potential of the offshore wind industry.

The sense of urgency to proceed with offshore wind leasing must also be placed in the context of increasing concerns resulting from competitive demands to expand renewable energy and the concerns about climate change impacts. The Network has calculated that European markets now aim to achieve a cumulative deployed capacity of 116 GW by 2030, while Asian deployment targets (excluding China) total approximately 58 GW by 2030. Assuming China achieves approximately 50 GW, and including the U.S. goal of 30 GW, **the globe intends to deploy on the order of 254 GW of offshore wind capacity by 2030**. The U.S. goal of 30 GW by 2030 represents approximately 11.8% of cumulative global targets for 2030. To put this in context, global cumulative capacity is currently approximately 35 GW, and **6.1 GW** of offshore wind capacity was commissioned during 2020. Globally, development is expected to ramp up, and a recent report noted that **more than 70 GW** of offshore wind are expected to be added worldwide during 2021 to 2025.

Markets in both Europe and Asia are already driving floating offshore wind forward, with multiple operational pilot projects of varying designs already in the water. **Three 100 MW** floating offshore wind projects in the Celtic Sea (United Kingdom) recently advanced in the environmental assessment process, and the United Kingdom has announced a goal of deploying 1 GW of floating offshore wind by 2030. In Asia, floating pilot projects are being developed in **Japan, South Korea, and Taiwan**. In South Korea, the feasibility of developing a **1.4 GW** floating offshore wind farm is currently being assessed. The U.S. must keep pace.

Beyond these commercial considerations, climate change is real, and it is causing incalculable economic damage as well as unspeakable human suffering and death across the globe **now**. The **August 2021 IPCC Report** forecasts a stark future: “unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.” An August 2021 **journal article** noted “significant early-warning signals” across eight indices of potential collapse of the Atlantic Meridional Overturning Circulation (AMOC), a major ocean current system transporting warm surface waters toward the northern Atlantic. A collapse of the current AMOC state “would have severe impacts on the global climate system and would increase the risk of a cascade of further transitions” in other critical Earth systems, such as the “Antarctic ice sheet, tropical monsoon systems, and Amazon rainforest.” There could be somewhat similar effects to the northern portion of the California Current, which brings nutrient-rich cold water to the California coast and forms the base of an immensely productive living marine system.

The California Department of Forestry and Fire Protection (**CAL FIRE**) 2021 Fire Season Outlook observes that

[w]hile wildfires are a natural part of California’s landscape, the fire season in California and across the West is starting earlier and ending later each year. Climate change is considered a key driver of this trend. Warmer spring and summer temperatures, reduced snowpack, and earlier spring snowmelt create longer and more intense dry seasons that increase moisture stress on vegetation and make forests more susceptible to severe wildfire. The length of fire season is estimated to have increased by 75 days across the Sierras and seems to correspond with an increase in the extent of forest fires across the state. NIFC predicts portions of the Coast Ranges, Sierra, and Cascades in California increasing to above normal fire danger in June and July and continuing through September.

Reuters reported that the 2020 wildfire season in the western United States cost insurers between [\\$7 and \\$13 billion](#) in insured losses, but this does not reflect the complete economic footprint of these events. Taking a broader view, the University College London calculated that, during 2018, the wildfires that took place within just California [cost the U.S. national economy \\$148.5 billion](#), or 0.7% of national annual GDP. Moreover, \$45.9 billion of these losses were sustained outside of California.

The existential threat posed by climate change demands resolute action in response. Offshore wind is a key driver of the transition to large-scale decarbonized electricity grids. By continuing to advance offshore wind leasing off the California coast, like the Humboldt WEA, BOEM’s actions meet the challenge of climate change head-on and advance the U.S. position at the leading edge of floating offshore wind deployment.

An EA is part of the National Environmental Policy Act (NEPA) process that governs offshore wind projects in federal waters. The [purpose of the EA](#) is “to determine the significance of the environmental effects [of the Proposed Action] and to look at alternative means to achieve the agency’s objectives.” Just like the U.S. offshore wind market is not developing in a vacuum, the Network urges BOEM to consider this EA in the broader context of the climate crisis that we are presently facing.

Furthermore, the [EA scoping process](#) is an opportunity to provide input that will “assist BOEM in determining important resources and issues, impact-producing factors, reasonable alternatives, and potential mitigating measures to be analyzed under NEPA.” The Network encourages a comprehensive analysis of benefits, not just costs, as part of BOEM’s consideration of the Humboldt WEA EA. Studies conducted by the federal and state governments and other organizations have observed that offshore wind projects provide measurable positive benefits to the environment, grid reliability, ratepayers, and the state, regional, and national economies. A recent analysis [concluded](#) that the rapidly developing economic opportunity presented by the U.S. offshore wind industry is on track to exceed \$100 billion for capital expenditures alone, without even accounting for long-term operational expenditures.

As part of the scoping process for the Humboldt WEA EA, the Network recommends that BOEM consider innovative offshore transmission options. Among the potential solutions considered should be an offshore subsea transmission cable that will enable offshore wind-generated electricity from the Humboldt WEA to flow south to load centers near the Bay Area. The Network submits that it is important for BOEM, at the EA scoping phase, to account for transmission options beyond traditional generator lead-line interconnection strategies. This is because the EA must consider the environmental impacts connected with the granting of rights-of-way (ROWs) and rights-of-use and easement (RUEs) that are necessary to provide a path to market for any future offshore wind leases in the Humboldt WEA.

There is precedent for BOEM taking innovative transmission approaches into account during the EA process. The Overall Scenario Assumptions underpinning the [draft EA for the New York Bight](#) (released August 2021) include consideration of a backbone transmission system. In fact, the Schatz Energy Research Center – in partnership with BOEM, the State of California, and Mott MacDonald – performed a [conceptual-level assessment](#) that considers routing of a high voltage direct current (HVDC) cable from Humboldt to the San Francisco Bay area.

Consideration of a potential backbone transmission system is also appropriate given the unique conditions of the Humboldt WEA. The WEA has excellent offshore wind resources but has [limited regional electricity demand and lacks transmission capacity](#) to absorb offshore wind generated electricity or transfer it to other load centers in California. The corollary of these constraints is that significant upgrades – either onshore, offshore, or both – will be required to maximize the potential of the Humboldt WEA. A [study](#) by the National Renewable Energy Laboratory (NREL) pointed out that construction of transmission capacity to serve the Humboldt WEA “could also affect the transmission options for future offshore wind power plants in Northern California.” This study noted further that a subsea transmission backbone could transmit power from offshore wind facilities in Northern California to the San Francisco Bay area. By moving at least some of these necessary transmission assets offshore, wildfire risk could be mitigated. This offshore pathway could also be a mechanism for enhancing reliability of the onshore grid, which is facing increasingly severe pressures from climate change. The Network encourages BOEM to consider, during the EA process, development of an offshore transmission backbone to connect future offshore wind projects in the Humboldt WEA to the San Francisco Bay area.

Planning for a possible future offshore transmission network in the northern California/southern Oregon region also makes sense because of the excellent offshore wind resource that straddles the border between the two states. Grid integration of large amounts of renewable energy requires a systemic re-thinking of how grid infrastructure is constructed. Traditionally, fossil-fuel generation plants were sited as close as possible to areas with high electricity demand. By contrast, with renewable generation technologies, transmission infrastructure must be constructed to connect geographic areas with suitable resources to load; these resources cannot be physically relocated. Offshore wind presents a [cross-border, mutually beneficial opportunity](#) for California and Oregon.

Additionally, the Network encourages BOEM to consider during the EA development process the positive impacts to demographics and employment that could occur because of site

characterization and site assessment activities in the Humboldt WEA. The Business Network for Offshore Wind represents the entire depth and breadth of the U.S. offshore wind supply chain, which is growing every day. The Network is aware of more than 500 supply chain contracts associated with U.S. offshore wind development, many of which are held by U.S.-based companies.

The Network's principal mission is to stimulate and advance the establishment of a domestic U.S. offshore wind supply chain. To advance this mission, the Network offers an integrated suite of educational products – including Offshore Wind 101, Offshore Wind Ready, and Foundation 2 Blade – all of which can aid businesses in entering the offshore wind industry. Wages in the industry are competitive, and skilled, trained workers are in demand; this provides a transition opportunity for oil and gas workers. The state and local communities near the Humboldt WEA can be the forefront of this new economic opportunity for the Pacific Coast. Offshore wind-associated investments into Humboldt are already starting: the [Redwood Coast Energy Authority provided \\$50,000](#) in funding to the Humboldt Bay Harbor District to support preparation of a proposal to secure ~\$66 million in state and federal funding to redevelop Humboldt's port infrastructure to support offshore wind development.

A recent analysis conducted by the [University of Southern California](#) (USC) confirmed the wide array of significant benefits that offshore wind can bring to California. These benefits include at least \$1 billion in savings in clean electricity resource costs, improved reliability of electricity, thousands of jobs, significant reductions in carbon emissions, minimized onshore impacts relative to onshore wind and solar, and reductions in ordinary air pollution which disproportionately impacts socioeconomically disadvantaged urban areas in California. Citing a 2021 policy briefing published by the Network's Floating Offshore Wind Working Group, the USC report at page 31 notes that decisions to localize investments in offshore wind component manufacturing sites in California will be a function of the scale of California's offshore wind goals.

To maximize the competitiveness of the U.S. Pacific floating offshore wind market in the face of ever-increasing pressure from international markets, the Network encourages BOEM, and California, Oregon, Washington, and Hawaii, to strongly consider collaboration on and effectiveness from regionalizing supply chains. The coordination of offshore wind power procurements between states – specifically California and Oregon – would enable an aggregation of supply chain demand. This would drive greater visibility of the U.S. Pacific in the global market, which would enhance competition, driving down costs. Larger component demands would also increase the likelihood of localization of offshore wind component manufacturing in the U.S., and the potential to revitalize Pacific Coast ports, like the Port of Humboldt Bay.

Constrained availability of ports is one of the key hurdles that must be resolved to enable deployment of offshore wind off the California coast. European ports are already encountering these challenges with floating offshore wind projects. Few California ports can meet the logistics needs of floating offshore wind projects. Many potentially suitable ports are at or close to their capacity due to high volumes of container vessel or other maritime traffic. The Port of Humboldt Bay is currently pursuing state and federal funding to support redevelopment for offshore wind uses, but these improvements will not be fully operational for years. Because of these long



timelines, decisive action is needed now to drive the expansion and redevelopment of the port infrastructure that California requires if offshore wind projects are to be deployed in federal waters off the state's coast.

The Business Network for Offshore Wind thanks BOEM for the opportunity to provide these comments and inform preparation of the EA and looks forward to continued engagement regarding offshore wind development in the Humboldt Wind Energy Area.

Very truly yours,

A handwritten signature in black ink that reads "Brandon W. Burke". The signature is written in a cursive, flowing style.

Brandon W. Burke  
Vice President for Policy & Regulatory Engagement  
Business Network for Offshore Wind