Town and County of Nantucket
Select Board • County Commissioners

16 Broad Street
Nantucket, Massachusetts 02554

Telephone (508) 228-7255
Facsimile (508) 228-7272
www.nantucket-ma.gov

C. Elizabeth Gibson
Town & County Manager

February 22, 2019

Program Manager
Office of Renewable Energy
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, Virginia 20166

Dear Program Manager:

The Town of Nantucket appreciates the opportunity to provide comments to the Bureau of Ocean Energy Management (BOEM) in response to the Draft Environmental Impact Statement (DEIS) for Vineyard Wind's proposed Construction and Operations Plan (Lease Number OOCS-A-0501). These written comments supplement the oral comments presented by the Town of Nantucket's Energy Coordinator at the February 11, 2019 Public Hearing held in Nantucket.

The Town of Nantucket supports the responsible development of cost-effective offshore wind as an opportunity to help the Commonwealth meet its Greenhouse Gas (GHG) emission reduction mandate, address the retirement of aging power plants, provide economic development opportunities for Massachusetts businesses, and job creation for Massachusetts residents.

The Town of Nantucket acknowledges the important benefits that the Vineyard Wind project (the Project) may specifically provide, such as:

- Improved reliability of the regional power system,
- Electricity cost savings, and
- Reduced air emissions from fossil fuel fired plants

The following comments should only be construed as constructive, aimed at assisting BOEM with this important analysis. The Town appreciates the significance of getting this first project right, as it will serve as an important precedent for future projects. At this stage of development, it is vital that historic and ecological impacts are clearly recognized and mitigated to the fullest extent.

Notwithstanding the general support that the Town of Nantucket has for cleaner energy alternatives, we have identified, in close consultation with numerous local stakeholder groups, several areas of concern, which may adversely impact Nantucket's natural environment,

maritime economy, and rich cultural heritage. These concern, based on input from the community and reached in agreement with key local stakeholders, are as follows:

Requiring Higher Standards for Nighttime Lighting Systems
In order to preserve and protect Nantucket's nighttime environment and heritage of Dark Skies, we strongly urge for BOEM to formally require the utilization of FAA-approved "Aircraft Detection Light Systems" (ADLS), the most environmentally-responsible and locally appropriate lighting option available, as part of the COP approval.

In selecting nighttime lighting systems for the wind turbine generators (WTGs), it is imperative to balance the need for safety with the importance of protecting the Island's Dark Sky qualities, which significantly contribute to Nantucket's unique historical character and astronomical heritage. Strobing or blinking nighttime lighting systems, as are standardly installed on WTGs, are incongruous with Nantucket's lighting regulations and will negatively impact the Island's cultural identity of historic and environmental preservation.

Aircraft Detection Light Systems should become the new standard for all offshore wind developments, especially those sited within the viewsheds of historic landmarks.

Addressing the visual impacts on Nantucket, a National Historic Landmark
The Nantucket Historic District was designated a National Historic Landmark (NHL) by the Federal Department of the Interior on November 13, 1966, and it remains one of only 2,600 places in the nation with that distinction.[1] We are deeply concerned with the maintenance of the Island's character in this regard.

We disagree with the DEIS conclusion that the project's visual effects on Nantucket would be "minor," or adequately mitigated by paint color or ADLS lighting alone. The size and scale of the project within the viewshed of the Island (as illustrated by the photos in Appendix III-H-a of the COP) will negatively affect Nantucket's designation as a National Historic Landmark.

As was concluded in the "Findings of Adverse Effect" of the Cape Wind project on the Nantucket Historic District:

> "The interruption of the natural horizon line by the WTGs and related structures will alter the historic Nantucket Sound setting of the Nantucket Historic District NHL, a historic early settlement, maritime and premier whaling village, and summer resort. These changes constitute an alteration of the historic character, setting, and viewsheds that make Nantucket nationally significant and eligible for conclusion in the National Register and a NHL.[2]"

We note that the NHL for the Nantucket Historic Landmark District encompasses the entire island of Nantucket, as well as the islands of Tuckernuck and Muskeget, and the definition of a

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[1] National Historic Landmarks Program-nps.gov
[2]Cape Wind DEIS, Appendix 5.10-F, p. 42

National Historic Landmark "is a building, district, object, site or structure that is officially recognized by the United States government for its outstanding historical significance."[3]

To minimize the visual impacts of WTGs, the Town of Nantucket supports a reduction of the project's development footprint (Alternative E), in part by removing or relocating the northern-most rows of turbines, closest to Nantucket's shore (Alternative C).

The removal of *at least* the six closest WTGs from Nantucket would "reduce indirect (i.e., visual) impacts on the historic properties on Martha's Vineyard, the Nantucket Historic District, and Nantucket Sound, from which the proposed Project would be visible (see Section 3.4.3.3)."[4]

This design modification of essentially "pushing back" the closest, most visible WTGs from Nantucket, would minimize the adverse visual impacts upon the Nantucket Historic District, without reducing the power output potential of the lease area.[5]

Because of the large size and height of the Project's preferred 9.5MW MHI Vestas WTGs, the visual impact of the structures on the Nantucket viewshed is a significant environmental impact requiring careful assessment, minimization, and mitigation, above and beyond the limited scope of the Section 106 Review.

Failure to Assess the Project's Specific Impacts on the Unique History and History-Related Tourism of Nantucket

Tourism is the lifeblood of Nantucket's economy, with economic activity related to tourism accounting for over 70% of the Island economy.[6] Notwithstanding the European experience with windfarms, there are no relevant precedents in the U.S., and certainly none with the historical preservation and significance of Nantucket.

Nantucket's unique appeal is firmly rooted in its historic character and pristine environmental characteristics. The size and scale of the Project within the viewshed of the Island is a source of concern for the preservation of the Island's cultural character. The DEIS does not adequately address the impacts on Nantucket-specific tourism related to its historical significance, remote sense of place, natural preservation, or pristine setting of island beaches.

Furthermore, the DEIS fails to evaluate the viewshed impact on the quality of life for the residents of Nantucket. As evidenced by Figure 3.4.4-1[7], the Project will be visible from all vantage points on the southern coast of Nantucket, and neighboring islands such as Tuckernuck. Many local residents, such as those who live in Madaket, just 14.7 miles from the closest proposed WTGs, treasure the unobstructed ocean views, a resource that has remained unspoiled by industrial elements for thousands of years.[8]

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[3] National Historic Landmarks Program-nps.gov
[4] DEIS, p 3-143
[5] DEIS, p 2-14
[6] Monitoring the Nantucket Economy: An Update to the 1993 Nantucket Economic Base Study, June, 2002, Sponsored by the Nantucket Planning and Economic Development Commission and the Nantucket Island Chamber of Commerce, p 7 & 8
[7] DEIS, p 3-154
[8] Madaket Residents Association DEIS Comments, 22 February 2019.

As recognized in the DEIS, under the National Environmental Policy Act, care must be taken to avoid adverse impacts, and in particular "Irreversible commitments occur when the primary or secondary impacts from the use of a resource either destroy the resource or preclude it from other uses."[9] BOEM must carefully consider the impacts on Nantucket's unique character which we contend is a "resource" both to the Island's economy and under NEPA's definition.

These potential adverse effects must be further analyzed and quantified.

Inadequate Visual Simulations

The current simulations are incomplete and inadequate to show the actual impact of the WTGs, which is necessary to fairly assess adverse impacts and to determine appropriate minimization and mitigation measures. The DEIS does not include photosimulations showing the aesthetic impacts of the Project. Instead, these are contained in a separate document located on BOEM's Vineyard Wind webpage, in a format and quality impossible to accurately judge or interpret.[10] For certain vantage points, such as the Madaket Beach and Surfside Beach locations, the simulations were taken from the most advantageous beach-level elevations rather than on the bluffs or more elevated popular public-viewing locations along Nantucket's south shore, such as Sanford Farm. As a result, the visual simulations provide a "best case" representation of the Project's visual impact upon the Island's southern horizon, a key contributing element of Nantucket's nationally-significant maritime history.

Photosimulations during sunset—a well-known tourist and resident asset—remain missing. The video simulations simply do not capture the extraordinary experience of a Madaket Sunset. Additional simulations representing each season, with strict adherence to best practice guidelines and methodology, as identified by BOEM's Compendium Report for the New York Call Area, are necessary.

We also seek updated visual simulations that reflect any change in final WTG placement or layout, such as the scenarios presented in Alternative D.[11]

Export Cable in Nantucket Coastal Jurisdiction

One of the options included in the DEIS is an export cable route through Nantucket's coastal water jurisdiction ("Eastern Muskeget" route). The final report should identify, demonstrate, and enumerate what specific mitigation measures and benefits would accrue to Nantucket if this option is exercised, especially if this option is determined to disrupt fisheries and local commercial fishing activities. At this time, we recognize the numerous comments and recommendations provided by the Massachusetts Division of Marine Fisheries in their February 5, 2019 letter to the Nantucket Conservation Commission (Appendix A), which warrant further analysis and consideration. As stated in their letter, the Division of Marine Fisheries recognizes that the export cable route area is significant to many marine fisheries species and therefore requirements aimed at monitoring and restoration must be imposed.

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[9] DEIS, p. ES-5.

[10] https://www.boem.gov/Vineyard-Wind-Nantucket-Visuals/

[11] DEIS, p 2-11

Impacts to Commercial and Recreational Fishing Activities
Nantucket has a robust fishing industry which is threatened by the overall project and in particular the export cable route through Nantucket's coastal waters. The design of the wind farm conflicts with commercial fishing methods creating a safety hazard to both commercial fishermen and recreational boaters. Additionally, as stated above, there is potential damage to commercial fisheries, including those for squid, river herring, shad, sea herring, striped bass, lobster, Jonah crab, horseshoe crab, and conch, which have not been addressed in the DEIS.

Vessel Traffic
The DEIS indicates a planned maintenance schedule requiring 392 vessel trips in a typical year. This incremental vessel traffic, over 30 years, can have a material impact on Nantucket and its surrounding waters well beyond the 2-3-year proposed installation period. Vessel routes should be established in advance to minimize these impacts.

Need for Consistent Best Practices and Minimum Guidelines
Lastly, we are concerned over the lack of minimum guidelines and best practice standards established to date for US offshore wind projects, *especially* as relates to adverse visual impacts upon National Historic Landmarks. **This project, and how it is evaluated and permitted, will set the precedent for all future projects off our southern shore and along the entire Atlantic Coast.** We are concerned with this project serving as a "learning exercise" for all other offshore wind projects to follow and placing Nantucket in the unfortunate role of a guinea pig.

It is therefore essential that there be consistency in the criteria applied to this project and subsequent future sites. Due to the high cultural and historic sensitivity of the Island, and its close proximity to the development site and cable routes, we insist that best practice criteria be applied, however and wherever possible. These minimum standards would include:

- Clear guidelines for Visual Impact Assessments and Visual Simulations, such as:
    - Standards and methodology, as identified in the "Renewable Energy Viewshed Analysis and Visualization Simulation for the New York Outer Continental Shelf Call Area: **Compendium Report**"[12]
    - Panoramic Photomontages, such as Trueview Simulations
    - Single Frame simulations per season and during specific times of local concern (i.e. sunset), from nondeceptive angles or perspectives (i.e. beach level vs. bluff). The public should be able to easily compare the visual simulations from different developers "apples to apples" for projects within the same viewshed.
    - Use of 3D software that permits the viewer to create custom views, such as submitted in the 400-page visual simulation assessment within the DEIS for Deep Water Wind's Block Island Wind Farm.[13]
- Requiring the least impactful nighttime lighting, such as Aircraft Detection Lighting Systems, as part of the COP Approval Process.
- Requiring all windfarms in a specific region to use the same paint color, determined to be most effective in minimizing the visual impacts, per specific atmospheric/geographical conditions of the lease sites.

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[12] https://www.boem.gov/Compendium-Report-Final/
[13] http://dwwind.com/wp-content/uploads/2014/08/Appx-S1-Visual-Impact-Assessment.pdf

- Establishing minimum set-back standards from land, with specific considerations for historic landmarks and areas with tourism-driven economies. The distance from Nantucket's shores is 14.7miles, which is arbitrary as a measure, and admittedly less than the "break even" point for social acceptability as analyzed by the University of Delaware.[14] We propose that 17.65 miles, or half of the 35.3-mile visual buffer (limit of WTG visibility) be considered as a more appropriate and reasonable initial benchmark for a minimum setback. The proposed 14.7 miles is too close a distance to a National Historic Landmark and sets a dangerous and irresponsible precedent for the industry.
- For communities with historical significance, BOEM should help ensure that local stakeholders receive fair and direct access to any state and federal agencies or resources, which may provide critical regulatory guidance on how best to avoid, minimize, and mitigate the local impacts of offshore windfarms. This support would be provided independent of the Section 106 process, and would, for example, identify and encourage dialogue between communities with their State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), connections the Town has been unsuccessful in establishing to date.
- Requiring appropriate project mitigation measures to offset the impacts to communities, such as community benefit agreements, offshore wind mitigation trust funds, or other economic development arrangements, as are standard in the offshore wind industry. This is a critical juncture in the development of the U.S. offshore wind industry, and we believe the citizens and businesses of Nantucket are open minded, if not supportive, of a successful industry. For this to be the case, there must be a meaningful sharing of the benefits from this development. At present, unlike arrangements with Barnstable, Martha's Vineyard, and the Rhode Island Fishing Advisory Board, there are no proposed tangible benefits in terms of electric rates, grants or other mitigation measures to balance the impacts borne upon Nantucket.

The Town of Nantucket is supportive of the responsible development of wind energy as an alternative to traditional sources and means to achieve the State's clean energy goals, improve air quality and human health, reduce the need for additional fossil fuel power plants, and mitigate climate change.

We believe, however, that there are sufficient unknowns about the potentially permanent consequences of the Project to warrant a most cautious approach to permitting the largest such facility in the world, especially regarding viewshed impacts upon nationally historic properties.

We once again thank BOEM for this opportunity to comment.

Sincerely,

Jason Bridges, Chair
Nantucket Select Board

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[14] DEIS, p 3-153

APPENDIX A:

Commonwealth of Massachusetts
Division of Marine Fisheries
251 Causeway Street, Suite 400
Boston, Massachusetts 02114
(617)626-1520
fax (617)626-1509

David E. Pierce, Ph.D.
Director

Charles D. Baker
Governor
Karyn E. Polito
Lieutenant Governor
Matthew A. Beaton
Secretary
Ronald Amidon
Commissioner
Mary-Lee King
Deputy Commissioner

February 5, 2019

Nantucket Conservation Commission
Town Building Annex – 1st Floor
37 Washington Street
Nantucket, MA 02554

Dear Commissioners:

The Division of Marine Fisheries (MA DMF) has reviewed the Notice of Intent (NOI) by Vineyard Wind LLC for the Vineyard Wind Connector project for the portions of the offshore transmission that are in Nantucket waters, as part of a broader offshore wind project. Vineyard Wind identified a western and eastern option for the laying of two (2) offshore export cables situated within Muskeget Channel between Martha's Vineyard and Nantucket. This letter is to comment on the 3.1 mile portion of the "eastern" Offshore Export Cable Corridor (OECC) that travels through Nantucket's municipal waters. The two cables traversing Nantucket waters will most likely be jet-plowed approximately 330 feet apart and buried between 5 – 8 feet under the substrate. If cable protection is needed (approximately 10' across), a layer of rock, concrete mattresses, grout/sand bags, or half-shell pipes will be laid over the exposed cables. If the dredging of sand waves is necessary, jetting or trailer suction hopper dredging will be used. Construction methodologies have not been finalized. In our recommendations we attempt to identify the methodologies that minimize impact. If other methodologies are selected, additional conditions to avoid or minimize impacts may be necessary.

The project site lies adjacent to mapped shellfish habitat for surf clam (*Spisula solidissima*). Subtidal waters bordering the project site have habitat characteristics suitable for this species. Land containing shellfish is deemed significant to the interest of the Wetlands Protection Act (310 CMR 10.34) and the protection of marine fisheries.

This portion of the project is located in Muskeget Channel, one of 3 major channels of Nantucket Sound. This channel is utilized by many marine fisheries species, more notably squid, river herring, shad, sea herring, striped bass, lobster, Jonah crab, horseshoe crab, and conch. Muskeget Channel is known to be a major thoroughfare for many migratory fish and marine mammals, including endangered turtles (Leeney et al. 2010). In this high current area, there are many challenges with sampling for these animals, so there is little known about where and when they use the channel (Leeney et al. 2010). Unique benthic and hydrographic features in the channel may be used by marine resources for specific life history behaviors.

MA DMF offers the following comments for your consideration:

- MA DMF has requested in previous communications that all cable laying within Nantucket waters should avoid the spring season (April-June) due to high concentrations of fishing activities and natural resource events (spawning and egg laying). A meeting with Vineyard Wind on 1/31/2019 laid out a sequencing of cable-laying that results in fall cable laying in the northern part of the offshore export cable, alleviating our primary time of year concerns. However, the Muskeget Channel portion is planned to be laid in the spring (April-June) of 2021. Specific actions on the part of Vineyard Wind may be necessary to mitigate conflicts with vessels and fishing activities in Nantucket waters. There are ongoing conversations regarding both compensatory mitigation for fishermen as well as communication protocols during cable laying.
- Turbidity, particularly in the event of dredging, can impact both benthic and pelagic marine fisheries resources. High turbidity levels could affect migrations through Muskeget Channel and sedimentation could smother benthic organisms. We recommend methods be used that minimize turbidity (for example, controlled flow excavation) and habitat alteration.
- Closures around the cable laying vessel are expected per USCG regulations. It is conceivable that a cable laid on the seafloor is protected via a closure until it is buried. This could have adverse impacts on fishing access and depending on the specific time of year and the length of the closure these impacts could be severe. We strongly recommend simultaneous lay and burial to ensure minimal closure of the cable laying area to other activities.
- Some sections of the cable will pass over hard bottom, which may serve as lobster settlement habitat. We recommend the proponent monitor the presence of young of the year lobster in these areas before and after construction to assess impact.
- Once the cable is energized, a potential impact to marine fisheries resources is the electromagnetic field (EMF) emitted by the cable. Some marine fisheries resources are sensitive to these fields (e.g., flounders, see McCann, 2012). The planned burial of the cable to ~1.5-2.5 m will minimize the impact of EMF. We recommend burial of at least 1.5 m and monitoring cable burial continuously via temperature monitoring or other in-situ method. If continuous monitoring cannot be done, then geophysical surveys should occur at least annually (which is more frequently than is currently described in the Construction Operations Plan) and always after major storm events such as hurricanes and nor'easters.
- Some sections of the cable may need to be armored for long-term protection. We recommend using natural materials that mimic the surrounding seafloor. Mitigation for habitat conversion may be needed.
- A mechanism to compensate fishermen for lost gear during construction and operation has not been established but has been discussed.
- The Benthic Habitat Monitoring Plan submitted as part of this NOI is inadequate both in terms of sample sizes and collection methods to assess any potential changes to seafloor infauna or bathymetry following cable installation. Only 10 sites from five habitat types are proposed for assessment. It is unclear if any of these sites are in Nantucket waters.
- The Benthic Habitat Monitoring Plan is insufficient to assess project impacts to important food for wildlife (e.g. shallow submerged lands with high densities of polychaetes, mollusks, or macrophytic algae), distribution of sediment grain size, and changes in natural relief and elevation caused by cable laying. The samples taken to assess these impacts need to be taken at a relevant scale and with quantitative methods. As we have stated in other letters, the Benthic Habitat Monitoring Plan needs to be fully revised with guidance from the agencies. Some specific recommendations that we have made include:

- The benthic stations where infauna are being sampled should also be sampled for grain size.
- Sediment profile imaging (SPI) images should be taken pre- and post-construction.
- The entire cable pathway should be re-imaged with multibeam post-construction; those data should be incorporated in a post-construction impact analysis.
- Video surveys should use high resolution video and be georeferenced.
- The timeline of sampling, including the season, should be clarified.
- The benthic monitoring plan needs additional detail with respect to how change will actually be measured and may need additional sampling stations for a quantitative assessment.
- The plan should state the hypotheses being tested.
- The plan identifies reports as the primary product; we recommend all data be made available in regional database management systems and directly to requesting agencies.

Questions regarding this review may be directed to Eileen Feeney in our New Bedford office at (508) 742-9721.

Sincerely,

Eileen M. Feeney

Eileen M. Feeney
Fisheries Habitat Specialist

cc: Jack Vaccaro, Epsilon Associates, Inc.
Erich Stephens, Vineyard Wind LLC
JC Johnsen, Shellfish Constable
Sue Tuxbury, NMFS
Robert Boeri, CZM
Barbara Newman, ACOE
Derek Standish, David Wong, DEP
Richard Lehan, DFG
David Pierce, Kathryn Ford, Ryan Nuttall, DMF

KF/EF/jl/rn

References

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Leeney RH, Nichols OC, Sette L, Wood LaFond S, Hughes PE (2010) Marine megavertebrates and fishery resources in the Nantucket Sound - Muskeget Channel area: ecology and effects of renewable energy installations. Report to Harris Miller Miller & Hanson Inc., September 2010. Provincetown Center for Coastal Studies, Provincetown, MA, USA. 88 pp.

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