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Brian Krevor
Environmental Protection Specialist
Office of Renewable Energy Programs, Environmental Review Branch
Bureau of Ocean Energy Management
Office of Renewable Energy
Bureau of Ocean Energy Management
45600 Woodland Road, Sterling, Virginia 20166

RE: Vineyard Wind Offshore Wind Energy Project Draft Environmental Impact Statement (CEQ# 20180303)

Dear Mr. Krevor:

The U.S. Environmental Protection Agency (EPA) New England Office has reviewed the Bureau of Ocean Energy Management (BOEM) Draft Environmental Impact Statement (DEIS) for the Vineyard Wind Offshore Wind Energy Project pursuant to our responsibilities under the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

Vineyard Wind proposes to construct, operate, and eventually decommission an 800 megawatt (MW) commercial-scale wind energy project within BOEM lease area OCS-A 0501 to provide energy to meet New England's demand for renewable energy. The DEIS evaluates the No Build Alternative and five alternative configurations for the project (or components of the project such as transmission cable landfall locations). The DEIS generally summarizes the impacts of each project variation and provides a discussion of mitigation measures that can be implemented to help address unavoidable impacts.

In addition to our role under NEPA, EPA serves as the air permitting authority for New England outer continental shelf areas and is concurrently reviewing a permit application from Vineyard Wind for air emissions related to construction and operation activities associated with the project. A review of the status of this effort is included in the attachment to this letter.

Our attached comments identify issues related to air; water quality; alternatives; cumulative impacts; impact characterization; impact mitigation, monitoring and minimization; avian impacts; marine transit and fisheries; oil spills; and project consultation that should be considered during the balance of the NEPA process and project permitting. Our comments provide recommendations how BOEM could address these issues and project design measures

that could be implemented to help mitigate for direct, indirect, secondary, and cumulative impacts related to the project.

We intend to continue to work closely with BOEM and the other cooperating agencies associated with the project to help address these issues. This work will be especially critical as state and federal permit processes related to air and water impacts continue to advance in parallel with the overall review of the project under NEPA.

Effective October 22, 2018, EPA will no longer include ratings in our comment letters. Information about this change and EPA's continued roles and responsibilities in the review of federal actions can be found on our website at: https://www.epa.gov/nepa/epa-review-process-under-section-309-clean-air-act.

EPA appreciates the opportunity to review this DEIS. If you have any questions regarding our comments, please contact me at 617/918-1025 or timmermann.timothy@epa.gov.

Sincerely,

Timothy Timmermann, Director
Office of Environmental Review

Enclosure

EPA Comments on the Draft Environmental Impact Statement for the Vineyard Wind Offshore Wind Energy Project

Air Emissions

The DEIS does not fully characterize or quantify the potential air emissions from the proposed project. The DEIS refers readers to Appendix III-B of the Construction and Operation Plan (COP) for a complete description of emission points and emission calculations. However, the DEIS does not contain any quantification of emissions for any of the alternative scenarios, cumulative impacts analysis, or the included discussion on climate change. Furthermore, section 3.2.1.11 on pages 3-12 of the DEIS states the following: "*A detailed emissions inventory is needed to develop a comprehensive assessment of sources and activities that have the potential to contribute to air quality impacts at the location of the Proposed Action and in the surrounding region. Although this was not available at the time of the preparation of this document, sufficient information exists to support the findings presented herein*". We note that detailed emissions inventories are periodically prepared by the Massachusetts Department of Environmental Protection and EPA.

Recommendation: The FEIS should include tables with emissions information during construction and operation for each of the proposed alternatives. The FEIS should provide readers with air emissions calculations to allow for a better understanding of the impacts associated with each proposed alternative. All emissions calculations should be based upon an equipment list that BOEM anticipates will be used during the project. We also recommend that the discussion include an analysis of future emission reductions resulting from the production of electricity from this project and the corresponding decrease in electricity production from fossil-fuel fired power plants in New England. The analysis should include the impacts to emissions of nitrogen oxides (NO_X), sulfur dioxide (SO_2) and carbon dioxide (CO_2).

Multiple sources of emissions data are available to assist BOEM with this analysis. Although the most recent emission inventory data was assembled to represent conditions for past years, it could still be used to assess sources and activities that could influence air quality at the location of the proposed project. For example, EPA's most recent comprehensive emissions inventory for the U.S. was for calendar year 2014, and is available at EPA's National Emissions Inventory (NEI) website at: https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data. With regard to data for power sector emissions specifically, BOEM can refer to the annual emission report produced by ISO New England, available online at https://www.iso-ne.com/system-planning/system-plans-studies/emissions/.

Air Quality

The DEIS does not fully characterize or quantify the potential air quality impacts from the proposed project. EPA appreciates BOEM's recognition of ozone as a regional pollutant, but the DEIS incorrectly indicates the construction air emissions will have a negligible impact because they are anticipated to last less than 2 years and attainment of the ozone National Ambient Air Quality Standards (NAAQS) is based on the annual fourth-highest daily maximum 8-hour

concentration, averaged over 3 years. BOEM's conclusion is misleading because 1 or 2 years of elevated concentrations at nearby air monitoring stations could influence the 3-year average if exceedances of the NAAQS frequently occur during the construction period. We note that Vineyard Wind, LLC will be required to obtain emission offsets in accordance with applicable air permitting requirements, which may help mitigate potential impacts to air quality resulting from the project.

Recommendation: BOEM should revise its analysis on potential impacts to the NAAQS to more accurately reflect the possibility of air impacts resulting from ozone formation downwind of the source due to emissions from the construction phase of the project. In addition, although BOEM indicates that the use of fuel efficient engines will mitigate air impacts, the DEIS should evaluate other mitigation options as well. EPA recommends BOEM explore the feasibility of requiring additional mitigation measures such as anti-idling practices and the retrofitting or repowering of older equipment and vessels with the cleanest, most efficient technologies to further ensure air quality impacts will be minimal. EPA is willing to assist BOEM with the development of these mitigation measures.

Air Permitting

EPA promulgated permitting rules at 40 CFR part 55, which establish air pollution control requirements for OCS sources consistent with section 328(a)(1) of the CAA. EPA has not delegated part 55 to any states in the northeastern part of the United States, and thus EPA serves as the permitting authority for New England OCS areas. Permits issued pursuant to 40 CFR part 55 regulate and restrict air emissions related to construction and operation activities associated with OCS sources, including certain vessels servicing the OCS sources.

On August 17, 2018, EPA received a permit application from Vineyard Wind, LLC for the proposed construction and operation of wind turbine generators and supporting equipment located approximately 14 miles south of Martha's Vineyard, Massachusetts. EPA determined the permit application was complete on January 29, 2019 and is currently processing the application.

A permit will initially be issued as a draft and subject to a 30-day public comment period and a public hearing, if one is requested. At the conclusion of the public comment period, EPA will make adjustments to the permit as needed, and issue a final permit. The process to issue a final OCS air permit for the Vineyard Wind project will run in parallel with the NEPA process, and a final decision on the OCS permit is likely to occur no later than 90 days after BOEM's issuance of a Record of Decision on its FEIS.

The DEIS refers to air impacts as "minimal" or "minor" in several locations throughout the document. While the DEIS documents that operating emissions of the project are relatively small and fit these descriptions, we note that the project's potential construction period emissions exceed Clean Air Act permitting thresholds for major sources and are thereby subject to the Prevention of Significant Deterioration and Nonattainment New Source Review permit program.

Recommendation: Although the operating emissions from the project are minimal and the construction emissions are temporary in nature, the project is subject to major source permitting regulations under the Clean Air Act. BOEM should revise the FEIS's characterization of air emissions or acknowledge, in text, the inconsistency in terminology between BOEM's characterization and EPA's forthcoming major source permitting actions to provide the general public with a better understanding of various actions addressing the Vineyard Wind project and how each respective agency classifies the impacts.

Air Emissions Sources

Section 3.2.1 of the DEIS describes potential air quality impacts that may result from the project. We note that the introductory paragraph on page 3-3 states the following: "*The proposed Project's WTGs, ESPs, and OECC do not generate air emissions*". Vineyard Wind's air permit application to the EPA indicates that the WTGs and ESPs will contain generator engines that produce air emissions.

Recommendation: Although the overall emissions from generator engines on the WTGs and ESPs are minimal when compared to other emission sources for the project, BOEM should revise this characterization in the FEIS for accuracy.

General Conformity

General conformity is a process required by the Clean Air Act, which establishes the framework for improving air quality to protect public health and the environment. The goal of general conformity is to ensure that actions conducted or sponsored by federal agencies are consistent with State air quality goals. These air quality goals are tied to states meeting the NAAQS. Areas that fail to meet the NAAQS for one or more of the criteria pollutants are classified as nonattainment areas. After a nonattainment designation is established, an area may successfully attain the standard and be reclassified as a maintenance area.

Federal projects located within either a maintenance or a nonattainment area must be evaluated for applicability to the Federal General Conformity regulations found at 40 CFR 93.150-165. Specifically, if the total of direct and indirect emissions of a criteria pollutant or precursor in a nonattainment or maintenance area caused by a Federal action would equal or exceed the applicability thresholds established in 40 CFR 93.153, the requirements of general conformity must be satisfied.

Recommendation: Before the project work commences, BOEM must evaluate if general conformity applies. If general conformity does apply, BOEM must complete a general conformity analysis consistent with the requirements found at 40 CFR 93.150-165 and submit the analysis to EPA for review. Please contact John Rogan of EPA's Air Programs Branch at (617) 918-1645 or rogan.john@epa.gov to discuss project General Conformity issues in greater detail.

Consultation and Coordination

On July 25, 2018, the EPA sent a letter to BOEM requesting that BOEM assume the lead Federal agency role for compliance with the Endangered Species Act (ESA), 16 U.S.C. § 1531 *et seq.*, the Magnuson-Stevens Fisheries and Conservation Management Act (MSA), 16 U.S.C. § 1801 *et seq.*, and the National Historic Preservation Act (NHPA), 54 U.S.C. 300101 *et seq.* In a letter to EPA dated September 24, 2018, BOEM formally accepted designation as the lead Federal agency for wind energy development projects on the Atlantic OCS for the purposes of fulfilling interagency consultations under the ESA, MSA, and NHPA. EPA acknowledges BOEM's commitment as the lead Federal agency and intends to continue to actively participate in BOEM's NEPA process for each of the wind power projects off the Atlantic coast.

Recommendation: Section 4.2 of the DEIS indicates that EPA is only a co-action agency for ESA. We recommend that the FEIS reflect that EPA is also a co-action agency for interagency consultations under the MSA and NHPA.

Alternatives

The range of alternatives developed by BOEM for the DEIS was based in part on interagency input through scoping, interagency discussions and comments offered on an administrative draft of the DEIS. The Vineyard Wind project proposal continued to evolve based on discussions between Vineyard Wind, BOEM, stakeholders and state and federal agencies. Key issues of discussion focused on project size, orientation, transit corridors, spacing and use conflicts. The adoption by Vineyard Wind of a 9.5 MW WTG reduced the number of proposed WTG installations to 84 locations to support an 800 MW project.

Throughout the EIS development process EPA supported BOEM's stated goals to promote and allow for flexibility in project design and to seek input before final project decisions are made. Consistent with that concept, we recommended consideration of a composite alternative that combines the one-nautical mile WTG spacing with an east-west turbine layout.

Recommendation: Based on our review of available information and stakeholder input we continue to support a composite alternative (Alternative D2 featuring east west WTG orientation and a minimum of 1 nautical mile spacing between WTGs in all directions combined with the reduced project size of Alternative E). That design appears to have the greatest potential for impact minimization and avoidance. We also understand that negotiations between Vineyard Wind, fishermen and the State of Rhode Island are ongoing and are focused at least in part on these issues. BOEM and the interagency team working on the project will need the opportunity to understand and fully consider the results of this coordination as part of the timely evaluation of the project and as part of associated permitting. EPA looks forward to ongoing active participation in discussions regarding project alternatives as part of the BOEM process.

Export Cable Landfall Alternatives

The DEIS identifies two possible landfalls on Cape Cod for an offshore export cable to connect to a substation on land, but information from BOEM provided in December 2018, and during the

recent public hearings on the DEIS indicates that Vineyard Wind has eliminated the New Hampshire Avenue landfall from consideration due to potential impacts in Lewis Bay, among other reasons. This change would be leave Alternative B (Covell's Beach landfall) as the preferred option. The proposed time-of-year restriction (TOYR) for in-water work at Covell's Beach from May 1 to July 31 will reduce impacts to spawning horseshoe crabs. Similarly, a TOYR described in the DEIS on the installation of export cable conduits from April 1 to August 31 has been proposed to avoid impacts to nesting shore birds. EPA supports both of these proposed mitigation measures. The DEIS states that the impact of Alternative B on benthic resources would be the same as, or less than, the predicted impact of the Proposed Action, the offshore impacts would be identical to those of the proposed action (Alternative A).

Recommendation: The proposed reductions in potential impacts to the near-shore environment from selection of the Covell's Beach Landfall Alternative (as compared to the New Hampshire Avenue location) are beneficial. EPA supports the Covell's Beach landfall as it will result in fewer potential negative impacts to coastal habitats and resident marine life in Lewis Bay.

Cumulative Impacts

The cumulative impacts analysis in the DEIS provides a solid foundation with respect to a listing of the various projects and activities that may cause or contribute to cumulative impacts in the general geographic area of the project. The Vineyard Wind lease area is adjacent to six other areas in the Atlantic currently leased from BOEM. The three most recent leases awarded through a highly successful BOEM auction are located to the southeast of the Vineyard Wind lease block and cover almost 390,000 acres (roughly half the acreage of Rhode Island). According to a BOEM press release, these lease auctions generated 405 million dollars in revenue and create the potential for 4.1 gigawatts of wind power development, enough to power nearly 1.5 million homes. The over 900,000 acres currently leased from BOEM off the Massachusetts and Rhode Island coasts represent a meaningful opportunity for the responsible development of offshore wind.

The interest in offshore wind power development, as reflected in the high bids during the recent auctions, underscores the need for BOEM to expand the cumulative impact scenario to explore future build-out conditions where the New England lease areas are developed at different intensities for wind power. The current analysis does not include an evaluation of a full build future wind power development scenario covering the 900,000 acres covered by existing leases.

Recommendation: We recommend that BOEM expand the scope of the cumulative impact analysis. The expanded scope would more fully consider future offshore wind buildout conditions, navigation corridors, WTG orientation, implications for the commercial fishing industry and potential impacts to the marine environment. We also encourage BOEM to use the cumulative impacts analysis to describe how the future buildout could benefit regional air quality and how it could help states more fully meet established renewable energy generation goals. There is a good deal of general information already available to support this type of analysis, which could help address public concerns about the uncertainties associated with the broader development of wind power in this area.

Water Quality Impacts

The DEIS identifies "Other Permits and Authorizations" required but does not list the EPA's or Coast Guard's regulatory responsibilities for certain discharges from vessels. The EPA regulates discharges from certain non-recreational vessels operating within the territorial seas through its Vessel General Permit. The US Coast Guard also has standards for vessels carrying ballast water within the waters of the U.S. (extending 12 nm from shore).

Recommendation: EPA recommends that the FEIS include these regulatory requirements and standards regarding ballast water management, and Vineyard Wind's responsibility to coordinate with these federal authorities on such discharges in areas where applicable. We note that these requirements are identified in the draft COP (Vol III, p. 56) and we also recommend that they be referenced in the FEIS (for example in Table 1.3-1).

We also recommend that the FEIS include a discussion of how the project (during construction and operation) will be consistent with MARPOL ship waste management practices with a specific focus on the discharge of plastics.

Oil Spill Protocol

Page 2-8 of DEIS mentions that before construction begins an Oil Spill Response Plan, Emergency Response Plan and Safety Management System will be developed for the project.

Recommendation: EPA supports these efforts and requests the opportunity to review drafts of these specific protocols prior to finalization.

Impacts to Benthic Habitats

The DEIS provides two options for the cable route through Muskeget Channel. More hard/complex substrate has been identified in the Western Muskeget channel corridor (2,022 acres) than Eastern Muskeget Option (2,003 acres).

Recommendation: The FEIS should explain how all available information, including any data not yet evaluated and presented in the DEIS, will be used to avoid and minimize impacts to hard and complex habitat and the process to select the eastern or western option. The DEIS describes the presence of known eelgrass beds near the Covell's Beach landfall site being limited to the Spindle Rock bed, approximately 380 feet (100 meters) from the proposed OECC approach to the Covell's Beach landfall site. However, information provided at BOEM meeting on December 6, 2018 indicated that a new eelgrass bed had been identified. The FEIS should present this new information and describe how this bed will be avoided, if it is located within the OECC.

Characterization of Impacts

The DEIS (Section 3.3.4.9) notes that information is incomplete regarding the extent of different seafloor habitats but that "sufficient information exists to support the findings presented herein."

Recommendation: We recommend that the FEIS explain how the seafloor mapping will be supplemented prior to construction to help avoid impacts from different dredging and cable burial methods. We also recommend that BOEM require dynamic positioning of construction vessels in areas of hard/complex seafloor habitat or in areas that are not fully mapped but likely to contain these habitats.

The discussion of dredging in areas of large sand waves (DEIS page 2-6) references COP Volume II-A, Figure 2.1-13, which indicates areas prone to large sand waves and thus likely locations for dredging activity.

Recommendation: This is an instance in the DEIS where the discussion would benefit greatly from a visual presentation in the EIS itself instead of a reference to another document.

Mitigation, Monitoring and Impact Minimization

EPA generally supports the following mitigative measures and monitoring proposed in Appendix D of the DEIS to minimize and assess benthic impacts:

- Utilize horizontal directional drilling wherever possible (and we recommend that the FEIS more fully describe the locations where additional directional drilling could avoid impacts from the project);
- Avoid cable installation on hard/complex habitat wherever possible;
- Require the use of mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seafloor in areas where benthic vegetation or other complex habitats may exist;
- Avoid trenching when other less damaging methods (e.g., plowing) are available for cable installation. We recommend that BOEM establish a firm requirement that all dredging and cable installation activities use the least environmentally harmful method practicable for each area. In general, because it results in substantially greater impacts, dredging should be minimized to the greatest extent practicable; and
- Conduct long-term monitoring to document the changes to the ecological communities on, around, and between WTG foundations and other benthic areas disturbed by the proposed Project, including protected species movement and habitat use.

Avian Impacts

EPA supports measures proposed in the DEIS to minimize impacts to birds but is concerned that there is no apparent monitoring effort proposed to assess the actual impacts from bird collisions with turbines. Relying on the "healthy" state of bird populations likely to encounter the turbines seems insufficient, particularly since populations of some species are in decline.

Recommendation: We recommend that the FEIS better explain how actual impacts to birds will be assessed once the wind farm is operational and consider appropriate mitigation for significant mortality. These impacts should be incorporated into the cumulative impact assessment as well.

North Atlantic Right Whales

On January 22, 2019 Vineyard Wind, the NRDC, NWF and CLF announced an agreement to establish protective actions to protect North Atlantic Right Whales during construction and operation of the project.

Recommendation: We recommend that the FEIS describe how the applicant/NGO agreement will be considered in the context of overall mitigation measures and how BOEM will consider and coordinate the agreement with relevant state and federal agencies. The discussion should also explain whether the agreement changes the proposed project and how the agreement will be integrated into the operational controls for the project.

Marine Transit and Fisheries Issues

Ongoing negotiations between Vineyard Wind, the Rhode Island Fisheries Advisory Board and the Rhode Island Coastal Resources Management Council (RICRMC) regarding project design, construction, operation and mitigation are scheduled to conclude following the close of the comment period for the DEIS. While the specific outcome of these discussions is unknown, BOEM staff has made it clear during interagency conversations and at recent public hearings that the conditions of the RICRMC approval would be adopted by BOEM and made binding on the project.

EPA reserves the right to supplement or modify our comments on the DEIS with consideration given to the outcome of these discussions/negotiations. We would also appreciate the opportunity to participate in interagency discussions regarding implementation of any conditions related to these negotiations that result in project modifications.