Vineyard Wind Offshore Wind Energy Project Scoping Report

U.S. Department of the Interior
Bureau of Ocean Energy Management
Office of Renewable Energy Programs

Table of Contents

1. Draft Scoping Summary Report for the Vineyard wind Environmental Impact Statement....1

1.1. Introduction....1

1.2. Objective....1

1.3. Methodology....2

1.3.1. Terminology....2

1.3.2. Comment Submittal....2

1.3.3. Comment Processing....3

1.3.3.1. Compilation of Submissions....3

1.3.3.2. Identification of Comments....3

1.4. Scoping Submission and Comment Summary....4

1.4.1. Submissions....4

1.4.2. Comments....5

1.4.3. Definition of Resource Areas and Common NEPA Topics Raised....6

1.4.3.1. Air Quality....6

1.4.3.2. Alternatives....6

1.4.3.3. Benthic Habitat....7

1.4.3.4. Birds and Bats....8

1.4.3.5. Coastal Habitat....10

1.4.3.6. Commercial Fisheries and For-Hire Recreational Fishing....11

1.4.3.7. Cultural, Historical, and Archaeological Resources....12

1.4.3.8. Cumulative Impacts....12

1.4.3.9. Finfish, Invertebrates, and Essential Fish Habitat....13

1.4.3.10. Land Use and Coastal Infrastructure....14

1.4.3.11. Marine Mammals....14

1.4.3.12. Mitigation....15

1.4.3.13. Navigation and Vessel Traffic....15

1.4.3.14. NEPA Process and Public Engagement....16

1.4.3.15. Other Resources and Uses....16

1.4.3.16. Project Description....17

1.4.3.17. Public Infrastructure/Services....17

1.4.3.18. Purpose and Need....17

1.4.3.19. Recreation and Tourism....18

1.4.3.20. Sea Turtles....18

1.4.3.21. Socioeconomics....19

1.4.3.22. Terrestrial Plants and Animals....19

1.4.3.23. Visual Impacts....19

1.4.3.24. Water Quality....20

1.4.3.25. Wetlands....20

List of Appendices

Appendix A: List of Submission Identifications, Names, and Affiliations

Appendix B: Individual Comments by Resource or NEPA Topic

List of Tables

Table 1: Public Scoping Meetings 3

Table 2: Distribution of Submissions by Type 4

Table 3: Distribution of Comments by Resource Addressed 5

Acronyms and Abbreviations

AIS	Automatic Identification System
BOEM	Bureau of Ocean Energy Management
COP	Construction and Operations Plan
EIS	Environmental Impact Statement
EMF	electromagnetic field
html	Hypertext Markup Language
ID	identification number
NEPA	National Environmental Policy Act
NOI	Notice of Intent
PDF	portable document format
Q&A	questions and answers
Vineyard Wind LLC	Vineyard Wind

1. DRAFT SCOPING SUMMARY REPORT FOR THE VINEYARD WIND ENVIRONMENTAL IMPACT STATEMENT

1.1. INTRODUCTION

Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) under Title 40 of the Code of Federal Regulations (CFR) Section 1501.7(a) require agencies such as the Bureau of Ocean Energy Management (BOEM) to perform certain actions as part of the scoping process, including:

- Determining the scope and the significant issues to be analyzed in depth in the Environmental Impact Statement (EIS); and
- Identifying and eliminating from detailed study the issues that are not significant.

This document, in combination with the Draft EIS, is intended to satisfy BOEM's obligations under 40 CFR 1501.7(a).

On December 20, 2017, Vineyard Wind LLC (Vineyard Wind) submitted a Construction and Operations Plan (COP) to BOEM seeking approval to construct and operate an up to 800-megawatt wind energy facility (herein referred to as the proposed Project or Proposed Action) offshore of Massachusetts in federal waters. On March 30, 2018, BOEM issued a Notice of Intent (NOI) to prepare an EIS consistent with NEPA regulations (NEPA; 42 United States Code § 4321 et seq.) to assess the potential impacts of the Proposed Action and alternatives (83 Federal Register 13777).

The NOI commenced a public scoping process for identifying issues and potential alternatives for consideration in the EIS. The formal scoping period was from March 30 through April 30, 2018. During this timeframe, federal agencies, state and local governments, and the general public had the opportunity to help BOEM identify potential significant resources and issues, impact-producing factors, reasonable alternatives (e.g., size, geographic, seasonal, or other restrictions on construction and siting of facilities and activities), and potential mitigation measures to analyze in the EIS, as well as provide additional information. BOEM also used the NEPA scoping process to initiate the Section 106 consultation process under the National Historic Preservation Act (54 United States Code § 300101 et seq.), as permitted by 36 Code of Federal Regulations § 800.2(d)(3), which requires federal agencies to assess the effects of projects on historic properties. Additionally, BOEM informed its Section 106 consultation by seeking public comment and input through the NOI regarding the identification of historic properties or potential effects to historic properties from activities associated with approval of the Vineyard Wind COP.

This Scoping Summary Report outlines the objectives, methodology, and content of the information provided by interested parties during the scoping period.

1.2. OBJECTIVE

This report reviews and catalogues the information and materials provided to BOEM during the scoping period for the proposed Project. The goal of the exercise was to identify substantive comments for consideration in the development of the EIS, and categorize them based on the applicable resource areas or NEPA topics. Section 1.3 describes the methodology used to identify and categorize comments. This

categorization scheme allowed subject matter experts to review comments directly related to their areas of expertise, and allowed BOEM to generate statistics based on the resource areas or NEPA topics addressed in each of the comments. In addition, the process demonstrates consideration of the materials received while simultaneously contributing to the development of the EIS.

1.3. METHODOLOGY

1.3.1. Terminology

The following terminology is used throughout this Scoping Report:

- **Submission:** The entire content submitted by a single person or group at a single time. For example, a 10-page letter from a citizen, an email with a portable document format (PDF) attachment, and a transcript of an oral comment given at a public scoping meeting was considered to be a submission.
- **Comment:** A specific statement within a submission that expresses a sender's specific point of view, concern, question, or suggestion. One submission may contain many comments.
- **Substantive Comment:** Scoping submissions were reviewed to identify and categorize "substantive" comments. To be substantive, a comment must meet both of the following criteria:
  - Related to the Proposed Project: To be substantive, a comment must first relate, even tangentially, to the proposed Project, its connected actions, cumulative actions/effects, and other reasonably foreseeable actions, impacts, or conditions.
  - Consisted of more than simple opinion: This criterion requires that substantive comments provide information to help BOEM prepare the EIS by providing some level of support or basis for the commenter's position, or some indication of issues the commenter believes are significant. As a hypothetical example, a statement that "BOEM should reject the Project" would not be considered substantive, but a statement that "The Vineyard Wind Project should not be approved because it would harm commercial fisheries" would be considered substantive.

Each substantive comment was assigned to at least one resource, or NEPA topic; however, most comments were assigned to more than one resource. Resources and NEPA topics are defined in Section 1.4.3 below.

1.3.2. Comment Submittal

BOEM received comment submissions during the scoping process via the following mechanisms:

- Electronic submissions received via Regulations.gov on docket number BOEM-2018-0015;
- Electronic submissions received via email to a BOEM representative;
- Hard-copy comment letters submitted to BOEM via traditional mail;
- Hard-copy comment cards and/or letters received during each of the five public scoping meetings; and
- Comments submitted verbally at each of the five public scoping meetings.

Five public scoping meetings were held at the following locations and dates as outlined in Table 1.

Table 1: Public Scoping Meetings

Date	Time	Location
April 16, 2018	Open House 5:00 p.m. to 8:00 p.m. Presentation and Q&A 6:00 p.m.	Fairfield Inn and Suites, Waypoint Event Center 185 MacArthur Drive New Bedford, MA 02740
April 17, 2018	Open House 5:00 p.m. to 8:00 p.m. Presentation and Q&A 6:00 p.m.	Martha's Vineyard Hebrew Center 130 Center Street Vineyard Haven, MA 02568
April 18, 2018	Open House 11:00 a.m. to 2:00 p.m. Presentation and Q&A 12:00 p.m.	Nantucket Middle School Cafeteria 10 Surfside Road Nantucket, MA 02554
April 18, 2018	Open House 6:00 p.m. to 9:00 p.m. Presentation and Q&A 6:30 p.m.	Double Tree Hotel, Cape Cod Room 287 Iyannough Road Hyannis, MA 02601
April 19, 2018	Open House 5:00 p.m. to 8:00 p.m. Presentation and Q&A 6:00 p.m.	University of Rhode Island, Ryan Center, Alumni Lounge 1 Lincoln Almond Plaza Kingston, RI 02881

Q&A = questions and answers

1.3.3. Comment Processing

1.3.3.1. Compilation of Submissions

BOEM downloaded and reviewed all submissions from Regulations.gov. These submissions were provided in Hypertext Markup Language (html) format, while attachments provided by stakeholders as part of their Regulations.gov submission were typically provided in PDF or Microsoft Word format. Text from the html, PDF, Word, and other text formats were copied from the original format into a single Microsoft Excel file that served as the submission database. The submission database also included information about each submission, including the submitter's contact information, submission date, whether the submitter was a government entity or agency, and the overall disposition of the sender toward the proposed Project (see Section 1.4).

Submissions provided by email were incorporated into the submission database in a similar manner. Hard-copy and hand-written submissions were transcribed and entered into the submission database, as was the entire text of each public meeting listed in Table 1.

A limited number of submissions were received after the scoping comment period ended; these were treated the same as those received before the deadline. Each submission entered into the submission database received a unique identification (ID) number.

1.3.3.2. Identification of Comments

Each submission and all oral testimony were read to identify substantive comments (as defined in Section 1.3.1). Each substantive comment was entered into a spreadsheet that served as the master comment database. Each comment then received a unique comment ID number. For example, the 4th comment identified in Regulations.gov submission 87 was identified as Comment 87-4. Since individual submissions within the public meeting transcripts were not uploaded individually to Regulations.gov, artificial nomenclature was used to catalogue each of the submissions including using NB, VH, NT, HY,

and KI, representing the public scoping meetings held in New Bedford, Vineyard Haven, Nantucket, Hyannis, and Kingston, respectively. Each substantive comment was assigned to at least one NEPA resource or topic area, and most comments were assigned to more than one resource or NEPA topic area. Resources categories are defined in Section 1.4. Appendix A, List of Submission IDs, Names, and Affiliations, provides a listing of all the submissions received. Appendix B, Individual Comments by Resource or NEPA Topic, presents the individual substantive comments that were extracted from each of the comment submissions and are organized by resource or NEPA topic area. Comments in Appendix B are exact quotes taken from the individual submissions received.[1]

Each initial comment identification was reviewed to ensure that comments were substantive, included the appropriate text from the submission, and were assigned to the correct resource.

It should be noted that many submissions included comments related specifically to the COP. These comments were not captured in the review process unless the comment also related the information or analysis to be included in the EIS.

1.4. SCOPING SUBMISSION AND COMMENT SUMMARY

1.4.1. Submissions

BOEM received 148 submissions from the public, agencies, and other interested groups and stakeholders, of which 4 were determined to be exact duplicates (same sender, same date, and same content) of other submissions, for a net of 144 unique submissions. Table 2 shows the types of submissions received:

Table 2: Distribution of Submissions by Type

Submission Type	Number Received
Regulations.gov submission	94
Mailed hard copy	25
Public meeting comment card	16
Email to BOEM representative	7
Letter submitted at public meeting	2
Total	144

Note: BOEM received an additional approximately 103 verbal submissions during public scoping meetings.

The totals above included the following submissions by federal, state, and local government entities:

- Two submissions from federal agencies: U.S. Environmental Protection Agency and National Marine Fisheries Service;
- Five from Massachusetts state agencies or representatives: Massachusetts Department of Marine Fisheries, Massachusetts Division of Fisheries and Wildlife, Massachusetts Executive Office of Energy and Environmental Affairs, Massachusetts Office of Coastal Zone Management, and Massachusetts Representative Dylan Fernandes; and
- Seven from local governments (Martha's Vineyard Commission and the towns of Barnstable, Nantucket, Tisbury, and Yarmouth), including two each by representatives from the Martha's Vineyard Commission and the Town of Barnstable.

[1] In rare instances, minor edits were made to some comments to fix obvious spelling or grammatical errors.

In addition to the federal, state, and local government entities identified above, seven non-governmental organizations provided comment submissions and the general public submitted the remainder.

Submissions were reviewed to determine the overall disposition of the provider toward the proposed Project. Based on this review, dispositions of the 144 unique submissions were as follows:

- Pro (generally in favor of the proposed Project): 65 (45 percent);
- Con (generally opposed to the proposed Project): 59 (41 percent); and
- Neutral (no distinct disposition, or disposition could not be clearly determined): 20 (14 percent).

The disposition of individuals who provided oral testimony at scoping meetings was difficult to determine because some speakers provided multiple statements at a given meeting (or at multiple meetings).

While repeated language was identified in a small number of submissions, no evidence suggested that any submissions were "form letters" or pre-written text provided by an interest group for submission by individuals.

1.4.2. Comments

BOEM identified a total of 985 substantive comments. Table 3 shows the distribution of comments by resource and NEPA topic (note that because most comments were associated with multiple resources, the number in the Comments column does not add to 985). Section 1.4.3 defines the resource areas to which substantive comments were assigned. The most commonly addressed resources or NEPA topics included Commercial Fisheries and For-Hire Recreational Fishing, Project Description, Socioeconomics, and Alternatives.

Table 3: Distribution of Comments by Resource Addressed

Resource	Comments
Air Quality	20
Alternatives	136
Benthic Habitat	61
Birds and Bats	47
Coastal Habitat	114
Commercial Fisheries and For-Hire Recreational Fishing	208
Cultural, Historical, and Archaeological Resources	10
Cumulative Impacts	54
Finfish, Invertebrates, and Essential Fish Habitat	113
Land Use and Coastal Infrastructure	6
Marine Mammals	95
Mitigation	125
Navigation and Vessel Traffic	70
NEPA Process and Public Engagement	67
Other Resources and Uses (Marine Minerals, Military, Aviation, Offshore Energy, other Noise, etc.)	19
Project Description	167
Public Infrastructure and Services	15
Purpose and Need	104
Recreation and Tourism	45
Sea Turtles	35
Other Socioeconomics	140
Terrestrial Plants and Animals	4
Visual Impact	6

Resource	Comments
Water Quality	64
Wetlands	3

NEPA = National Environmental Policy Act

1.4.3. Definition of Resource Areas and Common NEPA Topics Raised

The following sections define each of the resource areas or NEPA topics that the comments were categorized under, and summarizes the comments by each of the resource areas or topics listed. Comments have been summarized below, as appropriate, particularly for concerns that were raised by several commenters. As stated above, Appendix B presents the individual substantive comments that were extracted from each of the comment submissions and are organized by resource or NEPA topic area.

1.4.3.1. Air Quality

Air quality comments included evaluating emissions from proposed Project construction, operations, maintenance, and decommissioning as well as climate change. Most comments about climate change, greenhouse gas emissions, and alternative energy were also categorized under Purpose and Need (if directly related to the proposed Project). Common topics raised in this category included the following:

- The proposed Project is consistent with the state goals to reduce emissions from the power generation sector and is expected to reduce carbon dioxide and nitrogen oxide emissions.
- Vineyard Wind must provide an analysis concluding that proposed Project emissions would not cause or contribute to violations of the National Ambient Air Quality Standards or result in significant deterioration of air quality.
- The proposed Project will promote improved air quality and decrease greenhouse gas emissions.

1.4.3.2. Alternatives

Alternative comments included suggesting, questioning, or providing opinion about alternatives to the proposed Project, including alternatives that have been publicly presented by BOEM or the applicant, as well as alternatives suggested by the commenter or others. Common topics raised in this category included the following:

- The EIS should include a discussion of a full range of alternatives that are less damaging to the environment than the Proposed Action.
- The EIS should evaluate alternatives to installing cables through Lewis Bay.
- Regional or shared cables.
- Alternative wind turbine locations and transit corridors should be evaluated for navigational and commercial fisheries purposes.
- Timing of activities, including delayed construction and seasonal restrictions.

Section 2.1 of the Draft EIS describes the five action alternatives, one of which has two subalternatives, evaluated in the Draft EIS. Section 2.1.7 of the Draft EIS discusses alternatives that were considered but eliminated from further study. These alternatives included alternative wind turbine foundation types,

landfall locations, an offshore regional transmission network, a shared cable corridor, different project locations, and phased development. Pursuant to CEQregulations at 40 CFR § 1502.14(a) and Department of the Interior regulations at 43 CFR § 46.420(b-c), the criteria for eliminating these alternatives included:

- Consistency with law and regulations: some suggested alternatives would not be permissible;
- Operational, technical, and economic feasibility: some suggested alternatives could not be constructed due to environmental conditions or technological limitations;
- Environmental impact: some suggested alternatives would have greater impacts than the Proposed Action or action alternatives; and
- Geographical considerations: some alternatives were outside of BOEM's jurisdiction.

In addition to the alternatives considered but eliminated from further study, as discussed in Draft EIS Section 2.1.7, commenters during the scoping process identified the following alternatives:

- A cable landing site at Great Island, with an associated OECC route and onshore cable route. This alternative was initially contemplated by Vineyard Wind as a proposed landing site, but was later eliminated due to property rights concerns, as well as potential environmental impacts including the presence of possible habitat for Piping Plover.
- A cable landing site at Kalmus Beach, near the mouth of Lewis Bay, within an associated OECC route and onshore cable route underneath Ocean Street. This alternative was also considered by Vineyard Wind but eliminated from further consideration for a variety of reasons, including impacts on businesses in a high traffic area of downtown Hyannis, congested existing buried utilities in the area, and the lack of available space to install an onshore cable route underneath Ocean Street.
- References to the East and West transmission routes included in the State of Massachusetts Ocean Management Plan. These routes were not developed specifically for the Vineyard Wind Project, and thus were not considered.
- Installation of wind turbine generators in upland locations, rather than offshore. This alternative was dismissed because it is outside of BOEM's jurisdiction.
- Alternatives based on seasonal construction restrictions and other time-of-year limitations. The Draft EIS includes these limitations as potential mitigation measures for the action alternatives.
- Alternative methods for cable installation, such as hand-jetting to avoid armoring of the OECC route. Draft EIS Section 2.1.1.1 describes the construction methods for the Proposed Action, including jetting and other methods. As stated in Section 2.1.1.1, only about 10 percent of the OECC route would require armoring.

1.4.3.3. Benthic Habitat

Benthic habitat comments included the need to address biological, structural, or habitat impacts on benthic species and/or their habitat. Benthic habitat refers to habitat on the sea floor, including natural structures and vegetation. Common topics in this category included the following:

- The EIS should evaluate the cable installation methodologies, such as jet plow, hand jetting, dredging, armoring, and its effects on the benthic community.

- The EIS should include an analysis of all the potential impacts of the cable installation, and it should include a comprehensive cable inspection program on a regular and as-needed basis during the lifetime of the proposed Project to ensure adequate burial, including remediation plans for cables that are found to be at inadequate burial depth after inspection.
- The EIS should estimate the length of time the anchoring will take and use that to inform the impact assessment.
- The EIS should evaluate electromagnetic field (EMF) effects of the transmission line and its effects on the benthic community and marine species in general.
- The EIS should evaluate the differences between the foundation types and effects on the sea floor, including scour effects, habitat conversion, loss of seabed and the associated benthic communities and forage base, time of year and duration of proposed construction, permanent loss, and conversion of one habitat to another.
- The sand waves should be mapped and identified relative to the proposed cable routes. The depth of sand-wave dredging, the amount of sand waves to be removed, and the grain size of the material removed should be calculated and presented in the EIS. The EIS should provide an analysis of the estimated time it will take the sand waves to resume their pre-construction profile and a related assessment of the length of time for benthic community recovery to occur.
- The EIS should provide more details on the methods proposed for side-cast disposal of dredged sediments through the area of sand waves and specifically side-cast disposal methods that reduce and minimize impacts on the benthic community to ensure minimal impacts on currents running through the area of sand waves.
- The EIS should include an existing conditions plan that clearly locates and delineates all resource areas based on site-specific surveys conducted by the proponent, including but not limited to eelgrass, shellfish, hard/complex bottom, intertidal flats, and rare and endangered species. Concerns were also expressed regarding the habitat, biology, and ecology affects from construction, operation, and EMF.
- The EIS should include impact of fouling communities and how those communities are handled. If turbines are scraped to remove biomass, concentrations of decaying organisms can impact the sea floor by reducing oxygen.
- The EIS should include discussion on silt/sediment cut-off of oxygen and light to benthic organisms.

1.4.3.4. Birds and Bats

Bird and bat comments included addressing biological, structural, or habitat impacts on the species or their habitat. Common topics raised in this category included the following:

- The EIS should consider time-of-year and other conditions on the construction of the transmission line through Lewis Bay, to protect foraging and loafing habitat for birds such as piping plovers, terns, and other coastal water birds on Massachusetts Audubon's Egg Island property, a coastal shoal that is exposed at low tide, as work is proposed adjacent to this location.

- The EIS should consider the full range of potential impacts on all bird species known to forage and rest in or near the lease area, including those species protected under the Migratory Bird Treaty Act and the Endangered Species Act. BOEM should collect and evaluate data on bird species' vulnerability before, during, and after wind turbine construction to inform decision-making, improve mitigation, and advise future offshore wind efforts.
- Construction and maintenance of offshore wind facilities would require the use of helicopters and ships both during and after construction of the wind turbines. It should be documented as to how this increased traffic would affect the behavior of birds in the region and whether or not that could pose an additional threat.
- Recommendation that prior to construction (as well as during and after), bird populations be more intensely monitored and documented.
- The EIS should characterize impacts (direct, indirect, and cumulative) to avian species such as direct risk of collision, loss of food sources, displacement from foraging grounds, avoidance during migration, rotor speed, rotor size, the amount of turbines, turbine location, turbine lighting, and the cumulative impact of other turbine projects.
- The EIS should include information on potential avoidance, minimization and mitigation measures such as light management, anti-perching devices, and standardized protocol for documenting dead birds found on vessels and structures during the construction, operations, and maintenance.
- The EIS should include information on the research and monitoring to address uncertainties regarding the potential interactions of bats and offshore wind development and should thoroughly examine mitigation options.
- BOEM should continue to implement its Migratory Bird Treaty Act responsibilities. If the Department of Interior's new interpretation changes BOEM's analysis and associated requirements for impacts on migratory birds in any way, a detailed description and explanation of such changes must be included in the EIS.
- The EIS should thoroughly evaluate potential population-level impacts for all tern species.

1.4.3.5. Coastal Habitat

Coastal habitat includes those areas closer to the shoreline than offshore waters. Common comment topics related to coastal habitat included the following:

- The EIS should include an existing conditions plan that clearly locates and delineates all resource areas based on site-specific surveys conducted by the proponent, including but not limited to eelgrass, shellfish, hard/complex bottom, intertidal flats, and rare and endangered species. Coastal habitat specific concerns included the habitat, biology, and ecology affects from construction, operation, and EMF.
- Some of the landing options for the transmission lines have impacts that would need to be reviewed and considered for avoidance, minimization, and/or mitigation. This includes potential impacts on eelgrass beds, dunes, rare species habitat, and Article 97 lands.
- Concern that the proposed cable in Lewis Bay would result in effects to recreational fishing, swimming, shellfish, and scallops, and would result in loss of resources and/or effects from silting.
- The EIS should include a clear description of how eelgrass and winter flounder impacts from turbidity would be avoided, as well as minimization of impact on horseshoe crab, quahog and bay scallop resources, and fishing activities at the New Hampshire Avenue landfall site.
- Consider time-of-year and other conditions on the construction of the transmission line through Lewis Bay, to protect foraging and loafing habitat for terns and other coastal water birds on Massachusetts Audubon's Egg Island property, a coastal shoal that is exposed at low tide, as work is proposed adjacent to this location.
- Concerned about the effects of the cable through Lewis Bay and the lack of tidal flushing and the potential to further degrade the ecosystem and any potential restraints on the ability to improve the water quality going forward.
- The proposed cables in Lewis Bay should be buried to an appropriate depth to allow for dredging to occur in the bay.
- The EIS should include an analysis of all the potential impacts of the cable installation, and it should include a comprehensive cable inspection program on a regular and as needed basis during the lifetime of the proposed Project to ensure adequate burial, including remediation plans for cables that are found to be at inadequate burial depth after inspection.
- The sand waves should be mapped and identified relative to the proposed cable routes. The depth of sand-wave dredging, the amount of sand waves to be removed, and the grain size of the material removed should be calculated and presented in the EIS. The EIS should provide an analysis of the estimated time it would take the sand waves to resume their pre-construction profile and a related assessment of the length of time for benthic community recovery to occur.
- The EIS should provide more details on the methods proposed for side-cast disposal of dredged sediments through the area of sand waves and specifically side-cast disposal methods that reduce and minimize impacts on the benthic community to ensure minimal impacts on currents running through the area of sand waves.

- The EIS should provide more information on jet plow effectiveness on slopes and hard structures and if the method would change considering the sand waves/shoals and cobble habitat in Muskeget Channel.
- The EIS should discuss in more detail the potential use of concrete mattresses and effects on users, in particular in Lewis Bay.

1.4.3.6. Commercial Fisheries and For-Hire Recreational Fishing

Comments about economic and social aspects or impacts on commercial fisheries, commercial fishing operations, and for-hire recreational fishing operators included the following:

- The EIS should consider the full range of potential effects of the proposed Project on commercial fisheries and for-hire recreational fishing known to use the area, including but not limited to, economic impacts, radar interference, gear loss or damages, potential changes in revenue, use of concrete mats, noise, EMF, temporary or permanent loss of habitat from the proposed Project, displacement, vessel navigation/use of area for fishing, and oil spill effects.
- The EIS should consider potential gear conflicts from increased recreational fishing effort as a result of installing wind turbine generators that can act as fish aggregating devices.
- The EIS should indicate how fishermen would be notified in the event of an oil spill, and the process for oil spill reparations.
- The EIS should examine all potential reasons for vessel exclusion from the proposed Project area resulting from installation of the proposed Project (e.g., increased insurance costs, feasibility of towing mobile gears around turbines).
- The EIS should consider whether the potential increase in angler activity in the proposed Project area would require new or additional fishery management measures and potential socioeconomic impacts of those measures.
- The EIS should discuss the impacts of using concrete mattresses over the transmission line and the potential impacts on squid fishery tows for commercial vessels.
- The EIS should include data other than Automatic Identification System (AIS) data as the use of AIS data is insufficient. Vessel Monitoring Systems data, at all speeds, should be used rather than AIS data.
- The EIS should provide a detailed analysis of how the presence of the proposed Project and turbine spacing would affect fishing gear operation, including the ability for vessels to maintain maneuverability and minimize risk of fouling gear with other gear or with the turbines.
- The EIS should examine the possible impacts of pre-construction, construction, and operation of wind turbines to important gamefish in the area.
- A large increase in vessel and vehicle use would affect the harbors that this proposed Project would use. A thorough assessment of the potential conflicts with existing harbor users, including commercial and recreational fishermen, is needed for both construction phase activities and operations.

- The EIS should evaluate if the proposed Project would result in change to currents as a result of the turbines that could thereby affect fisheries such as scallops.
- The EIS should evaluate if the proposed Project would result in changes to the migration patterns of the species as most fish migrate east and west and proposed Project components would be oriented north and south.
- The EIS should evaluate potential impacts on fisheries along the transmission lines and the landfall locations in Lewis Bay and Muskeget Channel. Evaluations should include, but not be limited to, EMF impacts and avoidance measures, including time-of-year avoidance.
- The EIS should include a description of financial compensation procedures to mitigate impacts on the commercial or for-hire recreational fisheries. These procedures should be clearly defined prior to beginning construction. A Fishermen's Contingency Fund, along the lines of what is available to fishermen affected by offshore oil and gas development, could be used to mitigate impacts on fishermen. This fund should be available to both commercial and recreational fishermen and include impacts related to the wind development area and the offshore export cable corridor.

1.4.3.7. Cultural, Historical, and Archaeological Resources

Comments related to cultural, historic, archaeological, or tribal resources, such as the presence of or impacts on historic sites, included the following:

- Potential for visual impacts on Nantucket's economy and historic buildings, places, and districts, especially from Madaket Beach in the west to Sconset Beach in the east.
- Consultation with the Nantucket Historic District and the Nantucket Historical Commission should be performed due to the high cultural and historic sensitivity of the island.
- Coordination with the potentially affected tribes in determining whether any of the proposed lease areas are historically, culturally, or spiritually important.
- BOEM should document coordination pursuant to Executive Order 13175 in the EIS and that BOEM should work with federal agencies involved in the proposed Project to determine the lead agency for consultation for impacts from the proposed Project on land and the ocean.
- Tribes are requesting participation when the archaeology work is being conducted and not once fieldwork has been completed. Recommending that BOEM work to promote this level of coordination for the proposed Project.
- Strobing or blinking nighttime lighting systems, as are standardly installed on wind turbine generators, are incongruous with Nantucket's lighting regulations and would negatively impact the Island's cultural identity of historic and environmental preservation.

1.4.3.8. Cumulative Impacts

Comments related to how the proposed Project would interact with, or be impacted by past, present, and reasonably foreseeable future actions. For example, the combined impacts of the proposed Project along with other planned or existing wind energy projects, or combined with other types of projects in the region. Common topics raised in this category include the following:

- The EIS should evaluate impacts associated with other reasonably foreseeable wind energy projects.
- The EIS should consider the cumulative impacts of electric transmission cables for future wind energy projects and consider ways to minimize the number of cables required.
- Cumulative impacts analysis should include a broad view of reasonably foreseeable projects, including development projects that are only in the proposed leasing or site assessment phase. The potential cumulative impacts resulting from changes to benthic and pelagic habitats and potential food sources due to the presence of multiple projects should be evaluated.
- The EIS should establish a long-term monitoring program to analyze the cumulative impacts on marine resources of offshore wind energy development both in New England and along the entire Eastern seaboard where wind energy facilities have been proposed.

1.4.3.9. Finfish, Invertebrates, and Essential Fish Habitat

Comments that address fish, crustaceans, and other sea animals (other than sea turtles or marine mammals) included the following:

- The EIS should include more information regarding the distribution and temporal persistence of longfin squid mops and their vulnerability to proposed Project activities.
- The EIS should consider how the resetting of suspended sediments after dredging and export cable installation could impact fish via burial of demersal eggs (i.e., eggs on or attached to the bottom sediments).
- The EIS should include information on if the proposed Project, including the transmission line, would affect finfish, invertebrates, and Essential Fish Habitat species (including Jonah crab and horseshoe crab) including but not limited to migration patterns, EMF, noise, lobsters' ability to migrate successfully to areas of thermal refuge, west-to-east migrating finfish, spawning, loss of habitat, increased use of the habitat as a result of turbines potentially acting as artificial reefs, alter movements or feeding behaviors, and increase stress and/or result in temporary or permanent injury or mortality.
- The EIS and Essential Fish Habitat should include mitigation measures for the proposed Project including but not limited to mitigation for noise/pile-driving, temporal avoidance of migration times, avoidance of squidding grounds, construction timing, and micrositing and anchoring plans to avoid sensitive habitats.
- The EIS should include a discussion of both site-specific mitigation and monitoring as well as regional-scale monitoring efforts to assess cumulative impacts of adjacent projects.
- Cumulative impact concerns included changes to the spatial distribution of species including but not limited to scallops, surf clams, black sea bass, flatfish, marine mammals, and highly migratory species.

Comments about the fishing, shellfishing, or tourism industries tied to these species were applied under Commercial Fisheries and For-Hire Recreational Fishing.

1.4.3.10. Land Use and Coastal Infrastructure

Comments about existing conditions or impacts on onshore land use, including the ability to use land as otherwise legally permitted are included here as well as comments about coastal infrastructure. Major topics raised in this category include the following:

- The EIS should assess the potential conflicts with existing harbor users, including commercial and recreational fisherman during construction and operation of the proposed Project.

1.4.3.11. Marine Mammals

Comments about marine mammals that address biological, structural, or habitat impacts on the species or their habitat included the following:

- The scope of the review should include a detailed and comprehensive assessment of impacts on marine species.
- The EIS should include detailed information on the marine mammals, including the North Atlantic right whale and potential effects as a result of the proposed Project including but not limited to seasonal abundance and distribution, noise, EMF, displacement of individuals, food chain supply, alteration of prey assemblages, vessel strike concerns, entanglement risks, habitat avoidance, migration pattern changes, and oil spill effects.
- The EIS should include detailed information on the marine mammals, including the North Atlantic right whale and potential mitigation for the proposed Project including but not limited to soft-starts for pile driving, seasonal timing, time-of-day hours, passive acoustic monitoring and observers, night vision, thermal imaging technology, minimum exclusion zone of approximately 3,281 feet (1,000 meters), and vessel speed.
- The EIS should include information on the seasonal abundance and distribution of marine mammals throughout the area that may be directly or indirectly impacted by the proposed Project. It is important that the EIS discuss seasonal changes in the environment of the proposed Project area and how that influences the distribution and abundance of marine resources.
- BOEM should coordinate with state and regional scientific efforts to ensure that results from individual lease areas can be interpreted within a regional context and contribute to the generation of regional-scale data, which is required to address questions related to population-level change and cumulative impacts across the geographic range of the North Atlantic right whale.
- The EIS should establish a long-term monitoring program to analyze the cumulative impacts on marine resources of offshore wind energy development both in New England and along the entire Eastern seaboard where wind energy facilities have been proposed.
- Vineyard Wind should develop a proposed Project schedule that minimizes potential impacts on North Atlantic right whales.
- Offshore wind projects should not be sited in North Atlantic right whale foraging or calving critical habitat, as defined under the Endangered Species Act, unless and until research demonstrates that wind project operations will not displace right whales or adversely modify their habitat use.

1.4.3.12. Mitigation

Comments related to mitigation measures to address potential impacts on other resources. These include comments on already-proposed mitigation measures, as well as comments that suggest or question mitigation measures not yet proposed, but that could be relevant to the proposed Project. Common topics raised in this category include the following:

- The EIS should explain if and how financial compensation would be provided to commercial fisherman for gear loss as well as lost access and displacement.
- The EIS should address mitigation measures such as soft starts, sequencing constructing timing, micrositing, and anchoring plans to avoid sensitive habitats.
- Long-term monitoring of the proposed Project area should be required to assess impacts over time.
- Minimization and monitoring requirements should be implemented to reduce the risk of vessels strikes and noise impacts on marine species.

1.4.3.13. Navigation and Vessel Traffic

Comments that related to the existing conditions or impacts on the ability to operate and navigate vessels, whether personal or commercial are included here; however, comments about economic activity associated with those vessels are included in other resource areas. Common topics raised in this category included the following:

- The proposed Project would have an impact on radar and/or safe navigation, and the potential for the proposed wind turbine areas to be shut down prohibiting access in the future.
- The EIS should address how rescue operations for helicopters and vessels including tug boats would be affected by the proposed Project.
- The turbine spacing of a 1-mile-wide transit corridor may not be sufficient, and the lack of transit corridors in the proposed Project area is a concern.
- Commercial fishing using certain gear types such as trawling, in particular, would not be operationally feasible within the proposed Project area.
- The proposed Project, in particular the turbines, could potentially create dangerous situations for fishermen, as well as other ocean users such as pleasure boaters and divers; the emergency response plans for safety issues should be considered and reviewed.
- BOEM should work with the U.S. Coast Guard to develop a written policy or statement clearly detailing the agencies' positions on this issue and clarifying how this policy will be manifested through the review process.
- The EIS should assess impacts associated with navigating Lewis Bay with the burial options for the transmission line cable.

1.4.3.14. NEPA Process and Public Engagement

Comments related to the way in which the EIS will be prepared and the process followed. Typical comments under this topic may relate to public meetings, notification, or other involvement; consultation with agencies and/or Native American tribes; or other procedural issues. Common topics raised in this category included the following:

- The public scoping period should be extended.
- The environmental review process should include continued dialogue with interested stakeholders to help ensure that potential Project impacts are adequately considered.
- The EIS should take into consideration all relevant laws and regulations applicable to the proposed Project.
- The review process should be slowed down to ensure sufficient time for studies to be carried out to support the analysis.
- Supplemental information related to the assessment of the proposed Project should be made available to the public, including survey and geographic information system data.

1.4.3.15. Other Resources and Uses

This generalized comment category was used to collect other substantive comments. Specific topics could include (but are not limited to) marine minerals, military uses and activities, aviation, and noise concerns not related to other specific resources.

- The cumulative impact analysis should examine the landside effects of noise to residential and commercial buildings near the port facilities. Existing port facilities may already experience higher than normal noise levels, and additional noise may increase cumulative impacts.
- The EIS should address concerns associated with hurricanes, the materials within the turbines (such as neodymium dysprosium, hydraulic fluid) and within the transmission line, safety, and transmission line damage or breaks.
- The EIS should address whether the proposed Project would result in a possible resonance of noise/frequency from the proposed Project and cumulatively with other projects.
- In concert with the U.S. Coast Guard, Federal Aviation Administration, and U.S. Department of Defense, the review must assess navigation safety, aviation safety, radar interference, national security, and search and rescue operations.
- The EIS should address possible effects of EMFs on the marine ecosystem and should consider maximum insulating sheathing of all cables.

1.4.3.16. Project Description

Comments that called into question, suggest additions or changes, or otherwise relate to the description of the proposed Project/Proposed Action itself, such as proposed Project components, construction methodology, schedule, labor force, and similar items included the following:

- The proposed Project is backed by experienced companies in the wind energy industry with the financial means to successfully carry out the proposed Project.
- The EIS should address the onshore infrastructure needs related to the ports to support the proposed Project as well as other landside facilities and staging locations of materials to be used during construction.
- The EIS should address whether or not funds would be set aside to support decommissioning of the proposed Project and estimates of the costs associated with decommissioning should also be included.
- The EIS should explain the proposed cable installation options, depths, and methods of installation and address how the cable is to remain buried (e.g., armoring or other installation methods).
- The EIS should include a detailed construction schedule.
- The EIS should address the resiliency of Project components to withstand severe weather as well as potential vessel collisions.
- The differences among the various proposed foundation types should be discussed in the EIS as well as the potential environmental impacts of each.

1.4.3.17. Public Infrastructure/Services

Comments that related to public infrastructure and services such as public water, sewer, public safety, medical care, schools, and social services are included here (including onshore and offshore). Common topics raised in this category included the following:

- The EIS should have a detailed review of the emergency plans, which are made up largely of local responders, and every type of emergency should be studied and responses planned out.
- Construction of the proposed upland route would be disruptive to residents, including potential concerns for blocking emergency responders and access to schools and potential effects to public water and/or sewer systems.
- The EIS should provide more information on the need for reliance on local emergency response providers and how this relates to the timeliness to respond to a concern such as an oil spill response and other hazardous materials response.
- Potential effects of the transmission lines on the ability for future development and/or installation of other utilities, as well as those already installed, such as water, sewer, electric lines, roads, sidewalks.

1.4.3.18. Purpose and Need

Comments related to the Purpose and Need for the proposed Project itself (i.e., justification for constructing and operating the proposed Project). Comments associated with the proposed Project's relationship to more global issues, such as climate change, were assigned here, but only to the degree that

the commenter linked the proposed Project to those topics; in some instances, general statements about climate change or greenhouse gas emissions did not meet the definition of "substantive". Topics raised in this category include the following:

- The proposed Project would provide a reliable source of renewable energy that would offset the carbon emissions that contribute to climate change.
- The EIS should describe how the proposed Project would advance the Commonwealth of Massachusetts' goals to reduce emissions and support renewable energy.

1.4.3.19. Recreation and Tourism

Comments about onshore or offshore recreation (for example, parks recreational boating, and recreation fishing.), as well as tourism activity associated with these resources, such as whale watching, boat rentals (except for fishing), onshore sports leagues, or revenue-generating tourist facilities are included in this section. Major topics raised in this category include the following:

- Recreational boats would be impacted by the placement of the turbines as well as the offshore transmission line.
- Recreational fishing would be impacted by the placement of the turbines as well as the offshore transmission line. The EIS should consider potential gear conflicts from increased recreational fishing effort as a result of installing wind turbines that can act as fish aggregating devices.
- The EIS should include an evaluation of water-dependent uses in state and federal waters, such as commercial and recreational fishing, shipping, and marine transportation.
- Lewis Bay is an important water resource supporting tourism, shell fishing, recreational fishing, commercial ferry traffic, recreational and commercial boating activities, and swimming.

1.4.3.20. Sea Turtles

Comments about sea turtles that address biological, structural, or habitat impacts on the species or their habitat included the following:

- The scope of the review should include a detailed and comprehensive assessment of impacts sea turtles.
- The EIS should include detailed information on the potential effects including but not limited to seasonal abundance, population density, noise, EMF, displacement of individuals, food chain supply, vessel strike concerns, entanglement risks, habitat avoidance, migration pattern changes, lighting effects, oil spill effects, increase stress and/or result in temporary or permanent injury or mortality.
- The EIS should include detailed information on the sea turtles and potential mitigation for the proposed Project including but not limited to soft-starts for pile driving, seasonal timing, passive acoustic monitoring and observers, and real-time detection capabilities.
- Cumulative effects analysis should consider other existing, proposed, or planned projects.

1.4.3.21. Socioeconomics

Socioeconomic comments that addressed jobs, income, tax revenue from the proposed Project itself, as well as macroeconomic impacts (i.e., overall regional energy costs) are included here. This issue also includes economic effects to landowners impacted by onshore facilities or perceived impacts due to visual changes. Comments related to commercial or for-hire fishing were categorized under Commercial Fisheries and For-Hire Recreational Fishing (see Section 1.4.3.6). Common topics raised in this category include the following:

- The EIS should analyze the socioeconomic impacts that could occur as a result of changes in ocean and coastal recreation.
- The proposed Project would promote many sustainable, clean energy jobs.
- The loss of fisheries that may occur as a result of the proposed Project could lead to significant job loss.
- The EIS should work with stakeholders to gather fisheries activity and socioeconomic information that can be used for financial compensation for vessels/commercial fisherman.
- The EIS should explain how the proposed Project would affect local energy bills.

1.4.3.22. Terrestrial Plants and Animals

Comments about terrestrial plants and animals that address biological, structural, or habitat impacts on the species or their habitat included the following:

- The EIS should provide an evaluation of indirect impacts of any clearing for the proposed terrestrial construction activities resulting in a change (either permanent or temporary) of cover type within a wetland and other habitat and effects to plants and animals.
- The EIS should provide a mitigation analysis to identify measures to address potential impacts on state and federally listed endangered and threatened species.

1.4.3.23. Visual Impacts

Comments related to the proposed Project's visual appearance and impacts are included in this section. Comments about the secondary impacts of the proposed Project's appearance (i.e., that the ability to see the proposed Project from the shoreline would have negative impacts on property values) were assigned here and to the other impacted resource (i.e., Socioeconomics, Land Use and Coastal Infrastructure, Recreation and Tourism, etc.). Common topics raised in this category include the following:

- Removal or reduction of the number of turbine locations that would be located closer to the coastline of Nantucket and Martha's Vineyard; and
- Use of Federal Aviation Administration-approved "Aircraft Detection Light Systems" to minimize visual impacts.

1.4.3.24. Water Quality

All aspects of water quality, including surface water quality (including spills or other pollution) and drinking water sources, are included here. Common topics raised in this category include the following:

- The EIS should evaluate the potential impacts on ocean currents as a result of the installation of wind turbines.
- The installation of cables in Lewis Bay could limit the future ability for dredging to occur to allow for tidal flushing.
- Installation of proposed Project components could result in increased sedimentation, turbidity and therefore degrade water quality.
- The EIS should assess the potential impacts associated with a potential release of fluids, including dielectric fluids, at the proposed substation location as well as at the wind turbine locations.
- Affects to the groundwater aquifer from the installation of the upland cable should be assessed.

1.4.3.25. Wetlands

Comments included all aspects of wetlands potentially impacted by the proposed Project and associated with the upland components of the proposed Project. Major topics raised in this category include the following:

- The EIS should identify wetlands and waters of the United States that would be impacted by the proposed Project.
- The EIS should provide information on compliance with the U.S. Environmental Protection Agency's Section 404(b)(1) guidelines.