New England Fishery Management Council

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

July 26, 2023

Jessica Stromberg, Chief
Environmental Branch for Renewable Energy
Bureau of Ocean Energy Management
45600 Woodland Road (VAM-OREP)
Sterling, Virginia 20166

Re: Notice of Intent to Prepare and EIS for the Beacon Wind project

Dear Ms. Stromberg,

Please accept these comments from the New England Fishery Management Council (New England Council) and Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) regarding the Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the Construction and Operations Plan (COP) for the Beacon Wind (BW) project off Massachusetts. The COP proposes installing two offshore wind projects in the Lease Area (BW1 and BW2) and would include up to 155 wind turbine generators, 2 offshore substations, and 2 HVDC export cables. BW1 is expected to deliver 1,230 MW to Queens, NY and BW2 is anticipated to deliver more than 1,200 MW to either Queens, NY or Waterford, CT. Combining both projects, up to 728 nautical miles of cables would connect the turbines, offshore substations, and onshore connection points.

The New England Council has primary management jurisdiction over 28 marine fishery species in federal waters and is composed of members from Maine to Connecticut. The Mid-Atlantic Council manages more than 65 marine species[1] in federal waters and is composed of members from the coastal states of New York to North Carolina (including Pennsylvania). In addition to managing these fisheries, both Councils have enacted measures to identify and conserve essential fish habitats (EFH), protect deep sea corals, and sustainably manage forage fisheries. The Councils support policies for U.S. wind energy development and operations that will sustain the health of marine ecosystems and fisheries resources. While the Councils recognize the importance of domestic energy development to U.S. economic security, we note that the marine fisheries throughout New England and the Mid-Atlantic, including within the Beacon Wind project area and in surrounding areas, are profoundly important to the social and economic well-being of communities in the Northeast U.S. and provide numerous benefits to the nation, including domestic food security.

Our key recommendations are as follows. Additional details are provided below.

- 60-day comment periods are preferable over 45-day periods for public review and input on COPs and NEPA documents.

[1] Fifteen species are managed with specific Fishery Management Plans, and over 50 forage species are managed as "ecosystem components" within the Mid-Atlantic Council's FMPs.

- The EIS should clarify how the two-project approach works in terms of BOEM's approval process and if/how lessons learned from one project will inform the second project.
- The DEIS should document which portions of the lease area can be developed based upon the seabed conditions (e.g., presence of glauconite) before developing a range of alternatives. The DEIS should also specifically explain if and to what extent seabed conditions dictate turbine and offshore substation foundation type.
- For alternating to direct current conversion, closed-cycle systems should be considered to minimize entrainment of larva.
- We support all efforts to avoid impacts to submerged aquatic vegetation (SAV) and other structured habitats along the cable route and to avoid impacts to areas designated by the Councils as Habitat Areas of Particular Concern.
- We recommend working closely with NOAA Fisheries to identify appropriate fishing and habitat data to use when informing alternatives development and any potential impacts and mitigation measures needed.
- The DEIS should address impacts to radar for vessels transiting and fishing within the lease area in a 1x1 nm layout. The COP emphasizes that impacts are not expected 1.5 nm from the turbines.

General comments

Given the current pace of offshore wind energy development in this region combined with workload constraints, we are unable to provide a detailed review of the COP for this project. However, we recognize that the analyses in the EIS will have important ramifications for terms and conditions which may be implemented through final project approval, including fisheries mitigation and compensation measures. With this in mind, we strongly encourage BOEM to consider the recommendations listed in the wind energy policies adopted by both Councils, which apply across all projects.[2] Our two Councils worked together and adopted the same wording for these policies. We also urge BOEM to adopt the recommendations provided by NOAA Fisheries for this project, including recommendations for alternatives to consider, data sources, impacts analysis, and ways to minimize the negative impacts of this project on marine habitats, commercial and recreational fisheries, and fishery species.

We recommend that BOEM extend the comment period for this scoping opportunity and future scoping and DEIS document reviews to 60 days, consistent with multiple other projects (e.g., Sunrise Wind, CVOW, New England Wind, SouthCoast Wind). A 60-day comment period for review is preferable over 45 days given the length and complexity of the COP and associated documents. This comment period overlapped with the notice of availability for the Atlantic Shores South DEIS and with opportunities related to both commercial and research leasing in the Gulf of Maine. Consulting and coordinating on these projects is taxing available resources in the fishing, fishery management, and fishery science communities.

Beacon Wind is the fourth combined, two-stage Northeast U.S. offshore wind project to undergo environmental review and permitting. The EIS should describe how the two-project approach works in terms of BOEM's approval process. The concept of adaptive management is raised

[2] Available at https://www.mafmc.org/s/MAFMC_wind_policy_Dec2021.pdf

frequently in relation to U.S. offshore wind development. Because power that will be generated from BW2 has not yet been procured, the timeline for construction remains uncertain, and development may follow several years after BW1. There will likely be lessons learned during that time that might inform and help mitigate negative effects during construction of BW2. Will permit issuance, terms and conditions, and mitigation measures identified via the federal consistency process be adaptive such that lessons learned during BW1 can be applied to BW2?

Volume 2a of the COP references the presence of glauconite sands in the project area. From our review of Equinor's Empire Wind project and response to questions during the public hearing for this project, we understand that this may render portions of the lease area unsuitable for construction, at least using monopiles or piled jacket foundations. The EIS should clearly document which portions of the lease are suitable for development using each type of foundation. It is important to collect the necessary data and make these determinations prior to developing the range of alternatives under consideration in the DEIS. The size of the project (based on state procurements) combined with the specific positions used and turbine size (which governs the number of positions needed) will affect the magnitude of project impacts.

The export cable for BW1 is planned to run the full length of Long Island Sound, making landfall in Queens, NY. The export cable for BW2 will either use the same route, or make landfall in Waterford, CT. The EIS should thoroughly explain how this route and the alternate cable route versions shown in Figure 2.1-7 and described in Section 2.1.3.2.1 of the COP were determined and which stakeholders were consulted and which current spatial plans were considered, including the Long Island Sound Blue Plan. The EIS should also explain what is meant by assessing "the possibility of cable linkage between BW1 and BW2" if both projects connect to the New York Independence System Operator (NY ISO) (COP Volume 1 Section 1.2) given the projects are considered electrically independent. Is this different than sharing a cable corridor?

As the impacts analysis is developed, clear terminology will be important for readers to understand the complexity of the alternatives considered and the large number of impact-producing factors and environmental resources evaluated. The EIS should specify both magnitude and direction when characterizing impacts and define short and long term in the context of impacts.

Alternatives considered in the EIS

BW1 was procured by New York and is expected to generate 1,230 MW. BW2 has not been procured yet but is expected to generate more than 1,200 MW for either New York, Massachusetts, Rhode Island, or Connecticut. The project design envelope for both projects does not specify turbine nameplate capacity "because turbine suppliers have demonstrated an ability to modify generating capacity without changing physical dimensions" and the capacity "will be selected during the procurement process and is expected to be the most technologically advanced and efficient model available at that time" (COP Volume 1 3-4). It is difficult to comment on layout alternatives absent turbine capacity information. The EIS should specify both dimensions and capacity. A discussion of whether specific turbine capacities are feasible given market or other conditions would be appropriate to include in the DEIS. For example, the Revolution Wind DEIS considered an alternative for larger turbines, but the FEIS discusses that larger capacity

generators are not feasible due to having dimensions that exceed the PDE or because GE Haliade turbines cannot be used in U.S. projects. While it is reasonable to analyze additional alternatives in the DEIS recognizing that conditions can change, the realistic constraints associated with different alternatives should be clearly communicated.

The alternatives descriptions in the EIS should outline various layout options for each project, depending on the size of turbines selected and the amount of power to be generated by BW2. It will be important to clearly outline a wide range of possible scenarios for BW2 if the project size is unknown at the time of EIS completion.

Alternatives that meet / do not meet existing state procurements have been referenced as feasible / infeasible in past EIS documents. As we have stated in many past comment letters on other wind projects, the purpose and need as defined in the EIS should not be structured such that only projects which can meet existing procurements, procurement goals, or other goals of the developer will be considered. This grants too much deference to the wind project developers and limits BOEM's ability to consider ways to reduce the potential negative impacts, including protecting biodiversity and ocean co-use. BOEM should also state how a project that has not been procured will be evaluated against the purpose and need.

We recommend that BOEM develop a habitat minimization alternative to evaluate export cable routing options that will minimize impacts to sensitive habitats including SAV, hard bottom, and complex topography. Our concerns about habitat impacts are discussed in greater detail in the following section.

We also recommend that BOEM develop an alternative based on removing turbines in close proximity to Nantucket Shoals, similar to SouthCoast's DEIS Alternative D. Nantucket Shoals is a highly productive area that is important for cod spawning, several foraging species, North Atlantic Right Whales, etc. Developing an alternative that removes turbine and offshore substation placement positions in the northwestern portion of the Lease Area, closest to Nantucket Shoals would help reduce any potential impacts on this important habitat.

BW1 and BW2 consider the use of monopile, piled jacket, and suction bucket jacket turbine foundations and piled jacket and suction bucket jackets for offshore substations. The different impacts associated with the various types of foundations should be clearly identified in the EIS, particularly suction bucket jacket foundations which readers may be less familiar with. The EIS should explain if suction bucket jacket foundations can be used in areas where sediments are unsuitable for monopiles or piled jackets, perhaps because of the presence of glauconite. Given this foundation type is not in widespread use and has not yet been approved for any U.S. projects, will there be pilot testing of these structures? If so, we assume that a separate NEPA analysis would be required.

Section 2.2.3 of the COP states: "Each offshore substation facility will include a cooling system to regulate the temperature of the electrical converter equipment. Beacon Wind has evaluated both closed-cycle and once-through cooling water systems using seawater for the Project. Closed-cycle cooling designs for use in offshore applications are not commercially mature, and based on evaluations up to this point, would not be technically or commercially feasible for the Project. Beacon Wind is conducting ongoing evaluations to determine potential future viability

of closed-cycle systems. Once-through systems are carried forward as the maximum design scenario in the PDE." As we have stated in previous letters, we are very concerned about the impacts of larval entrainment in cooling stations. Closed-cycle systems can help mitigate these concerns. We were pleased to see such systems considered in the Atlantic Shores South DEIS. We hope closed-cycle systems will be considered for Beacon Wind as well, especially given that technological advances may occur between now and finalization of the Beacon Wind EIS, and because the second stage of the project might be developed later. The DEIS should document the feasibility of closed-cycle systems as compared to once-through systems so readers understand their likelihood of adoption.

For all alternatives, the EIS should be clear on which mitigation measures will be required as opposed to discretionary. Only required mitigation measures should influence the impacts determinations in the EIS.

Fisheries and habitat considerations

BOEM should coordinate early and often with NOAA Fisheries on the most appropriate data for analysis of potential impacts to fisheries, including fishing and transiting locations, as well as socioeconomic impacts. The EIS should clearly and repeatedly acknowledge the limitations of each data set. Summary information on Council-managed fisheries is also available on the Council websites, www.mafmc.org, and www.nefmc.org, at fishery management plan-specific links, typically via annual fishery information reports (MAFMC) or recent plan amendment or framework documents (both councils).

We strongly support all efforts to avoid impacts to SAV and other structured habitats along the cable route, as recommended in the Council policies. The New England Council has designated inshore areas from the coastline to 20 meters depth as habitat areas of particular concern (HAPC) for juvenile Atlantic cod. Structurally complex habitats, including eelgrass, mixed sand and gravel, and rocky habitats (gravel pavements, cobble, and boulder) with and without attached macroalgae and emergent epifauna, are essential habitats for these fish. In inshore waters, young-of-the-year juveniles prefer gravel and cobble habitats and eelgrass beds after settlement, but in their absence, predators also utilize adjacent un-vegetated sandy habitats for feeding. The New England Council recently recommended an HAPC for cod spawning habitat and complex habitats. The designation overlaps the Beacon Wind lease area and other Southern New England lease areas and is pending approval by NOAA Fisheries. The Mid-Atlantic Council has designated all native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, as HAPC for summer flounder. In defining this HAPC, the Mid-Atlantic Council also noted that if native species of SAV are eliminated, then exotic species should be protected because of functional value; however, all efforts should be made to restore native species. SAV also provides important habitat for many other species.

Commercial and recreational fisheries provide a wide range of benefits to coastal communities; not all are captured by looking only at financial metrics. The EIS should not overly rely on ex-vessel value when assessing and weighting impacts across various fisheries. Focusing on ex-vessel value can mask other important considerations such as the number of impacted fishery participants, the use of a low-value species as bait for a high-value species, or a seasonally important fishery.

Models exist to estimate the amount of fisheries revenue generated from within the project area; however, it is important to acknowledge that changes in transit patterns will also have economic impacts and the associated economic impacts will be challenging to accurately quantify.

In their EFH conservation recommendations for the Revolution Wind project, NMFS articulated several recommendations that are also pertinent to Beacon Wind including continued and further use of telemetry and passive acoustic surveys within and outside of the lease area before, during, and after construction to detect cod spawning activity. Collecting data on potential cod spawning activity within the lease area will be important to inform the EIS and to identify whether mitigation measures are needed. NMFS also recommended, and we agree, that data and results of these and other surveys be made available to NMFS Habitat and Ecosystem Services Division. EFH consultation should begin early in the EIS development process.

We recognize that data on private angling are very limited; therefore, it will be important to clearly articulate the limitations of the available data and work with local fishermen to understand how the project area is used by recreational fisheries. Volume 2e Section 8.8.2.1 of the COP describes the number of angler trips by impacted state and total catch by most highly targeted species in 2020 to evaluate private recreational activity within and near the lease area. The EIS should expand the dataset to include more recent years given 2020 was highly impacted by the pandemic. The EIS should consider how the number of impacted trips and estimated catch may translate into impacts from construction, operations, and decommissioning of Beacon Wind on angler satisfaction, shoreside economic impacts, and other impacts for private recreational fisheries. Quantitative data to assess these impacts are lacking; therefore, the EIS may be required to describe these impacts qualitatively.

Fishing vessels utilize certain fishing grounds based on where target species are located and where management regulations allow, thus, vessels cannot necessarily relocate to a different area to avoid the windfarm without socioeconomic impacts. The COP suggests in Volume 2e that commercial fishing will likely continue in the area given the proposed adoption of 1x1 nm spacing within the array (page 8-242), however, this may not be true for all conditions (weather, safety concerns, towed fishing gear, etc.). The EIS should not assume "continued access to traditional fishing grounds" (page 8-242) will occur uninterrupted for all commercial and recreational fishermen. This contrasts with the SouthCoast Wind DEIS which concluded that with the same turbine spacing "It is conceivable that some of the small number of fishing operations that derive a large percentage of their total revenue from areas where Project facilities would be located would choose to avoid these areas once the facilities become operational. Therefore, BOEM expects that the impacts resulting from the Proposed Action would range from **minor** to **major**, depending on the fishery and fishery operation" (SouthCoast Wind DEIS page 3.6.1-59). There is no obvious reason why the conclusion for the Beacon Wind project, using the same spacing, is different. The likely extent of impacts will be important to understand in the context of developing mitigation agreements for affected fishing industry members.

Fishing effort can change based on management actions such as a change in access areas, or updated state quota allocations for a target species like black sea bass. It is important to account for the dynamic nature of fishing effort over time when evaluating impacts to fishermen and fishing communities. This is an area of the EIS where cumulative considerations are especially critical and these two projects cannot be considered in a vacuum; many other wind farms are

proposed within the Southern New England wind energy areas, and fishing will be affected over a large area if all these projects are installed.

The impacts of the project will not be felt only by fishermen from nearby ports; the EIS should consider commercial and recreational fisheries over a wide geographic area that may be impacted by the project. For example, vessels traveling from ports north and south of the project area may transit through and/or fish in the area. In addition, the COP Volume 2e acknowledges that "landings fluctuate on an interannual basis", however, the revenue exposure tables only reflect an average value from 2008 – 2019 (page 8-201). Fluctuations in fishing effort should be reflected in the EIS, either with annual data, or by presenting a multi-year average alongside peak years. We appreciate the acknowledgement that non-AIS fishing activity occurs within the lease area and along the export cable route, and that the COP incorporated additional data sources such as VMS, visual survey data, etc. (Volume 2e, page 8-120). BOEM should coordinate with NOAA Fisheries on the best data regarding fishing and transit, the EIS should clearly acknowledge the limitations of the available data, and local fishermen should be consulted to better understand use patterns not captured in the data.

The COP states that "target burial depth is anticipated to be 3-6 ft…in areas not under federal management (i.e., outside of navigational channels and anchorages) and 15 ft … below the authorized depth within federally-managed areas" and the developer "may implement an additional target burial depth where appropriate" (Volume 2E, Section 8.7.2.4). For example, 3-6 ft burial is identified as potentially appropriate for clam dredging activities. BOEM's draft fisheries mitigation guidance states "All static cables should be buried to a minimum depth of 6 feet below the seabed where technically feasible." The Councils have not endorsed a specific cable burial depth, but rather have recommended depths that are adequate "to reduce conflicts with other ocean uses, including fishing operations and fishery surveys, and to minimize effects of heat and electromagnetic field emissions" (from the BOEM Draft Fisheries Mitigation Guidance). Assuming a depth of 6 feet is sufficient to address these objectives, we recommend the EIS include this target burial depth as the minimum end of the range. We also recommend explaining more details on the type and frequency of monitoring for burial depth.

The COP states that a Cable Burial Risk Assessment will "identify any needs for additional cable protections." It is important to note that cable armoring is of concern due to the potential to affect commercial fishing operations which use mobile bottom tending gear. The EIS should clearly document the fraction of the cables where armoring is likely to be required and identify where these areas are located. The New England Council's submarine cables policy recommends that when cable burial is not possible, cables should be protected with materials that mimic natural, nearby habitats. It would be helpful to identify the characteristics of any cable protection materials, should burial depths of 3-6 feet not be achieved, because these materials contribute to the net amount of complex habitat that would exist in the area once the project is constructed.

Appendix CC includes an assessment of electric and magnetic fields (EMF) which states that EMF generated from HVDC submarine export cables and HVAC inter-array cables are expected to have a "*de minimis* risk to all demersal marine species for the majority of the cable route where the cable will be buried and either bundled or separated" (page xiii) and that "population level risks to elasmobranchs and finfish associated with the DC magnetic fields" are also evaluated as *de minimis* (page xiv). Elasmobranchs (namely skates and spiny dogfish) and other

species exhibited a strong behavioral response to EMF in a field study conducted by University of Rhode Island and BOEM (Hutchison et al. 2018, Hutchison et al. 2020)[3], which is referenced in the COP (page 1-5). Potential EMF impacts are a concern to the fishing community and the extent to which EMF may or may not impact marine species should be thoroughly described in the EIS. Volume 2e of the COP states that "EMF modeling and assessments (will) identify potential mitigation requirements, such as the use of proper shielding and sufficient burial of…cables (where feasible) to reduce EMF impacts" and if target burial depth cannot be achieved, then protective materials may be added "to minimize the potential for gear snags, as feasible" (page 8-243). Further research citations would be helpful to verify the effectiveness of these types of mitigation measures. Potential differences in impacts between HVAC and HVDC cables should be evaluated in the EIS since both are under consideration (interarray and export cable, respectively).

Turbine foundations and their associated fouling communities will create artificial reefs, which are expected to attract certain fishery species (e.g., black sea bass). Volume 2E (page 8-50) briefly describes this impact on recreational fishing, whereby an increased number of fishing trips from nearby ports is anticipated while page 8-235 states that "it is possible…the two offshore substation facilities may have long-term safety and security exclusions during operations due to the nature of the substation facility infrastructure." The EIS should clearly describe this operational difference and the likely impacts to both recreational and commercial fishing vessels. Pages 8-239 and onward describe the impact of a potential reef effect on commercial vessels and concludes that commercial fishermen will also benefit from "a richer diversity of marine life now assembled in a smaller area." This assumes that commercial fishing will continue in this project area and will benefit from this effect. This may be the case for some commercial fishing vessels using pots/traps or hook and line gear; however, commercial fishing vessels using mobile bottom tending gear may choose to avoid fishing within the project area due to safety and navigation concerns. The EIS should acknowledge that the benefits of this artificial reef effect will vary by target species and by fishing sector. For example, any benefit to recreational anglers targeting highly migratory species (e.g., tunas and sharks) could be offset by the inability to anchor or to drift throughout the area. If operators shift their effort outside the project area during construction or long-term operations, this will potentially put them in areas of higher vessel traffic and gear conflict. Also, depending on operating conditions at sea, commercial and recreational fishermen cannot always reap the benefits of any increased catchability of target species due to safety concerns of fishing in swells around the turbines.

As we have stated in many previous comment letters, it should not be assumed that commercial fishermen will switch gear types and/or target species. This may not be feasible given the high cost, potentially lower prices, and different permits that would be required. Such adaptation would only occur over the longer term and may require fishery management changes. It should

[3] Hutchinson, Z. L., P. Sigray, H. He, A. B. Gill, J. King and C. Gibson (2018). Electromagnetic Field (EMF) Impacts on Elasmobranch (shark, rays, and skates) and American Lobster Movement and Migration from Direct Current Cables, U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs.; also see Hutchison, Z. L., A. B. Gill, P. Sigray, H. He and J. W. King (2020). "Anthropogenic electromagnetic fields (EMF) influence the behaviour of bottom-dwelling marine species." Scientific Reports **10**(1): 4219.

not be assumed that fisheries management will adapt in any particular way as it must achieve multiple objectives and offshore wind energy development is just one consideration.

In the context of both cable and turbine installation, any place where the bottom sediments will be disturbed must be evaluated for sediment contamination to understand the potential for environmental effects associated with contaminant release. Two obvious sources of contamination are dredged spoils from inshore, nearshore, or harbor maintenance and disposal of onshore materials (including waste). For many years, such disposal was not evaluated carefully and not regulated as it is today. As a result, sediments and other material with unacceptable levels of heavy metals and persistent organic pollutants (POPS) were disposed in ocean waters and may remain in locations where they could be disturbed. These sources of contamination need to be assessed and managed as part of the offshore wind development process.

Regarding radar, the COP Volume 2e states that "only marine radar was found to have any quantifiable effect within 1.5 nm (2.7 km) of a structure" (page 8-158). Given the 1x1 nm spacing between turbines, this would mean that vessels transiting within the lease area would experience radar interference. Fishermen have noted there is a need to declutter radar within lease areas, otherwise fine scale targets may be lost while navigating through them. If AIS transponders are most appropriate on a subset of structures only (versus on every turbine, offshore substation, and any other offshore structures), BOEM should consult with the fishing industry and the U.S. Coast Guard to identify where AIS would be most helpful.

The COP states that "submarine export and interarray cables will be retired in place or removed in accordance with a Decommissioning Plan" based on a separate approval process from BOEM (Volume 1, Section 3.7). It is essential that cables be removed during decommissioning. Abandoned, unmonitored cables could pose a significant safety risk for fisheries that use bottom-tending gear and the long-term risks to marine habitats are unknown.

Impacts to fishery independent surveys

We continue to have significant concerns about the cumulative impacts of offshore wind development on fishery independent surveys. Major negative impacts to these surveys would translate into greater uncertainty in stock assessments, the potential for more conservative fisheries management measures, and resulting impacts on fishery participants and communities. We are encouraged by BOEM's commitment to working with NOAA on long term solutions to this challenge through the regional, programmatic, Federal Survey Mitigation Program, described in the Records of Decision for the Vineyard Wind 1, South Fork, and Ocean Wind 1 projects.

Conclusion

We appreciate the opportunity to provide comments to ensure that issues of social and ecological importance are considered in the forthcoming EIS for the Beacon Wind COP. We look forward to working with BOEM to ensure that any wind development in our region minimizes impacts on the marine environment and can be developed in a manner that ensures coexistence with our fisheries.

Please contact us if you have any questions.

Sincerely,

Thomas A. Nies
Executive Director, New England Fishery Management Council

Dr. Christopher M. Moore
Executive Director, Mid-Atlantic Fishery Management Council

cc: J. Beaty, M. Luisi, W. Townsend