



January 17, 2023

Jessica Stromberg
BOEM Office of Renewable Energy Programs
45600 Woodland Road
Sterling, Virginia 20166

Re: Draft Environmental Impact Statement for Empire Wind Project off New York

Dear Ms. Stromberg

Please accept these comments from the New England Fishery Management Council (New England Council) and the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) regarding the draft environmental impact statement (DEIS) for the Empire Wind 1 and Empire Wind 2 projects offshore of New York. The two projects, collectively referred to as “the project” in the DEIS, will be electrically isolated and independent from each other. Combined, they may contain up to 147 wind turbines, 2 offshore substations (one for each project), and 2 cable routes (one for each project). Wind turbine generators would be spaced at least 0.65 nautical miles apart.

The DEIS analyzes the potential environmental impacts of nine alternatives, including a no action alternative, the project as described in the Constructions and Operations Plan (COP) submitted by the developer (i.e., the proposed action), and five alternatives to the proposed action. After considering comments received through this comment period, BOEM will publish a final environmental impact statement (FEIS). The FEIS will inform BOEM’s decision to approve, approve with modifications, or disapprove the COP.

The Mid-Atlantic Council manages commercial and recreational fisheries for more than 65 marine species¹ in federal waters and is composed of members from the coastal states of New York to North Carolina (including Pennsylvania). The New England Council manages over 28 marine fishery species in federal waters and is composed of members from the coastal states of Maine to Connecticut. In addition to managing these fisheries, both Councils have enacted measures to identify and conserve essential fish habitat (EFH), protect deep sea corals, and sustainably manage fisheries for forage species. 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 marine fisheries throughout the Mid-Atlantic and New England, including within the Empire Wind project area and in surrounding areas, are profoundly important to the social and economic well-being of communities in this region and provide numerous benefits to the nation, including domestic food security.

Given the current pace of offshore wind energy development in this region and workload constraints, we are unable to provide a detailed review of this project and the DEIS. For example, this comment period overlaps with comment periods on DEIS documents for three other wind projects in our region.

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 analysis in the DEIS has important ramifications for the terms and conditions that 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, and which apply across all projects.² Our two Councils worked together on and adopted the same wording for these policies. We also urge BOEM to adopt the recommendations from NOAA Fisheries for this project, including their recommendations for data considerations, impacts analysis, and ways to minimize potential negative impacts to marine habitats, commercial and recreational fisheries, and fishery species.

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

- Clarify in the purpose and need section that BOEM is not bound to consider approval only of projects that are large enough to meet existing state energy procurements for the associated projects.
- Clarify which alternatives can be combined.
- Provide more details on the technological considerations relevant for Alternative F and clarify if Alternatives A, B, and E are technologically feasible.
- Clarify if Alternative F is currently preferred by the project developer, and if so, update the COP to reflect this and include another opportunity for the public to comment given the focus of the DEIS is on Alternative A as the proposed action.
- Group the turbine and cable layout alternatives by project (Empire Wind 1 and Empire Wind 2) to evaluate each project individually and then in combination.
- Analyze the impacts of all action alternatives in detail, not just the proposed action.
- Under No Action, compare to both scenarios, i.e., where all other wind projects are constructed and where no other projects are constructed.
- Expand the discussion of potential impacts to the Mid-Atlantic Cold Pool.
- Identify which mitigation measures are assumed for the purpose of impacts determinations.

Purpose and Need

Section 1.2 of the DEIS (Purpose and Need of the Proposed Action) notes that it is a goal of the Empire Wind 1 and 2 project developer to meet the existing state energy procurements for these projects. However, the procured amount of energy is not referenced in statements which use the terms “purpose” or “need.” This is an important nuance because the National Environmental Policy Act requires consideration of a range of alternatives which could meet the defined purpose and need. We expressed concern that DEIS documents for other wind projects (e.g., Revolution Wind) implied that only alternatives which would generate the full procured amount of electricity could meet the purpose and need. This could limit BOEM’s ability to reduce the potential negative impacts of the project by considering approval of a smaller project than that proposed by the developer.

We suggest that this FEIS and future NEPA documents more clearly indicate that the agency is not bound to consider approval only of projects that can produce a certain level of electricity (e.g., the amount procured by the state(s) via the power purchase agreement(s)). BOEM should consider federal and state renewable energy targets as well as existing procurements when preparing an EIS and determining whether to approve a project. However, it should be made clear that BOEM may approve

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

a project smaller than what is proposed or procured. We suggest expanding on this to make it clear that the project will avoid risks to the health of marine ecosystems, ecologically and economically sustainable fisheries, and ocean habitats. BOEM should clearly acknowledge that if these risks cannot be avoided, they should be minimized, mitigated, and compensated for.

Alternatives to Meet the Purpose and Need

The DEIS includes eight action alternatives, some of which include sub-alternatives.

- Alternative A is the proposed action as described in the COP and includes:
 - Up to 147 wind turbine generators on monopile foundations (up to 57 for Empire Wind 1 and up to 90 for Empire Wind 2),
 - Up to two offshore substations (one for each project) with piled jacket foundations,
 - Up to 260 nautical miles of interarray cables buried to a target depth of 6 feet, and
 - Up to two export cables (one for each project) with a combined total length of up to 66 nautical miles and buried to a target depth of 6 feet, with deeper burial (15 feet) in federally maintained areas such as anchorages and navigation channels.
- Alternative B would remove up to six potential wind turbine locations from the northwest end of the Empire Wind 1 project area to reduce potential impacts at the edge of Cholera Bank (an important fishing area) and on scenic resources and navigation safety. Based on the layout maps provided, we assume Alternative B would allow for the same maximum number of turbines as Alternatives A and E; however, this is not explicitly stated in the DEIS text.
- Alternative C includes two mutually exclusive sub-alternatives for the locations of the Empire Wind 1 export cable route. Under Alternative C-1, the route would traverse a charted anchorage area. Under Alternative C-2, the route would traverse the Ambrose Navigation Channel.
- Under Alternative D, the export cable routes for Empire Wind 2 would avoid the sand borrow area off Long Island.
- Alternative E would remove seven potential wind turbine locations from Empire Wind 2 to create a one nautical mile setback from Empire Wind 1 to improve access for fishing and navigation. Based on the layout maps provided, we assume that Alternative E would allow for the same maximum number of turbines as Alternatives A and B; however, this is not explicitly stated in the DEIS text.
- Under Alternative F, the turbine locations for Empire Wind 1 would be modified to address geotechnical considerations. The maximum number of turbines for Empire Wind 1 would be reduced from 57 to 54
- Under Alternative G, the onshore cable crossing of Barnums Channel would be a cable bridge crossing constructed using trenchless technology.
- Alternative H would use dredge or fill methods for the Empire Wind 1 export cable landfall location that are aimed at reducing the discharge of dredged material.

We assume that unless otherwise stated in the DEIS, none of the alternatives are mutually exclusive. However, this is not clearly and explicitly stated in the DEIS. For example, it should be made clear if Alternatives B and E could be combined. Based on the maps provided, we assume that Alternative F cannot be combined with Alternatives B or E; however, this is not explicitly stated.

The FEIS should more clearly indicate that 15-MW turbines will be used under each alternative, based on the project developer's preferred supplier agreement with Vestas. This should be explicitly stated in

the executive summary, the descriptions of each alternative, and the impacts sections because impacts can vary based on the size of the turbines. The turbine size is acknowledged in other sections of the DEIS; however, it is not clearly stated in the descriptions of each alternative. This is relevant for determining the number of turbines which could be used under each alternative to meet the existing energy procurements for each project. Overall, we support consideration of higher MW turbines because they can reduce the footprint of the project while still generating the same amount of power as a project with lower MW turbines and a larger footprint. As previously stated, BOEM should not be bound to only consider approval of projects which can meet existing procurements, especially when only one turbine size is presented as an option. However, this is still relevant information to consider for each alternative.

A minimum turbine spacing of 0.65 nautical miles is indicated for Alternative A but is not specified for the other alternatives. We assume the other alternatives use this same minimum spacing; however, this should be clarified. BOEM should also explain why options for wider spacing were not considered. There are navigational safety concerns with closer spacing, as noted in the DEIS, and several projects in the Massachusetts/Rhode Island Wind Energy Areas have set a precedent by adopting a 1 x 1 nautical mile spacing. If a 0.65 nautical mile spacing is required to meet the existing energy procurements, then this is another example of the problematic restrictions that existing procurements place on BOEM when developing alternatives to minimize negative impacts.

It is our understanding that the aim of the modified layout under Alternative F is to avoid the mineral glauconite, which was detected during geotechnical surveys of the Empire Wind 1 project area. However, these details are not stated in the DEIS. The DEIS does not make it clear why special geotechnical considerations are needed for Alternative F but not the other alternatives. It is also our understanding that Alternative F may be preferred by the project developer at this time, despite the fact that Alternative A is identified in the DEIS as the proposed action and is the focus of the COP and impact analyses. If Alternative F is in fact preferred, the COP should be modified to reflect that this is the new proposed action, and it should be described as such in the FEIS.

It is concerning that the description of Alternative F implies that Alternatives A, B, and E may not be technologically feasible given that under Alternative F there would be “modifications for environmental and technical considerations.” Based on the level of detail provided in the DEIS, it is not possible for us to discern if this is an accurate interpretation. If this is the case, it is very concerning that the DEIS would analyze alternatives that are not technologically feasible. We do not understand how a project that is not feasible can be considered a reasonable alternative, as required by NEPA, since it cannot meet the purpose and need. This limits the range of options available to reduce the negative impacts of the project, is confusing to readers of the DEIS, and poses challenges for informed public comment on the DEIS. Readers may focus their time and comments on the proposed action due to limited resources. We suggest that BOEM publish more details on the nature of the technological concerns addressed by Alternative F and the feasibility of the other alternatives. BOEM should then allow for additional public comments based on this additional information.

It is also not clear if the Empire Wind 2 project area has been surveyed to the same extent as Empire Wind 1 and if these same geotechnical challenges may later arise for the Empire Wind 2 project area. All of these concerns highlight challenges with the environmental review process for offshore wind energy projects to date. Geotechnical and geophysical survey work should be completed before

finalizing the COP to inform the DEIS and before finalizing the alternatives analyzed in the DEIS. This can help ensure that all alternatives considered in the DEIS are technologically feasible.

The organization of the offshore export cable alternatives is also confusing. Alternative D is focused on Empire Wind 2, while Alternatives C and H only include analyses for Empire Wind 1. We recommend grouping the turbine and cable layout alternatives by project to evaluate each project individually and then in combination. This type of organization is included within Appendix O but not in the main DEIS document.

Affected Environment and Impacts Analysis

Given workload constraints, including multiple currently open comment periods on offshore wind projects in our region, we are unable to thoroughly review the affected environment section and impacts analysis in the DEIS. We urge BOEM to seriously consider the recommendations and advice of NOAA fisheries regarding the impacts analysis, including the most appropriate data to use, how to consider impacts for data-poor fisheries, and the resulting impacts conclusions.

We are concerned that the DEIS did not analyze in detail the impacts of each alternative and the cumulative impacts from these alternatives. The impacts analysis and the cumulative impact analysis focus on the proposed action alternative (i.e., Alternative A), which, as we understand it, may no longer be preferred by the developer and may no longer be a technologically viable option. The impacts for all impact producing factors should be both qualitatively and quantitatively described for each individual alternative and compared against the no action alternative given this information will be used to determine necessary minimization, mitigation, and compensation measures. For example, Section 3.9.6 includes the impact analysis of Alternatives B, E, and F combined into one section and without specific, detailed information as was provided for the proposed action. The impacts of these alternatives should be differentiated in much greater detail than what is included in Section 3.9.10 such that tradeoffs can be accurately described and commented on by the public. If additional impacts of Alternatives B, E, and F are included elsewhere in an appendix then a cross reference should be provided. In the DEIS, it is unclear how and to what extent the impacts of Alternative F, for example, differ between the proposed action as it pertains to which fisheries and species will be most impacted.

Regarding cumulative effects, the DEIS considers future offshore wind energy activities in other lease areas as part of future baseline conditions against which the impacts of this project are compared (Appendix F). As we understand it, the DEIS has two baseline conditions, one with other planned, but not yet approved, wind projects and one without. The alternatives should be compared against both sets of conditions in a consistent way to better describe the expected magnitude of project's impacts.

Regarding fisheries impacts, we have the following concerns:

- Figures 3.9-14 through 3.9-23 and Table 3.9-31 include average revenue data over many years. While this is helpful to gain a broad understanding of the level of revenue exposure in the lease area and cable routes, including data by year is most helpful, similar to what is provided in [NOAA's Socioeconomic Impacts](#) tool. Fisheries revenues can fluctuate for a variety of reasons (warming waters, change in fishing regulations, etc.), therefore, an average value may not always accurately describe the economic value of the fishery.

- Figures 3.9-14 through 3.9-23 use data that are a minimum of ten years old (2007-2012). These data should be updated to the latest available data to better reflect recent fishing information and should match other data provided in the DEIS.
- The comparisons being made in the fisheries tables (e.g., Volume 1, Table 3.9-10) are somewhat confusing to track. Some are within the lease area only, and some are relative to the fishery overall. More detailed table captions and column headers would be useful, in addition to explaining the tables in the body of the EIS.
- Impacts to private recreational anglers are not included in the main body of the DEIS but are included in Appendix G (Assessment of Resources with Minor (or Lower) Adverse Impacts). This analysis should be expanded upon and should more clearly describe the data limitations for private recreational fishing. For example, data are not available to determine the amount of private recreational fishing effort that takes place within the lease area and the export cable corridor routes because those data are not collected. The FEIS should evaluate impacts to this user group using qualitative methods and quantitatively to the extent possible.

Hydrodynamic effects and disturbances on benthic resources are included in the DEIS, however, not to the extent that they are likely to occur. For example, the presence of structures could impact the Mid-Atlantic Cold Pool regarding changes in temperature, mixing, larval transport of important commercial and recreational fish species (e.g., sea scallops), and temperature corridors used for migration for multiple important fishery species. This is an area of ongoing research.³ The FEIS should clearly document what is known about potential impacts to the Cold Pool and resulting potential impacts to marine species and fisheries. The FEIS should acknowledge data gaps and ongoing research and should consider potential impacts resulting from this project, as well as cumulative impacts from all planned wind energy projects throughout the region.

We are also concerned about the impacts of boulder removals required for cable installation, especially when done via plow. The DEIS indicates that the site preparation activities and cable installation could be done by jet plow, mechanical plow, or mechanical trenching in one section of the document (page 3.10-25) and in another section (page 3.21-13), jetting is listed as the primary method and dredging is yet another option. The FEIS should specify which installation techniques will be used and, if done via plow, the plow width and the size of the area that will be impacted should also be clearly stated. The nature of the impact from plowing is very different from dredging used to harvest seafood, and the scientific literature on fishing gear impacts is unlikely to provide a reasonable proxy for the impacts of boulder clearance plows. For example, fishermen attempt to avoid boulders to reduce the risk of costly damage to fishing gear.

Recommendations for Preferred Alternatives

As previously stated, it is not clear which alternatives can be combined. This is problematic as combining multiple alternatives could help reduce the potential for negative impacts to fisheries, habitats, and navigation, all of which are of concern to our Councils.

³ For example, two recent reports on potential impacts of offshore wind energy development on the Cold Pool are available at the following links:

<https://scemfis.org/wp-content/uploads/2021/01/ColdPoolReview.pdf>;

https://rucool.marine.rutgers.edu/wp-content/uploads/2020/10/PartnersWorkshop_WhitePaper_Final.pdf

We support a combination of the following alternatives:

- **Alternative B** to reduce impacts to Cholera Bank, an important fishing area containing sensitive hard bottom habitats.
- **Alternative E** to improve navigation safety for fisheries and other ocean users by creating a 1 nautical mile set back between Empire Wind 1 and Empire Wind 2.
- **Alternative H** to reduce the environmental impacts of dredge or fill activities.

Mitigation, Terms and Conditions

Mitigation measures are necessary to reduce the potential negative impacts of the Empire Wind 1 and 2 projects. The recommendations outlined in our offshore wind energy policies, referenced above, should be reflected as terms and conditions for approval of the project. We provided a separate comment letter on the draft Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries.⁴ These comments supported many of the mitigation measures recommended in that draft guidance. We recommend that all final mitigation guidelines be reflected in terms and conditions for BOEM's approval of this project.

Appendix H includes the analyzed potential mitigation and monitoring measures; however, it is unclear which of these measures are likely to be required by BOEM as opposed to optional. Assumptions about which mitigation measures are required will affect the impact determinations and overall conclusions. For example, time of year restrictions on construction can be used to protect sensitive spawning and fishing periods. The Councils are supportive of time of year restrictions to reduce potential impacts to sensitive life stages of fishery species and to reduce impacts to fisheries; however, further detail should be provided in the FEIS on how this would be done and what exactly this measure would achieve. "Installation of scour protection, as needed" and "where feasible, planning the location and timing of construction activities that minimize overlap with areas or times of high activity" are also listed as mitigation measures (Table H-3), though it is not clear when scour protection would be needed or not or what constitutes areas of high fishing activity. Overall, we recommend working with NOAA Fisheries on these determinations and identification of sensitive spawning and fishing periods to avoid as ways to mitigate impact.

The EIS notes that "BOEM expects the industry to adopt both technological and non-technology-based measures to reduce impacts on marine radar, including greater use of AIS and electronic charting systems, new technologies like LiDAR, employing more watchstanders, and simply avoiding wind farms altogether (Volume 1, page 3.16-13)." The fishing industry has proven to be adaptable in the face of change; however, more deliberate mitigation measures that support vessel radar upgrades could minimize impacts to fisheries and others navigating through and around the project area. An adaptation fund is noted in Appendix H. Additional information about the size of the fund and how extensively it may support funding and training would be helpful. Additional details about the overall fisheries mitigation and compensation fund would also be useful. It is difficult to assess the extent to which such funds might mitigate the impacts described in the DEIS without more information.

Unexploded ordnances (UXOs) can be uncovered during site preparation activities. Exposed UXO presents a significant risk to mariners, especially those towing mobile gear that could bring UXO to the

⁴ Available at <https://www.mafmc.org/correspondence>.

surface. While UXO is a known ongoing risk to mariners, offshore wind project construction activities can uncover UXO devices. We recommend that the terms and conditions specify that developers are responsible for the safe disposal of UXO unearthed due to construction activities. Our understanding is that some UXOs might be detected via surveys but are not exposed; in such cases, only mariner notification may be sufficient given disposal may present greater risks. Clear, timely, and repeated communication about UXO locations and any changes in the location or status of UXOs is essential and should not rely only on email notifications.


We recommend developing a clear strategy for boulder relocation that is protective of habitats in the area, potentially relocating them to soft bottom directly adjacent to existing hard bottom areas. Mobile gear fishing activity should be considered when planning specific placement options; relocation areas with similar habitat impacts might have higher or lower potential for conflict with trawling and dredging activities. We also recommend using grabs to relocate boulders whenever possible, vs. relying on plowing. Plowing will have a much larger impact on benthic habitats as compared to grabs. Recreational fishermen often fish on boulder habitats. We recommend that maps post boulder relocation be made available to the recreational and commercial fishing communities and others.

We strongly support all efforts to avoid impacts to Submerged Aquatic Vegetation (SAV) and other structured habitats throughout the entire project areas, including along the cable route. 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 a Habitat Area of Particular Concern (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.

Conclusion

We appreciate the opportunity to provide comments to ensure that issues of social and ecological importance are considered in the final EIS for Empire Wind. We look forward to working with BOEM to ensure that 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,



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



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

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