Record of Decision

South Fork Wind Farm and South Fork Export Cable Project Construction and Operations Plan

November 24, 2021

U.S. Department of the Interior
Bureau of Ocean Energy Management

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

Table of Contents

1. INTRODUCTION

This document constitutes the Bureau of Ocean Energy Management's (BOEM) and the National Ocean and Atmospheric Administration (NOAA) National Marine Fisheries Service's (NMFS) joint record of decision (ROD) for the final environmental impact statement (FEIS) prepared for the South Fork Wind Farm and South Fork Export Cable Project (Project) Construction and Operations Plan (COP) (BOEM 2021). This ROD addresses BOEM's action to approve the COP under section 8(p) of the Outer Continental Shelf Lands Act (OCSLA; 43 U.S.C. § 1337(p)) and NMFS' action to issue an Incidental Harassment Authorization (IHA) to South Fork Wind, LLC (South Fork Wind) under section 101(a)(5)(D) of the Marine Mammal Protection Act, as amended (MMPA; 16 U.S.C. § 1371(a)(5)(D)). This ROD was prepared following the requirements of the National Environmental Policy Act (NEPA; 42 U.S.C. §§ 4321 *et seq*.) and 40 C.F.R. parts 1500-1508.[1]

BOEM prepared the FEIS with the assistance of a third-party contractor, SWCA, Inc. The U.S. Army Corps of Engineers (USACE), NMFS, the Bureau of Safety and Environmental Enforcement (BSEE), the U.S. Coast Guard (USCG), and the U.S. Environmental Protection Agency (USEPA) were cooperating agencies during the development and review of the document. Cooperating state agencies included the Massachusetts Office of Coastal Zone Management (MA CZM), Rhode Island Coastal Resource Management Council (RI CRMC), and Rhode Island Department of Environmental Management. The Town of East Hampton and the Trustees of the Freeholders and Commonality of the Town of East Hampton were cooperating local government agencies.

The purpose for BOEM's action is to respond to and determine whether to approve, approve with modifications, or disapprove the COP to construct and install, operate and maintain, and decommission a commercial-scale offshore wind energy facility within the area comprising Lease OCS-A 0517 (Lease Area). BOEM's action is needed to further the United States' policy to make Outer Continental Shelf (OCS) energy resources available for expeditious and orderly development, subject to environmental safeguards (43 U.S.C. § 1332(3)), including consideration of natural resources and existing ocean uses. This responsibility balances multiple statutory goals, consistent with the M-Opinion 37067, "*Secretary's Duties under Subsection 8(p)(4) of the Outer Continental Shelf Lands Act When Authorizing Activities on the Outer Continental Shelf."*[2] M-37067 provides that "subsection 8(p)(4) of OCSLA and similar statutes require only that the Secretary strike a rational balance between Congress's enumerated goals, i.e., a variety of uses. In making this determination, the Secretary retains wide discretion to weigh those goals as an application of her technical expertise and policy judgment..." (M-37067, p. 2).

The FEIS also analyzed impacts resulting from the Proposed Action that are relevant to USACE permitting actions under section 10 of the Rivers and Harbors Act of 1899 (RHA; 33 U.S.C. §

[1] On July 16, 2020, the Council for Environmental Quality (CEQ), which is responsible for regulations to implement NEPA that are applicable to all Federal agencies, revised the regulations for implementing the procedural provisions of NEPA (85 Fed. Reg. 43304). Since BOEM's NEPA review of the proposed Project began prior to the September 14, 2020, effective date of the updated regulations, BOEM prepared the FEIS and this ROD under the previous version of the regulations (1978, as amended in 1986 and 2005).

[2] http://doi.gov/sites/doi.gov/files/m-37067.pdf

403) and section 404 of the Clean Water Act (CWA; 33 U.S.C. § 1344), and NMFS' action of issuing an IHA to South Fork Wind under the MMPA.

1.1. BACKGROUND

BOEM began evaluating potential OCS wind energy leasing and development offshore Rhode Island in 2009 by establishing an intergovernmental renewable energy task force comprised of elected officials from state, local, and tribal governments and other Federal agency representatives. BOEM or its partner agencies then conducted the following activities concerning planning and leasing:

- In July 2010, the Governors of Rhode Island and Massachusetts identified an Area of Mutual Interest for BOEM to consider for leasing.
- In August 2011, BOEM published a call for information and nominations (Call) in the *Federal Register* to solicit industry interest in acquiring commercial leases for developing wind energy projects in the Call area and to seek public input on environmental resources and other uses in the Call area ("Commercial Leasing for Wind Power on the OCS Offshore Rhode Island and Massachusetts – Call for Information and Nominations (Call)," 76 Fed. Reg. 51383 (August 18, 2011)). On that same day, BOEM published a notice of intent (NOI) to prepare an environmental assessment (EA) under NEPA for commercial wind leasing and site assessment activities offshore Rhode Island and Massachusetts in the *Federal Register* for public comment.[3]
- In February 2012, BOEM publicly identified a wind energy area (WEA) offshore Rhode Island and Massachusetts, excluding certain areas from commercial leasing addressed in comments to the Call (e.g., areas of intense fishing on Cox's Ledge).
- In July 2012, BOEM published a notice of availability (NOA) of an EA in accordance with NEPA for potential commercial wind lease issuance and site assessment activities on the OCS offshore Rhode Island and Massachusetts for public review and comment (76 Fed. Reg. 51391 (July 3, 2012)).
- In December 2012, BOEM published a proposed sale notice in the *Federal Register*, for public review and comment, identifying 164,750 acres (667 square kilometers (km^2)) offshore Rhode Island/Massachusetts in Federal waters that would be available for commercial wind energy leasing (77 Fed. Reg. 71612 (December 3, 2012)).
- BOEM considered the comments received on the EA and on June 5, 2013, BOEM published an NOA for a revised EA regarding the WEA offshore Rhode Island and Massachusetts in the *Federal Register* (78 Fed. Reg. 33908 (June 5, 2013)). As a result of the analysis in the revised EA (BOEM 2013), BOEM issued a finding of no significant impact (FONSI), which concluded that reasonably foreseeable effects associated with the commercial wind lease issuance (e.g., site characterization surveys in the WEA and deployment of meteorological towers and buoys) would not significantly impact the environment.
- BOEM considered the comments received on the proposed sale notice and published a final sale notice in the *Federal Register* on June 5, 2013 (78 Fed. Reg. 33898).

[3] https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/FRN-RI-and-MA-NOI-for-website8-18-11.pdf

- In July 2013, BOEM held a competitive lease sale pursuant to 30 C.F.R. § 585.211 for the lease areas within the Rhode Island and Massachusetts WEA. Deepwater Wind New England LLC (which subsequently changed its name to South Fork Wind LLC) won Lease OCS-A 0486 in the auction (Figure 1).
- In June 2018, South Fork Wind submitted a COP to BOEM for the proposed Project.[4] The COP proposes the development of an offshore wind energy project with up to 15 wind turbine generators (WTGs or turbines), submarine cables between the WTGs (inter-array cables), an offshore substation (OSS) and an export cable to the South Fork of Long Island. The area of the proposed Project is 13,700 acres (55 km^2). Additional details regarding the proposed Project are set forth in Chapter 2 of the FEIS.
- On October 19, 2018, BOEM published an NOI to prepare an environmental impact statement (EIS) (83 Fed. Reg. 53104) for South Fork Wind's proposed wind energy facility offshore Rhode Island and Massachusetts. During the public comment period, BOEM held three public scoping meetings in New York, Massachusetts, and Rhode Island.
- On March 24, 2020, BOEM granted a lease assignment to Deepwater South Fork LLC for Lease Area OCS-A 0517, comprising 13,700 acres within the original lease area for OCS-A 0486.
- On September 15, 2020, NMFS received a completed application from South Fork Wind for an authorization to incidentally take marine mammals under the MMPA during construction of the Project.
- On January 8, 2021, BOEM published an NOA for a draft EIS (DEIS) assessing the potential impacts of the Proposed Action and alternatives to it (*Notice of Availability of a Draft Environmental Impact Statement for Deepwater South Fork LLC's Proposed Wind Energy Facility Offshore Rhode Island*, 86 Fed. Reg. 1520 (January 8, 2021)). The DEIS was made available in electronic form for public viewing at www.boem.gov/renewable-energy/state-activities/south-fork.
- During the public review and comment period for the South Fork Wind DEIS (January 8, to February 22, 2021), BOEM held three virtual public hearings. BOEM received a total of 388 unique submittals from the public, agencies, and other interested groups and stakeholders.
- On February 5, 2021, NMFS published a notice of proposed IHA in the *Federal Register* (86 Fed. Reg. 8490 (February 5, 2020)) for public review and comment.
- On August 20, 2021, BOEM published an NOA for the FEIS in the *Federal Register* (86 Fed. Reg. 46,879). The FEIS was made available in electronic form for public viewing at www.boem.gov/renewable-energy/state-activities/south-fork. BOEM's 30-day waiting period for issuance of a ROD closed on September 20, 2021.
- On October 1, 2021, NMFS issued a Biological Opinion considering all effects of the proposed Project on Endangered Species Act-(ESA-) listed species and designated critical habitat (NMFS 2021).
- On November 1, 2021, after conferring with BOEM, NMFS amended Term and Condition 13 in the Incidental Take Statement (ITS) to allow additional flexibility to comply with a training requirement without compromising training quality and the purpose of the requirement. NMFS also made several minor corrections to the Biological

[4] The COP as updated is available at www.boem.gov/renewable-energy/state-activities/south-fork.

Opinion and the original letter from NMFS transmitting the Biological Opinion to BOEM. The issuance dates of the corrected Biological Opinion and the corrected transmittal letter remain as October 1, 2021. The ITS notes that it was amended on November 1, 2021.

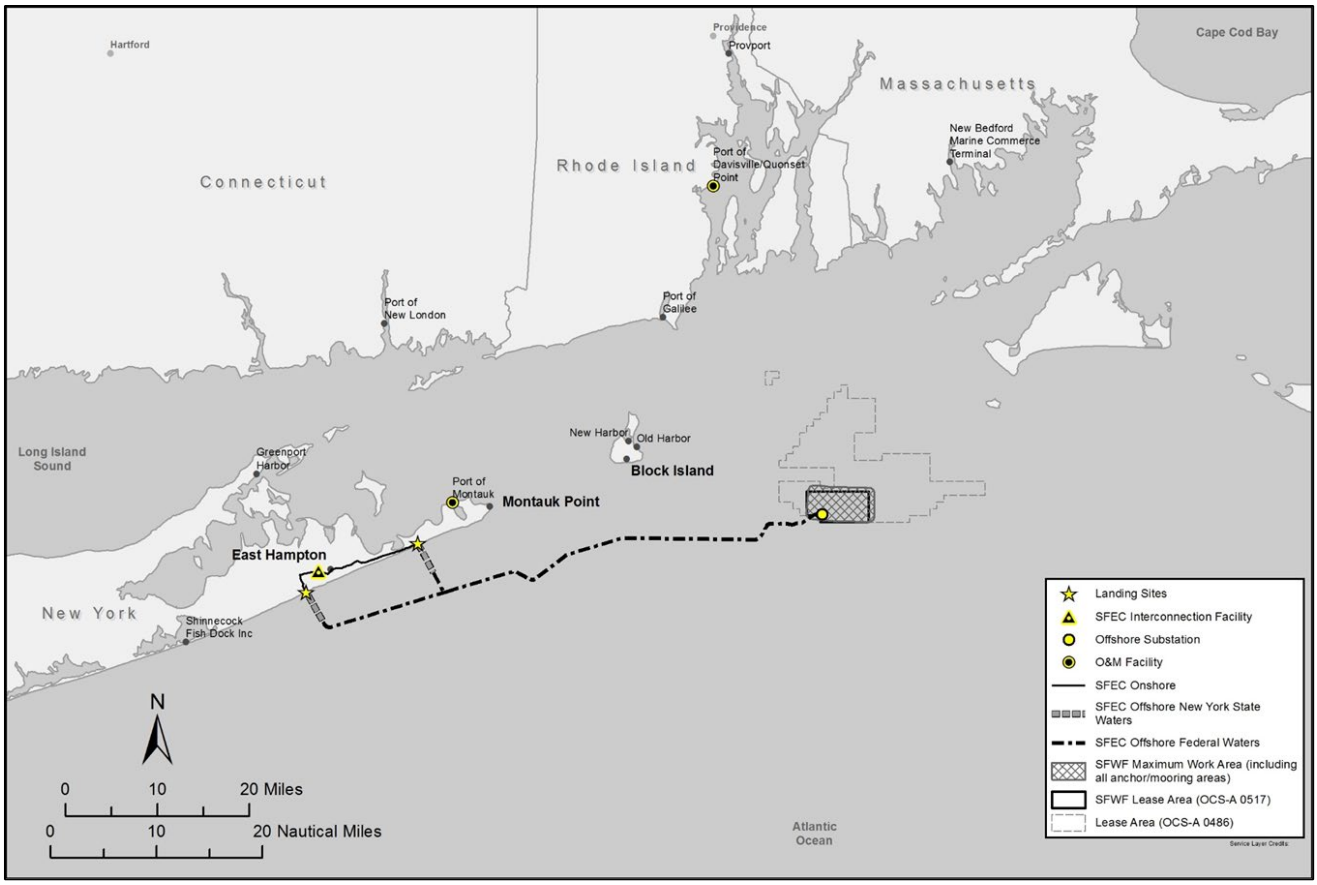


Figure 1 – Proposed Project Area and Facilities

1.2. AUTHORITIES

The following summarizes BOEM's and NMFS' authorities regarding the proposed Project. The FEIS includes a full list of authorizations and permits for the Project and a description of consultations in Appendix A, Table A-1. The agencies adopting the FEIS are those agencies that have defined authorizations and permitting responsibilities for the Project. The NMFS IHA is briefly discussed here; its decision and supporting rationale are discussed in Section 5.2. Additional cooperating agencies participated in the NEPA process, but their permitting decisions will be made at a later time (e.g., USACE[5]), they are not required to authorize the Project, they

[5] Section 10 of the RHA (33 U.S.C. § 403) prohibits the obstruction or alteration of navigable waters of the United States without a permit from USACE. The USACE also issues permits under Section 404 of the CWA (33 U.S.C. § 1344) authorizing the discharge of dredged or fill material into waters of the United States. The applicant proposes to discharge fill below the high tide line of waters of the United States and to perform work and place structures below the mean high water mark of navigable waters of the United States. These activities require authorization from USACE under section 10 of the RHA and section 404 of the CWA. The USACE participated in development

have completed any authorizations that are required of them, or their actions are exempt from NEPA (e.g., Clean Air Act permitting) and, therefore, reviewed separately.

1.2.1. BOEM Authority

The Energy Policy Act of 2005, Public Law 109-58, amended OCSLA (43 U.S.C. §§ 1331 *et seq*.) by adding a new subsection 8(p) to authorize the Secretary of the Interior to issue leases, easements, and rights-of-way in the OCS for renewable energy development, including wind energy projects. The Secretary of the Interior must consider certain factors before acting under OCSLA subsection 8(p)(4) (43 U.S.C. § 1337(p)(4)). Specifically, "[t]he Secretary shall ensure that any activity under [subsection 8(p)] is carried out in a manner that provides for—

(A) safety;
(B) protection of the environment;
(C) prevention of waste;
(D) conservation of the natural resources of the outer Continental Shelf;
(E) coordination with relevant Federal agencies;
(F) protection of national security interests of the United States;
(G) protection of correlative rights in the outer Continental Shelf;
(H) a fair return to the United States for any lease, easement, or right-of-way under this subsection;
(I) prevention of interference with reasonable uses (as determined by the Secretary) of the exclusive economic zone, the high seas, and the territorial seas;
(J) consideration of—
    (i) the location of, and any schedule relating to, a lease, easement, or right-of-way for an area of the outer Continental Shelf; and
    (ii) any other use of the sea or seabed, including use for a fishery, a sealane, a potential site of a deepwater port, or navigation;
(K) public notice and comment on any proposal submitted for a lease, easement, or right-of-way under this subsection; and
(L) oversight, inspection, research, monitoring, and enforcement relating to a lease, easement, or right-of-way under this subsection.

Subsection 8(p)(4) of OCSLA requires the Secretary to ensure that activities authorized under subsection 8(p) of OCSLA are carried out in a manner that provides for these 12 different goals. As stated in M-Opinion 37067, "… subsection 8(p)(4) of OCSLA imposes a general duty on the Secretary to act in a manner providing for the subsection's enumerated goals. The subsection does not require the Secretary to ensure that the goals are achieved to a particular degree, and she retains wide discretion to determine the appropriate balance between two or more goals that conflict or are otherwise in tension."[6]

The Secretary delegated to BOEM the authority to approve a COP. Final regulations implementing this authority were promulgated by BOEM's predecessor agency, the Minerals

---

of the South Fork Wind EIS as a cooperating agency under the CEQ NEPA regulations (40 C.F.R.§§ 1501.5, 1501.6, and 1508.5) and 33 C.F.R. Part 325. The information contained in the South Fork Wind FEIS will inform USACE's decision on its permit action under section 10 of the RHA and section 404 of the CWA.

[6] M-Opinion 37067 at p. 5, http://doi.gov/sites/doi.gov/files/m-37067.pdf

Management Service (MMS), on April 29, 2009 (81 Fed. Reg. 19638). These regulations prescribe BOEM's responsibility for determining whether to approve, approve with modifications, or disapprove South Fork Wind's COP. In accordance with CEQ NEPA regulations (40 CFR part 1501), BOEM served as the lead Federal agency for the preparation of the EIS.

1.2.2. NMFS Authority

Sections 101(a)(5)(A) and (D) of the MMPA give NMFS the authority to authorize, upon request, the incidental, but not intentional, take of small numbers of marine mammals, including incidental take by harassment, provided certain determinations are made and statutory and regulatory procedures are met. To authorize the incidental take of marine mammals, NMFS evaluates the best available scientific information to determine whether the take would have a negligible impact on affected species or stocks and whether the activity would have an unmitigable adverse impact on the availability of the species or stocks for subsistence use (if applicable). NMFS cannot issue an authorization if NMFS finds the taking would result in more than a negligible impact on marine mammal species or stocks or would result in an unmitigable adverse impact on the species or stocks for subsistence uses. NMFS must also prescribe the permissible methods of take and other means of effecting the least practicable adverse impact on the species or stocks of marine mammals and their habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance. All incidental take authorizations include additional requirements pertaining to monitoring and reporting.

NMFS promulgated regulations to implement the MMPA (50 C.F.R. part 216), including application instructions for incidental take authorizations. Applicants must comply with these regulations, application instructions, and the MMPA. The decision being made by NMFS, including its decision to adopt BOEM's FEIS, is discussed in Section 5.2 of this ROD.

2. PROPOSED PROJECT

2.1. PROJECT DESCRIPTION

The Project will be located in the Lease Area (area of BOEM's Renewable Energy Lease Number OCS-A 0517), which is approximately 19 miles southeast of Block Island, Rhode Island, and 35 miles east of Montauk Point, New York, in the Atlantic Ocean.

The COP describes the construction and installation, operations and maintenance (O&M), and conceptual decommissioning of the Project. As proposed in the COP, the Project would have consisted of the following components (see Project Operational Concept [Figure 1.1-1] in the COP):

- South Fork Wind Farm (SFWF): The COP proposes the installation of up to 15 wind turbine generators (WTGs or turbines), submarine cables between the WTGs (inter-array cables), an offshore substation (OSS), and an onshore O&M facility.
- South Fork Export Cable (SFEC): This component would consist of an alternating current (AC) electric cable and an interconnection facility that would connect the SFWF to the existing mainland electric grid in East Hampton, New York, for the delivery of power to the South Fork of Suffolk County, Long Island.

2.2. PURPOSE AND NEED FOR THE PROPOSED ACTION

Cooperating agencies with authorization decision responsibilities have reviewed BOEM's purpose and need statement below, and each cooperating agency has concurred that it meets their obligations (more specific statements of the purpose and need for the actions by NMFS are found in Section 5.2).

Through a competitive leasing process under 30 CFR 585.211, Deepwater Wind New England, LLC was awarded Commercial Lease OCS-A 0486 for a leased area offshore Rhode Island. This lease area was later assigned to South Fork Wind and segregated to Commercial Lease OCS-A 0517, which covers the Lease Area. South Fork Wind has the exclusive right to submit a COP for activities within the Lease Area, and it has submitted a COP to BOEM proposing the construction and installation, O&M, and conceptual decommissioning of the Project.

The purpose of the Project is to develop a commercial-scale offshore wind energy facility in the Lease Area with WTGs, an OSS, and one transmission cable making landfall in Suffolk County, New York. The Project will contribute to New York's renewable energy requirements, particularly the state's goal of 9,000 MW of offshore wind energy generation by 2035. In addition, South Fork Wind's goal is to fulfill its contractual commitments to Long Island Power Authority (LIPA) pursuant to a power purchase agreement executed in 2017 resulting from LIPA's technology-neutral competitive bidding process.

The purpose of BOEM's action is to respond to and determine whether to approve, approve with modifications, or disapprove the COP to construct and install, operate and maintain, and decommission a commercial-scale offshore wind energy facility within the Lease Area. BOEM's action is needed to further the United States' policy to make OCS energy resources available for expeditious and orderly development, subject to environmental safeguards (43 U.S.C. § 1332(3)), including consideration of natural resources and existing ocean uses. In addition, other

Federal agencies may consider requests for authorizations related to the Project under applicable laws and regulations not administered by BOEM. These considerations differ from BOEM's consideration of the Proposed Action, but the considerations are related and constitute connected actions under 40 CFR 1508.25, with discrete purposes and needs based on their respective statutory and regulatory obligations. The purpose and need of other Federal agencies' actions are to evaluate the applicant's request pursuant to specific requirements of the statutes and implementing regulations administered by those agencies, consider impacts of the applicant's activities on relevant resources, and if appropriate, issue the permit or authorization.

3. ALTERNATIVES

The FEIS considered a reasonable range of alternatives to the Proposed Action.[7] BOEM considered a total of 22 alternatives during the preparation of the EIS and carried forward for detailed analysis three action alternatives and the No Action Alternative (Table 1). The other 18 alternatives were not further analyzed because they did not meet the purpose and need or did not meet other screening criteria. (see FEIS, Section 2.1.5).

3.1 ALTERNATIVES CARRIED FORWARD FOR DETAILED ANALYSIS

Table 1 – Description of Alternatives

Alternative	Description
Proposed Action	Under this alternative, the construction and installation, O&M, and conceptual decommissioning of up to 15 wind turbine generators (WTGs) in the 6- to 12-MW range and an offshore substation (OSS) within the Lease Area (including the expanded area) and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. SFW would space WTGs in a uniform east–west and north–south grid with 1 × 1–nautical-mile (nm) spacing between WTGs and diagonal transit lanes at least 0.6 nm wide. This configuration would allow micrositing of WTGs to avoid sensitive cultural resources and marine habitats.
Vessel Transit Lane (Transit Alternative)	Under this alternative, BOEM evaluated a 4-nm-wide vessel transit lane through the Lease Area where no surface occupancy would occur. BOEM developed this alternative in response to the January 3, 2020, Responsible Offshore Development Alliance (RODA) layout proposal (RODA 2020). The RODA proposal includes designated transit lanes, each at least 4 nm wide. Although the proposal includes six total transit lanes, only one lane intersects the Lease Area. The vessel transit lane is unique to this alternative and could facilitate transit of vessels through the Lease Area from southern New England and eastern Long Island ports to fishing areas in the region. WTGs located within the transit lane would be eliminated under this alternative. SFW would develop the remaining WTGs with a 12-MW turbine capacity and would move the offshore substation north of the currently proposed location and install it in one of the remaining WTG locations. The Transit alternative is within the proposed design envelope of up to 15 turbines in the 6- to 12-MW range. This alternative would disclose the effect a transit lane could have on the expected effects from the other action alternatives analyzed in the EIS.
Fisheries Habitat Impact Minimization (Habitat Alternative)	Under this alternative, the construction and installation, O&M, and conceptual decommissioning of WTGs and an OSS within the Lease Area and associated inter-array and export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, to reduce impacts to complex fisheries habitats as compared to the Proposed Action, BOEM would require SFW to exclude certain WTGs and associated cable locations when micrositing is not possible to maintain a uniform east–west and north–south grid of 1 × 1–nm spacing between WTGs with diagonal transit lanes of at least 0.6 nm wide. Under the Habitat alternative, BOEM may approve fewer WTG locations than proposed by SFW.
No Action	Under this alternative, BOEM would not approve the COP, and Project construction and installation, O&M, and conceptual decommissioning activities would not occur. Any potential environmental and socioeconomic impacts, including benefits, associated with the Project as described under the Proposed Action would not occur.

[7] DOI's regulations implementing NEPA state that the term "reasonable alternatives" "includes alternatives that are technically and economically practical or feasible and meet the purpose and need of the proposed action." 43 C.F.R. § 46.420(b).

3.2. Environmental Consequences of Alternatives

Table 2 summarizes and compares the impacts from the proposed Project under each action alternative assessed in chapter 3 of the FEIS. Under the No Action Alternative, any potential environmental and socioeconomic impacts associated with the Project, including both adverse impacts and benefits, would not occur. However, as described under the cumulative impact analysis in chapter 3, impacts from other activities could still occur.

3.3. Environmentally Preferable Alternatives

BOEM is required by CEQ regulations to identify in this ROD the *environmentally preferable alternative(s)* (40 C.F.R. part 1505.2). Upon consideration and weighing of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources (43 C.F.R. part 46.30), the Department of the Interior's (DOI's) responsible official, who is approving this ROD, has determined that the environmentally preferable alternatives are the No Action Alternative and the Habitat Alternative.

Adverse environmental impacts in the Project area would generally be less under the No Action Alternative because construction, operation, and decommissioning activities and disturbances related to the proposed Project would not occur and, hence, impacts on physical, biological, or cultural resources from the Proposed Action would be avoided. Nonetheless, the No Action Alternative would probably result in moderate, long-term, adverse impacts on regional air quality because other energy generation facilities would be needed to meet future power demands. These facilities might be fueled with natural gas, oil, or coal, which would emit more pollutants than wind turbines and would have more adverse impacts on air quality and contribute greenhouse gases that cause climatic change. Adverse impacts on air quality also tend to disproportionally impact environmental justice communities, which often include low-income and minority populations. These air quality impacts might be compounded by other impacts because selection of the No Action Alternative could negatively impact future investment on U.S. offshore wind energy facilities, which could result in the loss of beneficial cumulative impacts such as increased employment, improvements in air quality, and reductions in greenhouse gas emissions.

The Habitat Alternative would reduce impacts to complex habitat as described in Section 3.4.2 of the FEIS. Complex habitat is identified by NOAA as important to juvenile fish such as cod. Offshore wind has been identified as a key factor for Atlantic states to reach their greenhouse gas emission reduction goals. It is presently an irreplaceable component in state, Federal, and international strategies to reduce and reverse global climate change over the coming decades. In comparison to the No Action Alternative, the Habitat Alternative allows for the generation of electricity from sources that do not adversely affect the air quality in the region. Also, in contrast to the No Action Alternative, selection of the Habitat Alternative could encourage investment on U.S. offshore wind energy facilities, which could in turn result in beneficial cumulative impacts such as increased employment, improvements in air quality, and reductions in greenhouse gas emissions.

Table 2. Comparison of Impacts by Alternative

Resource	No Action	Proposed Action	Vessel Transit Lane Alternative	Fisheries Habitat Impact Minimization Alternative
Air quality	Continuation of existing air quality trends and sources of air pollution. Negligible to moderate adverse effects if no other wind farms are authorized and negligible to moderate adverse effects if they are authorized.	Minor to moderate temporary adverse impacts to air quality in the region due to vessel activity during construction and installation, O&M, and conceptual decommissioning, as well as minor beneficial long-term air quality and reduced health event impacts. The overall cumulative impacts to air quality would be minor adverse and minor beneficial.	Minor to moderate temporary adverse impacts to air quality in the region due to construction and installation, O&M, and conceptual decommissioning, as well as minor beneficial long-term air quality and reduced health event impacts. The overall cumulative impacts to air quality would be minor adverse and minor beneficial. When compared to the Proposed Action, air quality impacts could slightly decrease depending on final design.	Minor to moderate temporary adverse impacts to air quality in the region due to construction and installation, O&M, and conceptual decommissioning, as well as minor beneficial, long-term air quality and reduced health event impacts. The overall cumulative impacts to air quality would be minor adverse and minor beneficial. When compared to the Proposed Action, air quality impacts could slightly decrease depending on final design.
Water quality	Continuation of existing water quality trends. Minor to moderate adverse effects if no other wind farms are authorized and minor to moderate adverse effects and minor beneficial effects if they are authorized.	Negligible to moderate impacts on onshore surface water and offshore water quality from erosion, sediment resuspension and deposition and scouring, discharges, and inadvertent spills or releases. Onshore and offshore, overall cumulative impacts to water quality would be minor.	Negligible to moderate impacts on onshore surface water and offshore water quality from erosion, sediment resuspension and deposition and scouring, discharges, and inadvertent spills or releases. Onshore and offshore, overall cumulative impacts to water quality would be minor. When compared to the Proposed Action, offshore water quality impacts could slightly decrease depending on final design.	Negligible to moderate impacts on onshore surface water and offshore water quality from erosion, sediment resuspension and deposition and scouring, discharges, and inadvertent spills or releases. Onshore and offshore, overall cumulative impacts to water quality would be minor. When compared to the Proposed Action, offshore water quality impacts could slightly decrease depending on final design.
Bats	Continuation of population trends and continuation of effects to species from natural and human-caused stressors. Minor adverse effects if no other wind farms are authorized and minor adverse effects if they are authorized.	Negligible to minor adverse impacts on bats and suitable habitat from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor.	Negligible to minor adverse impacts on bats and suitable habitat from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor. When compared to the Proposed Action, collision risk could slightly decrease depending on final design.	Negligible to minor adverse impacts on bats and suitable habitat from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor. When compared to the Proposed Action, collision risk could slightly decrease depending on final design.
Benthic habitat, essential fish habitat (EFH), invertebrates, and finfish	Continuation of population trends. Continuation of effects to species from natural and human-caused stressors. Negligible to moderate adverse effects if no other wind farms are authorized and negligible to moderate adverse effects if they are authorized.	Negligible to moderate impacts on benthic habitat, EFH, invertebrates, and finfish from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts to benthic habitat, EFH, invertebrates, and finfish would be moderate.	Negligible to moderate impacts on benthic habitat, EFH, invertebrates, and finfish from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts to benthic habitat, EFH, invertebrates, and finfish would be moderate. When compared to the Proposed Action, reduced WTG and cable installation could slightly decrease impacts depending on final design.	Negligible to moderate impacts on benthic habitat, EFH, invertebrates, and finfish from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts to benthic habitat, EFH, invertebrates, and finfish would be moderate. When compared to the Proposed Action, impacts to complex habitat would be reduced. Reduced WTG and cable installation, as well as micrositing of these components, could slightly decrease other Project-related impacts depending on final design.
Birds	Continuation of population trends. Continuation of effects to species from natural and human-caused stressors. Minor adverse effects if no other wind farms are authorized and negligible to moderate adverse and moderate beneficial effects if they are authorized.	Negligible to minor temporary adverse impacts on birds and suitable habitat from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts would be minor.	Negligible to minor impacts on birds and suitable habitat from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts would be minor. When compared to the Proposed Action, collision risk could slightly decrease depending on final design.	Negligible to minor impacts on birds and suitable habitat from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts would be minor. When compared to the Proposed Action, collision risk could slightly decrease depending on final design.
Marine mammals	Continuation of population trends and continuation of effects to species from natural and human-caused stressors. Negligible to moderate adverse effects if no other wind farms are authorized and negligible to moderate effects if they are authorized.	Negligible to moderate impacts, as well as minor beneficial impacts, from construction and installation, O&M, and conceptual decommissioning activities, varying by species. Overall cumulative adverse impacts would be moderate adverse and minor to moderate beneficial.	Negligible to moderate impacts, as well as minor beneficial impacts, from construction and installation, O&M, and conceptual decommissioning activities, varying by species. Overall cumulative adverse impacts would be moderate adverse and minor to moderate beneficial. When compared to the Proposed Action, reduced WTG and cable installation could slightly decrease noise, turbidity, and collision impacts depending on final design.	Negligible to moderate impacts, as well as minor beneficial impacts, from construction and installation, O&M, and conceptual decommissioning activities, varying by species. Overall cumulative adverse impacts would be moderate adverse and minor to moderate beneficial. When compared to the Proposed Action, reduced WTG and cable installation could slightly decrease noise, turbidity, and collision impacts depending on final design.
Other terrestrial and coastal habitats and fauna	Continuation of population trends and continuation of effects to species from natural and human-caused stressors. Minor adverse effects if no other wind farms are authorized and negligible to minor adverse effects if they are authorized.	Negligible to minor impacts to terrestrial and coastal habitats and fauna from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor.	Negligible to minor impacts to terrestrial and coastal habitats and fauna from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor.	Negligible to minor impacts to terrestrial and coastal habitats and fauna from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor.
Sea turtles	Continuation of population trends and continuation of effects to species from natural and human-caused stressors. Minor to moderate adverse effects if no other wind farms are authorized and negligible to moderate adverse effects if they are authorized.	Negligible to minor impacts from elevated underwater noise from construction, vessel traffic, and accidental discharges of spills or trash. Overall cumulative impacts would be minor adverse and minor beneficial.	Negligible to minor impacts from elevated underwater noise from construction, vessel traffic, and accidental discharges of spills or trash. Overall cumulative impacts would be minor adverse and minor beneficial. When compared to the Proposed Action, reduced WTG and cable installation could slightly decrease noise, turbidity, and collision impacts depending on final design.	Negligible to minor impacts from elevated underwater noise from construction, vessel traffic, and accidental discharges of spills or trash. Overall cumulative impacts would be minor adverse and minor beneficial. When compared to the Proposed Action, reduced WTG and cable installation could slightly decrease noise, turbidity, and collision impacts depending on final design.
Wetlands and Waters of the United States (WOTUS)	Continuation of existing trends/issues for wetland resources. Minor adverse effects if no other wind farms are authorized and minor adverse effects if they are authorized.	Short- to long-term, negligible to minor adverse impacts to wetlands and WOTUS from Project construction and installation, and conceptual decommissioning. No O&M impacts are anticipated. Overall cumulative adverse impacts would be minor.	Short- to long-term, negligible to minor adverse impacts to wetlands and WOTUS from Project construction and installation, and conceptual decommissioning. No O&M impacts are anticipated. Overall cumulative adverse impacts would be minor.	Short- to long-term, negligible to minor adverse impacts to wetlands and WOTUS from Project construction and installation, and conceptual decommissioning. No O&M impacts are anticipated. Overall cumulative adverse impacts would be minor.

Resource	No Action	Proposed Action	Vessel Transit Lane Alternative	Fisheries Habitat Impact Minimization Alternative
Commercial fisheries and for-hire recreation fishing	Continuation of current trends. Negligible to moderate adverse effects if no other wind farms are authorized and negligible to moderate effects if they are authorized.	Negligible to major adverse construction and installation, O&M, and conceptual decommissioning impacts to commercial fisheries and for-hire recreational fishing due to increased port congestion; changes to fishing access, primarily through reduced fishing opportunity when construction activities are occurring; damage to or loss of fishing gear; and impacts on the catch due to changes in target species abundance or availability during construction activities. The reef effect of WTG foundations and associated scour protection is expected to have negligible to minor beneficial impacts to for-hire recreational fisheries, depending on the extent to which the foundations enhance fishing opportunities. Overall cumulative adverse impacts would be major.	Negligible to major adverse construction and installation, O&M, and conceptual decommissioning impacts to commercial fisheries and for-hire recreational fishing due to increased port congestion; changes to fishing access, primarily through reduced fishing opportunity when construction activities are occurring; damage to or loss of fishing gear; and impacts on the catch due to changes in target species abundance or availability during construction activities. The reef effect of WTG foundations and associated scour protection is expected to have negligible to minor beneficial impacts to for-hire recreational fisheries, depending on the extent to which the foundations enhance fishing opportunities. Overall cumulative adverse impacts would be major. When compared to the Proposed Action, the transit corridor could facilitate or hinder vessel transit, depending on the type of vessel. The transit corridor could increase the potential for allision, collision, and other navigation conflicts as compared to the Proposed Action.	Negligible to major adverse construction and installation, O&M, and conceptual decommissioning impacts to commercial fisheries and for-hire recreational fishing due to increased port congestion; changes to fishing access, primarily through reduced fishing opportunity when construction activities are occurring; damage to or loss of fishing gear; and impacts on the catch due to changes in target species abundance or availability during construction activities. The reef effect of WTG foundations and associated scour protection is expected to have negligible to minor beneficial impacts to for-hire recreational fisheries, depending on the extent to which the foundations enhance fishing opportunities. Overall cumulative adverse impacts would be major.
Cultural resources	Continuation of existing trends/issues. Negligible to major adverse effects if no other wind farms are authorized and negligible to major effects if they are authorized.	Negligible to major adverse impacts to marine and terrestrial archaeological resources and to historic visual resources from Project construction and installation, O&M, and conceptual decommissioning activities. Overall cumulative adverse impacts would be negligible to major across marine, terrestrial, and viewshed resources.	Negligible to major adverse impacts to marine and terrestrial archaeological resources and to historic visual resources from Project construction and installation, O&M, and conceptual decommissioning activities. Overall cumulative adverse impacts would be negligible to major across marine, terrestrial, and viewshed resources. When compared to the Proposed Action, could decrease viewshed impacts and the risk of marine resource damage or destruction to unknown submerged cultural resources based on final design.	Negligible to major adverse impacts to marine and terrestrial archaeological resources and to historic visual resources from Project construction and installation, O&M, and conceptual decommissioning activities. Overall cumulative adverse impacts would be negligible to major across marine, terrestrial, and viewshed resources. When compared to the Proposed Action, could decrease viewshed impacts and the risk of marine resource damage or destruction to unknown submerged cultural resources based on final design.
Demographics, employment, and economics	Continuation of existing trends for population and employment. Minor adverse to minor beneficial effects if no other wind farms are authorized and negligible to minor adverse and minor beneficial effects if they are authorized.	Negligible to minor adverse and minor to moderate beneficial impacts to the socioeconomic analysis area in terms of employment, federal revenue, and income from construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts would be minor adverse and minor beneficial.	Negligible to minor adverse and minor to moderate beneficial impacts to the socioeconomic analysis area in terms of employment, federal revenue, and income from construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts would be minor adverse and minor beneficial. When compared to the Proposed Action, slightly reduced, beneficial and adverse economic impact.	Negligible to minor adverse and minor to moderate beneficial impacts to the socioeconomic analysis area in terms of employment, federal revenue, and income from construction and installation, O&M, and conceptual decommissioning. Overall cumulative impacts would be minor adverse and minor beneficial. When compared to the Proposed Action, slightly reduced, beneficial and adverse economic impact.
Environmental justice	Continuation of current demographic trends. Minor to moderate adverse effects if other wind farms are not authorized and negligible to moderate effects if they are authorized.	Negligible to moderate adverse impacts to minority or low-income populations and tribes from Project construction and installation, O&M, and conceptual decommissioning activities. Overall cumulative adverse impacts would be minor to moderate adverse and minor beneficial.	Negligible to moderate adverse impacts to minority or low-income populations and tribes from the Project construction and installation, O&M, and conceptual decommissioning activities. Overall cumulative adverse impacts would be minor to moderate adverse and minor beneficial. When compared to the Proposed Action, air quality, water quality, and commercial fishing impacts could slightly decrease depending on final design.	Negligible to moderate adverse impacts to minority or low-income populations and tribes from the Project construction and installation, O&M, and conceptual decommissioning activities. Overall cumulative adverse impacts would be minor to moderate adverse and minor beneficial. When compared to the Proposed Action, air quality, water quality, and commercial fishing impacts could slightly decrease depending on final design.
Land use and coastal infrastructure	Continued activity in accordance with established land use patterns and regulations. Minor adverse effects if other wind farms are not authorized and negligible to minor effects if they are authorized.	Minor, beneficial impacts to land use due to increased compatible uses at ports, whereas construction or conceptual decommissioning of onshore components would have negligible to moderate, temporary adverse impacts due to disturbance associated with onshore construction, including traffic delays and re-routing. Overall cumulative impacts would be minor adverse and minor beneficial.	Minor, beneficial impacts to land use due to increased compatible uses at ports, whereas construction or conceptual decommissioning of onshore components would have negligible to moderate, temporary adverse impacts due to disturbance associated with onshore construction, including traffic delays and re-routing. Overall cumulative impacts would be minor adverse and minor beneficial.	Minor, beneficial impacts to land use due to increased compatible uses at ports, whereas construction or conceptual decommissioning of onshore components would have negligible to moderate, temporary adverse impacts due to disturbance associated with onshore construction, including traffic delays and re-routing. Overall cumulative impacts would be minor adverse and minor beneficial.
Navigation and vessel traffic	Current navigation trends would continue. Minor to moderate adverse effects if other wind farms are not authorized and minor to moderate adverse effects if they are authorized.	Negligible to minor impacts on navigation and vessel traffic in the region from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be moderate.	Negligible to minor impacts on navigation and vessel traffic in the region from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be moderate. When compared to the Proposed Action, navigation impacts could slightly increase or decrease depending on final design.	Negligible to minor impacts on navigation and vessel traffic in the region from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be moderate. When compared to the Proposed Action, navigation impacts could slightly decrease depending on final design.
Other marine uses	No new impacts to marine uses and continuation of existing uses. Negligible to minor adverse effects if no other wind farms are authorized and negligible to minor (most uses) to moderate (military uses) to major (scientific research surveys) effects if they are authorized.	Negligible to major impacts to mineral extraction, military use, air traffic, land-based radar services, cables and pipelines, and scientific surveys. Overall cumulative adverse impacts would be minor for most uses. However, the overall impact would be moderate adverse for some military uses and radar and major adverse for scientific research and protected species surveys.	Negligible to major impacts to mineral extraction, military use, air traffic, land-based radar services, cables and pipelines, and scientific surveys. Overall cumulative adverse impacts would be minor for most uses. However, the overall impact would be moderate adverse for some military uses and radar and major adverse for scientific research and protected species surveys.	Negligible to major impacts to mineral extraction, military use, air traffic, land-based radar services, cables and pipelines, and scientific surveys from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor for most uses. However, the overall effect would be moderate adverse for military uses and major adverse for scientific research and protected species surveys.

Resource	No Action	Proposed Action	Vessel Transit Lane Alternative	Fisheries Habitat Impact Minimization Alternative
Recreation and tourism	Continuation of existing trends and no beneficial impacts from Proposed Action. Minor to moderate adverse effects if no other wind farms are authorized and minor to moderate adverse and minor beneficial effects if they are authorized.	Negligible to minor short- to long-term impacts to recreation and tourism due to Project construction and conceptual decommissioning activities. O&M of offshore Project activities could elicit both beneficial and adverse impacts to recreational use of resources within the viewshed of the WTGs. Overall cumulative adverse impacts would be minor adverse and minor beneficial.	Negligible to minor short- to long-term impacts to recreation and tourism due to Project construction and conceptual decommissioning activities. O&M of offshore Project activities could elicit both beneficial and adverse impacts to recreational use of resources within the viewshed of the WTGs. Overall cumulative adverse impacts would be minor adverse and minor beneficial. When compared to the Proposed Action, recreation impacts could slightly increase or decrease depending on final design.	Negligible to minor short- to long-term impacts to recreation and tourism due to Project construction and conceptual decommissioning activities. O&M of offshore Project activities could elicit both beneficial and adverse impacts to recreational use of resources within the viewshed of the WTGs. Overall cumulative adverse impacts would be minor adverse and minor beneficial. When compared to the Proposed Action, recreation impacts could slightly increase or decrease depending on final design.
Visual resources	Continuation of impacts to viewshed from past and current activities. Minor to major adverse effects if no other wind farms are authorized and negligible to major adverse effects if they are authorized.	Negligible to major short- to long-term impacts on non-historic visual resources from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor to moderate, as the viewshed would return to previous condition after conceptual decommissioning.	Negligible to major short- to long-term impacts on non-historic visual resources from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor to moderate, as the viewshed would return to previous condition after conceptual decommissioning. When compared to the Proposed Action, visual impacts from nighttime lighting and structures could slightly decrease depending on final design.	Negligible to major short- to long-term impacts on non-historic visual resources from Project construction and installation, O&M, and conceptual decommissioning. Overall cumulative adverse impacts would be minor to moderate, as the viewshed would return to previous condition after conceptual decommissioning. When compared to the Proposed Action, visual impacts from nighttime lighting and structures could slightly decrease depending on final design.

4. MITIGATION, MONITORING, AND REPORTING

This ROD adopts all practicable measures identified in Appendix G of the FEIS to avoid, minimize, and mitigate adverse environmental impacts that could result from the proposed activities. The measures were rewritten as enforceable conditions. Mitigation measures not adopted relate to the removal of proposed turbine locations and are explained in the decision[8] (Section 5.1). Also, mitigation measures that will be enforced under other permitting authorities such as the USACE or the State of New York are not included because they are outside BOEM's legal authority to enforce. The final adopted measures are identified in the Appendices of this ROD. BOEM has modified some measures identified in the FEIS as an outcome of consultations under Section 7 of the ESA and Section 106 of the National Historic Preservation Act (NHPA), which concluded after publication of the FEIS. Other modifications were the result of updates to measures being considered by NMFS for the final IHA.

[8] BOEM is incorporating the project design criteria and best management practices in the ESA Letter of Concurrence dated June 29,2021, as applicable to the activities BOEM is approving. BOEM recognizes that the programmatic consultation considers "certain site assessment and site characterization activities to be carried out to support the siting of offshore wind energy development projects off the U.S. Atlantic coast" and therefore may encompass categories of action that BOEM is not approving in this particular COP.

5. FINAL AGENCY DECISIONS

5.1 DOI's DECISION

After carefully considering the FEIS alternatives, including comments from the public on the DEIS and FEIS, DOI has decided to approve, with modifications, the COP for South Fork Wind adopting the Habitat Alternative. DOI identified this as its Preferred Alternative in the FEIS and it is also one of the two identified environmentally preferrable alternatives. After careful consideration of the two proposed layouts, including environmental and technical concerns, DOI selected the layout proposed by South Fork Wind (Alternative Layout B). By selecting this version of the Habitat Alternative, DOI will allow no more than 12 turbines to be installed in the following selected locations of the 15 locations proposed by South Fork Wind: WTG1, WTG2, WTG3, WTG4, WTG7, WTG8, WTG10, WTG11, WTG12, WTG13, WTG14, and WTG 15. The turbine layout must be arranged in a uniform east–west and north–south grid, with 1 × 1 nm spacing between WTGs, and diagonal transit lanes of at least 0.6 nm wide, consistent with the USCG's recommendations in *The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study* (MARIPARS; USCG 2020). Additionally, WTGs in these locations must be microsited to the maximum extent practicable to minimize impacts to complex habitat.

The Vessel Transit Lane Alternative (Transit Alternative) analyzed a 4-nm-wide vessel transit lane in which no surface occupancy would occur. The Transit Alternative would preclude turbine placement in the six most southern turbine locations. The range of direct impacts to all resources from the Transit Alternative would remain substantially similar to those of the Proposed Action. However, the Transit Alternative would unnecessarily reduce the energy production potential of the lease. While the establishment of a transit lane would facilitate travel for vessels along the southern portion of the lease area, the Final MARIPARS report stated that WTGs with 1-nm spacing and north-south/east-west orientation will (i) facilitate traditional fishing methods (east-west travel) in the Project area; (ii) provide for typical transit routes through the combined lease areas (northwest-southeast travel); (iii) not trigger the need for formal or informal vessel routing measures because such uniform grid pattern will result in the functional equivalent of numerous navigation corridors that can safely accommodate both transits through and fishing; and (iv) provide the USCG with adequate search and rescue (SAR) access (north-south travel) (USCG 2020). Therefore, choosing the Transit Alternative is not necessary to mitigate potential impacts to navigation in the lease area.

The developers in the Massachusetts/Rhode Island lease areas have agreed to a 1 x 1 nm uniform grid layout ("Developers' Agreement") and adding a transit lane to this layout may increase navigational complexity. The Developers' Agreement was reached in order to avoid irregular transit corridors. This agreement limited the turbine locations available for offshore wind development in the lease area, and choosing the Transit Alternative—thereby further reducing the area available for wind development—could render the Project technically and economically infeasible, or result in increased environmental impacts to complex habitat, as 4 of the 12 turbine locations in the Transit Alternative would not be occupied by turbines in the Habitat Alternative Layout B. Reducing the number of locations below 12 to avoid complex habitat would result in the Project not being able to meet the power purchase agreement of 130 MW. Thus, the Transit Alternative introduces significant economic and technical difficulties when compared with the

Habitat Alternative. For all these reasons, DOI has not selected the Transit Alternative in this ROD.

Under the No Action Alternative, DOI would not approve the South Fork Wind Project. In addition, no other permits or authorizations for this proposed Project would be issued. The No Action Alternative is considered one of the environmentally preferable alternatives because adverse environmental impacts across resources would generally be less under the No Action Alternative, i.e., no construction, operation, or decommissioning activities will occur on the OCS. For example, no disturbance would occur from the installation of the SFEC, and no disturbance would occur on land from the South Fork Export Cable Route and substation. However, selection of the No Action Alternative would be expected to result in moderate, long-term adverse impacts on air quality due to the need to construct and operate new energy generation facilities to meet future power demands. These new power plants might be fueled by natural gas, oil, or coal, which would emit more air pollutants and produce greater impacts on air quality in the region in comparison to the Project. The No Action Alternative was not selected because it would not allow expeditious and orderly development of DOI-managed resources and would not meet the purpose and need of the Proposed Action.

The Proposed Action is the construction and operation of up to 15 WTGs and an OSS and the installation of inter-array cables and an export cable to provide electricity to the South Fork of Long Island as described in Section 2.1 of this ROD. When compared to the other action alternatives, this alternative would be the most impactful. Other alternatives analyzed in the FEIS, like the Habitat Alternative, would be less impactful and would still meet the goals of the applicant and the purpose and need of the Proposed Action. For those reasons, the Proposed Action alternative was not selected.

The FEIS found that the Habitat Alternative will result in fewer adverse impacts than the other action alternatives considered. Both the Habitat Alternative Layouts A and B (FEIS Figures 2.1.3-2a and Figure 2.1.3-2b) exclude turbines in the WTG 5, WTG 16A, and WTG 17A locations. However, South Fork Wind raised technical and engineering concerns (letter received on September 20, 2021) with the feasibility of the Habitat Alternative Layout A, specifically, the installation of WTG 6 and WTG 9, the removal of WTG1 and WTG 15, and the realignment of the associated inter-array cables. BOEM has weighed the technical and economic burdens associated with fully adopting Alternative Layout A and concurs with South Fork Wind's analysis that WTG 6 and WTG 9 should be removed, and WTG 1 and WTG 15 should be retained. As stated in the EIS, both layouts under the Habitat Alternative are comparable in their protection of complex and potentially complex habitat as shown in Figures 3.4.2-1 and 3.4.2-2 of the FEIS, with Habitat Alternative Layout B impacting approximately 5.3 fewer acres of complex and potentially complex habitat than Habitat Alternative Layout A. Relative to the Proposed Action, the Layout A option would reduce the impacts to complex and potentially complex habitat in the lease area from 16.9 acres to 9.5 acres (a reduction of 7.4 acres). Impacts to complex and potentially complex habitat from the inter-array cables would be reduced from 146.8 acres to 118.5 acres (a reduction of 28.3 acres). Relative to the Proposed Action, the Layout B option would reduce impacts to complex and potentially complex habitat in the lease area from 16.9 acres to 12.6 acres (a reduction of 4.3 acres). Impacts to complex and potentially complex habitat from the inter-array cables would be reduced from 146.8 acres to 110.1 acres (a reduction of 36.7 acres). In comparing the total impacts to complex and potentially complex

habitat for the layouts (i.e., combined impacts from the lease area and inter-array cable corridor), the Layout A option would result in total impacts to complex and potentially complex habitat of 128 acres. The Layout B option would result in total impacts to the two habitat types of 122.7 acres. The Habitat Alternative is also consistent with DOI's purpose and need. For those reasons, DOI has selected the Habitat Alternative in this ROD.

DOI weighed all concerns in making decisions regarding this Project and has determined that all practicable means within its authority have been adopted to avoid or minimize environmental and socioeconomic impacts associated with the selected alternative and the approval of the COP. The Department selected the Habitat Alternative Layout B after DOI's consideration of 10 letters received commenting on the FEIS. None of these letters identified issues that would require supplementing the FEIS. The ROD Appendices identify the mitigation, monitoring, and reporting requirements that will be finalized and included as terms and conditions in the COP Approval Letter to be issued to South Fork Wind.[9] Most of the mitigation and monitoring measures identified in Appendix A are substantively the same as those included in Appendix G of the FEIS. However, several of the measures identified in the FEIS have been modified since its publication, including measures arising from consultation under Section 7 of the ESA, 16 U.S.C. § 1536, Section 106 of the NHPA, 54 U.S.C. §§ 300101 et seq., and measures concerning the EFH conservation recommendations under the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801 et seq. (see Appendix A of this ROD). On October 1, 2021, BOEM received the Biological Opinion from NOAA. On November 2, 2021, BOEM received the corrected Biological Opinion and amended Incidental Take Statement. BOEM revised the mitigation measures accordingly. In addition, BOEM will incorporate the conditions in the Biological Opinion's Incidental Take Statement, as amended by NMFS on November 1, 2021, and the final IHA in the terms of its approval. On November 23, 2021 BOEM finalized a Section 106 memorandum of agreement (MOA) with the consulting parties. The MOA was executed after a thorough NHPA review. As described in Appendix A of the FEIS, BOEM coordinated its NEPA and NHPA processes, using the public scoping process for the EIS to fulfill the public involvement requirements. Throughout 2020 and 2021, BOEM consulted on the identification of historic properties and the assessment of effects on those properties. After the FEIS was finalized, BOEM continued to consult on the development of the MOA. The MOA memorialized mitigation measures concerning Section 106 that were only draft in the FEIS and these are included in Appendix A as part of the final adopted mitigation measures.

As described in the FEIS, Habitat Alternative Layout B is anticipated to have major adverse impacts to NMFS Northeast Fisheries Science Center scientific surveys (hereinafter "NMFS surveys"). The adverse impacts to NMFS surveys could increase in intensity and scope if future wind energy projects are approved throughout the Northeast U.S. Continental Shelf Ecosystem. BOEM and NOAA have been working together to identify a path forward on how to address impacts to NMFS scientific surveys, with the goal to develop a programmatic approach to mitigate impacts to surveys (see FEIS Section 3.5.7.4).

[9] The terms and conditions included in the Appendices to this ROD generally represent the substantive requirements that will be included in the COP Approval Letter, subject to clarifying revisions consistent with the substance of the terms and conditions included in this ROD and the findings of the FEIS.

elements: 1) evaluate survey design, 2) identify and develop new survey approaches, 3) calibrate new survey approaches, 4) develop interim provisional survey indices, 5) monitor wind energy to fill regional scientific survey data needs over the life of offshore wind operations, and 6) develop and communicate new regional data streams. If developed, the FSMP would evaluate impacts to NMFS surveys and identify potential regional solutions that could be applied to future offshore wind projects. In addition to the foregoing, BOEM has agreed to include mitigation measure 2.3 in Appendix A, which requires South Fork Wind to participate in the efforts led by NMFS, in coordination with BOEM, to establish the FSMP. The FSMP is still under development with BOEM. Furthermore, the Project developer's participation in this programmatic effort is not yet specified.

Project-specific monitoring plans are also required under this ROD. These plans should generate information on Project impacts in order to assist in effectively documenting biological changes in the SFWF. Specifically, approval of South Fork Wind's COP recognizes and requires South Fork to complete its commitment to conduct a minimum of 1 year pre-construction, 1 year during construction, and 2 years of post-construction surveys, including fisheries surveys and passive acoustic monitoring for marine mammals in the SFWF. These measures were designed to evaluate the effect of the South Fork Wind development on specific components of the marine ecosystem, not as mitigation of impacts to NMFS scientific surveys, which, as noted above, will be addressed programmatically. These measures will collect and analyze biological and environmental data that may be integrated with existing data and other ongoing research, and may allow for a better understanding of habitat modifications made by wind energy project structures. See Appendix A for additional details on the survey plans and protocols.

Additional engineering and technical terms and conditions that will be required with COP approval are included in Appendix B of this ROD.[10] South Fork Wind will be required to certify annually that it is in compliance with the terms and conditions of its approved COP (30 C.F.R. § 585.633(b)). South Fork Wind must also comply with all other applicable requirements of 30 C.F.R. part 585, including, but not limited to, the submission of a Facility Design Report and a Fabrication and Installation Report, before beginning construction activities.

Today's decision balances the orderly development of OCS renewable energy with the prevention of interference with other uses of the OCS and the protection of the human, marine, and coastal environments. A decision that balances these goals and does not hold one as controlling over all others is consistent with the duties required under subsection 8(p)(4) of

[10] All mitigation measures and terms and conditions adopted by BOEM as part of this ROD will be included in the COP authorization letter to be issued to South Fork Wind.

OCSLA, which requires the Secretary to strike a rational balance between Congress's enumerated goals.[11]

My approval of this decision constitutes the final decision of the Department of the Interior.

LAURA DANIEL-DAVIS Digitally signed by LAURA DANIEL-DAVIS Date: 2021.11.24 11:06:12 -05'00'

11/24/21

Laura Daniel-Davis
Principal Deputy Assistant Secretary
Land and Minerals Management

Date

[11] M-37067, pg. 2.

5.2. NMFS' DECISION

This section documents NMFS' planned determination to issue an Incidental Harassment Authorization (IHA) to South Fork Wind pursuant to its authorities under the MMPA. It also references NMFS' decision to adopt the BOEM FEIS to support NMFS' anticipated decision to issue the IHA. NMFS prepared and signed a separate memorandum independently evaluating the sufficiency and adequacy of the BOEM FEIS. That memorandum provides NMFS' rationale to adopt the FEIS to satisfy its independent NEPA obligations related to the IHA. In that memorandum NMFS concluded: (i) the action addressed in the adopted document is substantially the same as that being considered or proposed by NMFS and meets all NEPA requirements under 40 C.F.R. § 1506.3 (adopting an EIS); (ii) the analysis includes the appropriate scope and level of environmental impact evaluation for NMFS' proposed action and alternatives; and (iii) NMFS' comments and suggestions related to primary environmental effects of concern from the proposed action (i.e., effects to marine mammals), submitted in its role as a cooperating agency, have been satisfied.

On March 15, 2019, NMFS received a request from South Fork Wind pursuant to MMPA section 101(a)(5)(D) for an authorization to take small numbers of marine mammals, by harassment, incidental to the construction of an offshore wind energy project south of Rhode Island in OCS-A 0517, for a period of no longer than one year. Once NMFS determined the application was adequate and complete, it had a corresponding duty to determine whether and how to authorize take of marine mammals incidental to the activities described in the application in accordance with standards and determinations set forth in the statute and its implementing regulations. Thus, the purpose of NMFS' action—which was a direct outcome of South Fork Wind's request for authorization to take marine mammals, by harassment, incidental to their proposed activities—was to evaluate South Fork Wind's application pursuant to the MMPA and 50 C.F.R. § 216 and issue an IHA, if appropriate. The need for NMFS' action is to consider the impacts of authorizing the requested take on marine mammals and their habitat. In addition to its opportunity to comment on the DEIS, the public was also involved in the MMPA decision-making process through its opportunity to comment on NMFS' proposed IHA which was published in the *Federal Register* (86 FR 8490, February 5, 2021). NMFS' final action takes into account those comments, as well as the corresponding formal consultation process under Section 7 of the ESA for issuance of the IHA.

5.2.1. NMFS Decision (40 C.F.R. § 1505.2(a))

Pending completion of all statutory processes, NMFS plans to issue an IHA to South Fork Wind authorizing take of marine mammals incidental to construction activities associated with the proposed Project, specifically pile driving and marine site assessment surveys, for one year. NMFS' final decision to issue the requested IHA will be documented in a separate Decision Memorandum prepared in accordance with internal NMFS policy and procedures. The IHA will authorize the incidental take of marine mammals while prescribing the amount and means of incidental take, as well as mitigation, monitoring, and reporting requirements, including those mandated by the Biological Opinion, as corrected and amended, that completes the formal Section 7 consultation process under the ESA. A Notice of Issuance of the IHA will be published in the *Federal Register* within 30 days of issuance of the IHA. The *Federal Register* notice will

describe how NMFS concluded the requirements set forth in the MMPA and its implementing regulations were met and issuance of the IHA was warranted.

5.2.2. Alternatives NMFS Considered (40 C.F.R. § 1505.2(b))

NMFS is required to consider a reasonable range of alternatives to a proposed action in accordance with NEPA and 40 C.F.R. § 1502.10(e) and § 1502.14. NMFS considered two alternatives, the No Action Alternative in which NMFS would deny South Fork Wind's request for an authorization and an action alternative in which it would issue an IHA to South Fork Wind with mitigation, monitoring, and reporting requirements.

Consistent with BOEM's No Action Alternative, NMFS would not issue the requested authorization to South Fork Wind, in which case, NMFS assumes South Fork Wind would not proceed with their proposed project as described in the application since it would be likely to cause harassment of marine mammals in contravention of the MMPA (unless modification to the project was undertaken that would negate the need for the authorization). Since NMFS is also required by 40 C.F.R. 1505.2 to identify an environmentally preferable alternative, NMFS considers the No Action Alternative to be the environmentally preferable alternative as the incidental take of marine mammals would be avoided since no construction activities resulting in harassment would occur.

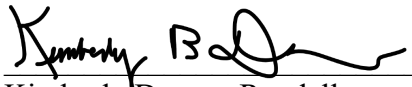
The other alternative NMFS considered was its Proposed Action, issuance of the IHA to South Fork Wind, which would authorize take of marine mammals incidental to one-year of construction activities as noted above, subject to specified mitigation, monitoring and reporting measures. As part of that alternative, and through the public and agency review process, NMFS considered a range of mitigation measures to carry out its duty to identify other means of effecting the least practicable adverse impact on the species or stocks. These measures were initially identified in the proposed IHA (86 FR 8490) and modified in the final IHA in response to public comment, agency review, and ESA Section 7 consultation. The Proposed Action alternative evaluated by NMFS is consistent with the Preferred Alternative evaluated by BOEM in the FEIS and selected in this ROD as it will provide the incidental take authorization necessary to achieve the activities identified in that alternative.

5.2.3. Primary Factors NMFS Considers Favoring Selection of the Proposed Action (40 C.F.R. § 1505.2(b))

As noted earlier, NMFS intends to issue an IHA to South Fork Wind in response to their request for an IHA, after completing all required statutory and regulatory processes. NMFS' Proposed Action to issue an IHA for BOEM's Preferred Alternative effectively meets NMFS' stated purpose and need for acting. NMFS has an obligation to issue a requested IHA if certain statutory and regulatory determinations are made after providing for proper public review and comment. Denying issuance of the IHA, as described under NMFS' No Action Alternative, would be contrary to NMFS' responsibilities, given the results of the analysis conducted under the MMPA demonstrates the authorized take would meet statutory and regulatory requirements and would thus not support NMFS' ability to meet the purpose and need for acting.

5.2.4 Mitigation, Monitoring and Reporting Considered by NMFS (40 C.F.R. § 1505.2(c))

NMFS has a statutory and regulatory process to prescribe the permissible methods of take and other means of effecting the least practicable adverse impact on the species or stocks of marine mammals and their habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance. All incidental take authorizations also include requirements pertaining to monitoring and reporting. Mitigation, monitoring, and reporting requirements related to marine mammals were preliminarily identified in the proposed IHA (86 FR 8490). Those measures may be modified in the final IHA in consideration of public comments, additional analysis, and based on the outcome of the formal ESA Section 7 consultation. When it issues its IHA to the applicant, NMFS will include the necessary mitigation to effect the least practicable adverse impact on marine mammals as well as, monitoring and reporting requirements to be implemented by South Fork Wind. Appendix A includes a listing of mitigation, monitoring and reporting measures that have been considered by BOEM in formulating its NEPA analysis. Many of these measures align with those to be included in the IHA; however, the final IHA may contain additional, more protective measures.



11/24/2021

Kimberly Damon-Randall
Director
NMFS Office of Protected Resource

Date

APPENDIX A. ENVIRONMENTAL MITIGATION AND MONITORING MEASURES (TERMS AND CONDITIONS)

As part of the proposed South Fork Wind Offshore Wind Energy Project (Project), South Fork Wind LLC (South Fork Wind) has voluntarily committed to measures to avoid, reduce, mitigate, or monitor impacts on the resources discussed in Chapter 3 and Appendix G of the final environmental impact statement (FEIS) (BOEM 2021). The mitigation and monitoring measures are summarized in the Construction and Operations Plan (COP) Executive Summary Table ES-1 (Jacobs 2021). The Bureau of Ocean Energy Management (BOEM) considers as part of the Proposed Action only those measures that South Fork Wind has committed to in the COP. BOEM has selected alternatives and adopted additional mitigation or monitoring measures to further protect and monitor these resources. These additional mitigation and monitoring measures have resulted from reviews under several environmental statutes in addition to the National Environmental Policy Act (NEPA), particularly the National Historic Preservation Act (NHPA) and the memorandum of agreement (MOA) developed under that Act for this Project; Magnuson-Stevens Fisheries Conservation and Management Act; Endangered Species Act (ESA) and the Biological Opinion issued for this Project; and Marine Mammal Protection Act (MMPA).[1] These additional measures are described in Appendix G of the FEIS (BOEM 2021).

Monitoring measures include requirements to evaluate the effectiveness of mitigation measures or to identify if resources are responding as predicted to impacts from the Project. Monitoring requirements may be revised in light of new information to: (1) adapt implementation of an approved mitigation measure, (2) develop new or modify existing mitigation measures, or (3) contribute to regional efforts intended to gain a better understanding of the impacts and benefits resulting from offshore wind energy projects in the Atlantic.

South Fork Wind must comply with, and certify its compliance with, the mitigation measures in this Appendix A, as will be set forth in the letter of approval for the COP. South Fork Wind must also comply with any revisions to these measures that BOEM may require as the result of a revised COP approval pursuant to 30 C.F.R. 585.633 and 585.634. South Fork Wind (the Lessee)[2] must conduct all activities as proposed in its approved COP for the Project and these associated terms and conditions. Additionally, the Lessee must comply with all applicable requirements in commercial lease OCS-A 0517 (Lease), statutes, regulations, and all permits and authorizations issued by Federal and state agencies for the Project. BOEM and/or the Bureau of Safety and Environmental Enforcement (BSEE), as applicable,[3] may issue a notice of noncompliance, pursuant to 30 C.F.R. § 585.400(b), if it is determined that the Lessee failed to comply with any provision of its approved COP, the Lease, the Outer Continental Shelf Lands Act (OCSLA), or OCSLA's implementing regulations. BOEM and/or BSEE may also take additional actions pursuant to 30 C.F.R. § 585.400, where appropriate.

[1] To the extent the descriptions of the measures listed below differ from the enforceable measures in the Biological Opinion, MMPA Incidental Take Authorization, any other Federal or state agencies, or the NHPA memorandum of greement, the language in those documents will control.

[2] Throughout this document, the term "Lessee" includes the Lessee and its designated operator(s), as well as the Lessee's or designated operator's agents, which may include the following: contractors; sub-contractors; consultants; operators; designees; and any other entity, organization, or person who is directly or indirectly conducting activities associated with COP approval on behalf of the Lessee.

[3] At the time these terms and conditions were drafted, DOI's BOEM and BSEE were in the process of transferring enforcement authorities from BOEM to BSEE. These terms and conditions were drafted to best reflect the expected transfer of those authorities. When conditions describe Lessee submissions to DOI, the Lessee should coordinate with BOEM and confirm whether the submittal should be made to BOEM or BSEE.

1. CONDITIONS RELATED TO PROTECTED SPECIES[4] AND HABITAT

1.1. General Environmental Conditions.

1.1.1. Aircraft Detection Lighting System (Construction) (Operations). The Lessee must use a Federal Aviation Administration (FAA) approved vendor for the Aircraft Detection Lighting System (ADLS), which will activate the FAA hazard lighting only when an aircraft is in the vicinity of the wind facility to reduce visual impacts at night. The Lessee must confirm the use of an FAA-approved vendor for ADLS on wind turbine generators (WTGs) and the offshore substation (OSS) in the Fabrication and Installation Report (FIR).

1.1.2. Marine Debris[5] Awareness and Elimination (Planning) (Construction) (Operations) (Decommissioning).

1.1.2.1. Marine Debris Awareness Training. The Lessee must ensure that vessel operators, employees, and contractors engaged in offshore activities pursuant to the approved COP complete marine trash and debris awareness training annually. The training consists of two parts: (1) viewing a marine trash and debris training video or slide show (described below); and (2) receiving an explanation from management personnel that emphasizes their commitment to the requirements. The marine trash and debris training videos, training slide packs, and other marine debris related educational material may be obtained at https://www.bsee.gov/debris or by contacting BSEE. The training videos, slides, and related material may be downloaded directly from the website. Operators engaged in marine survey activities must continue to develop and use a marine trash and debris awareness training and certification process that reasonably assures that their employees and contractors are in fact trained. The training process must include the following elements:

1.1.2.1.1. Viewing of either a video or slide show by the personnel specified above;

1.1.2.1.2. An explanation from management personnel that emphasizes their commitment to the requirements;

1.1.2.1.3. Attendance measures (initial and annual); and

1.1.2.1.4. Recordkeeping and the availability of records for inspection by the Department of the Interior (DOI).

[4] As used herein, the term "protected species" means species of fish, wildlife, or plant that have been determined to be endangered or threatened under Section 4 of the Endangered Species Act (ESA). ESA-listed species are provided in 50 C.F.R. 17.11-12. The term also includes marine mammals protected under the MMPA.

[5] Throughout this document, "marine debris" is defined as any object or fragment of wood, metal, glass, rubber, plastic, cloth, paper, or any other man-made item or material that is lost or discarded in the marine environment.

1.1.2.2. Training Compliance Report. By January 31 of each year, the Lessee must submit to DOI an annual report that describes its marine trash and debris awareness training process and certifies that the training process has been followed for the previous calendar year. The Lessee must send the reports via email to BOEM (at renewable_reporting@boem.gov) and BSEE (at marinedebris@bsee.gov).

1.1.2.3. Marking. Materials, equipment, tools, containers, and other items used in Outer Continental Shelf (OCS) activities, which are of such shape or configuration that they are likely to snag or damage fishing devices and could be lost or discarded overboard, must be clearly marked with the vessel or facility identification number, and properly secured to prevent loss overboard. All markings must clearly identify the owner and must be durable enough to resist the effects of the environmental conditions to which they may be exposed.

1.1.2.4. Recovery & Prevention. The Lessee must recover marine trash and debris that is lost or discarded in the marine environment while performing OCS activities when such incident is likely to: (a) cause undue harm or damage to natural resources, including their physical, atmospheric, and biological components, with particular attention to marine trash or debris that could entangle or be ingested by marine protected species; or (b) significantly interfere with OCS uses (e.g., because the marine trash or debris is likely to snag or damage fishing equipment, or presents a hazard to navigation). The Lessee must notify DOI within 48 hours via email to BOEM (at renewable_reporting@boem.gov) and BSEE (at marinedebris@bsee.gov) when recovery activities are: (i) not possible because conditions are unsafe; or (ii) not practicable and warranted because the marine trash and debris released is not likely to result in any of the conditions listed in (a) or (b) above. Notwithstanding this notification, DOI may still order the Lessee to recover the lost or discarded marine trash and debris if DOI finds the reasons provided by the Lessee in the notification unpersuasive. If the marine trash and debris is located within the boundaries of a potential archaeological resource/avoidance area, or a sensitive ecological/benthic resource area, the Lessee must contact DOI for concurrence before conducting any recovery efforts.

1.1.2.4.1. Recovery of the marine trash and debris should be completed as soon as practicable, but no later than 30 calendar days from the date on which the incident occurred. If the Lessee is not able to recover the marine trash or debris within 48 hours, the Lessee must submit a plan to DOI explaining the activities planned to recover the marine trash or debris (Recovery Plan). The Lessee must submit the Recovery Plan no later than 10 calendar days from the

date on which the incident occurred. Unless DOI objects within 48 hours of the filing of the Recovery Plan, the Lessee can proceed with the activities described in the Recovery Plan. The Lessee must request and obtain a time extension if recovery activities cannot be completed within 30 calendar days from the date on which the incident occurred. The Lessee must enact steps to prevent similar incidents and must submit a description of these actions to BOEM and BSEE within 30 calendar days from the date on which the incident occurred.

1.1.2.5. Reporting. The Lessee must report to DOI (using the email address listed on DOI's most recent incident reporting guidance) all lost or discarded marine trash and debris. This report must be made monthly and submitted no later than the fifth day of the following month. The Lessee is not required to submit a report for those months in which no marine trash and debris was lost or discarded. The report must include the following:

1.1.2.5.1. Project identification and contact information for the Lessee and for any operators or contractors involved;

1.1.2.5.2. The date and time of the incident;

1.1.2.5.3. The lease number, OCS area and block, and coordinates of the object's location (latitude and longitude in decimal degrees);

1.1.2.5.4. A detailed description of the dropped object, including dimensions (approximate length, width, height, and weight) and composition (e.g., plastic, aluminum, steel, wood, paper, hazardous substances, or defined pollutants);

1.1.2.5.5. Pictures, data imagery, data streams, and/or a schematic/illustration of the object, if available;

1.1.2.5.6. An indication of whether the lost or discarded item could be detected as a magnetic anomaly of greater than 50 nanoTesla, a seafloor target of greater than 1.6 feet (0.5 meters), or a sub-bottom anomaly of greater than 1.6 feet (0.5 meters) when operating a magnetometer or gradiometer, side scan sonar, or sub-bottom profile in accordance with DOI's most recent, applicable guidance;

1.1.2.5.7. An explanation of how the object was lost; and

1.1.2.5.8. A description of immediate recovery efforts and results, including photos.

1.1.2.6. In addition to the foregoing, the Lessee must submit a report within 48 hours of the incident (48-hour Report) if the marine trash or debris could: (a) cause undue harm or damage to natural resources, including their physical, atmospheric, and biological components, with particular attention to marine trash or debris that could entangle or be ingested by marine protected species; or (b) significantly interfere with OCS uses (e.g., because the marine trash or debris is likely to snag or damage fishing equipment or presents a hazard to navigation). The information in the 48-hour Report must be the same as that listed for the monthly report, but only for the incident that triggered the 48-hour Report. The Lessee must report to DOI via email to BOEM (at renewable_reporting@boem.gov) and BSEE (at marinedebris@bsee.gov) if the object is recovered and, as applicable, describe any substantial variance from the activities described in the Recovery Plan that were required during the recovery efforts. The Lessee must include and address information on unrecovered marine trash and debris in the description of the site clearance activities provided in the decommissioning application required under 30 C.F.R. § 585.906.

1.1.3. Option to Comply with Most Current Non-Required Measures (Planning) (Construction) (Operations) (Decommissioning). The Lessee may opt to comply with the most current non-required measures (e.g., measures in a programmatic consultation that are not binding on the Lessee) related to protected species and habitat in place at the time an activity is undertaken under the Lease. At least 30 calendar days prior to undertaking an activity, the Lessee must notify DOI of its intention to comply with such measures in lieu of those required under the terms and conditions above. DOI reserves the right to object or request additional information on how the Lessee intends to comply with such measures. If DOI does not respond with objections within 15 calendar days of receipt of the Lessee's notification, then the Lessee may conclusively presume DOI's concurrence.

1.2. Avian and Bat Protection Conditions.

1.2.1. Bird Deterrent Devices (Construction) (Operations). To minimize attracting birds to operating turbines, the Lessee must install bird-deterrent devices on turbines and the OSS. The location of bird-deterrent devices must be proposed by the Lessee based on best management practices applicable to the appropriate operation and safe installation of the devices. The Lessee must confirm the locations of bird-deterrent devices as part of the as- built documentation it must submit with the Facility Design Report.

1.2.2. Avian and Bat Monitoring Program (Construction) (Operations). At least 45 calendar days before beginning surveys, the Lessee must complete, obtain concurrence from DOI, and adopt an Avian and Bat Monitoring Plan as described in Appendix F of the FEIS (Avian and Bat Post-Construction

Monitoring Framework), including coordination with interested stakeholders. DOI will review the Avian and Bat Monitoring Plan and provide any comments on the plan within 30 calendar days of its submittal. The Lessee must resolve all comments on the Avian and Bat Monitoring Plan to DOI's satisfaction before implementing the plan. The Lessee may conclusively presume DOI's concurrence with the Avian and Bat Monitoring Plan if DOI provides no comments on the plan within 30 calendar days of its submittal date.

1.2.2.1. Monitoring. The Lessee must install acoustic monitoring devices for birds and bats on the OSS; install Motus receivers at up to four locations within the wind farm; refurbish up to two onshore Motus receiver stations near the South Fork Wind Farm (SFWF) (e.g., Block Island, Buzzards Bay); provide funding for up to 50 Motus tags per year provided to researchers working with Roseate Terns for up to three consecutive years; and conduct avian behavior point count surveys at individual WTGs.

1.2.2.2. Annual Monitoring Reports. The Lessee must submit to BOEM (at renewable_reporting@boem.gov) and BSEE (at protectedspecies@bsee.gov) a comprehensive report after each full year of monitoring (pre- and post-construction) within 6 months of completion of the last avian survey. The report must include all data, analyses, and summaries regarding ESA-listed and non-ESA-listed birds and bats. DOI will use the annual monitoring reports to assess the need for reasonable revisions (based on subject matter expert analysis) to the Avian and Bat Monitoring Plan. DOI reserves the right to require reasonable revisions to the Avian and Bat Monitoring Plan and may require new technologies as they become available for use in offshore environments.

1.2.2.3. Post-Construction Quarterly Progress Reports. The Lessee must submit quarterly progress reports during the implementation of the Avian and Bat Monitoring Plan to BOEM (at renewable_reporting@boem.gov) and the United States Fish and Wildlife Service (USFWS) by the 15th day of the month following the end of each quarter during the first full year that the Project is operational. The progress reports must include a summary of all work performed, an explanation of overall progress, and any technical problems encountered.

1.2.2.4. Monitoring Plan Revisions. Within 15 calendar days of submitting the annual monitoring report, the Lessee must meet with BOEM and USFWS to discuss the following: the monitoring results; the potential need for revisions to the Avian and Bat Monitoring Plan, including technical refinements or additional monitoring; and the potential need for any additional efforts to reduce impacts. If DOI determines after this discussion that revisions to the Avian and Bat Monitoring Plan are necessary, DOI may require the Lessee to modify the Avian and Bat

Monitoring Plan. If the reported monitoring results deviate substantially from the impact analysis included in the FEIS (BOEM 2021), the Lessee must transmit to DOI recommendations for new mitigation measures or monitoring methods.

1.2.2.5. Raw Data. The Lessee must store the raw data from all avian and bat surveys and monitoring activities according to accepted archiving practices. Such data must remain accessible to DOI and USFWS, upon request for the duration of the Lease. The Lessee must work with BOEM to ensure the data are publicly available.

1.2.3. Annual Bird Mortality Reporting (Construction) (Operations) (Decommissioning). The Lessee must submit an annual report covering each calendar year, due by January 31 of the following year, documenting any dead (or injured) birds or bats found on vessels and structures during construction, operations, and decommissioning. The report must be submitted to BOEM (at renewable_reporting@boem.gov) and BSEE (at protectedspecies@bsee.gov), and USFWS. The report must contain the following information: the name of species, date found, location, a picture to confirm species identity (if possible), and any other relevant information. Carcasses with Federal or research bands must be reported to the United States Geological Survey Bird Band Laboratory, at https://www.pwrc.usgs.gov/bbl/.

1.3. Benthic Habitat and Ecosystem Monitoring Conditions.

1.3.1. Benthic Survey Plan Revisions (Planning). The Lessee must review all National Oceanic and Atmospheric Administration (NOAA) comments on the Benthic Survey Plan (Section 7.0 of the Fisheries Research Monitoring Plan) provided to the Lessee by DOI and revise the Benthic Survey Plan as appropriate. The Lessee must provide to DOI the revised Benthic Survey Plan and written responses for all NOAA comments not addressed in the Benthic Survey Plan. DOI will review the revised Benthic Survey Plan and written responses from the Lessee for all NOAA comments not addressed in the Benthic Survey Plan, and provide comments, if any, to the Lessee within 45 days of their submittal to DOI. The Lessee must resolve all comments on revisions to the Benthic Survey Plan to DOI's satisfaction prior to implementation of the revised Benthic Survey Plan.

1.3.2. Fisheries Surveys (Planning) (Construction) (Operations). The Lessee must conduct fisheries research and monitoring surveys, including the benthic survey, according to the South Fork Wind (SFW) Fisheries Research and Monitoring Plan (FRMP). The Lessee must conduct these surveys for durations of, at a minimum, 1 year during pre-construction, 1 year during construction, and 2 years post-construction. The Lessee must submit an annual report within 90 days of the completion of each survey season to DOI (renewable_reporting@boem.gov) that includes results and analyses as described in the FRMP. The Lessee must share data in accordance with their data sharing plan.

1.3.3. Passive Acoustic Monitoring (Planning) (Construction) (Operations). The Lessee must deploy moored or autonomous Passive Acoustic Monitoring (PAM) devices to record ambient noise, marine mammals, and cod vocalizations in the SFWF during all construction activities, and for at least 3 calendar years of operation following construction. The archival recorders must have a minimum capability of detecting and storing acoustic data on anthropogenic noise sources (such as vessel noise, pile driving, and WTG operation), marine mammals, and cod vocalizations in the SFWF. The Lessee must submit both raw and processed data with detection results to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov) and NMFS (at nmfs.pacmdata@noaa.gov) within 120 calendar days following recorder collection and annually within 120 calendar days of the anniversary of the initial recorder deployments. The Lessee must consider currently available recommendations for designing underwater acoustic monitoring including standardized measurement, processing methods, reporting metrics, and metadata standards for offshore wind.[6] The PAM Plan must include proposed equipment, deployment locations, detection review methodology and other procedures, and protocols related to the required use of PAM for monitoring. The Lessee must deploy at least two PAM buoys in coordination with the Regional Wildlife Science Entity[7] acoustic monitoring efforts within the lease and/or Rhode Island and Massachusetts wind energy area areas (https://tinyurl.com/29fdfe2e). No later than 90 calendar days before the first buoy deployment, the Lessee must submit its PAM Plan to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov), and NMFS (at nmfs.gar.incidental-take@noaa.gov). DOI will review the PAM Plan and provide comments, if any, on the plan within 45 calendar days, but no later than 90 days of its submittal. The Lessee must resolve all comments on the PAM Plan to DOI's satisfaction before implementation of the plan. If DOI does not provide comments on the PAM plan within 90 calendar days of its submittal, the Lessee may conclusively presume DOI's concurrence with the PAM Plan.

1.3.4. Periodic Underwater Surveys, Reporting of Monofilament and Other Fishing Gear Around WTG Foundations (Operations) (Decommissioning). The Lessee must monitor indirect impacts associated with charter and recreational fishing gear lost from expected increases in fishing around WTG foundations by surveying at least 3 different WTGs in the SFWF annually. Survey design and effort may be modified based upon previous survey results with review and concurrence by DOI. The Lessee must conduct surveys by remotely operated vehicles, divers, or other means to determine the frequency and locations of marine debris. The Lessee must report the results of the surveys to BOEM (at renewable_reporting@boem.gov) and BSEE (at marinedebris@bsee.gov) in an annual report, submitted by April 30 for the preceding calendar year. Annual

[6] Van Parijs, SM, Baker K, Carduner J, Daly J, Davis GE, Esch C, Guan S, Scholik-Schlomer A, Sisson NB, Staaterman E. 2021. NOAA and BOEM Minimum Recommendations for Use of Passive Acoustic Listening Systems in Offshore Wind Energy Development Monitoring and Mitigation Programs. Frontiers in Marine Science. 8(1575).

[7] https://neoceanplanning.org/rwse/

reports must be submitted in Word format. Photographic and videographic materials must be provided on a portable drive in a lossless format such as TIFF or Motion JPEG 2000. Annual reports must include survey reports that include the survey date; contact information of the operator; the location and pile identification number; photographic or video documentation of the survey and debris encountered; any animals sighted; and the disposition of any located debris (i.e., removed or left in place). Required data and reports may be archived, analyzed, published, and disseminated by BOEM.

1.4. Pre-Seabed Disturbance Conditions.

1.4.1. Anchoring Plan (Planning) (Construction). At least 90 calendar days before conducting OCS seabed-disturbing activities that require anchoring, the Lessee must submit to DOI for review and comment an Anchoring Plan for all areas where anchoring occurs within 1,640 feet (500 meters) of habitats, resources, and submerged infrastructure that are sensitive, which include hard bottom and structurally complex habitats as shown in Figures 3.2.4-1 and 3.4.2-2 of the FEIS (BOEM 2021). The Lessee must include in the Anchoring Plan the planned location of anchoring activities, sensitive habitats and their locations, seabed features, potential hazards, and any related facility installation activities (such as cable, WTG, and OSS installation). The Lessee will provide to all construction and support vessels the habitat delineations identifying areas of structurally complex habitat as shown in Figures 3.2.4-1 and 3.4.2-2 of the FEIS (BOEM 2021), with the addition of a GIS layer showing boulder locations, where anchoring should be avoided to the extent technically and economically feasible. All vessels deploying anchors must use mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seafloor, unless the Lessee demonstrates, and DOI accepts, that (i) the use of mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seafloor is not technically and economically feasible; or (ii) a different alternative is as safe and provides the same or greater environmental protection. The Lessee must provide the Anchoring Plan to DOI and NOAA (at renewable_reporting@boem.gov) for a 45-day review and comment period 90 days before construction begins. The Lessee must resolve all comments on the Anchoring Plan to DOI's satisfaction before conducting OCS seabed-disturbing activities that require anchoring. If DOI does not provide comments on the Anchoring Plan within 45 calendar days of its submittal, then the Lessee may conclusively presume DOI's concurrence with the Anchoring Plan.

1.4.2. Micrositing Plan (Construction). The Lessee must submit a Micrositing Plan describing how structure (WTGs and OSS) locations and cable routes will be microsited into areas of low-return multibeam backscatter areas, as technically and economically feasible, to reduce impacts to complex habitat. The Lessee must not microsite structure locations in a way that narrows any northwest-southeast or northeast-southwest transit corridors to less than 0.6 nautical miles. The Lessee must identify all potential and previously identified unexploded ordinance (UXO) and/or discarded military munitions (DMM) in the Micrositing

Plan and any practicable mitigation measures for UXO/DMMs. The Lessee must clearly depict all boulder relocation activities associated with the installation of project structures (WTGs and OSS) and inter-array cables in the Micrositing Plan (see 1.4.3). The Lessee must provide the Micrositing Plan to DOI and NOAA (at renewable_reporting@boem.gov) and BSEE (at benthic.ecology@bsee.gov), for a 45-day review and comment period at least 90 days before submission of the relevant FIR section. The Lessee must resolve all comments on the Micrositing Plan to DOI's satisfaction before submission of the relevant FIR section. If DOI does not provide comments on the Micrositing Plan within 45 calendar days of its submittal, then the Lessee may conclusively presume DOI's concurrence with the Micrositing Plan.

1.4.3. Boulder Relocation (Construction). As a component of the associated Micrositing Plan (see 1.4.2), the Lessee must consider the spatial extent of boulder relocation in the micrositing of structures (WTGs and OSS) and inter-array cables, and must, to the extent technically and economically feasible for this Project, relocate boulders into low-return multibeam backscatter areas. The Lessee must clearly depict all boulder relocation activities associated with the installation of Project turbines and inter-array cables in the Micrositing Plan. If the Lessee is unable to relocate boulders in the micrositing of structures (WTGs and OSS) and inter-array cables into low-return multibeam backscatter areas, then the Lessee must submit an analysis of the technical and economic feasibility of boulder relocation for this Project to DOI and NOAA (at renewable_reporting@boem.gov) and BSEE (at benthic.ecology@bsee.gov) for a 45-day review and comment period at least 90 days before submission of the relevant FIR section. The Lessee must resolve all comments on the analysis to DOI's satisfaction before submission of the relevant FIR section. If DOI does not provide comments on the analysis of the technical and economic feasibility of boulder relocation within 45 calendar days of its submittal, then the Lessee may conclusively presume DOI's concurrence with the analysis.

1.4.4. Scour and Cable Protection (Construction) (Operations) (Decommissioning). The Lessee must use cable protection measures in structurally complex habitat, as shown in Figures 3.4.2-1 and 3.4.2-2 of the FEIS (BOEM 2021). To the extent technically and economically feasible, the Lessee must ensure that all materials used for these measures consist of natural or engineered stone that does not inhibit epibenthic growth and provides three-dimensional complexity in height and in interstitial spaces. The Lessee must prepare a Scour and Cable Protection Plan (SCPP) that includes descriptions and specifications for all cable protection materials used in structurally complex habitat, as shown in Figures 3.4.2-1 and 3.4.2-2 of the FEIS (BOEM 2021). The Lessee must include in the SCPP a plan for a pre-construction benthic survey to further characterize complex habitat at each of the two WTGs that were not microsited entirely into non-complex habitat, and a proposal for the use of nature-inclusive design materials or materials appropriate for Atlantic cod habitat at each of the relevant WTGs to mitigate for impacts to complex habitat permanently disturbed at those sites. The Lessee must submit the SCPP to DOI and NOAA (at renewable_reporting@boem.gov) for a

45-day review and comment period at least 90 days before placement of cable protection. The Lessee must resolve all comments on the SCPP to DOI's satisfaction before placement of cable protection measures. If DOI does not provide comments on the SCPP within 45 calendar days of its submittal, then the Lessee may conclusively presume DOI's concurrence with the SCPP.

1.4.5. Atlantic Cod Spawning Avoidance (Construction). At least 90 days prior to inter-array cable installation (e.g., boulder relocation, pre-cut trenching, cable-crossing installation, cable lay and burial) and foundation site preparation (e.g., scour protection installation) the Lessee must provide DOI a plan to monitor for Atlantic cod aggregations that are indicative of spawning behavior during the above-listed activities between November 1 and March 30 of each year (Plan). The objective of the Plan is to detect Atlantic cod aggregations and avoid and minimize the above-listed activities in any area with aggregations of Atlantic cod indicative of spawning behavior, as technically and economically feasible. The Lessee must include in the Plan details on detection thresholds (e.g., density and location) of spawning Atlantic cod aggregations that would trigger the adaptive management of activities described in this paragraph, including any restrictions on activities in any area with aggregations of Atlantic cod indicative of spawning behavior, and any analysis of technical and/or economic infeasibility. The Lessee must submit the Plan to DOI and NOAA (at renewable_reporting@boem.gov) for a 45-day review and comment period 90 days before inter-array cable installation and foundation site preparation activities defined in the Plan are proposed to begin. The Lessee must resolve all comments on the Plan to DOI's satisfaction prior to implementation of the plan. If DOI does not provide comments on the Plan within 45 calendar days of its submittal, then the Lessee may conclusively presume DOI's concurrence with the Plan.

1.5. Fishery Monitoring Conditions for Endangered and Threatened Species (Planning) (Construction) (Operations)

1.5.1. The Lessee must ensure that all trap/pot/gillnet gear follow required best practices:

- All sampling gear will be hauled at least once every 30 days, and all gear will be removed from the water and stored on land between sampling season;
- No surface floating buoy lines will be used;
- All groundlines will be composed of sinking line;
- Buoy lines will use weak links (< 1,700-pound breaking strength);
- Gillnet strings will be anchored with a Danforth-style anchor with a minimum holding strength of 22 pounds; and
- Knot-free buoy lines will be used to the extent practicable.

1.5.2. The Lessee must ensure that all trap/pot and gillnet gear used in fishery surveys is uniquely marked to distinguish it from other commercial or recreational gear. Marked gear must use yellow and black striped duct tape, placed along a 3-foot-long mark within 12 feet (3.66 meters) of a buoy. In addition, using black and white paint or duct tape, Lessee must place 3 additional marks on the top, middle, and bottom of the line. Any changes in marking must not be made without notification and concurrence from BOEM. BOEM will consult with the National Marine Fisheries Service (NMFS) Greater Atlantic Regional Fisheries Office, Protected Resources Division concerning any requested changes as may be necessary.

1.5.3. The Lessee must ensure all gillnet sampling times are limited to no more than 24 hours to reduce mortality of entangled sea turtles and sturgeon. If weather or other safety concerns prevent retrieval of the gear within 24 hours of it being set, NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division must be notified (nmfs.gar.incidental-take@noaa.gov) and the gear must be retrieved as soon as it is safe to do so.

1.5.4. The Lessee must ensure that any survey gear lost is reported and recovered according to the Marine Debris Elimination and Reporting conditions in 1.1.3. All lost gear must also be reported to NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (nmfs.gar.incidental-take@noaa.gov) within 24 hours of the documented time when gear is discovered to be missing or lost. This report must include information on any markings on the gear and any efforts undertaken or planned to recover the gear.

1.5.5. The Lessee must ensure all vessels have at least one survey team member onboard the trawl surveys and ventless trap surveys who has completed Northeast Fisheries Observer Program observer training (or another training in protected species identification and safe handling, inclusive of taking genetic samples from Atlantic sturgeon) within the last 5 years. Reference materials for identification, disentanglement, safe handling, and genetic sampling procedures must be available on board each survey vessel. This requirement is in place for any trips where gear is set or hauled. Documentation of training must be provided to BOEM and BSEE within 48 hours upon request.

1.5.6. The Lessee must ensure all vessels deploying fixed gear (e.g., gillnets, pots/traps) must have adequate disentanglement equipment (i.e., knife and boathook) onboard. Any disentanglement must occur consistent with the Northeast Atlantic Coast Sea Turtle Disentanglement Network Guidelines[8] and the procedures described in "Careful Release Protocols for Sea Turtle Release with Minimal Injury"[9].

[8] Greater Atlantic Region Sea Turtle Disentanglement Network (STDN) Sea Turtle Disentanglement Guidelines, July 1, 2020, available at: https://www.reginfo.gov/public/do/DownloadDocument?objectID=102486501

[9] Southeast Fisheries Science Center. 2008. Careful Release Protocols for Sea Turtle Release with Minimal Injury. NOAA technical memorandum NMFS-SEFC; 580. Available at: https://repository.library.noaa.gov/view/noaa/3773

1.5.7. The Lessee must ensure any sea turtles or Atlantic sturgeon caught and/or retrieved in any fisheries survey gear are identified to species or species group and reported to DOI via email to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov), and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov). Each ESA-listed species caught and/or retrieved must then be properly documented using appropriate equipment and the NMFS data collection form.[10] Biological data, samples, and tagging must occur as outlined below. Specifically:

1.5.7.1. The Lessee must follow the Sturgeon and Sea Turtle Take Standard Operating Procedures[11] .

1.5.7.2. The Lessee must equip survey vessels with a passive integrated transponder (PIT) tag reader onboard capable of reading 134.2 kHz and 125 kHz encrypted tags (e.g., Biomark GPR Plus Handheld PIT Tag Reader) and this reader be used to scan any captured sea turtles and sturgeon for tags. Any recorded tags must be recorded on the take reporting form[10] and reported to DOI via email to BOEM (at renewable_reporting@boem.gov), BSEE, (at protectedspecies@bsee.gov) and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (nmfs.gar.incidental-take@noaa.gov).

1.5.7.3. The Lessee must take genetic samples from all captured Atlantic sturgeon (alive or dead) to allow for identification of the distinct population segment (DPS) of origin of captured individuals and the tracking of the amount of incidental take. This sample collection must be done in accordance with the Procedures for Obtaining Sturgeon Fin Clips (https://media.fisheries.noaa.gov/dam-migration/sturgeon_genetics_sampling_revised_june_2019.pdf).

1.5.7.3.1. Fin clips must be sent to a BOEM approved laboratory capable of performing genetic analysis and assignment to DPS of origin. Results of genetic analysis, including assigned DPS of origin, must be submitted to DOI via email to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov) and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov) within 6 months of the sample collection.

[10] Take Report Form for ESA-Listed Species, July 2021. Available at: https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null

[11] Sturgeon and Sea Turtle Take Standard Operating Procedures, November 3, 2021. Available at: https://media.fisheries.noaa.gov/dam-migration/sturgeon_&_sea_turtle_take_sops_external.pdf

1.5.7.3.2. Subsamples of all fin clips and accompanying metadata form must be held and submitted to the Atlantic Coast Sturgeon Tissue Research Repository on a quarterly basis. The Sturgeon Genetic Sample Submission Form is available at https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic.

1.5.8. The Lessee must ensure all captured sea turtles and Atlantic sturgeon are documented with required measurements, photographs, body condition, and descriptions of any marks or injuries. This information must be entered as part of the record for each capture. A NMFS Take Report Form must be filled out for each individual sturgeon and sea turtle (download at https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null) and submitted to DOI via email to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov) and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (nmfs.gar.incidental-take@noaa.gov).

1.5.9. The Lessee must ensure any live, uninjured animals are returned to the water as quickly as possible after completing the required handling and documentation. Live and responsive sea turtles or Atlantic sturgeon caught and retrieved in gear used in any fisheries survey should be released according to established protocols and whenever at-sea conditions are safe for those releasing the animal(s). Any unresponsive sea turtles or Atlantic sturgeon caught and retrieved in gear used in fisheries surveys must be handled and resuscitated whenever at-sea conditions are safe for those handling and resuscitating the animal(s). Specifically:

1.5.9.1. To the extent allowed by sea conditions, the Lessee must give priority to the handling and resuscitation of any sea turtles or sturgeon that are captured in the gear being used. Handling times for these species should be minimized (i.e., kept to 15 minutes or less) to limit the amount of stress placed on the animals.

1.5.9.2. All survey vessels must have copies of the sea turtle handling and resuscitation requirements found at 50 CFR 223.206(d)(1) prior to the commencement of any on-water activity (download at https://media.fisheries.noaa.gov/dam-migration/sea_turtle_handling_and_resuscitation_measures.pdf). These handling and resuscitation procedures must be executed any time a sea turtle is incidentally captured and brought onboard a survey vessel.

1.5.9.3. For sea turtles that appear injured, sick, distressed, or dead (including stranded or entangled individuals), survey staff must immediately contact the Greater Atlantic Region Marine Animal Hotline at 866-755-6622 for further instructions and guidance on handling, retention, and/or disposal of the animal. If unable to contact the hotline (e.g., due to distance from shore or lack of ability to communicate via phone), the

U.S. Coast Guard (USCG) should be contacted via very high frequency (VHF) marine radio on Channel 16. If required, hard-shelled sea turtles (i.e., non-leatherbacks) may be held on board for up to 24 hours, provided that conditions during holding are authorized by the NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division and safe handling practices are followed. If the hotline or an available veterinarian cannot be contacted and the injured animal cannot be taken to a rehabilitation center, activities that could further stress the animal must be stopped. When sea-to-shore contact with the hotline or an available veterinarian is not possible, the animal must be allowed to recover and be responsive before safely releasing it to the sea.

1.5.9.4. Attempts must be made to resuscitate any Atlantic sturgeon that are unresponsive or comatose by providing a running source of water over the gills as described in the Sturgeon Resuscitation Guidelines (https://media.fisheries.noaa.gov/dam-migration-miss/Resuscitation-Cards-120513.pdf).

1.5.9.5. NMFS may authorize that dead sea turtles or Atlantic sturgeon be retained on board the survey vessel, provided that appropriate cold storage facilities are available on the survey vessel. Sea turtle and sturgeon carcasses should be held in cold storage (frozen is preferred, although refrigerated is permitted if a freezer is not available) until retention or disposal procedures are authorized by the NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division for transfer to an appropriately permitted partner or facility on shore.

1.5.10. The Lessee must notify DOI via email to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov) and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov) within 24 hours of any interaction with a sea turtle or sturgeon and include the NMFS take reporting form (https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null). The report must include at a minimum, the following: (1) survey name and applicable information (e.g., vessel name, station number); (2) Global Positioning System (GPS) coordinates describing the location of the interaction (in decimal degrees); (3) gear type involved (e.g., bottom trawl, gillnet, longline); (4) soak time, gear configuration and any other pertinent gear information; (5) time and date of the interaction; (6) identification of the animal to the species level (if possible), and a photograph or video of the animal (multiple photographs are suggested, including at least one photograph of the head scutes). If reporting within 24 hours is not possible (e.g., due to distance from shore or lack of ability to communicate via phone, fax, or email), reports must be submitted as soon as possible; late reports must be submitted with an explanation for the delay.

1.5.11. The Lessee must submit an annual report within 90 days of the completion of each survey season to BOEM (at renewable_reporting@boem.gov) and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov) that includes all information on any observations of and interactions with ESA-listed species. This report must also contain information on all survey activities that took place during the season, including location of gear set, duration of soak/trawl, and total effort. The report on survey activities must be comprehensive of all activities, regardless of whether ESA-listed species were observed.

1.6. Protected Species Detection and Vessel Strike Avoidance Conditions (All vessels except survey vessels: see Section 1.7.20).

1.6.1. Vessel Crew and Visual Observer Training Requirements (Construction) (Operations) (Decommissioning). The Lessee must provide Project-specific training to all vessel crew members, Visual Observers, and Trained Lookouts on the identification of sea turtles and marine mammals, vessel strike avoidance and reporting protocols, and the associated regulations for avoiding vessel collisions with protected species. Reference materials for identifying sea turtles and marine mammals must be available aboard all Project vessels. Confirmation of the training and understanding of the requirements must be documented on a training course log sheet, and the Lessee must provide the log sheets to DOI upon request. The Lessee must communicate to all crew members its expectation for them to report sightings of sea turtles and marine mammals to the designated vessel contacts. The Lessee must communicate the process for reporting sea turtles and marine mammals (including live, entangled, and dead individuals) to the designated vessel contact and all crew members. The Lessee must post the reporting instructions including communication channels in highly visible locations aboard all Project vessels.

1.6.2. Vessel Observer Requirements (Construction)(Operations)(Decommissioning). The Lessee must ensure that vessel operators and crew members maintain a vigilant watch for marine mammals and sea turtles, and reduce vessel speed, alter the vessel's course, or stop the vessel as necessary to avoid striking marine mammals or sea turtles. All vessels transiting to and from the SFWF must have a trained lookout for NARWs on duty at all times, during which the trained lookout must monitor a vessel strike avoidance zone around the vessel. The trained lookout must maintain a vigilant watch at all times a vessel is underway, and when technically feasible, be capable of monitoring the 500-meter Vessel Strike Avoidance Zone for ESA-listed species and to maintain minimum separation distances. Alternative monitoring technology (e.g., night vision, thermal cameras, etc.) must be available to maintain a vigilant watch at night and in any other low visibility conditions. If a vessel is carrying a trained lookout for the purposes of maintaining watch for NARWs, a trained lookout for sea turtles is not required, provided that the trained lookout maintains watch for marine mammals and sea turtles. If the trained lookout is a vessel crew member, the lookout obligations as noted above must be that person's designated role and primary responsibility

while the vessel is transiting. Vessel personnel must be provided an Atlantic reference guide to help identify marine mammals and sea turtles that may be encountered. Vessel personnel must also be provided material regarding NARW Seasonal Management Areas (SMAs), Dynamic Management Areas (DMAs), and Slow Zones[12], sightings information, and reporting. All observations must be recorded per reporting requirements. Outside of active watch duty, members of the monitoring team must check NMFS' NARW sightings for the presence of NARWs in the SFWF. The trained lookout must check https://seaturtlesightings.org before each trip and report any detections of sea turtles in the vicinity of the planned transit to all vessel operators or captains and lookouts on duty that day.

1.6.2.1. For all vessels operating north of the Virginia/North Carolina border, between June 1 and November 30, the Lessee must have a trained lookout posted on all vessel transits during all phases of the Project to observe for sea turtles.

1.6.2.2. For all vessels operating south of the Virginia/North Carolina border, year-round, the Lessee must have a trained lookout posted on all vessel transits during all phases of the Project to observe for sea turtles. The trained lookout will communicate any sightings in real time to the captain to implement required avoidance measures.

1.6.3. Vessel Communication of Threatened and Endangered Species Sightings (Planning) (Construction) (Operations) (Decommissioning). The Lessee must ensure that whenever multiple Project vessels are operating, any visual detections of ESA-listed species (marine mammals and sea turtles) are communicated in near real time to a third-party Protected Species Observer (PSO), vessel captains, or both associated with other Project vessels.

1.6.4. Vessel Speed Requirements (Construction) (Operations) (Decommissioning). During construction, vessels of all sizes will operate port to port at 10 knots or less between November 1 and April 30 and while operating in the lease area, along the export cable route, or transit area to and from ports in New York, Connecticut, Rhode Island, and Massachusetts. Regardless of vessel size, vessel operators must reduce vessel speed to 10 knots (11.5 mph) or less while operating in any Seasonal Management Area (SMA),[13] or DMA/visually detected Slow Zones. This requirement does not apply when necessary for the safety of the vessel or crew. Any such events must be reported (see reporting requirements). Otherwise, these speed limits do not apply in areas of Narragansett Bay or Long Island Sound where the presence of NARWs is not expected.

[12] The term "Slow Zone" is an umbrella term. Slow Zones are determined by either visual detection of a NARW (resulting in a DMA) or acoustic detection of a NARW (resulting in a slow zone. The condition only applies to visually triggered Slow Zones.
[13] 73 FR 60173; October 10, 2008; (see https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales).

1.6.4.1. All vessel operators must check for information regarding mandatory or voluntary ship strike avoidance and daily information regarding NARW sighting locations. These media may include, but are not limited to: NOAA weather radio, U.S. Coast Guard NAVTEX and Channel 16 broadcasts, Notices to Mariners, the Whale Alert app, or WhaleMap website. NARW Sighting Advisory System info can be accessed at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html. Info rmation about active SMAs and Slow Zones can be accessed at: https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales.

1.6.4.2. The Lessee may only request a waiver from any visually triggered Slow Zone/DMA vessel speed reduction requirements during operations and maintenance, by submitting a vessel strike risk reduction plan that details revised measures and an analysis demonstrating that the measure(s) will provide a level of risk reduction at least equivalent to the vessel speed reduction measure(s) proposed for replacement. The plan included with the request must be provided to NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division and BOEM at least 90 days prior to the date scheduled for the activities for which the waiver is requested. The plan must not be implemented unless NMFS and BOEM reach consensus on the appropriateness of the plan.

1.6.4.3. BOEM encourages increased vigilance through voluntary implementation of best management practices to minimize vessel interactions with NARWs, and by voluntarily reducing speeds to 10 knots or less when operating within an acoustically triggered slow zone, and when feasible, avoid Slow Zones.

1.6.4.4. Vessel captain and crew must maintain a vigilant watch for all protected species and slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any listed species. The presence of a single individual at the surface may indicate the presence of submerged animals in the vicinity; therefore, precautionary measures should always be exercised upon the sighting of a single individual. If pinnipeds or small delphinids of the genera *Delphinus*, *Lagenorhynchus*, *Stenella*, or *Tursiops* are visually detected approaching the vessel (i.e., to bow ride) or towed equipment, vessel speed reduction, course alteration, and shutdown are not required.

1.6.4.5. Vessels underway must not divert their course to approach any protected species.

1.6.4.6. If an ESA-listed whale or large unidentified whale is identified within 500 m of the forward path of any vessel (90 degrees port to 90 degrees

starboard), the vessel operator must immediately implement strike avoidance measures and steer a course away from the whale at 10 knots (18.5 km/hr.) or less until the vessel reaches a 500 m separation distance from the whale. Trained lookouts, visual observers, vessel crew, or PSOs must notify the vessel captain of any whale observed or detected within 1,640 feet (500 meters) of the survey vessel. Upon notification, the vessel captain must immediately implement vessel strike avoidance procedures to maintain a separation distance of 1,640 feet (500 meters) or reduce vessel speed to allow the animal to travel away from the vessel. If a whale is observed but cannot be confirmed as a species other than a NARW, the vessel operator must assume that it is a NARW and execute the required vessel strike avoidance measures to avoid the animal.

1.6.4.7. If an ESA-listed large whale is sighted within 200 m of the forward path of a vessel, the vessel operator must initiate a full stop by reducing speed and shift the engine to neutral. Engines must not be engaged until the whale has moved outside of the vessel's path and beyond 500 m. If stationary, the vessel must not engage engines until the ESA-listed large whale has moved beyond 500 m.

1.6.5. Vessel Strike Avoidance of Small Cetaceans and Seals (Construction) (Operations) (Decommissioning). For small cetaceans and seals, all vessels must maintain a minimum separation distance of 164 feet (50 meters) to the maximum extent practicable, except when those animals voluntarily approach the vessel. When marine mammals are sighted while a vessel is underway, the vessel operator must endeavor to avoid violating the 164-foot (50-meter) separation distance by attempting to remain parallel to the animal's course and avoiding excessive speed or abrupt changes in vessel direction until the animal has left the area, except when taking such measures would threaten the safety of the vessel or crew. If marine mammals are sighted within the 164-foot separation distance, the vessel operator must reduce vessel speed and shift the engine to neutral, not engaging the engines until animals are beyond 164 feet (50 meters) from the vessel.

1.6.6. Vessel Strike Avoidance of Sea Turtles (Construction) (Operations) (Decommissioning). The Lessee must slow down to 4 knots if a sea turtle is sighted within 100 m of the operating vessel's forward path. The vessel operator must then proceed away from the turtle at a speed of 4 knots or less until there is a separation distance of at least 100 m at which time the vessel may resume normal operations. If a sea turtle is sighted within 50 m of the forward path of the operating vessel, the vessel operator must shift to neutral when safe to do so and then proceed away from the individual at a speed of 4 knots or less until there is a separation distance of at least 100 m, at which time normal vessel operations may be resumed. Between June 1 and November 30, all vessels must avoid transiting through areas of visible jellyfish aggregations or floating vegetation (e.g., sargassum lines or mats). In the event that operational safety prevents avoidance

of such areas, vessels must slow to 4 knots while transiting through such areas. Year round, vessels operating south of the Virginia/North Carolina border must avoid transiting through areas of visible jellyfish aggregations or floating vegetation (e.g., sargassum lines or mats). In the event that operational safety prevents avoidance of such areas, vessels must slow to 4 knots while transiting through such areas. The only exception to all the above requirements is when the safety of the vessel or crew necessitates deviation from these requirements. If any such incidents occur, they must be reported (see reporting requirements). All vessel crew members must be briefed on the identification of sea turtles and on regulations and best practices for avoiding vessel collisions. Reference materials must be available aboard all project vessels for identification of sea turtles. The expectation and process for reporting of sea turtles (including live, entangled, and dead individuals) must be clearly communicated and posted in highly visible locations aboard all project vessels, so that there is an expectation for reporting to the designated vessel contact (such as the lookout or the vessel captain), as well as a communication channel and process for crew members to so report.

1.6.7. Reporting of All NARW Sightings (Planning) (Construction) (Operations) (Decommissioning). The Lessee must immediately report all NARWs observed at any time by PSOs or vessel personnel on any Project vessels, during any Project-related activity, or during vessel transit. Reports must be sent to: BOEM (at renewable_reporting@boem.gov) and BSEE (at protectedspecies@bsee.gov); the NOAA Fisheries 24-hour Stranding Hotline number (866-755-6622); the Coast Guard (via Channel 16); and WhaleAlert (through the WhaleAlert app at http://www.whalealert.org/). The report must include the time, location, and number of animals.

1.6.8. Detected or Impacted Protected Species Reporting (Planning) (Construction) (Operations) (Decommissioning). The Lessee is responsible for reporting dead or injured protected species, regardless of whether they were observed during operations or due to Project activities. The Lessee must report any potential take, strikes, dead, or injured protected species caused by Project vessels or sighting of an injured or dead marine mammal or sea turtle, regardless of the cause, to the NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov), NOAA Fisheries 24-hour Stranding Hotline number (866-755-6622), BOEM (at renewable_reporting@boem.gov), and BSEE (at protectedspecies@bsee.gov). Reporting must be as soon as practicable but no later than 24 hours from the time the incident took place (Detected or Impacted Protected Species Report). Staff responding to the hotline call will provide any instructions for the handling or disposing of any injured or dead protected species by individuals authorized to collect, possess, and transport sea turtles.

1.6.9. The Detected or Impacted Protected Species Report must include the following information:

- Time, date, and location (latitude and longitude) of the first discovery of the animal or animals and updated location information (if known) and applicable;
- Species identification (if known) or a description of the animals involved;
- Condition of the animals (including carcass condition if the animal is dead);
- Observed behaviors of the animals, if alive;
- If available, photographs or video footage of the animals; and
- General circumstances under which the animal or animals were discovered.

1.6.10. The Protected Species Incident Report must include the following information:

- Time, date, and location (latitude and longitude) of the incident;
- Species identification (if known) or description of the animals involved;
- Lessee and vessel information;
- Vessel's speed during and leading up to the incident;
- Vessel's course or heading and what operations were being conducted (if applicable);
- Status of all sound sources in use (if applicable);
- Description of avoidance measures or requirements in place at the time of the strike and what additional measures were taken, if any, to avoid the strike;
- Environmental conditions (e.g., wind speed and direction, Beaufort scale, cloud cover, visibility) immediately preceding the strike;
- Estimated size and length of animal or animals struck;
- Description of the behavior of the animals immediately preceding and following the strike;
- Estimated fate of the animal or animals (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and
- To the extent practicable, photographs or video footage of the animals.

1.6.11. Detected or Impacted Dead Non-ESA-Listed Fish (Planning) (Construction) (Operations) (Decommissioning). Any occurrence of at least 10 dead non-ESA-

listed fish within established shutdown or monitoring zones must also be reported to BOEM (at renewable_reporting@boem.gov) as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting.

1.7. Wind Turbine Foundation Pile Driving/Impact Hammer Activity Conditions.

1.7.1. Pile-Driving Time-of-Year Restriction (Construction). The Lessee must not conduct any foundation pile-driving activities between December 1 and April 30. Pile driving must not occur in December unless unanticipated delays due to weather or technical problems arise that necessitate extending pile driving through December, and the pile driving is allowed by BOEM in accordance with the following procedures. The Lessee must notify BOEM in writing by September 1 that the Lessee believes that circumstances necessitate pile driving in December. The Lessee must submit to BOEM (at renewable_reporting@boem.gov) for written concurrence an enhanced survey plan for December 1 through December 31 to minimize the risk of exposure of NARWs to pile-driving noise, including noise from daily pre-construction geophysical surveys. BOEM will review the enhanced survey plan and provide comments, if any, on the plan within 30 calendar days of its submittal. The Lessee must resolve all comments on the enhanced survey plan to BOEM's satisfaction and receive BOEM's written concurrence before any pile driving occurs. However, the Lessee may conclusively presume BOEM's concurrence with the enhanced survey plan if BOEM provides no comments on the plan within 90 calendar days of its submittal. The Lessee must also follow the time-of-year enhanced mitigation measures specified in the applicable Biological Opinion. The Lessee must confirm adherence to time-of-year restrictions on pile driving in the pile-driving reports submitted with the FIR.

1.7.2. Pile-Driving Weather and Time Restrictions (Construction). The Lessee must ensure effective visual monitoring in all directions and must not commence foundation pile-driving until at least 1 hour after civil sunrise to minimize the effects of sun glare on visibility. The Lessee must not commence pile-driving within 1.5 hours of civil sunset to minimize the potential for pile-driving to continue after civil sunset when visibility will be impaired.

1.7.3. Pile-Driving Visibility Requirements (Construction).

1.7.3.1. Operational Requirements. The Lessee may commence pile driving only when all clearance zones are fully visible (e.g., not obscured by darkness, rain, fog, or snow) for at least 30 minutes between civil sunrise and civil sunset. The lead PSO must determine when sufficient light exists to allow effective visual monitoring in all cardinal directions. If light is insufficient, the lead PSO must call for a delay until the clearance zone is visible in all directions. If conditions such as darkness, rain, fog, or snow impede the visual detection of marine mammals in the clearance zones, the Lessee must not initiate construction activities until all parts of all clearance zones are fully visible as determined by the lead PSO. The Lessee must develop and

implement an Alternative Monitoring Plan in the event that poor visibility conditions unexpectedly arise and pile-driving cannot be stopped if stopping pile driving would pose risks to human safety or pile instability.

1.7.3.2. Alternative Monitoring Plan. If necessary under 1.7.3.1, the Lessee must prepare and submit an Alternative Monitoring Plan (AMP) to NMFS (at nmfs.gar.incidental-take@noaa.gov) and BOEM (at renewable_reporting@boem.gov) at least 90 calendar days before beginning any pile-driving activities for the Project. DOI will review the AMP and will provide any comments on the plan within 30 calendar days of its submittal. The Lessee must resolve all comments on the AMP to DOI's satisfaction before implementing the plan. If BOEM provides no comments on the AMP within 90 calendar days of its submittal, then the Lessee may conclusively presume BOEM's concurrence with the plan. The Lessee is encouraged to include additional observers or alternative monitoring technologies in the AMP such as night vision, thermal, infrared, or PAM technologies if including these will help to ensure that shutdown zones are maintained for all ESA-listed species in the event of unexpected poor-visibility conditions.

1.7.4. PSO Requirements (Planning) (Construction) (Operations) (Decommissioning). The Lessee must use PSOs provided by a third party. PSOs must have no Project-related tasks other than to observe, collect and report data, and communicate with and instruct relevant vessel crew regarding the presence of protected species and mitigation requirements (including brief alerts regarding maritime hazards). PSOs or any PAM operators serving as PSOs must have completed a commercial PSO training program for the Atlantic with an overall examination score of 80 percent or greater (Baker et. al 2013). The Lessee must provide training certificates for individual PSOs to BOEM upon request. PSOs and PAM operators must be approved by NMFS before the start of a survey. Application requirements to become a NMFS-approved PSO for construction activities can be found at www.fisheries.noaa.gov/new-england-mid-atlantic/careers-and-opportunities/protected-species-observers, or for geological and geophysical surveys by sending an inquiry to nmfs.psoreview@noaa.gov.

1.7.5. Specific PSO Requirements include:

1.7.5.1. At least one PSO must be on duty at all times as the lead PSO or as the PSO monitoring coordinator during pile driving. Total PSO coverage must be adequate to ensure effective monitoring to reliably detect whales and sea turtles in the identified clearance and shutdown zones and execute any pile driving delays or shutdown requirements. Determination of the zones prior to construction will be based on review by BOEM and NMFS of the Pile-Driving Monitoring Plan

(1.7.5). Determination of the zones during construction will be based on review of PSO reports.

1.7.5.2. At least one lead PSO must be present on each High Resolution Geophysical (HRG) survey vessel. PSOs on transit vessels must be approved by NMFS but need not be authorized as a lead PSO. Lead PSOs must have prior approval from NMFS as an unconditionally approved PSO.

1.7.5.3. All PSOs on duty must be clearly listed and the lead PSO identified on daily data logs for each shift.

1.7.5.4. A sufficient number of PSOs, consistent with the Biological Opinion and as prescribed in the final Incidental Harassment Authorization (IHA), must be deployed to record data in real time and effectively monitor the required clearance, shutdown, or monitoring zone for the Project.

1.7.5.5. The duties of these PSOs include: visual surveys in all directions around a pile; PAM; and continuous monitoring of sighted NARWs.

1.7.5.6. Where applicable, the number of PSOs deployed must meet the NARW enhanced seasonal monitoring requirements.

1.7.5.7. A PSO must not be on watch for more than 4 consecutive hours and must be granted a break of no fewer than 2 hours after a 4-hour watch.

1.7.5.8. A PSO must not work for more than 12 hours in any 24- hour period (NMFS 2013) unless an alternative schedule is authorized in writing by BOEM.

1.7.5.9. Visual monitoring must occur from a vantage point on the associated operational platforms that allows for 360-degree visual coverage around a vessel.

1.7.5.10. The Lessee must ensure that suitable equipment is available to PSOs, including binoculars, range-finding equipment, a digital camera, and electronic data recording devices (e.g., a tablet) to adequately monitor the extent of the clearance and shutdown zones, to determine the distance to protected species during surveys, to record sightings and verify species identification, and to record data. PSO observations must be conducted while free from distractions and in a consistent, systematic, and diligent manner.

1.7.6. Pile-Driving Monitoring Plan Requirements (Construction). At least 90 calendar days before beginning the first pile-driving activities for the Project, the Lessee must submit a Pile-Driving Monitoring (PDM) Plan for review to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov), and NMFS. DOI will review the PDM Plan and provide any comments on the plan

within 90 calendar days of its submittal. The Lessee must resolve all comments on the PDM Plan to DOI's satisfaction before implementing the plan. If DOI provides no comments on the PDM Plan within 90 calendar days of its submittal, then the Lessee may conclusively presume DOI's concurrence with the plan.

1.7.7. The PDM Plan must:

1.7.7.1. Contain information on the visual and PAM components of monitoring, describing all equipment, procedures, and protocols;

1.7.7.2. Demonstrate a near-real-time capability of PAM detection to 3.12 miles (5 kilometers) from the foundation pile- driving location;

1.7.7.3. Ensure that the full extent of the distance over which harassment may occur from all pile types is monitored for marine mammals (160 decibels [dB] impact, 120 dB vibratory) root-mean-square [RMS]) and sea turtles (175 dB RMS) to document all potential take, and the methods to determine the number of ESA-listed whales exposed to noise above the Level B harassment threshold during pile driving with the vibratory hammer.

1.7.7.4. Include a PAM Plan detailing the detection confidence by the PAM operator necessary to determine that a possible NARW vocalization originated from within the clearance shutdown zones and would trigger delay or shutdown protocols. The PAM operator responsible for determining if the acoustic detection originated from a NARW must be trained in identification of mysticete vocalizations. The real-time PAM system must be configured to ensure that the PAM operator is able to review acoustic detections within approximately 15 minutes of the original detection, in order to verify whether a right whale has been detected. Any possible NARW vocalization must be reported as a detection if the vocalization is determined by the PSO to be within the clearance and shutdown zones. Records of the all the PAM operator's review of acoustic detections must be provided in weekly pile driving reports;

1.7.7.5. Include the number of NMFS-approved PSOs or monitors that will be employed, the platforms or vessels upon which they will be deployed, and contact information for the PSO providers;

1.7.7.6. Include an AMP that includes measures for enhanced monitoring capabilities in the event that poor visibility conditions unexpectedly arise and pile driving cannot be stopped. The AMP must also include measures for deploying additional observers, use of technologies such as using night vision goggles for marine mammals and sea turtles or using PAM for marine mammals with the goal of ensuring maintenance of clearance and shutdown zones in the event of unexpected poor visibility conditions when foundation piling cannot be stopped; and

1.7.7.7. Include complete details on the plans and procedures for sound attenuation as well as for monitoring ESA-listed whales and sea turtles during all impact and vibratory pile driving;

1.7.7.8. Include details on all reporting requirements for protected species;

1.7.7.9. Describe a communication plan detailing the chain of command, mode of communication, and decision authority. PSOs must be previously approved by NMFS to conduct mitigation and monitoring duties for pile-driving activity. In accordance with the PDM Plan, the Lessee must use an adequate number of PSOs, as determined by NMFS and BOEM, to monitor the area of the clearance and shutdown zones. The PDM Plan must also describe seasonal and species-specific clearance and shutdown zones, including time-of-year requirements for NARWs. A copy of the PDM Plan must be in the possession of the Lessee representative, the PSOs, impact-hammer operators, and any other relevant designees operating under the authority of the approved COP and carrying out the requirements of the PDM Plan on site.

1.7.8. Soft Start for Pile Driving (Construction). The Lessee must implement soft start techniques for all impact pile-driving, both at the beginning of a monopile installation and at any time following the cessation of impact pile-driving of 30 minutes or longer. The soft start procedure must include a minimum of 20 minutes of 4-6 strikes/minute at 10-20 percent of the maximum hammer energy.

1.7.9. Pile-Driving Sound Field Verification Plan (Construction). The Lessee must ensure that the distance to the Level A harassment and Level B harassment thresholds, sea turtle injury and harassment thresholds, and Atlantic sturgeon injury and harassment thresholds are no larger than those modelled assuming 10 dB re 1 µPa noise attenuation is met by conducting field verification during pile-driving. At least 90 calendar days before beginning the first pile-driving activities for the Project, the Lessee must submit a Sound Field Verification Plan (SFVP) for review and comment to the USACE, BOEM (at renewable_reporting@boem.gov), and NMFS (at nmfs.gar.incidental-take@noaa.gov). DOI will review the SFVP and provide any comments on the plan within 30 calendar days of its submittal. The Lessee must resolve all comments on the SFVP to DOI's satisfaction before implementing the plan. The Lessee may conclusively presume DOI's concurrence with the SFVP if DOI provides no comments on the plan within 90 calendar days of its submittal. The Lessee must execute the SFVP and report the associated findings to BOEM for 3 monopile foundations, or as specified under the corresponding IHA for this action. The Lessee must conduct additional field measurements if it installs piles with a diameter greater than the initial piles, if it uses a greater hammer size or energy, or if it measures any additional foundations to support any request to decrease the distances specified for the clearance and shutdown zones. The Lessee must implement the SFVP requirements for verification of noise attenuation for at least 3 foundations for BOEM, in consultation with NMFS, to consider reducing

zone distances. The Lessee must ensure that locations identified in the SFVP for each pile type are representative of other piles of that type to be installed and that the results are representative for predicting actual installation noise propagation for subsequent piles. The SFVP must describe how the effectiveness of the sound attenuation methodology will be evaluated. The SFVP must be sufficient to document impacts in Level B harassment zones for marine mammals and injury and behavioral disturbance zones for sea turtles and Atlantic sturgeon.

1.7.10. Adaptive Refinement of Clearance Zones, Shutdown Zones, and Monitoring Protocols (Construction). The Lessee must reduce any unanticipated impacts on marine mammals and sea turtles by adjusting pile-driving monitoring protocols for clearance and shutdown zones, taking into account weekly monitoring results. Any proposed changes to monitoring protocols must be concurred with by DOI and NMFS before those protocols are implemented. Any reduction in the size of the clearance and shutdown zones for each foundation type must be based on at least 3 measurements submitted to BOEM for review. For each 1,500 m that a clearance or shutdown zone is increased based on the results from SFVP, the Lessee must deploy additional platforms and must deploy additional observers on those platforms. Should the shutdown zone for sei, fin, humpback, and sperm whales be decreased, it must not be less than 1,000 m and the full extent of the Level B harassment distance must be monitored. Decreases in the distance of the clearance or shutdown zones for NARW and sea turtles are not permitted.

1.7.11. Pile-Driving Clearance Zones (No-go Zones) for Sea Turtles (Construction). The Lessee must minimize the exposure of ESA-listed sea turtles to noise that may result in injury or behavioral disturbance during pile-driving operations by tasking the PSOs to establish a clearance and shutdown zone for sea turtles during all pile-driving activities that is no less than 1,640 feet (500 meters) between 60 minutes before pile-driving activities, during pile driving and 30 minutes post-completion of pile-driving activity. Adherence to the 1,640-foot (500-meter) clearance and shutdown zones must be confirmed in the PSO reports.

1.7.12. Pile-Driving Clearance Zones (No-go Zones) for Marine Mammals (Construction). The Lessee must use visual monitoring by at least two PSOs and PAM during impact pile-driving activities following the standard protocols and data collection requirements. The Lessee must ensure that at least two PSOs are on duty on the impact pile driving platform and at least two PSO are on duty on a dedicated PSO vessel and establish the following clearance zones for NARWs to be used between 60 minutes before pile-driving activities and 30 minutes post-completion of pile-driving activity:

1.7.12.1. The Lessee must establish the following clearance zones using visual monitoring for impact pile driving: 1.37 miles (2.2 kilometers) for large whales other than NARW (including blue, fin, sei, minke, humpback, and sperm whales); 1,476 feet (450 meters) for harbor porpoises; 492 feet (150 meters) for seals; and 328 feet (100 meters) for dolphins and pilot whales.

Impact Pile Driving		
Minimum Visibility of 2,200 m required for all impact pile driving		
Species	**Clearance Zone (m)**	**Shutdown Zone (m)**
North Atlantic right whale – PAM	5,000	2,000
North Atlantic right whale – visual detection	Visual detection of a right whale at any distance by a PSO stationed at the pile driving platform or PSO vessel triggers the required clearance or shutdown procedures	
Fin, sei, humpback, and sperm whales	2,200	2,000
Harbor porpoise	450	450
Seals	150	150
Dolphins and pilot whales	100	50
Sea turtles	500	500

1.7.12.2. The Lessee must also establish a PAM clearance zone of 3.1 miles (5 kilometers) and a PAM shutdown zone of 1.23 miles (2 kilometers) for NARWs.

1.7.12.3. Impact pile driving activity must be delayed when a NARW is visually observed by PSOs at any distance from the pile. Impact pile driving for all foundations must be delayed upon a confirmed PAM detection of a NARW, if the detection is confirmed to have been located within the 5 kilometer clearance zone. Any unidentified whale sighted by a PSO within 6,562 feet (2,000 meters) of the pile must be treated as if it were a NARW and trigger any required pre-construction delay or shutdowns during pile installation.

1.7.12.4. No pile driving may begin unless all clearance zones have been free of NARW for 30 minutes immediately before pile driving. The Lessee must deploy a real-time PAM system designed and verified to maintain a PAM clearance zone of 3.1 miles (5 kilometers) and a shutdown zone of 1.23 miles (2 kilometers) for all monopile foundations.

1.7.12.5. Real-time PAM must begin at least 60 minutes before pile driving to monitor a 3.1 mile (5 kilometer) clearance zone.

1.7.12.6. The real-time PAM system must be configured to ensure that the PAM operator is able to review acoustic detections within approximately 15 minutes of the original detection in order to verify whether a right whale has been detected.

1.7.12.7. Impact pile driving must be suspended upon a confirmed PAM NARW vocalization within the 1.2 mile (2 kilometer) PAM shutdown Zone detected and identified as a NARW. The detection will be treated as a NARW detection for mitigation purposes.

1.7.13. Vibratory Pile-Driving Clearance Zones (No-go Zones) for ESA-listed Species and Marine Mammals (Construction). The Lessee must use visual monitoring by at least two PSOs during vibratory pile-driving activities. The Lessee must ensure that PSOs are on a dedicated PSO vessel and establish the following clearance zones for NARWs to be used between 30 minutes before pile-driving activities and 30 minutes post-completion of pile-driving activity: 4,921 feet (1,500 meters) for all mysticete whales and sperm whales; 1,640 feet (500 meters) for sea turtles, 492 feet (150 meters) for seals, 328 feet (100 meters) for harbor porpoises; and 164 feet (50 meters) for dolphins and pilot whales.

Vibratory Pile Driving		
Species	**Clearance Zone (m)**	**Shutdown Zone (m)**
NARW, fin, sei, and sperm whales	1,500	1,500
Seals	150	150
Harbor porpoise	100	100
Dolphins and pilot whales	50	50
Sea turtles	500	500

1.7.13.1. Vibratory pile driving may begin only after PSOs have confirmed all clearance zones are clear of marine mammals. Vibratory pile driving must be suspended if a marine mammal is visually observed by PSOs within the shutdown zone in the above table.

1.7.13.2. At all times of the year, any unidentified whale sighted by a PSO within 6,562 feet (2,000 meters) of the pile must be treated as if it were a NARW and trigger any required pre-construction delay or shutdowns during pile installation.

1.7.13.3. Vibratory pile driving may begin only if all clearance zones are fully visible (e.g., not obscured by darkness, rain, fog, or snow) for at least

30 minutes as determined by the lead PSO. If conditions such as darkness, rain, fog, or snow prevent the visual detection of marine mammals in the clearance zones, construction activities must not begin until the full extent of all clearance zones are fully visible as determined by the lead PSO.

1.7.14. Protocols for Shutdown and Power-Down when Marine Mammals or Sea Turtles are Sighted During Pile Driving (Construction). PAM operators must notify PSOs of any marine mammal acoustic detection during pile driving. The Lessee must suspend pile-driving if a sea turtle is detected visually or a marine mammal is detected visually or by PAM, entering or within a designated shutdown zone. The Lessee must shut down the pile-driving hammer unless stopping pile-driving activities would risk human safety or pile instability, in which case reduced hammer energy must be used where practicable. The Lessee must report any decision not to shut down pile-driving under this exception to BOEM and NMFS within 24 hours of the decision and provide a detailed explanation of the safety risk presented and the animals potentially impacted.

1.7.15. Pile Driving Restart Procedures for Marine Mammal or Sea Turtle Detections (Construction). Pile-driving, including impact hammer use, must not resume after suspension for marine mammal or sea turtle detections unless (1) the PSO has tracked the animals during the entire detection period and verifies that the animals voluntarily exited the clearance or shutdown zone and have headed away from the clearance or shutdown area; (2) at least 30 minutes have passed after the PSO lost track of any mysticetes, sperm whales, Risso's dolphins, or pilot whales without re-detection; and (3) at least 15 minutes have passed after the PSO lost track of any sea turtle or other marine mammals without re-detection.

1.7.16. Noise Mitigation for Impact Pile Driving (Construction). The Lessee must apply noise reduction technologies during all impact pile driving to minimize marine species noise exposure. The ranges measured to the Level B harassment threshold when noise mitigation devices are in use must be consistent with or less than the ranges modeled assuming 10 dB attenuation, determined via sound field verification of the modeled isopleth distances (e.g., Level B harassment distances). If a bubble curtain is used, the following requirements apply:

1.7.16.1. Bubble curtains must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.

1.7.16.2. The lowest bubble ring must be in contact with the seafloor for the full circumference of the ring, and the weights attached to the bottom ring must ensure 100 percent seafloor contact.

1.7.16.3. No parts of the ring or other objects may prevent full seafloor contact of the lowest bubble ring.

1.7.16.4. The Lessee must train personnel in the proper balancing of air flow to the bubblers. The Lessee must submit an inspection and performance

report to DOI within 72 hours following the performance test. Any modifications to attenuation device to meet the performance standards must occur before impact driving occurs and maintenance or modifications completed must be included in the report.

1.7.16.5. The Lessee must ensure PSOs follow all pile driving reporting instructions and requirements as listed in Section 1.17.18.1.

1.7.17. Pile-Driving Noise Reporting and Clearance or Shutdown Zone Adjustment (Construction). The Lessee must measure pile-driving noise in the field for at least three monopile foundations and submit initial results to NMFS, USACE, and BOEM (at renewable_reporting@boem.gov) as soon as they are available. BOEM will discuss the results as soon as feasible. The Lessee may request modification of the clearance and shutdown zones based on these results but must meet or exceed minimum distances for threatened and endangered species specified in the Biological Opinion (e.g., 1,000 m for large whales and 500 m for sea turtles). If the field measurements indicate that the isopleths for noise exposure are larger than those considered in the approved COP, the Lessee must coordinate with BOEM, BSEE, NMFS, and USACE to implement additional sound attenuation measures or larger clearance or shutdown zones before driving any additional piles. NMFS does not anticipate considering any reductions in the clearance or shutdown zones for North Atlantic right whales.

1.7.18. Pile-Driving Work Within a Slow Zone (Construction). If a visually-triggered NARW Slow Zone overlaps with the NARW Shutdown Zone, the PAM system detection must extend to the largest practicable detection zone, and any clearance and shutdown zones that may have been adjusted (i.e., increased in size) as a result of sound field verification must be no less than 2 km. PSOs must treat any PAM detection of NARWs in the clearance and shutdown zones the same as a visual detection, and call for the required delays or shutdowns in pile installation.

1.7.19. Submittal of Raw Field Data Collected for Marine Mammals and Sea Turtles in the Pile-Driving Shutdown Zone (Construction). Within 24 hours of detection, the Lessee must report to BOEM (at renewable_reporting@boem.gov) and BSEE (at protectedspecies@bsee.gov) the sighting of any marine mammal or sea turtle in the shutdown zone that results in a shutdown or a power-down. In addition, PSOs must submit the raw data collected in the field and daily report forms including the date, time, species, pile identification number, GPS coordinates, time and distance of the animal when sighted, time the shutdown or power-down occurred, behavior of the animal, direction of travel, time the animal left the shutdown zone, time the pile driver was restarted or powered back up, and any photographs.

1.7.20. Weekly Pile-Driving Reports (Construction). The Lessee must submit weekly PSO and PAM monitoring reports to DOI and NMFS during pile-driving. Weekly reports must document the daily start and stop times of all pile-driving, the daily start and stop times of associated observation periods by the PSOs, details on the deployment of PSOs, and all detections of marine mammals and sea turtles. The weekly reports must be submitted to BOEM (at renewable_reporting@boem.gov),

BSEE (at protectedspecies@bsee.gov) and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov). Weekly monitoring reports must include:

1.7.20.1. summaries of pile-driving activities and piles installed including, start and stop times, pile locations, and PSO coverage;

1.7.20.2. vessel operations (including port departures, number of vessels, type of vessel(s), and route);

1.7.20.3. all protected species sightings;

1.7.20.4. vessel strike-avoidance measures taken; and

1.7.20.5. any equipment shutdowns or takes that may have occurred.

1.7.21. Monthly Pile-Driving Reports (Construction). The Lessee must submit monthly PSO, PAM, and construction activity monitoring reports to DOI and NMFS during construction and for the first year of operations. Monthly reports must document the daily start and stop times of all pile-driving, the daily start and stop times of associated observation periods by the PSOs, details on the deployment of PSOs, and all detections of marine mammals and sea turtles, as further specified below. PSO reports may consist of raw data and must include the information described below under reporting instructions. DOI will work with the Lessee to ensure that no confidential business information is released in the monitoring reports. The monthly reports must be submitted to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov) and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov). The Lessee must complete any editing, review, and quality assurance checks before reports are submitted. The reports must begin at the start of PAM or visual monitoring during pile-driving and be submitted on the 15th of every month covering construction during the previous month until pile- driving stops. A final report covering monitoring over the entire construction period must be submitted within 90 calendar days after pile-driving is completed.

1.7.21.1. Reporting Instructions for PSO Pile-Driving Monitoring Reports.

1.7.21.2. The data must be collected in accordance with standard reporting forms, software tools, or electronic data forms authorized by BOEM for the particular activity. The forms must be filled out for each vessel with PSOs aboard. Unfilled cells must be left empty and must not contain "NA." The reports must be submitted in Word and Excel formats (not as a pdf). All dates must be entered as YYYY-MM-DD. All times must be entered in 24 Hour UTC as HH:MM. New entries should be made on the Effort form each time a pile segment changes or weather conditions change, and at least once an hour as a minimum. Before submittal, the forms must always be checked for completeness and have

any problems resolved. The file name must follow this format: Lease#_ ProjectName_PSOData_YearMonthDay to YearMonthDay.xls Data fields must be reported in Excel format. Data categories must include Project, Operations, Monitoring Effort, and Detection, as further specified below. Data must be generated through software applications or otherwise recorded electronically by PSOs. Applications developed to record PSO data are encouraged as long as the data fields listed below can be recorded and exported into Excel. Alternatively, BOEM has developed an Excel spreadsheet, with all the necessary data fields, that is available upon request.

Required data fields include:

Project Information:

- Project Name
- Lease Number
- State Coastal Zones
- PSO Contractors
- Vessel Names
- Reporting Dates
- Visual monitoring equipment used (e.g., bionics, magnification, IR cameras, etc.)
- Distance finding method used
- PSO names (last, first) and training
- Observation height above sea surface

Operations Information:

- Date (YYYY-MM-DD)
- Hammer type used (make and model)
- Greatest hammer power used for each pile
- Pile identifier and pile number for the day (e.g., pile 2 of 3 for the day)
- Pile diameters
- Pile length
- Pile locations (latitude and longitude)
- Number of vessel transits
- Types of vessel used
- Vessel routes used

Monitoring Effort Information:

- Date (YYYY-MM-DD)
- Noise Source (ON=Hammer On; OFF=Hammer Off)
- PSO name(s) (Last, First)
- If visual, how many PSOs on watch at one time?

- Time pre-clearance visual monitoring began in UTC (HH:MM)
- Time pre-clearance monitoring ended in UTC (HH:MM)
- Time pre-clearance PAM monitoring began in UTC (HH:MM)
- Time PAM monitoring ended in UTC (HH:MM)
- Duration of pre-clearance PAM and visual monitoring
- Time power-up/ramp-up began
- Time equipment full power was reached
- Duration of power-up/ramp-up
- Time pile driving began (hammer on)
- Time pile-driving activity ended (hammer off)
- Duration of activity
- Duration of visual detection
- Wind speed (knots), from direction
- Swell height (meters)
- Water depth (meters)
- Visibility (km)
- Glare severity
- Latitude (decimal degrees), longitude (decimal degrees)
- Compass heading of vessel (degrees)
- Beaufort scale
- Precipitation
- Cloud coverage (%)
- Did a shutdown/power-down occur?
- Time shutdown was called for (UTC)
- Time equipment was shut down (UTC)
- Habitat or prey observations
- Marine debris sighted

Detection Information:

- Date (YYYY-MM-DD)
- Sighting ID (V01, V02, or sequential sighting number for that day) (multiple sightings of the same animal or group should use the same ID)
- Date and time at first detection in UTC (YY-MM- DDT HH:MM)
- Time at last detection in UTC (YY-MM-DDT HH:MM)
- PSO name(s) (Last, First)
- Effort (ON=Hammer On; OFF=Hammer Off)
- If visual, how many PSOs on watch at one time?
- Start time of observations
- End time of observations
- Duration of visual observation
- Wind speed (knots), from direction
- Swell height (meters)

- Water depth (meters)
- Visibility (km)
- Glare severity
- Latitude (decimal degrees), longitude (decimal degrees)
- Compass heading of vessel (degrees)
- Beaufort scale
- Precipitation
- Cloud coverage (%)
- Sightings including common name, scientific name, or family
- Certainty of identification
- Number of adults
- Number of juveniles
- Total number of animals
- Bearing to animals when first detected (ship heading+ clock face)
- Range from vessel (reticle distance in meters)
- Description (include features such as overall size; shape of head; color and pattern; size, shape, and position of dorsal fin; height, direction, and shape of blow, etc.)
- Detection narrative (note behavior, especially changes in relation to survey activity and distance from service vessel)
- Direction of travel in first approach (relative to vessel)
- Behaviors observed: indicate behaviors and behavioral changes observed in sequential order (use behavioral codes)
- If any bow-riding behavior observed, record total duration during detection (HH:MM)
- Initial heading of animals (degrees)
- Final heading of animals (degrees)
- Shutdown zone size during detection (meters)
- Was the animal inside the shutdown zone?
- Closest distance to vessel (reticle distance in meters)
- Time at closest approach (UTC HH:MM)
- Time animal entered shutdown zone (UTC HH:MM)
- Time animal left shutdown zone (UTC HH:MM)
- If observed/detected during ramp-up/power-up: first distance (reticle distance in meters), closest distance (reticle distance in meters), last distance (reticle distance in meters), behavior at final detection
- Did a shutdown/power-down occur?
- Time shutdown was called for (UTC)
- Time equipment was shut down (UTC)
- Detections with PAM

1.7.21.2.1. Beginning in year 2 of operations, the Lessee must submit annual reports that include a summary of all Project activities carried out in the previous year, including vessel transits (number, type of vessel, and route), repair and

maintenance activities, survey activity, and all observations of ESA-listed species. The annual reports must be submitted to BOEM (at renewable_reporting@boem.gov) and BSEE (at protectedspecies@bsee.gov). These reports are due by April 1 of each year for the previous calendar year.

1.7.22. Geophysical Survey Conditions (Planning) (Construction) (Operations) (Decommissioning). The Lessee must comply with all the *Project Design Criteria and Best Management Practices for Protected Species* that implement the integrated requirements for threatened and endangered species in the June 29, 2021, programmatic consultation under the ESA, revised September 1, 2021 (https://www.boem.gov/renewable-energy/nmfs-esa-consultations). This requirement also applies to non-ESA-listed marine mammals that are found in that document.

2. CONDITIONS RELATED TO COMMERCIAL FISHERIES, FOR-HIRE RECREATIONAL FISHING, AND ENVIRONMENTAL JUSTICE

2.1. Fisheries Compensation and Mitigation Funds (Planning) (Construction) (Operations) (Decommissioning). No later than 1 year after the approval of the COP, the Lessee must establish the following compensation/mitigation funds to compensate commercial fishermen for losses directly related to the Project and mitigate other impacts:

2.1.1 Rhode Island – Compensation Fund – $4,250,000 and $950,000 Coastal Community Fund;

2.1.2 Massachusetts – Compensation Fund – $2,100,000 and $200,000 Coastal Community Fund and up to $300,000 (the "Navigational Enhancement and Training Funding") to fund claims when made through the Navigational Enhancement and Training Program;

2.1.3 The Lessee must establish the compensation/mitigation funds in accordance with consistency certifications issued for the Project under the Coastal Zone Management Act. The Lessee must require the administrator of each compensation/mitigation fund (Administrator/Trustee) to notify BOEM that the compensation/mitigation fund has been established and is processing claims to mitigate impacts to fisheries. Notification can be accomplished by the Administrator/Trustee transmitting to BOEM an annual financial statement of the trust/fund. The Administrator/Trustee submit the required notification by December 31 of each year, beginning on the second anniversary of the Project's Commercial Operations Date. The notification must be signed by the Administrator/Trustee.

2.2. Survey Monitoring Program (Planning) (Construction) (Operations) (Decommissioning). The Lessee must participate in the establishment of the Federal Survey Monitoring Program. Participation includes, but is not limited

to, sharing information and engagement in scientific studies needed to understand the impact of wind energy development on: (I) marine ecosystems and the human communities that use these marine ecosystems; and (II) the following surveys: (a) NOAA Spring and Autumn Bottom Trawl surveys; (b) NOAA Ecosystem Monitoring surveys; (c) NOAA NARW aerial surveys; (d) NOAA aerial and shipboard marine mammal and sea turtle surveys; (e) NOAA Atlantic surfclam and ocean quahog surveys; (f) NOAA and industry-based Atlantic sea scallop surveys; and (g) any other surveys in the region impacted by wind energy development.

2.3. Environmental Data Sharing with Federally Recognized Tribes (Planning) (Construction) (Operations) (Decommissioning). No later than 90 calendar days after COP approval, the Lessee must contact the federally recognized tribes participating in government-to-government consultations with BOEM for the Project in order to solicit their interest in access to the following: reports generated as a result of the Fisheries Research Monitoring Plan; reports of NARW sightings; injured or dead protected species reporting (turtles and NARW); NARW PAM monitoring; PSO reports (e.g., weekly pile driving reports); pile-driving schedules and changes to them. At a minimum, the Lessee must offer access to the following federally recognized tribes: the Mashpee Wampanoag Tribe, the Wampanoag of Gay Head (Aquinnah); the Mashantucket Pequot Indian Tribe; the Mohegan Tribe of Indians of Connecticut; the Shinnecock Indian Nation; the Narraganset Indian Tribe; and the Delaware Tribe of Indians. The Lessee must provide, in a manner suitable to the Tribes, access to non-proprietary, non-confidential business information to any federally recognized Tribe no later than 30 days after the information becomes available.

3 CONDITIONS RELATED TO VISUAL AND CULTURAL RESOURCES

3.1 Install Three Fewer Turbines (Planning) (Construction) (Operations). The Lessee will install no more than 12 turbines in the locations described in Section 5.1 of the Record of Decision (ROD). The Lessee must provide as built documents within the time period specified under the relevant conditions in Appendix B.

3.2 Micrositing of Project Installation and Seafloor Disturbing Activities Locations (Planning) (Construction) (Operations). The Lessee must use the micrositing of Project installation and seafloor disturbing activities to avoid, if possible, or minimize disturbance of all ancient submerged landform features previously identified during marine archaeological surveys of the Project, to the extent practicable.

3.3 Installation of Cable (Planning) (Construction) (Operations). The Lessee must emplace cabling at a target depth of 4 to 6 feet at time of emplacement, and no more than 15 feet, to minimize and potentially avoid impacts to any deeply

buried archaeological deposits at ancient submerged landform features.

3.4 Methods Used for Installation of Cable (Planning) (Construction) (Operations). The Lessee must use a mechanical cutter, mechanical plow, and/or jet plow to install cable at the target burial depth to reduce the amount of seabed impact relative to the amount that would result from mechanical dredging, which would assist in limiting the construction footprint and work areas at the five adversely affected ancient submerged land form features (SFEC-CF-3, SFEC-CF-5, SFEC-CF-7, SFEC-CF-9, SFEC-CF-13) in the South Fork Export Cable construction corridor, where seabed conditions allow. Where target burial depth is not achieved using a mechanical cutter, mechanical plow, and/or jet plow, the Lessee must notify BOEM and so report in the annual report as required in the Section 106 MOA under the monitoring and reporting stipulation (Stipulation X) including the reasons why these methods could not be achieved.

3.5 Apply Paint Color No Lighter than RAL (Reichs-Ausschuß für Lieferbedingungen und Gütesicherung) 9010 Pure White and No Darker than RAL 7035 Light Grey to the Turbines (Planning) (Construction) (Operations). The Lessee will color the wind turbines an off white/grey color (no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey) before beginning commercial operations. The BOEM- approved Certified Verification Agent (CVA) or the Lessee must confirm the paint color as part of the FIR.

3.6 Avoid Identified Shipwrecks, Debris Fields, and Submerged Landform Features that Can be Avoided (Planning) (Construction) (Operations) (Decommissioning). The Lessee must avoid all identified potential shipwrecks and potentially significant debris fields as well as the following submerged ancient landform features identified during marine archaeological surveys of the SFWF and SFEC: SFWF PL-1; SFWF PL-2; SFWF PL-3; known shipwrecks 28 and 32; and potential shipwrecks 30, 82, 112, and 218 by the distances specified in the Marine Archaeological Resources Assessment (MARA) and the MARA Addendum (COP, Appendix R).

3.6.1 For the ancient submerged landform features that can be avoided (SFWF PL-1, SFWF PL-2, and SFWF PL-3), the Lessee must establish a protective buffer extending 30 meters (100-foot) beyond the conservatively delineated landform and will avoid seabed disturbing activities within this buffer during construction, operations, and decommissioning activities (MARA addendum, page 19).

3.6.2 For known shipwrecks 28 and 32, the Lessee must avoid the site by a minimum 50-meter (164-foot) buffer calculated from the maximum discernable extent of the remains and will avoid seabed disturbing activities within this buffer during construction, operations, and decommissioning activities (MARA Section 6).

3.6.3 For potential shipwrecks 30, 82, 112, and 218, the Lessee must avoid the site by a minimum 100-meter (328-foot) buffer calculated from the maximum

discernable extent of material, as scatter material may be buried away from the location of observable remains. The Lessee must avoid seabed disturbing activities within this buffer during construction, operations, and decommissioning activities (MARA Section 6).

3.6.4 If the Lessee determines that it cannot avoid any of the listed submerged ancient landform features, the potential shipwrecks, or potentially significant debris fields as required under Stipulation I.A.1.i of the Section 106 MOA, the Lessee must notify BOEM prior to entering or disturbing the seabed in the excluded area. BOEM will notify the Lessee of any additional requirements, which may include additional investigations to confirm the nature of the resource, additional investigations to determine the resource's eligibility for the National Register of Historic Places (NRHP), and data recovery excavations. If any vessel conducting work on behalf of the Lessee enters or impacts the seafloor within the avoidance areas noted above, the Lessee must submit an incident report to BOEM within 24 hours.

3.7 Conduct Mitigation Investigations of Five Previously Identified Submerged Landform Features that Cannot be Avoided (Planning) (Construction). The Lessee must fund mitigation investigations of the 5 submerged ancient landform features (SFEC-CF-3, SFEC-CF-5, SFEC-CF-7, SFEC-CF-9, and SFEC-CF-13) identified during marine archaeological surveys that remain in the Area of Potential Effects (APE) and cannot be avoided due to the undertaking's design constraints. The Lessee must execute all aspects of this condition of COP approval in accordance with the Section 106 MOA (Stipulation III.B.1) and the Historic Preservation Treatment Plan (HPTP) (Stipulation IV of the Section 106 MOA) that will be finalized after the ROD is issued and in a manner acceptable to BOEM. The HPTP must be completed by August 15, 2022, unless a different date is set for this given HPTP in consultation with signatories, invited signatories, and consulting parties of the Section 106 MOA and confirmed by BOEM. The Lessee must fund and commence these measures prior to the initiation of any offshore, seabed-disturbing Project elements included as part of this undertaking. No construction activity is to proceed that would disturb the seafloor at the ancient submerged landform features until: the appropriate HPTP is approved by BOEM for these features; after any specified fieldwork component of preconstruction investigations at these features is completed by the Lessee; and the Lessee has received written confirmation from BOEM that preconstruction fieldwork is sufficient to satisfy the requirements of the HPTP addressing the ancient submerged landform features. The report(s) prepared must be submitted to BOEM (at renewable_reporting@boem.gov) and to BSEE (at env-compliance-arc@bsee.gov).

3.8 Implement Mitigation Measures to Resolve Visual Adverse Effects to Ten Historic Properties (Planning) (Construction). The Lessee must fund mitigation measures to resolve the adverse effects to the Block Island Southeast Lighthouse National Historic Landmark and the other historic properties (Old Harbor

Historic District, Spring House Hotel, Spring House Hotel Cottage, Spring Street Historic District, Capt. Mark L. Potter House, Vaill Cottage, Gay Head Light, Gay Head – Aquinnah Shops, Vineyard Sound and Moshup's Bridge traditional cultural property) that may be adversely affected due to visual effects through the development and implementation of one or multiple HPTPs pursuant to the Section 106 MOA (Stipulations III and IV). The Lessee must ensure that the requirements, listed for each specific historic property at Stipulation III.C.1.i-vi of the Section 106 MOA, will be included in that property's HPTP(s). Mitigation options for the 10 of these adversely affected historic properties are listed in Stipulation III.C.2 of the Section 106 MOA. These are baseline recommendations for potential mitigation measures, but they may be modified during consultation for the HPTPs pursuant to Stipulation IV of the Section 106 MOA. The HPTPs must be completed by August 15, 2022, unless a different date is set for a given HPTP in consultation with signatories, invited signatories, and consulting parties of the Section 106 MOA and confirmed by BOEM. The report(s) prepared must be submitted to BOEM (at renewable_reporting@boem.gov) and to BSEE (at env-compliance-arc@bsee.gov).

3.9 Annual Monitoring and Reporting on the Section 106 MOA (Planning) (Construction) (Operations) (Decommissioning). At the beginning of each calendar year (by January 30), following the execution of the Section 106 MOA until it expires or is terminated, the Lessee must prepare a summary report detailing work undertaken pursuant to the terms of the Section 106 MOA. Such report shall include a description of how the stipulations relating to avoidance and minimization measures (Stipulations I and II) were implemented including, when applicable, a description of efforts to microsite facilities to avoid ancient submerged landform features; any scheduling changes proposed, any problems encountered; and any disputes and objections received related to BOEM's efforts to carry out the terms of the MOA. The Lessee can satisfy its reporting requirement under this stipulation of the Section 106 MOA (Stipulation X) by providing the relevant portions of the annual compliance certification required under 30 CFR 585.633. The report(s) prepared must be submitted to BOEM (at renewable_reporting@boem.gov) and to BSEE (at env-compliance-arc@bsee.gov).

3.10 Post-Review Discoveries (Planning) (Construction) (Operations) (Decommissioning). If, while conducting activities under the approved COP, the Lessee discovers a potential archaeological resource, such as the presence of a shipwreck (e.g., a sonar image or visual confirmation of an iron, steel, or wooden hull, wooden timbers, anchors, concentration of historic objects, piles of ballast rock), prehistoric artifacts, relict landforms, or other items potentially of an archaeological nature within the SFWF, then the Lessee must:

3.10.1 Immediately halt seabed-disturbing activities within the area of discovery;

3.10.2 As soon as practicable and no later than 24 hours after the discovery, notify BOEM (at renewable_reporting@boem.gov) and BSEE (at env-compliance-arc@bsee.gov) for additional instructions;

3.10.3 Notify DOI in writing via written report, describing the discovery in detail, including a narrative description of the manner of discovery (e.g., date, time, heading, weather, information from logs); a narrative description of the potential resource, including measurements; images of the potential resource that may have been captured; portions of raw and processed datasets relevant to the discovery area; and any other information considered by the Lessee to be relevant to DOI's understanding of the potential resource. Provide the notification to BOEM (at renewable_reporting@boem.gov) and BSEE (at env-compliance-arc@bsee.gov) within 72 hours of its discovery. DOI may request additional information and/or request revisions to the report.

3.10.4 Keep the location of the discovery confidential and take no action that may adversely affect the archaeological resource until DOI has made an evaluation and instructs the Lessee on how to proceed, including when activities may recommence; and

3.10.5 Conduct any additional investigations and submit documentation as directed by DOI to determine if the resource is eligible for listing in the NRHP (30 C.F.R. § 585.802(b)). The Lessee must satisfy this requirement only if: (1) the site has been impacted by the Lessee's Project activities; and/or (2) impacts to the site or to the APE cannot be avoided. If investigations indicate that the resource is potentially eligible for listing in the NRHP, DOI will instruct the Lessee how to protect the resource or how to mitigate adverse effects to the site. If DOI incurs costs in protecting the resource, then DOI may charge, under Section 110(g) of the NHPA, the Lessee reasonable costs for carrying out preservation responsibilities under OCSLA (30 C.F.R. § 585.802(c-d)).

3.11 No Impact Without Approval (Planning) (Construction) (Operations) (Decommissioning). The Lessee may not knowingly impact a potential archaeological resource without DOI's prior concurrence. If a possible impact to a potential archaeological resource occurs, the Lessee must immediately halt operations; report the incident with 24 hours to BOEM (at renewable_reporting@boem.gov) and BSEE (at env-compliance-arc@bsee.gov); and provide a written report to BOEM (at renewable_reporting@boem.gov) and BSEE (at env-compliance-arc@bsee.gov) within 72 hours.

3.12 PAM Placement Review (Construction) (Operations) (Decommissioning). The Lessee may only place PAM systems in locations where an analysis of the results of geophysical surveys has been completed. This analysis must include a determination by a Qualified Marine Archaeologist as to whether any potential archaeological resources are present in the area. This activity may have been performed already as part of the Lessee's submission of archaeological resources

reports in support of its approved COP. Except as allowed by DOI under Stipulation 4.2.6 of the Lease and Section 3.11 above, the PAM placement activities must avoid potential archaeological resources by a minimum of 328 feet (100 meters), and the avoidance distance must be calculated from the maximum discernible extent of the archaeological resource. If the placement area was not previously reviewed and certified by a Qualified Marine Archaeologist in support of the Lessee's approved COP, a Qualified Marine Archaeologist must certify, in an annual letter to DOI, that the Lessee's PAM placement activities did not impact potential historic properties identified as a result of the Qualified Marine Archaeologist's determination. This certification is not required if the PAM placement activities did impact potential historic properties identified in the archaeological surveys without the DOI's prior authorization. In that case, the Lessee and the Qualified Marine Archaeologist who prepared the report must instead provide to DOI a statement documenting the extent of these impacts. This statement must be made to DOI in accordance with Stipulation 4.2.7 of the Lease and Section 3.10, above. BOEM may require additional mitigation measures as appropriate based on a review of the results and supporting information.

APPENDIX B. TECHNICAL MEASURES (TERMS AND CONDITIONS)

1. TECHNICAL CONDITIONS

1.1 Unexploded Ordnance and/or Discarded Military Munitions Investigation (Planning). The Lessee must investigate the areas of potential disturbance for the presence of unexploded ordnance (UXO) and/or discarded military munitions (DMM) and evaluate the risk in accordance with the As Low as Reasonably Practical (ALARP) risk mitigation principle. Implementation of the ALARP risk mitigation principle is achieved with the following steps: (i) desktop study (DTS); (ii) investigation surveys to determine the presence of objects; (iii) identification surveys to determine the nature of the identified objects; (iv) UXO relocation and/or construction re-routing; and (v) certification UXO risks from installation and operation of the facility have been reduced to ALARP levels.

1.1.1 To address UXO/DMM risks as described in the ALARP mitigation process, the lease has submitted information to fulfill steps (i) DTS, (ii) investigation surveys to determine the presence of objects and still needs to complete steps (iii) identification surveys to determine the nature of the identified objects and (iv) UXO relocation and/or construction re-routing prior to construction. Information needed to fulfill step (iii) identification surveys to determine the nature of the identified objects is addressed in conditions 2.2.1 below. Information needed to fulfill step (iv) UXO relocation and/or construction re-routing prior to construction is addressed in conditions 2.1.3.2 below.

1.1.2 UXO/DMM Identification Survey Plan (Planning). The Lessee must submit an Identification Survey Plan to the Department of the Interior (DOI) for review and concurrence prior to the installation of facilities in the Identification Survey area. The Identification Survey Plan must describe investigation surveys to determine the presence of objects and still needs to complete steps the areas that need further investigation as discussed in the DTS and the Investigation Survey Report. The Identification Survey Plan must: include information on the proposed survey vessel, equipment, methodologies, and schedule for the Identification Survey of the areas identified; and provide the anticipated date of submittal of its UXO/DMM Identification Survey Report to DOI. As described in Section 2.1.5 the Identification Survey Report must be submitted to DOI prior to commencing installation activities in the Identification Survey area. If the Identification Survey Plan is not consistent with the recommendations included in the DTS and Investigation Survey Report, the Identification Survey Plan must discuss in detail the deviations and the associated rationale.

1.1.3 UXO/DMM Identification Survey Report (Planning). The Lessee must submit an Identification Survey Report for DOI review and concurrence prior to the installation of facilities in the Identification Survey area. This report must include the following:

1.1.3.1 A detailed discussion of utilized methodologies;

1.1.3.2 A summary and detailed description of the findings and information on all mitigations necessary for UXO/DMM risks to reach ALARP levels such as: detailed information on UXO relocation activities, micrositing of facilities, changes to installation or operational activities, and cable re-routings;

1.1.3.3 A separate list of findings that identify conditions different from those anticipated and discussed in the DTS and the Investigation Survey Report; and

1.1.3.4 A statement attesting that the installation methods and UXO/DMM mitigation strategies discussed in the Fabrication and Installation Report (FIR), DTS, and/or Investigation Survey Report are consistent with the results of the Identification Survey, accepted engineering practices, and applicable best management practices. Alternatively, the Lessee may submit a detailed discussion of alternative installation methods and/or UXO/DMM mitigation strategies that the Lessee has determined to be appropriate given the results of the Identification Survey, accepted engineering practices, and applicable best management practices.

1.1.4 UXO/DMM Survey Results Implementation (Construction). The Lessee must implement the mitigation methods identified in the approved Construction and Operations Plan (COP), DTS, and the subsequent survey report(s) following the resolution of all comments provided by DOI. As part of the FIR and prior to commencing installation activities, the Lessee must make available to the approved Certified Verification Agent (CVA) and DOI for review the complete and final versions of information on implementation and installation activities associated with the ALARP mitigation process, including: (i) desktop study (DTS); (ii) investigation surveys to determine the presence of objects; (iii) identification surveys to determine the nature of the identified objects; (iv) and UXO relocation and/or construction re-routing .

1.1.5 UXO/DMM ALARP Certification (Planning). The Lessee must provide to the Bureau of Ocean Energy Management (BOEM) and make available to the approved CVA information to certify UXO risks related to the installation and operation of the facility have been reduced to ALARP levels as part of the Facilities and Design Report (FDR) and FIR certification and prior to commencing installation activities.

1.2 Safety Management System (Planning) (Construction) (Operations) (Decommissioning). Pursuant to 30 C.F.R. § 585.810, a lessee, designated operator, contractor, or subcontractor constructing, operating, or decommissioning renewable energy facilities on the Outer Continental Shelf (OCS) must have a Safety Management System (SMS). The Lessee must provide a description of the SMS that will guide all activities described in the approved COP (hereafter the "Lease Area's Primary SMS").

The Bureau of Safety and Environmental Enforcement (BSEE) will supply further guidance on the Lease Area Primary SMS content and process until DOI concurs that the SMS is fully functional.

1.2.1 The Lease Area Primary SMS must include a diving safety program or describe how it will ensure a contractor has a diving safety program that is in accordance with the U.S. Coast Guard (Coast Guard) regulations for Commercial Diving Operations at 46 C.F.R. part 197, subpart B, or updated standards, as appropriate. In so providing a diving safety program, the Lessee is required to consult with the Coast Guard.

1.2.2 The Lease Area Primary SMS must include a fall protection program, and, separately, describe how the SFWF's Primary SMS will ensure that contractors working at height will have a fall protection program that complies with the American National Standards Institute (ANSI)/American Society of Safety Engineers (ASSE) Z-359.2 Minimum Requirements for a Comprehensive Managed Fall Protection Program, or an updated version of this standard or a related standard.

1.2.3 The Lease Area Primary SMS must identify and assess risks to health, safety, and the environment associated with the offshore wind farm structures and operations must include an overview of the physical and procedural barrier(s) that will be used and maintained to mitigate the identified risks. The annual SMS reports (see Section 2.2.5) must discuss the operability and physical condition of the identified barriers and any changes made to the barrier systems.

1.2.4 The Lease Area Primary SMS is expected to evolve as activities progress from site characterization through construction, operations, and eventually to decommissioning, typically, by acknowledging the new risks that will be faced by a shifting workforce, and by incorporating work practices and operating procedures specific to managing those risks. Pursuant to 30 C.F.R. § 585.811, the Lease Area Primary SMS must be fully functional for all relevant activities prior to their commencement. The Lessee must demonstrate, to DOI's satisfaction, the functionality of the Lease Area Primary SMS no later than 30 calendar days prior to beginning each major stage of the Project (i.e., construction, operation, maintenance, decommissioning), as described in the approved COP. A revised description of the Lease Area Primary SMS must be submitted at each major stage of the Project if different risks exist, the Project stage involves new activities, or new risk mitigations (e.g., new standards or best practices) are proposed. The Lessee can demonstrate the Lease Area Primary SMS functionality through various means. The following list provides examples, neither exhaustive nor prescriptive, of additional ways that BOEM expects the Lease Area Primary SMS functionality to be demonstrated.

1.2.4.1 If the Lessee has a similar SMS that is functioning elsewhere, the Lessee can demonstrate the proper functioning of the SMS by sharing certifications of that SMS from a recognized accreditation organization (e.g., International Organization for Standardization

(ISO)/International Electric Code (IEC) 450001, ANSI Z10, API RP 75 4th or later edition) or by sharing reports of third-party or internal audits of the SMS. The Lessee must also share an explanation of how the Lessee has adapted the audited SMS to become the Lease Area Primary SMS.

1.2.4.2 If the Lessee does not have a similar SMS that is functioning elsewhere, demonstration of functionality should include at least one of the following activities:

- A desktop exercise in which the Lessee evaluates how the Lease Area Primary SMS functions in response to different scenarios, including an evaluation of the strengths and weaknesses of Lessee's preparedness to control various risks;

- A description of the personnel who have been trained on the Lease Area Primary SMS, an overview of the training content, and a description of controls the Lessee has put in place to ensure trained personnel's understanding of and adherence to the Lease Area Primary SMS; or

- A detailed description of how the Lessee intends to monitor whether the implementation of the Lease Area Primary SMS is achieving the desired goals, and an overview of how the SMS will be adjusted as necessary to control identified risks.

1.2.5 The Lessee is also required to provide BSEE with annual reports, by the anniversary date of DOI's initial concurrence with the Lease Area Primary SMS, highlighting: (1) changes that have been made to the Lease Area Primary SMS; (2) successes and challenges regarding the implementation of the Lease Area Primary SMS; and (3) evidence of the functionality of the Lease Area Primary SMS, specifically how the Lease Area Primary SMS has driven continual improvement in safety and environmental performance. If DOI determines that changes to the Lease Area Primary SMS were significant, DOI will review the changes and ask for any additional details or clarification as required. The Lessee must revise and resubmit its Lease Area Primary SMS description if DOI does not concur with the Lessee's changes.

1.2.6 In addition to maintaining an acceptable and functional Lease Area Primary SMS, the Lessee, designated operator, contractor, and subcontractor constructing, operating, or decommissioning renewable energy facilities on the OCS, are required to follow the policies and procedures of the specific SMS applicable to their activities, and to take corrective action whenever there is a failure to follow the specific SMS, or the specific SMS failed to ensure safety.

1.3 Oil Spill Response Plan (Planning). Pursuant to 30 C.F.R. § 585.627(c), the Lessee must submit an Oil Spill Response Plan (OSRP) in compliance with 33 U.S.C. § 1321,

including information identified in 30 C.F.R. part 254 that is applicable to the Lessee's activities. The Lessee must submit the OSRP directly to BSEE (at bseeosrd-gomr@bsee.gov). Before the installation of any component of the Lessee's facilities that may handle or store oil on the OCS, BSEE must review and accept the Lessee's OSRP. The Lessee's OSRP must be consistent with the National Contingency Plan and appropriate Area Contingency Plan(s), as defined in 30 C.F.R. § 254.6. In order to continue operating, the Lessee must operate in accordance with the OSRP accepted by BSEE.

The Lessee's OSRP must contain the following information:

1.3.1 Facility Information. The OSRP must describe the type and amounts of oil on the facilities covered under the Lessee's OSRP, and design parameters intended to monitor for oil spills.

1.3.1.1 As used herein, "Oil," as defined by Clean Water Act at 33 U.S.C. 1321(a), means oils of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. However, "oil," does not include animal fats, oils, and greases, and fish and marine mammal oils, or oils of vegetable origin, including oils from seeds, nuts, or kernels. Dielectric fluids, as an example, meets this definition of oil. "Facility," for the purposes of the Lessee's OSRP, is a facility as defined in 30 C.F.R. § 585.112 that contains or stores oil.

1.3.2 Copies of Safety Data Sheets. The OSRP must include copies of safety data sheets (SDS) for any oils present on any facility in quantities equal to or greater than 100 gallons.

1.3.3 The Worst-Case Discharge Volume. The OSRP must include the worst-case discharge (WCD) volume for each type of facility covered in the plan.

1.3.3.1 The "Worst-Case Discharge Volume" is the highest cumulative volume of oil and all other oil-based substances contained on a single facility, such as an offshore substation (OSS) or wind turbine generator (WTG).

1.3.3.2 Calculating the Lessee's WCD volume(s):

1.3.3.2.1 For all facilities (e.g., WTGs or other support structures) other than OSS and transmission lines, the WCD is the highest total volume of oil and oil-based substances contained onboard or within the facility, including all cables containing oil that are connected to the facility, except for transmission lines.

1.3.3.2.2 For an OSS, the WCD is the highest total volume of oil and oil-based substances contained within the facility,

including all cables containing oil that are connected to the facility, except for transmission lines.

1.3.3.2.3 For transmission lines that contain oil, the WCD is the maximum volume of oil and oil-based substances that can be contained within the transmission line with the highest oil storage capacity and any storage tanks that may supply oil to the cable.

1.3.4 Response Organization. The OSRP must identify a trained Qualified Individual (QI), and an alternate, who have full authority to implement removal actions and ensure immediate notification of appropriate Federal officials and response personnel. The OSRP must provide these individuals' 24-hour contact information, including phone numbers and e-mail addresses. In the OSRP that covers the OSS, the Lessee must also designate trained members of the Lessee's Incident Management Team (IMT), and provide their 24-hour contact information, including phone numbers and e-mail addresses. If a contract has been established with an IMT, evidence of such a contract must be provided in the Lessee's OSRP.

1.3.4.1 "Qualified Individual" means an English-speaking representative of the Lessee located in the United States, available on a 24-hour basis, and with full authority to obligate funds, carry out removal actions, and communicate with the appropriate Federal officials and the persons providing personnel and equipment in removal operations.

1.3.4.2 "Incident Management Team" means the group of personnel identified to staff the organizational structure to manage the overall response to an incident in accordance with the Lessee's OSRP. The IMT consists of the Incident Commander, Command and General Staff, and other personnel assigned to key Incident Command System positions designated in the Lessee's OSRP.

1.3.4.3 "Oil Spill Removal Organization" (OSRO) is an entity contracted by the Lessee to provide spill response equipment and/or manpower in the event of an oil spill.

1.3.4.4 "Spill Response Operating Team" (SROT) means the trained persons who respond to spills and deploy and operate oil spill response equipment.

1.3.5 Notification Procedures. The OSRP must describe the procedures for spill notification. Notification procedures must include the 24-hour contact information for:

1.3.5.1 The QI and an alternate, including phone numbers and e-mail addresses;

1.3.5.2 IMT members, if applicable;

1.3.5.3 Federal, state, and local regulatory agencies that must be notified when a spill occurs, including but not limited to the National Response Center;

1.3.5.4 An OSRO and SROT that are available to respond; and

1.3.5.5 Other response organizations and subject matter experts that the Lessee will rely on for the Lessee's response.

1.3.6 Spill Mitigation Procedures. The OSRP must describe the different discharge scenarios that could occur from the Lessee's facilities and the mitigation procedures by which the offshore facility operator and any listed/contracted OSROs (if required) would respond to such discharges. The mitigation procedures must address responding to both smaller spills (with slow, low-volume leakage) and larger spills to include the largest WCD covered under the Lessee's OSRP (refer to definition above).

1.3.7 Trajectory Analysis. The OSRP that covers the OSS must include a stochastic spill trajectory analysis from the OSS. The trajectory analysis must:

1.3.7.1 Be based on the WCD volume from the OSS that contains highest total volume of oil and oil-based substances. If the OSS contain the same volume of oil and oil-based substances, base the trajectory analysis on the OSS that is closest to shore;

1.3.7.2 Be conducted for the longest period that the discharged oil would reasonably be expected to persist on the water's surface, or 14 calendar days, whichever is shorter; and

1.3.7.3 Identify the probabilities for oiling on the water's surface and on shorelines, and minimum travel times for the transport of the oil over the duration of the model simulation. Oiling probabilities and minimum travel times must be calculated for exposure threshold concentrations reaching 10 grams per square meter. Stochastic analysis must incorporate a minimum of 100 different trajectory simulations using random start dates selected over a multi-year period.

1.3.8 Resources at Risk. The OSRP must include a concise list of the sensitive resources that are located near the Lessee's offshore facility and could be oiled by a spill. In lieu of listing sensitive resources, the Lessee may identify the areas that could be oiled by a spill from the Lessee's facility and provide hyperlinks to corresponding Environmentally Sensitive Index Maps and/or Geographic Response Strategies for those areas from the appropriate Area Contingency Plans.

1.3.9 Contractual Agreements. The OSRP must include a list of OSROs and SROTs that are available to respond to the WCD of oil from the Lessee's offshore facilities and their contact information.

1.3.9.1 If the Lessee's OSRP covers only WTGs, the Lessee may provide a Letter of Intent (LOI) in lieu of a contract from each OSRO and SROT in the Lessee's plan acknowledging that it has agreed to be listed in the Lessee's OSRP.

1.3.9.2 In the OSRP that covers the OSS, the Lessee is required to ensure the availability of the OSRO and SROT resources necessary to respond through a contract or membership agreement. If a contract has been established with an OSRO and SROT, evidence of such contracts or membership agreements must be provided in the Lessee's plan. An LOI is not required from any OSRO or SROT that has been ensured to be available through a contract.

1.3.9.3 The OSRP must also include a map(s) that shows equipment storage sites and staging location(s) for the oil spill response equipment that would be deployed by the facility operators or the OSRO(s) listed in the plan in the event of a discharge.

1.3.10 Training. The OSRP must include a description of the annual training necessary to ensure that the QI, IMT, OSRO and SROT (as applicable) are sufficiently trained to perform their respective duties. The Lessee's OSRP must provide the most recent dates of applicable training(s). The Lessee must ensure that the Lessee's QI, IMT, OSRO, and SROT personnel receive annual training. The training must be sufficient for personnel to perform their duties. Training records must be maintained and retained for 3 years and must be provided to BSEE upon request.

1.3.11 Response Plan Exercise. The OSRP must include a triennial exercise plan for review and concurrence by BSEE to ensure that the Lessee is able to respond quickly and effectively whenever oil is discharged from the Lessee's facilities. The Lessee must conduct an annual scenario-based notification exercise, an annual scenario-based IMT tabletop exercise, and, during the triennial exercise period, at least one functional exercise. If the Lessee's plan includes an OSRO and/or SROT contract, an annual deployment exercise of the Lessee's contracted response equipment is required. BSEE will advise on the options the Lessee has to satisfy these requirements and may require changes in the type, frequency, or location of the required exercises, exercise objectives, equipment to be deployed and operated, or deployment procedures or strategies. BSEE may evaluate the results of the exercises and advise the Lessee of any needed changes in response equipment, procedures, tactics, or strategies. BSEE may periodically initiate unannounced exercises to test the Lessee's spill preparedness and response capabilities. Exercise records must be maintained and retained for 3 years and must be provided to DOI upon request.

1.3.12 Response Equipment. The OSRP that covers the OSS must: include a list, or a hyperlink to a list, of the oil spill response equipment that is available to the Lessee through OSRO contracts; and identify the location of the equipment depots where the equipment is stored. The Lessee must: ensure that the Lessee's contracted response equipment is maintained in proper operating condition; further ensure that all maintenance, modification, and repair records are kept for a minimum of 3 years; and provide these records to BSEE upon request. The Lessee or the Lessee's OSRO must provide BSEE with physical access to the Lessee's equipment storage depots and perform functional testing of the Lessee's response equipment upon BSEE's request. BSEE may require maintenance, modifications, or repairs to response equipment or require the Lessee to remove response equipment from the Lessee's plan if it does not operate in accordance with its intended purpose.

1.3.13 OSRP Maintenance. If the Lessee makes a significant change to its OSRP that would reduce the Lessee's ability to respond to: a spill, a significant increase in the Lessee's WCD, removal of a contracted IMT, OSRO, or SROT from the Lessee's plan, or a significant change in the applicable area contingency plans, the Lessee must revise its OSRP to remedy these problems and provide notice to BSEE no more than 15 calendar days after said change for review and concurrence. The Lessee must review and update the entire OSRP as needed at intervals not to exceed once every 3 years, starting from the date the OSRP was initially accepted. The Lessee must send a written notification to BSEE upon completion of this review and submit any updates for concurrence. BSEE may require changes to the Lessee's OSRP if BSEE determines that the OSRP is outdated or contains significant inadequacies through review of the Lessee's OSRP, information obtained during exercises or actual spill responses, or other relevant information obtained by BSEE.

1.4 Cable Routings (Planning). The Lessee must submit the final Cable Burial Risk Assessment (CBRA) package and engineered cable routings for all cable routes on the OCS to DOI for review prior to or with the submittal of the relevant FDR/FIR, as appropriate. The final CBRA package must include a summary of final information on: (a) natural and man-made hazards; (b) sediment mobility, including high and low seabed levels expected over the Project lifetime; (c) feasibility and effort level information required to meet burial targets; and (d) profile drawings of the cable routings illustrating cable-burial targets along with the stable seabed depth, and (e) minimum burial depths to address threats to the cable including, but not limited to, anchoring risk, military activity, and fishing gear interaction. Detailed supporting data and analysis may be incorporated by reference or attachments. The Lessee must resolve any DOI-identified comments and concerns about the CBRA to DOI's satisfaction prior to the installation of cables and related facilities authorized in the Lessee's approved COP.

1.5 Cable Burial (Planning) (Construction) (Operations). As described in the approved COP, the export and inter-array cables is expected to be installed using a mechanical cutter, mechanical plow, jet plow, or controlled flow excavator as described in Section

3.1.3.3 and 3.2.3.2 of the approved COP. For the purpose of the approved COP, DOI has determined the proper burial depth to be a minimum of 4 feet (1.2 meters) along Federal sections of the export cable and inter-array cables. This depth is consistent with the approved COP and the cable burial performance assessment provided in the initial CBRA. Unless otherwise authorized by BOEM, the Lessee must comply with cable burial conditions described in the COP by demonstrating proper burial depth of the installed submarine cables along at least 95 percent of the total export cable length in Federal waters and at least 90 percent of the inter-array cable routing, excluding cable crossings and approaches to foundations. Unless otherwise specified by BOEM, the maximum size of the approach to foundations is the 300 ft (91.4m) radius around a foundation as described as the conservative estimate in the COP.

1.6 Cable Protection Measures (Planning) (Construction) (Operations). As described in the approved COP, the export and inter-array cables are expected to be installed using a mechanical cutter, mechanical plow, jet plow, or controlled flow excavator as described in Section 3.1.3.3 and 3.2.3.2 of the approved COP. In areas, where proper burial depth cannot be achieved, the Lessee may employ cable protection measures through techniques such as concrete mattresses, fronded mattresses, rock bags, or rock placement. In areas where final cable burial depth is less than 1 foot 8 inches (0.5m), SFW will install secondary protection, as it deems necessary or as required by BOEM.

1.6.1 As described in the approved COP, the use of cable protection measures will not exceed 5 percent of the total export cable length in Federal waters or 10 percent along the inter-array cable routing. For the purpose of the approved COP, DOI has determined the proper burial depth to be a minimum of 4 feet (1.2 meters) along Federal sections of the export cable and inter-array cables, as measured from the stable seabed to the top of the cable. This depth is consistent with the approved COP and the cable burial performance assessment provided in the initial CBRA. The Lessee may employ cable protection measures when proper burial depth is not achieved and provide DOI with detailed drawings/information of the actual burial depths and locations where protective measures were used, when the post-installation reports are submitted.

1.6.2 If the Lessee cannot comply with the requirements in Section 2.5.1, the Lessee must provide for DOI's review information explaining any proposed alteration of the requirements in that Section 2.5.1, including the need for the proposed alteration, and must resolve any DOI concerns and objections to such alteration to DOI's satisfaction prior to or with the FIR submission and CVA verification.

1.7 Crossing Agreements (Planning). The Lessee must provide final cable crossing agreements for each active, in-service submarine cable, or other types of in use infrastructure, such as pipelines, to DOI no later than 30 calendar days prior to cable installation and be made available to the CVA for FDR and FIR review, unless otherwise determined by BOEM.

In the event that the lessee concludes that it will be unable to reach a cable crossing agreement, the Lessee must inform BOEM as soon as possible, and no later than concurrent with the submission of the relevant FDR and FIR. A cable crossing agreement will not be required if BOEM has determined, at its sole discretion and based on its review of the record of relevant communications from the Lessee to owners or operators of active, in-service submarine cables, or other types of in use infrastructure, that the Lessee made reasonable efforts to enter an agreement and was unable to do so.

1.8 Post-Installation Cable Monitoring (Construction) (Operations). The Lessee must provide DOI with a cable monitoring report within 90 calendar days following each inter-array and export cable inspection to determine cable location, burial depths, the state of the cable, and site conditions. Inspections of the inter-array and export cables must: include high resolution geophysical (HRG) methods, involving, for example, multi-beam bathymetric survey equipment; and identify seabed features, natural and man-made hazards, and site conditions along Federal sections of the cable routing.

1.8.1 Unless an alternate cable monitoring plan is submitted and accepted by DOI, on the OCS, the Lessee must conduct the initial inter-array and export cable inspection within 6 months of commissioning, and subsequent inspections at Years 1 and 2, and every 3 years thereafter, and within 180 calendar days after a major storm event (as defined in the Post-Storm Monitoring Plan, described in Section 2.10). If DOI determines that conditions along the cable corridor warrant adjusting the frequency of inspections following the Year 2 survey (e.g., due to changes in cable burial or seabed conditions that may impact cable stability or other users of the seabed), then DOI may require the Lessee to submit a revised monitoring plan to DOI for review and concurrence.

1.8.2 If the Lessee and/or DOI determines that burial conditions have deteriorated or changes significantly and remedial actions are warranted, the Lessee must submit the following to BOEM (at renewable_reporting@boem.gov) and BSEE (at OSWsubmittals@bsee.gov) within 45 calendar days of the date of the notice of determination: the data used to make the determination, a seabed stability analysis, and a report of remedial actions taken or scheduled. All remedial actions must be consistent with those described in the approved COP and completed in accordance with the schedule provided in the remedial action report. DOI will review the report of remedial actions and provide comments, if any, within 60 calendar days of submittal. The Lessee must resolve all comments on the report to DOI's satisfaction. If DOI provides no comments on the report within 60 days of its submittal, then the Lessee may perform remedial actions described in the report.

1.9 WTG and OSS Foundation Depths (Planning). In a letter dated February 26, 2020, BOEM granted a departure from 30 C.F.R. 585.626(a)(4) and (6), permitting Lessee to provide the final geotechnical investigation at the proposed foundation locations in the FDR. The FDR must include geotechnical investigations at all approved foundation

locations along with associated geotechnical design parameters and recommendations in accordance with 30 C.F.R. 585.626(a)(4) and (6).

1.10 Minimizing and Monitoring Foundation Scour Protection (Construction) (Operations) (Decommissioning). The Lessee must: minimize, to the maximum extent practicable based on design and engineering considerations, the footprint of scour protection measures at the WTG foundations; and inspect scour protection performance. The Lessee must submit an Inspection Plan to DOI and the National Marine Fisheries Service (NMFS) at least 60 calendar days prior to initiating the inspection program. DOI will review the Inspection Plan and provide comments, if any, on the plan within 60 calendar days of its submittal. The Lessee must resolve all comments on the Inspection Plan to DOI's satisfaction and receive DOI's written concurrence prior to initiating the inspection program. However, the Lessee may conclusively presume DOI's concurrence with the Inspection Plan if DOI provides no comments on the plan within 60 calendar days of its submittal.

1.10.1 The Lessee must carry out an initial foundation scour inspection within 6 months of installation completion of each foundation location, and subsequent inspections at each foundation location at intervals not greater than 5 years thereafter, and within 180 calendar days after a major storm event (as defined in the Post-Storm Monitoring Plan, described in Section 2.10).

1.10.2 The Lessee must provide DOI with a foundation scour monitoring report within 90 calendar days of completing each foundation scour inspection.

1.10.3 Should scour holes develop within 10 percent of the minimum local scour design values, or if spud depressions from installation affect scour protection stability, the Lessee must submit a plan for additional monitoring and/or mitigation to DOI for review and concurrence.

1.11 Post-Storm Monitoring Plan (Construction) (Operations) (Decommissioning). The Lessee must provide a plan for post-storm monitoring of the facility infrastructure, foundation scour protection, and cables to DOI for review and concurrence prior to commencing installation activities. This plan must: include a description of how the Lessee will measure or monitor environmental conditions; specify the condition thresholds for a major storm, and their associated technical justification(s), above which post-storm monitoring or mitigation is necessary; describe potential monitoring, mitigation, and damage identification methods; and state when the Lessee will notify DOI of post-storm related activities. DOI reserves the right to require post-storm mitigations to address conditions that could result in safety risks and/or impacts to the environment.

1.12 High-Frequency Radar Interference Analysis and Mitigation (Planning) (Construction) (Operations). Recent BOEM research (Colburn et al., 2020[1]) has determined that the Lessee's Project is within the line of sight (LOS) of eight oceanographic high-frequency (HF) radar systems (SeaSonde® and LERA types):

Radar Name	Radar System
BISL	Medium Range SeaSonde
LPWR	Medium Range LERA
HBSR	Medium Range LERA
NWTP	Medium Range LERA
CPVN	Medium Range LERA
MVCO	Long Range SeaSonde
NANT	Long Range SeaSonde
AMAG	Long Range SeaSonde

1.12.1 Mitigation Agreement. At least 60 calendar days prior to completion of construction or initiation of commercial operations (whichever is earlier), the Lessee must enter into a mitigation agreement with the Surface Currents Program of the National Oceanic & Atmospheric Administration (NOAA) Integrated Ocean Observing System (IOOS) Office, to determine if the Lessee's Project causes radar interference to the degree that radar performance is no longer within the specific radar systems' operational parameters or fails to meet their mission objectives. The mitigation agreement serves for purposes of implementing Sections 2 and 3 below. If there is any discrepancy between Sections 2 and 3 and the terms of the mitigation agreement, the terms of the mitigation agreement will prevail. Within 15 calendar days of entering into the mitigation agreement, the Lessee must provide BOEM with a copy of the executed mitigation agreement. Within 45 calendar days of completing the requirements in Sections 2 and 3, the Lessee must provide BOEM with evidence of compliance with those requirements. The Surface Currents Program point-of-contact for development of the agreement is Brian Zelenke (brian.zelenke@noaa.gov), NOAA IOOS *Surface Currents Program Manager*.

1.12.2 If the Surface Currents Program or radar operator determines that the Project causes a radar system to fall outside of its operational parameters or fails to meet mission objectives, as soon as possible and no later than thirty (30) days of determination, the Lessee must:

1.12.2.1 Notify DOI of the determination;

[1] Colburn R., C. Randolph., C. Drummond, M. Miles, F. Brody, C. McGillen, A. Krieger, and R. Jankowski. 2020. *Radar Interference Analysis for Renewable Energy Facilities on the Atlantic Outer Continental Shelf*. OCS Study BOEM 2020-039. McLean, Virginia: U.S. Department of the Interior, Bureau of Ocean Energy Management. https://www.boem.gov/sites/default/files/documents/environment/Radar-Interferance-Atlantic-Offshore-Wind_0.pdf

1.12.2.2 Share real-time telemetry of surface currents and other oceanographic data with the Surface Currents Program and radar operators into the public domain, measured at locations in the Project confirmed by the Surface Currents Program and radar operators as sufficient to allow mission objectives to be met; and

1.12.2.3 Share time-series of blade rotation rates, nacelle bearing angles, and other information about the operational state of each of the Project's turbines with the Surface Currents Program and radar operators to aid interference mitigation.

1.12.3 NOAA IOOS Surface Currents Program Notification. At least 30, but no more than 60, calendar days prior to completion of construction or initiation of commercial operations (whichever is earlier), the Lessee must notify the Surface Currents Program.

1.13 Commissioning Surveillance of Critical Safety Systems (Planning) (Construction). Prior to commencing commercial operations, the Lessee must provide to DOI qualified third-party verification of proper installation and commissioning of all critical safety systems and equipment designed to prevent or ameliorate major accidents that could result in harm to health, safety, or the environment (hereinafter "critical safety systems"). The documentation provided to DOI must demonstrate that the qualified third party verified that the critical safety systems for the Project and equipment to be used were commissioned in conformity with the Original Equipment Manufacturer (OEM)'s standards and the Project's functional requirements, are functioning properly prior to the start of commercial operations.

1.13.1 Qualified Third Party. A qualified third party must be a technical classification society, a licensed professional engineering firm, or a registered professional engineer capable of providing the necessary certifications, verifications, and reports. The qualified third party must not have been involved in the design of the Project.

1.13.2 Critical Safety Systems and Equipment Risk Assessment. The Lessee must conduct a risk assessment to identify the critical safety systems and equipment within its facility. The Lessee must submit the risk assessment to DOI and the qualified third party for review. The qualified third party must make a recommendation to DOI on the acceptability of the risk assessment and its associated conclusions. DOI must concur with the qualified third-party recommendation(s) prior to the Lessee beginning commissioning activities.

1.13.3 Commissioning Surveillance Requirements. The qualified third party must evaluate whether the commissioning of the wind farms' critical safety systems and equipment, as identified in the risk assessment, are in conformance with the instructions in OEM manuals and the Project's functional requirements. Other tests to be performed during commissioning may be agreed upon with the Lessee.

This evaluation requires the examination of commissioning records and witnessing of tests. The qualified third party must witness the commissioning of the critical safety systems and equipment of at least one WTG. The qualified third party must, at a minimum, verify that:

1.13.3.1 The installation procedures and/or commissioning instructions supplied by the manufacturer and identified in the Project's functional reequipments are adequate;

1.13.3.2 The instructions supplied by the manufacturer and identified in the Project's functional reequipments are followed during commissioning;

1.13.3.3 The systems and equipment function as designed; and

1.13.3.4 The final commissioning records are complete.

1.13.4 Commissioning Surveillance Reporting. The Lessee must submit commissioning surveillance records (for example, the final results and acceptance of the commissioning test by the qualified third party) or a Conformity Statement and supporting documentation (prepared in accordance with International Electrotechnical Commission System for Certification to Standards relating to Equipment for use in Renewable Energy applications (IECRE OD-502)) for the critical safety systems identified in Section 2.13.2. DOI must concur with the commissioning surveillance records or Conformity Statement and supporting documentation prior to the Project initiating commercial operations. If DOI has not responded to the commissioning surveillance records or Conformity Statement and supporting documentation submitted by the qualified third party within 3 working days, then the Lessee may presume concurrence.

1.14 As-Built Drawings (Construction) (Operations) (Decommissioning). The Lessee must compile, retain, and make available to DOI the following drawings and documents, as provided in the chart below.

Drawing Type	Time frame to make available issued for construction drawings	Time frame to make available post-fabrication drawings	Time frame to make available final, stamped as-built drawings
Complete set of structural drawing(s) including major structural components and evacuation routes	With FDR submittal	N/A	Within 1 calendar year of the facility commencing commercial operations[2]
Front, side, and plan view drawings	With FDR submittal	N/A	Within 1 calendar year of the facility commencing commercial operations
Location plat for all Project facilities	With FDR submittal	N/A	Within 1 calendar year of the facility commencing commercial operations
Complete set of cable drawing(s)	With FDR submittal	Prior to Final FIR Non-Objection as contemplated in 30 C.F.R. § 585.700(b)[3]	Within 90 calendar days of the facility commencing commercial operations
Piping and instrumentation diagram(s)		N/A	Within 90 calendar days of the facility commencing commercial operations
Safety flow diagram(s)[4]	With FDR submittal	N/A	Within 90 calendar days of the facility commencing commercial operations
Electrical one-line drawing(s)		Prior to Final FIR Non-Objection	Within 90 calendar days of the facility commencing commercial operations
Cause and Effect Chart		Prior to Final FIR Non-Objection	Within 90 calendar days of the facility commencing commercial operations
Schematics of the fire and gas-detection system(s)		Prior to Final FIR Non-Objection	Within 90 calendar days of the facility commencing commercial operations

[2] "Commercial operations" is defined at 30 C.F.R. § 585.112.
[3] As-installed location must be submitted with the final FIR.
[4] Safety flow diagrams should depict the location of critical safety systems and equipment designed to prevent or ameliorate major accidents that could result in harm to health, safety, or the environment.

2. NAVIGATIONAL AND AVIATION SAFETY CONDITIONS

2.1 Design Conditions (Planning) (Construction) (Operations).

2.1.1 Marking. The Lessee must mark each WTG and OSS with private aids to navigation. No sooner than 30 and no less than 15 calendar days prior to installation, the Lessee must file an application (form CG-2554), either in paper form or electronically, with the Commander of the First Coast Guard District to establish Private Aids to Navigation (PATON), per 33 C.F.R. part 66. Approval must be obtained before installation of the Lessee's facilities begins. The Lessee must:

2.1.1.1 Provide a lighting, marking, and signaling plan for review and concurrence by DOI and the Coast Guard at least 120 calendar days prior to installation. The plan must conform to applicable Federal law and regulations, and guidelines established by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Recommendation R0139 (O-139); the Marking of Man-Made Offshore Structures; the Coast Guard's Local Notice to Mariners (D1 LNM: 33/20) on Ocean-Structure PATON Marking Guidance; and BOEM's Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development (April 28, 2021). Should any part of Recommendation O-139 conflict with Federal law or regulation, or if the Lessee seeks an alternative to Recommendation O-139, then the Lessee must consult with and gain approval from the Coast Guard;

2.1.1.2 Mark each individual WTG and OSS with clearly visible, unique, alpha-numeric identification characters consistent with the attached Rhode Island and Massachusetts Structure Labeling Plot. The Lessee must additionally display this label on each WTG nacelle, visible from above. If the Lessee's OSS includes helicopter landing platforms, as described in Section 3.1.3, then Lessee must also display this label on those platforms;

2.1.1.3 Light each WTG and OSS in a manner that is visible by mariners in a 360-degree arc around the WTG and OSS;

2.1.1.4 Install red obstruction lighting for each WTG that is compatible with night-vision goggles and consistent with the Federal Aviation Administration (FAA) (Advisory Circular (AC) 70/7460-lM);

2.1.1.5 Provide signage, which is visible to mariners in a 360-degree arc around the structures, warning vessels of the air draft below the turbine blades as determined at highest astronomical tide;

2.1.1.6 Cooperate with the Coast Guard and NOAA to ensure that cable routes, OSS, and WTGs are depicted on appropriate government-produced and commercially available nautical charts;

2.1.1.7 Provide mariner information sheets on the Lessee's website, with details on the location of the WTGs and OSS and specifics such as blade clearance above sea level; and

2.1.1.8 Submit documentation to DOI within 90 calendar days of beginning commercial operations documenting compliance with Sections 3.1.1.1 through 3.1.1.7.

2.1.2 Blade/Nacelle Control. The Lessee must equip all WTG rotors (blade assemblies) with control mechanisms constantly operable from the Lessee's control center.

2.1.2.1 Control mechanisms must enable the Lessee to immediately initiate the shutdown of any requested WTGs upon notification from the Department of Defense (DoD) or the Coast Guard. The Lessee must include a formal shutdown procedure in its Emergency Response Plan's Standard Operating Procedures and test this procedure on a regular basis as outlined in the Lessee's annual inspection plan. The Lessee must submit the results of testing with the Project's annual inspection results.

2.1.2.2 The DoD or Coast Guard may request rotor shutdown. The Lessee must immediately initiate shutdown when ordered by the DoD or Coast Guard. Coast Guard-requested shutdowns will be limited to those WTGs in the immediate vicinity of an emergency and limited to the period the Coast Guard determines is needed to safely respond to the emergency triggering the emergency shutdown. The Lessee may resume operations only upon notification from the entity (DoD or Coast Guard) that initiated the shutdown. DOI will coordinate with the Lessee and DoD or Coast Guard to facilitate issuance of said notice as soon as resuming operation of the WTGs is not expected to interfere with the emergency that prompted the shutdown.

2.1.2.3 The Lessee must work with the Coast Guard to establish the proper blade configuration during WTG shutdown for Coast Guard search and rescue air assets.

2.1.2.4 The Lessee must participate in Coast Guard periodic coordinated training and exercises to test and refine notification and shutdown procedures, and to provide search and rescue training opportunities for Coast Guard Command Centers, vessels, and aircraft.

2.1.3 Helicopter Landing Platforms. If the Lessee's OSS include helicopter landing platforms, the Lessee must design and build those platforms to

accommodate Coast Guard HH60 rescue helicopters. The design must be verified by the DOI-approved CVA.

2.1.4 Structure Micrositing. The Lessee must not adjust approved structure locations in a way that narrows any northwest-southeast or northeast-southwest transit corridors to less than 0.6 nautical miles. The Lessee must submit the final as-built structure locations as part of the as-built documentation outlined in Section 2.13.

2.1.5 Emergency Response Plan. Prior to construction of the Project, the Lessee must submit an Emergency Response Plan to address non-routine events for review and concurrence by DOI and the Coast Guard. Annually, the Lessee must submit any revisions of the plan for review and concurrence by the Coast Guard. The Lessee must submit to DOI revisions to the Emergency Response Plan accepted by the Coast Guard. The Emergency Response Plan must demonstrate that the control center will be adequately staffed to execute the standard operating procedures, communications capabilities with the Coast Guard, and monitoring capabilities over the Project. The Emergency Response Plan must address the following, which the Lessee may modify with concurrence from the Coast Guard:

2.1.5.1 Standard Operating Procedures. Methods for: (i) establishing and testing WTG rotor shutdown and braking; (ii) lighting control; (iii) notifying the Coast Guard of mariners in distress or potential/actual search and rescue incidents; (iv) notifying the Coast Guard of any events or incidents that may impact maritime safety or security; and (v) providing the Coast Guard with environmental data, imagery, communications, and other information pertinent to search and rescue or marine pollution response.

2.1.5.2 Staffing. The number of personnel intended to staff the control center to ensure continuous monitoring of WTG operations; communications and surveillance systems; hours of operation; job qualification requirements; and initial, on-the-job, and refresher training requirements.

2.1.5.3 Communications. Description of the capabilities to be maintained by the control center to communicate with the Coast Guard and mariners within and in the vicinity of the Lease area. Control center communications capability must include, at a minimum, landline and wireless telephone for voice and data. Construction and operations vessel communications capability must include, at a minimum, Very High Frequency (VHF) marine radio.

2.1.5.4 Monitoring. The control center must maintain the capability to monitor the Lessee's installation and operations in real time, including at night and in periods of poor visibility, for: (i) determining the status of all PATONs, immediately reporting discrepancies to the local Coast

Guard Sector Command Center (discrepancies must be corrected no later than 21 calendar days after detection); and (ii) any available Lessee vessels or monitoring equipment (e.g. cameras) searching for and locating mariners in distress upon notification of a maritime distress incident.

- The Lessee must test the monitoring systems to ensure functionality on a regular basis as outlined in the Lessee's annual inspection plan. The Lessee must submit the results of testing to DOI with the Project's annual inspection results.

- The Lessee must contact the Coast Guard immediately if real-time monitoring is unavailable for more than 1 hour. The Lessee must put in place an alternate monitoring plan(s) agreed to by the Coast Guard.

- The Lessee must notify DOI within 24 hours if real-time monitoring becomes unavailable for more than 1 hour.

2.1.5.5 Examples of Non-Routine Events. Non-routine events may include, but are not limited to, area oil spills, major storm events (as defined in the Post-Storm Monitoring Plan, described in Section 2.10), marine incidents, mariners taking refuge within and on the facility. As part of the coordination required under Section 3.1.5, the Lessee must consult with the Coast Guard on the events that must be covered within the Emergency Response Plan.

2.2 Installation Conditions (Planning) (Construction).

2.2.1 Schedule. At least 60 calendar days prior to commencing offshore construction activities, the Lessee must provide DOI and the Coast Guard with a plan that describes the schedule and process for installing the WTGs and OSS, including all planned mitigations to be implemented to minimize any adverse impacts to navigation while installation is ongoing. No WTG or OSS installation work may commence at the Project site (i.e., on or under the water), without prior review by DOI and the Coast Guard of the plan required under this provision. The Lessee must submit any significant revisions or updates to the plan at least 60 calendar days prior to commencing the activities described in that update or revision. Appropriate Notice to Mariners submissions must accompany the plan.

2.2.2 Cable Burial. No later than 60 calendar days post-cable installation, the Lessee must submit to DOI and the Coast Guard a copy of the final submarine cable system route positioning list that depicts the precise location and burial depths of the entire cable system.

2.3 Reporting Conditions (Planning) (Construction) (Operations) (Decommissioning).

2.3.1 Complaints. On a monthly basis, the Lessee must: (1) provide DOI with a description of any complaints received (written or oral) by boaters, fishermen, commercial vessel operators, or other mariners regarding impacts to navigation safety allegedly caused by construction or operations vessels, crew transfer vessels, barges, or other equipment; and (2) describe remedial action(s) taken in response to complaints received, if any. DOI reserves the right to require additional remedial action in accordance with 30 C.F.R. part 585.

2.3.2 Correspondence. On a monthly basis, the Lessee must provide DOI and the Coast Guard with copies of any correspondence received from other Federal, state, or local agencies regarding navigation safety issues.

2.3.3 Maintenance Schedule. On a monthly basis, the Lessee must provide DOI and the Coast Guard with its maintenance schedule for any planned WTG or OSS maintenance. Appropriate Notice to Mariners submissions must accompany each maintenance schedule.

2.4 Meeting Attendance (Planning) (Construction) (Operations). As requested by DOI and the Coast Guard, the Lessee must attend (within reason) meetings (e.g., Harbor Safety Committee, Area Maritime Security Committee, Southeastern Massachusetts and Rhode Island Port Safety and Security Forums) to provide briefs on the status of construction and operations, and on any problems or issues encountered with respect to navigation safety.

2.5 Area Oil Spill Contingency Planning (Planning) (Construction) (Operations). The Lessee must participate in any Coast Guard-supported efforts to develop area oil spill contingency plans.

2.6 Periodic Review (Planning) (Construction) (Operation). Throughout the life of the Project, the Coast Guard will continue to monitor the construction and operation of the Project for purposes of navigation safety and the execution of Coast Guard missions. To the extent it is technically and economically feasible, the Lessee must cooperate with the Coast Guard in this regard, including participation in Coast Guard exercises and evaluations.

APPENDIX C. NATIONAL SECURITY MEASURES (TERMS AND CONDITIONS)

While reviewing the Construction and Operations Plan (COP), the Bureau of Ocean Energy Management (BOEM) coordinated with the Department of Defense (DoD) to develop measures necessary to safeguard against potential liabilities to and impacts on DoD activities. BOEM requested that the Military Aviation and Installation Assurance Siting Clearinghouse coordinate within the DoD a review of the COP. As a result of this review, DoD identified impacts to the mission of the North American Aerospace Defense Command's (NORAD's) radar operations. BOEM and the DoD Siting Clearinghouse coordinated to address these concerns and to avoid or mitigate them. The DoD Clearinghouse requested the specific mitigation measures listed below to be accomplished by the Lessee via entering into an agreement with the DoD:

1. South Fork would notify NORAD 30–60 days ahead of project completion and when the project is complete and operational for Radar Adverse Impact Management (RAM) scheduling;
2. South Fork would contribute $80,000 towards the execution of the RAM;
3. Curtailment for National Security or Defense Purposes as described in Section 3.2 of Lease OCS-A 0517.

DoD requested that BOEM require South Fork Wind to enter into an agreement to mitigate the identified impact. To protect the security interests of the United States, BOEM will incorporate these measures as conditions of approval if the COP is approved.

1. NATIONAL SECURITY CONDITIONS

1.1 Hold and Save Harmless – United States Government. (Planning) (Construction) (Operation). Whether compensation for such damage or injury might be due under a theory of strict or absolute liability or otherwise, the Lessee assumes all risks of damage or injury to any person or property, which occur in, on, or above the Outer Continental Shelf (OCS), in connection with any activities being performed by the Lessee in, on, or above the OCS, if the injury or damage to any person or property occurs by reason of the activities of any agency of the United States Government, its contractors, or subcontractors, or any of its officers, agents or employees, being conducted as a part of, or in connection with, the programs or activities of the individual military command headquarters (hereinafter "the appropriate command headquarters") listed below:

United States Fleet Forces (USFF) N46
1562 Mitscher Ave, Suite 250
Norfolk, VA 23551
(757) 836-6206

Notwithstanding any limitation of the Lessee's liability in Section 9 of the Lease, the Lessee assumes this risk whether such injury or damage is caused in whole or in part by any act or omission, regardless of negligence or fault, of the United States, its contractors or subcontractors, or any of its officers, agents, or employees. The Lessee further agrees to indemnify and save harmless the United States against all claims for loss, damage, or injury in connection with the programs or activities of the command headquarters, whether the same be caused in whole or in part by the negligence or fault of the United States, its contractors, or subcontractors, or any of its officers, agents, or

employees and whether such claims might be sustained under a theory of strict or absolute liability or otherwise.

1.2 Falmouth Airport Surveillance Radar-8 System. (Construction) (Operation). To mitigate impacts on the North American Aerospace Defense Command's (NORAD's) operation of the Falmouth, MA, Air Surveillance Radar-8 (ASR-8), the Lessee must complete the following.

1.2.1 Mitigation Agreement. The Lessee must enter into a mitigation agreement with the DoD, for purposes of implementing Sections 1.2.2 and 1.2.3 below. If there is any discrepancy between Sections 1.2.2 and 1.2.3 and the terms of the mitigation agreement, the terms of the mitigation agreement will prevail. Within 15 calendar days of entering into the mitigation agreement, the Lessee must provide BOEM with a copy of the executed mitigation agreement. Within 45 calendar days of completing the requirements in Sections 1.2.2 and 1.2.3, the Lessee must provide BOEM with evidence of compliance with those requirements. The NORAD point-of-contact for development of the agreement is Frederick Shepherd: frederick.l.shepherd.civ@mail.mil; 719-556-3260.

1.2.2 NORAD Notification. At least 30, but no more than 60, calendar days prior to completion of construction or initiation of commercial operations (whichever is earlier), the Lessee must notify NORAD for Radar Adverse Impact Management (RAM) scheduling, which is required for the Falmouth ASR-8; and

1.2.3 Funding for RAM Execution. At least 30, but no more than 60, calendar days prior to completion of construction or initiation of commercial operations (whichever is earlier), the Lessee must contribute funds in the amount of $80,000 to NORAD toward the execution of the RAM.

1.3 Distributed Acoustic Sensing Technology. (Planning) (Construction) (Operation). To mitigate potential impacts on the Department of the Navy's (DON's) operations, the Lessee must coordinate with the DoD/DON on any proposal to utilize distributed acoustic sensing (DAS) technology as part of the Project or associated transmission cables. The DON point-of-contact for coordination relating to DAS is Matthew Senska: matthew.senska@navy.mil; 571-970-8400.

Electromagnetic Emissions. (Planning) (Construction) (Operation). Before entering any designated defense operating area, warning area, or water test area for the purpose of carrying out any survey activities under the approved COP, the Lessee must enter into an agreement with the commander of the appropriate command headquarters to coordinate the electromagnetic emissions associated with such survey activities. The Lessee must ensure that all electromagnetic emissions associated with such survey activities are controlled as directed by the commander of the appropriate command headquarters. The Lessee must provide BOEM with a copy of the agreement within 15 calendar days of entering into it. The Lessee must include a summary of associated activities in the Lessee's annual self-inspection reports.

APPENDIX D. OCSLA COMPLIANCE REVIEW OF THE CONSTRUCTION AND OPERATIONS PLAN FOR THE SOUTH FORK WIND OFFSHORE WIND ENERGY PROJECT

United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT
WASHINGTON, DC 20240-0001

Information Memorandum

To: Walter Cruickshank
Deputy Director, Bureau of Ocean Energy Management

From: James F. Bennett
Program Manager, Office of Renewable Energy Programs

Subject: Compliance Review of the Construction and Operations Plan for the South Fork Wind Farm and South Fork Export Cable Offshore Wind Energy Project for Commercial Lease OCS-A 0517

1.0 Summary

On April 9, 2021, the Principal Deputy Solicitor signed M-Opinion 37067, entitled, "*Secretary's Duties under Subsection 8(p)(4) of the Outer Continental Shelf Lands Act When Authorizing Activities on the Outer Continental Shelf*." Subsection 8(p)(4) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. §§ 1331 *et seq*., requires the Secretary of the Interior ("Secretary") to consider 12 enumerated factors before authorizing an activity under subsection 8(p) of OCSLA. Citing a well-established body of law applicable to statutes such as OCSLA, M-37067 concludes that "subsection 8(p)(4) [] and similar statutes require only that the Secretary strike a rational balance between Congress's enumerated goals, i.e., a variety of uses. In making this determination, the Secretary retains wide discretion to weigh those goals as an application of her technical expertise and policy judgment."[1] M-37067 guides the Bureau of Ocean Energy Management's (BOEM) compliance review of the Construction and Operations Plan (COP) for the South Fork Wind Farm and South Fork Export Cable Project (hereafter Project) on Commercial Lease OCS-A 0517, and BOEM's consideration of the 12 factors enumerated in subsection 8(p)(4) of OCSLA (hereinafter, "8(p)(4) factors").[2]

[1] *Secretary's Duties under Subsection 8(p)(4) of the Outer Continental Shelf Lands Act When Authorizing Activities on the Outer Continental Shelf*, M-37067 at 1-2 (Apr. 9, 2021), http://doi.gov/sites/doi.gov/files/m-37067.pdf; *see id*. at 3–4.

[2] Solicitors' M-Opinions are legal interpretations that are binding on DOI as a whole. Dep't of the Interior, Departmental Manual, 209 DM 3.1, 3.2A(11) (2020).

This memorandum assesses the Fisheries Habitat Impact Minimization Alternative ("Habitat Alternative") in the Project final environmental impact statement (FEIS) in relation to the 8(p)(4) factors and implementing regulations at 30 C.F.R. part 585.[3]

2.0 Background and Project Overview

The Department of the Interior's (DOI's) efforts to consider whether to lease areas offshore Massachusetts and Rhode Island and assess the feasibility of allowing wind energy activities therein began in 2009, approximately 12 years ago. As a result of said efforts, in July 2013, BOEM held a competitive lease sale pursuant to 30 C.F.R. § 585.211 for certain lease areas within the Rhode Island/Massachusetts Wind Energy Area (WEA). This lease sale resulted in BOEM's issuance of Commercial Lease OCS-A 0486 to Deepwater Wind New England LLC. Lease OCS-A 0486 became effective on October 1, 2013. On January 16, 2020, Deepwater Wind New England, LLC submitted an application to assign 13,700 acres of OCS-A 0486 to Deepwater Wind South Fork, LLC, which subsequently changed its name to South Fork Wind, LLC (South Fork Wind). The lease assignment, which became effective on March 23, 2020, and carries the new lease number OCS-A 0517, covers the area identified in Exhibit A of the lease (Lease Area). Lease OCS-A 0517 does not authorize South Fork Wind to conduct construction activities within the leased area. Under Lease OCS-A 0517 and 30 C.F.R. part 585, South Fork Wind must submit and receive approval of a COP before any construction activities may take place on the Outer Continental Shelf (OCS).[4] Submittal and processing of the COP is governed by the provisions set forth in 30 C.F.R. §§ 585.620 through 585.629.

On June 29, 2018, South Fork Wind submitted a COP to BOEM for review and approval. The COP proposes the development of an offshore wind energy project ("Proposed Project") limited to an area within Lease OCS-A 0517, as shown in Figure 1 below. The Proposed Project area consists of 13,700 acres (55 km^2).

South Fork Wind has proposed the Project using a Project Design Envelope (PDE) framework, under which multiple aspects of the Project are potentially variable but would remain within the limits defined in the PDE. Within this PDE framework, the Proposed Project (Proposed Action in the FEIS) consists of up to 15 wind turbine generators (WTGs), each of which would have a 6 to 12 megawatt (MW) generation capacity, and one offshore substation (OSS). The WTGs would be placed in a grid-like array (with WTGs in rows oriented northeast-southwest and northwest-southeast) within the Lease Area, with spacing between WTGs of 1 nautical mile (nm). An export cable would make landfall at either Beach Lane or Hither Hills on the South Fork of Long Island. South Fork Wind's COP details the proposed construction, operation, and eventual decommissioning of the WTGs, OSS, and associated inter-array and export cabling to shore for the Project, as well as biological and physical survey information.

---

[3] The FEIS identified BOEM's preferred alternative as the Fisheries Habitat Impact Minimization Alternative ("Habitat Alternative"). Bureau of Ocean Energy Management, BOEM 2020-057, South Fork Wind Farm and South Fork Export Cable Project Final Environmental Impact Statement, (2021) [hereinafter FEIS], https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/SFWF%20FEIS.pdf.

[4] *See* 30 C.F.R. § 585.600(b).

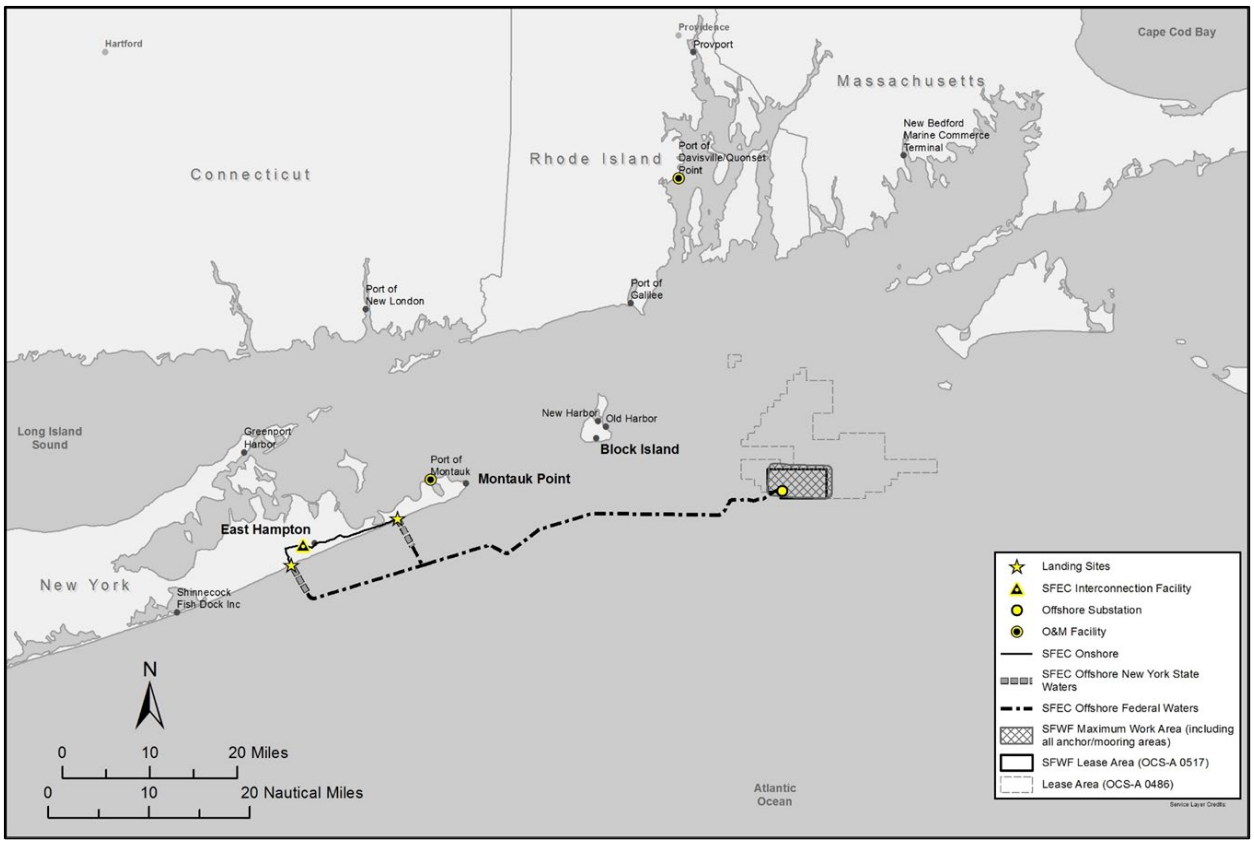


FIGURE 1 – Project Area

The Habitat Alternative, which fits within the PDE, differs from the Proposed Project in that DOI will allow a maximum of 12 WTGs to be installed and will prohibit their installation in 5 locations in the Project area. In addition, the turbine layout would include a north-south/east-west orientation with a spacing of 1 nm between turbines, consistent with the United States Coast Guard's (USCG) recommendations in the Final Massachusetts and Rhode Island Port Access Route Study (MARIPARS).[5] Under the Habitat Alternative, the export cable would still make landfall at either Beach Lane or Hither Hills on the South Fork of Long Island.

The regulations at 30 C.F.R. § 585.200(b) entitle a lessee to one or more project easements, without further competition, for the purpose of installing transmission and distribution cables and appurtenances on the OCS as necessary for the full enjoyment of the lease. In accordance with 30 C.F.R. § 585.622(b), South Fork Wind requested a project easement as part of its COP. As proposed in the COP, this project easement would pass through approximately 50.7 nm of Federal waters. The remainder of the South Fork Export Cable (SFEC) would pass through approximately 3.2 nm of state waters. The total length, from Lease OCS-A 0517 to shore, would measure approximately 53.9 nm.[6] On October 18, 2021, South Fork Wind submitted a revised

[5] U.S. Coast Guard, USCG 2019-0131, The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study (2020), https://www.navcen.uscg.gov/pdf/PARS/FINAL_REPORT_PARS_May_14_2020.pdf.

[6] The COP proposed that the export cable would make landfall at either Beach Lane or Hither Hills on the South Fork of Long Island. The Beach Lane option is slightly longer than the Hither Hills option, and thus, Beach Lane numbers were used for this approximation.

easement request expanding the width of the corridor to 590 feet (approximately 180 meters) along its entire route in order to accommodate a potential future cable repair using an omega bight joint, which requires approximately four times the water depth extending to one side of the cable. The route and the length of the cable would not change, and the entirety of the width already has been included in both the environmental and technical reviews and no further action is required.

3.0 Section 585.628 Review

As noted in Section 2, the regulations at 30 C.F.R. §§ 585.620 through 585.629 govern BOEM's review and processing of COPs. The regulations at 30 C.F.R § 585.628 require BOEM to review the COP and all information provided therein pursuant to 30 C.F.R. §§ 585.626 and 585.627, to determine whether the COP contains all the information necessary to be considered complete and sufficient for BOEM to conduct technical and environmental reviews. Once BOEM determines that the COP is complete and sufficient, BOEM and the Bureau of Safety and Environmental Enforcement (BSEE) conduct a technical review, and BOEM conducts an environmental review. As described below, BOEM's Office of Renewable Energy Programs (OREP) has completed the sufficiency, technical, and environmental reviews of the South Fork Wind COP.

3.1 Completeness and Sufficiency Review

With regard to the regulations pertaining to COPs, 30 C.F.R. § 585.620 provides the general requirements of what must be described in a COP,[7] while 30 C.F.R. § 585.621 sets forth what a COP must demonstrate. 30 C.F.R. § 585.626 describes what specific information must be included in the COP, including the results of required surveys, as well as other project-specific information, including financial assurance. Pursuant to 30 C.F.R. § 585.627, the Lessee must submit information and certifications necessary for BOEM to comply with the National Environmental Policy Act of 1969 (NEPA)[8] and other relevant laws.

By letters dated July 6, 2018, and February 13, 2019, South Fork Wind requested a departure from BOEM's regulations to allow it to submit information identified in 30 C.F.R. §§ 585.626(a)(2), (a)(3), and (a)(5) for the Proposed Project's expanded maximum work area, to conduct additional surveys, including geophysical, shallow and deep geotechnical, marine archaeological, and benthic surveys, and information identified in 30 C.F.R. §§ 585.626(a)(4) and (a)(6), to conduct additional geotechnical sampling, including deep geotechnical cores. South Fork Wind proposed to submit the information identified in 30 C.F.R. §§ 585.626(a)(2), (a)(3), and (a)(5) at a time after South Fork Wind submitted its COP, but before BOEM issued a draft environmental impact statement and concluded its reviews under the National Historic Preservation Act (NHPA). South Fork Wind proposed to submit the information identified in 30 C.F.R. §§ 585.626(a)(4) and (a)(6) at a time after South Fork Wind submitted its COP, but prior

[7] Section 585.620 provides that a COP must contain information describing all planned facilities that the Lessee proposes to construct and use for its project, along with all proposed activities including the proposed construction, operations, and conceptual decommissioning plans, including the anticipated project easement(s); and describe all planned facilities to be constructed and used for the project, including onshore support facilities. *See also* Bureau of Ocean Energy Mgmt., Office of Renewable Energy Programs, Information Guidelines for a Renewable Energy Construction and Operations Plan (2020).
[8] 42 U.S.C. § 4321 *et seq*.

to or with the required Facility Design Report (FDR). OREP's Projects and Coordination Branch (PCB) evaluated the departure request and coordinated BOEM's review. On February 26, 2020, BOEM approved the departure request in part, as follows. BOEM found that with respect to the request to depart from 30 C.F.R. §§ 585.626(a)(2), (a)(3), and (a)(5), South Fork Wind submitted this additional information in an updated COP submission in May 2019, and so found that a departure to delay the submission of this information was no longer necessary. With respect to submitting the information identified in 30 C.F.R. §§ 585.626(a)(4) and (a)(6), the geotechnical information submitted by South Fork Wind by this point was sufficient to allow for review of the COP and BOEM therefore approved the departure request, allowing South Fork Wind to submit geotechnical investigations at final foundation locations with or prior to the FDR along with results of geotechnical analyses and foundation design parameters.

On June 29, 2017, South Fork Wind submitted a COP to BOEM for review and approval. On August 16, 2018, PCB verified that the COP included an adequate level of information required in 30 C.F.R. §§ 585.626 and 585.627 for BOEM to begin reviewing the sufficiency of that information. PCB coordinated BOEM's sufficiency review of the South Fork Wind COP. On April 4, 2019, South Fork Wind requested a pause under FAST-41 so it could provide additional information. On August 21, 2020, the pause was lifted and the environmental review continued. Throughout the review process, BOEM evaluated the information provided in response to its requests for additional information, as well as the updated COPs South Fork Wind submitted, and determined that the information provided was sufficient in accordance with the regulations.

OREP has determined that the COP includes all the information required in 30 C.F.R. §§ 585.626 and 585.627 for the Proposed Project, excepting the information described in 30 C.F.R. §§ 585.626(a)(4) and (a)(6), for which BOEM has approved a regulatory departure. If the Proposed Project is approved as modified by the Habitat Alternative, then South Fork Wind must submit the following information no later than when it submits its FDR:

- All items required in the Memorandum of Agreement (MOA) executed under Section 106 of the NHPA;[9]
- Updated information required in 30 C.F.R. §§ 585.626(a)(1) on shallow hazards, to include (2) the results of the geological survey relevant to the design and siting of the facility, and (6) the overall site investigation for the facility;
- Updated location plat and cable and easement information required in 30 C.F.R. §§ 585.626(b)(5) and (7); and
- Updated information on man-made hazards such as those defined as Munitions and Explosives of Concern (MEC).[10]

[9] 54 U.S.C. §§ 300101 *et seq.*

[10] MEC is a term that distinguishes specific categories of military munitions that may pose unique explosives safety risks, such as: (i) unexploded ordnance, as defined in 10 U.S.C. § 101(e)(5); (ii) discarded military munitions, as defined in 10 U.S.C. § 2710(e)(2); or (iii) munitions constituents (MC) (e.g., TNT, cyclotrimethylenetrinitramine (RDX)), as defined in 10 U.S.C. § 2710(e)(3), present in high enough concentrations to pose an explosive hazard. *See generally* Dep't of Defense, DESR 6055.09 (2019).

3.2 Technical Review

OREP's Engineering and Technical Review Branch (ETRB) reviewed the proposed facilities, project design, project activities, shallow hazards, geological conditions, physical and oceanographic conditions, cables, and fabrication and installation details in the COP, and coordinated with the following agencies:

- BSEE, for safety [Safety Management System (SMS) and Oil Spill Response Plan];
- Federal Aviation Administration (FAA) and National Oceanic and Atmospheric Administration (NOAA), for aviation and radar interference; and
- USCG, for vessel navigation.

Furthermore, ETRB and BSEE reviewed the statement of work and qualification submitted in the COP for the Certified Verification Agent (CVA) nomination. On August 5, 2020, BOEM approved the nomination of DNV to be the CVA for the Proposed Project. DNV will review and certify that the project facilities are designed, fabricated, and installed in conformance with accepted engineering practices, as described in the FDR and the Fabrication and Installation Report (FIR), to be submitted by South Fork Wind if BOEM approves the COP.

As a result of said reviews, ETRB has determined that both the technical information and supporting data provided with the COP meet the requirements of 30 C.F.R. § 585.626 and are sufficient to allow the safe installation of the Proposed Project on the OCS. ETRB has also concluded that the COP proposes the use of properly trained personnel and the best available and safest technology, pursuant to 30 C.F.R. § 585.621. ETRB provided a memorandum (ETRB Review Memo; Appendix D.1 to the Record of Decision [ROD]), which recommends the approval of the COP subject to ETRB's proposed conditions (Technical Terms and Conditions; Appendix B to the ROD).

3.3 Environmental Review

OREP's Environment Branch for Renewable Energy conducted an environmental review of the COP. On October 19, 2018, BOEM published the Notice of Intent (NOI) to prepare an environmental impact statement (EIS) for South Fork Wind's COP,[11] which started BOEM's formal scoping process pursuant to NEPA. The Notice of Availability (NOA) of the Draft EIS (DEIS) for the Proposed Project was published on January 8, 2020.[12] The U.S. Army Corps of Engineers (USACE), the National Marine Fisheries Service (NMFS), BSEE, USCG, and the U.S. Environmental Protection Agency (USEPA) were cooperating agencies during the development and review of the FEIS. Cooperating state agencies included the Massachusetts Office of Coastal Zone Management, the Rhode Island Coastal Resources Management Council, and the Rhode Island Department of Environmental Management. The Town of East Hampton and the Trustees of the Freeholders and Commonality of the Town of East Hampton were also cooperating agencies.[13]

[11] Notice of Intent to Prepare an Env't Impact Statement, 83 Fed. Reg. 53,104 (Oct. 19, 2018).
[12] Notice of Availability of a Draft Env't Impact Statement, 86 Fed. Reg. 1520 (Jan. 8, 2021).
[13] For more details, *see* FEIS.

On August 20, 2021, BOEM published the NOA of the FEIS in the *Federal Register*.[14] The FEIS identified the Habitat Alternative as BOEM's preferred alternative and included BOEM's responses to comments on the DEIS in Appendix I. The FEIS found that the Habitat Alternative would have negligible to moderate adverse impacts on most resources, and only the potential for major adverse impacts on (i) cultural and visual resources (not overall but depending on the specific resource affected); (ii) commercial fishing (not overall but depending on the specific type of gear utilized and thus specific type of fisherman affected); and (iii) scientific research and surveys.[15] The FEIS also found that the Proposed Project could have, to some extent, beneficial impacts on the following resources: (i) air quality; (ii) demographics, employment, and economics; (iii) recreation and tourism; and (iv) land use and coastal infrastructure.

With respect to impacts from future planned actions, including the Proposed Project, the FEIS found that the following resources could be subject to major impacts if future planned actions materialize and no further actions are taken to mitigate their impacts: (i) commercial fisheries and for-hire recreational fishing and (ii) scientific research and surveys. The FEIS also found that future planned actions could have beneficial impacts on the following resources: (i) demographics, employment, and economics; (ii) recreation and tourism; and (iii) land use and coastal infrastructure. The 30-day waiting period for the FEIS closed on September 20, 2021.

Several consultations were conducted as part of the environmental review process. On October 1, 2021, NMFS issued a Biological Opinion (BiOp) for the Proposed Project under Section 7 of the Endangered Species Act (ESA).[16] The BiOp concluded that the proposed activity is not likely to jeopardize the continued existence of any ESA-listed species under NMFS' jurisdiction. To minimize impacts on ESA-listed species, NMFS provided several Reasonable and Prudent Measures that must be made conditions of approval if the COP is approved.[17] BOEM also completed an informal consultation with the U.S. Fish and Wildlife Service (FWS).[18] Using the best available information, the FWS concurred with BOEM's determination that approval of the COP may affect, but is not likely to adversely affect, federally endangered or threatened birds. BOEM also completed Essential Fish Habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and received conservation recommendations for consideration in the FEIS and ROD.[19] BOEM also consulted under Section 106 of the NHPA and, through that consultation, identified historic properties that may be adversely affected by COP approval, as well as measures to resolve those effects. Consultation under Section 106 of the NHPA concluded with the execution of the MOA between BOEM, South Fork Wind, the Massachusetts State Historic Preservation Officer, the Rhode Island State

[14] Notice of Availability of a Final Env't Impact Statement, 86 Fed. Reg. 46,879 (Aug. 20, 2021).
[15] FEIS, Exec. Summary, at iv-v.
[16] 16 U.S.C. §§ 1531 *et seq.*; *see generally* Nat'l Marine Fisheries Serv., GARFO-021-00353 Endangered Species Act Section 7 Consultation Biological Opinion: Construction, Operation, Maintenance, and Decommissioning of the South Fork Wind Offshore Energy Project (Lease OCS-A 0517), https://www.boem.gov/renewable-energy/nmfs-esa-consultations, hereinafter BiOp.
[17] *See* BiOp § 11.3.
[18] *See* Letter from David Stilwell, Field Supervisor, Long Island Field Office, Fish and Wildlife Serv., to David Bigger, PhD, Office of Renewable Energy Programs, Bureau of Ocean Energy Mgmt. (Mar. 4, 2021), https://www.boem.gov/renewable-energy/state-activities/south-fork.
[19] *See* FEIS, app. A (discussing consultation correspondence).

Officer, the New York State Historic Preservation Officer, and the Advisory Council on Historic Preservation, on November 23, 2021.

South Fork Wind voluntarily submitted consistency certifications to the States of New York, Rhode Island, and Massachusetts under the Coastal Zone Management Act (CZMA).[20] The coastal management programs for the States of New York, Rhode Island and Massachusetts concurred with South Fork Wind's consistency certification, finding that the Proposed Project is consistent to the maximum extent practicable with the enforceable policies of each state's coastal management plan. South Fork Wind provided BOEM with the CZMA concurrence letters issued by these states.[21]

4.0 Compliance Review[22]

The regulations at 30 C.F.R. part 585 set forth responsibilities for both BOEM and South Fork Wind that are similar to those imposed by the 8(p)(4) factors.[23] The regulations at 30 C.F.R. § 585.102 require BOEM to ensure that any activities authorized under part 585 are carried out in a manner that provides for 12 enumerated goals. Similarly, 30 C.F.R. § 585.621 requires the COP to demonstrate that South Fork Wind has planned and is prepared to conduct the proposed activities in a manner that conforms to its responsibilities listed in 30 C.F.R. § 585.105(a), as well as seven other goals listed therein. BOEM and South Fork Wind share some of the responsibilities (e.g., ensuring that activities are carried out in a safe manner), while others are the responsibility of either BOEM (e.g., ensuring a fair return to the United States) or South Fork Wind (e.g., using properly trained personnel). The discussion in the following Sections 4.1 to 4.12 provides an overview of how BOEM has assessed the Habitat Alternative in accordance with the 8(p)(4) factors and the regulations at 30 C.F.R. part 585. Because many of these goals are related to the same topic or overlap one another, some are analyzed together.

4.1 Conforms to all applicable laws, regulations, and lease provisions of South Fork Wind's commercial lease[24]

Consultations and reviews for the Proposed Project under NEPA, ESA, MSA, CZMA, and NHPA have been completed.[25] Further, approval of the COP would prohibit South Fork Wind from commencing construction activities before obtaining all applicable permits and authorizations, including a Clean Water Act Section 404 dredge and fill permit from the USACE, and an Incidental Harassment Authorization from NMFS. Section 1.3 of the COP (Regulatory Framework) lists all expected Federal, New York state, regional (county), and local-level reviews and permits for the Proposed Project.[26]

[20] 16 U.S.C. §§ 1451 *et seq*.
[21] *See* FEIS, app. A (discussing Coastal Zone Management Act concurrences).
[22] *See* 43 U.S.C. § 1337(p)(4) (OCSLA Subsection 8(p)(4)); 30 C.F.R. §§ 585.102, 585.621.
[23] *See* 30 C.F.R. §§ 585.102, 585.621.
[24] *See id.* §§ 585.102(b), 585.621(a).
[25] *See* discussion *supra* sec. 3.3.
[26] *See also* FEIS.

4.2 Safety, best available and safest technology, best management practices, and properly trained personnel[27]

The COP for the South Fork Wind Farm Project proposed the following major offshore components:

- Up to 15 WTGs with nameplate capacity of 6-12 MW;
- Each WTG would be supported by a monopile foundation;
- The inter-array cables would either be 34.5-kilovolt (kV) or 66-kV three-phase alternating current cable;
- One OSS on a monopile foundation; and
- The export cable would consist of a 138-kV submarine power cable with target burial depth of 4 to 6 feet.

If BOEM approves the COP, BOEM and the CVA will verify that all major components of the Proposed Project, as well as all planning, design, and construction activities, meet or exceed industry standards/certifications at the FDR/FIR stage, as proposed in the COP.[28]

ETRB has assessed the geotechnical and geophysical information provided by South Fork Wind and determined that the information is adequate and enough for ETRB to conclude that the geotechnical and geophysical characteristics of the Lease Area would allow for the safe installation and operation of the components as considered in the COP.

Further, OREP consulted with BSEE, USCG, FAA, and NOAA on safety requirements during the COP review process. BSEE's recommendations and relevant requirements have been incorporated into the proposed conditions of approval for the COP to ensure that this project is carried out in a safe manner.[29] Also, oversight of the review of future submissions (e.g., FDR and FIR activities) will allow BOEM to ensure that the "facilities are designed, fabricated, and installed in conformance with accepted engineering practices."[30]

The COP also provides a description of its proposed SMS[31] as required by 30 C.F.R. § 585.627(d). The proposed SMS, which will be finalized following COP approval, if BOEM approves the COP, includes a description of the processes and procedures listed in 30 C.F.R. § 585.810(a)-(f), and how South Fork Wind proposes to carry them out. BOEM determined that South Fork Wind's proposals are consistent with acceptable industry practices and standards. Specifically, the SMS provides that all contractors will be fully qualified to perform the roles for which they are contracted, including any prescribed safety standards and awareness training. South Fork Wind will provide safety orientation to familiarize contractors with any site-specific

[27] *See* 43 U.S.C. § 1337(p)(4)(A); 30 C.F.R. §§ 585.102(a)(1), 585.621(b), 585.621(e)-(g).
[28] 30 C.F.R. § 585.115(e) (incorporating by reference Am. Petroleum Inst., API RP 2A-WSD, Recommended Practice for Planning, Designing and Constructing Fixed Offshore Platforms—Working Stress Design (21st ed. 2000); Errata and Supplement 1 (2002); Errata and Supplement 2 (2005); Errata and Supplement 3 (2007)).
[29] *See infra.* Technical Terms and Conditions, Appendix B to the ROD.
[30] *See* 30 C.F.R. § 585.705(a)(1).
[31] *See* COP vol. II, app. E.

safety issues,[32] including USCG regulations on workplace safety and health, design and equipment, and emergency response, as well as hazard identification and risk management.

Also, as discussed in Section 4.9, approval of the Habitat Alternative would require, to the extent possible, the design of the Proposed Project to be compliant with applicable marking and lighting guidelines issued by the USCG and recommended by BOEM.

Based on the foregoing, it has been determined that South Fork Wind proposes to use the best available and safest technology,[33] best management practices,[34] and properly trained personnel[35] for the construction and operation of the Proposed Project.

4.3 Protection of the environment and prevention of undue harm or damage to natural resources; life (including human and wildlife); property; the marine, coastal, or human environment; or sites, structures, or objects of historical or archaeological significance[36]

Minimizing environmental impacts through the assessment of environmental resources is integral to BOEM's planning and leasing phase of offshore wind development. The Final EIS (BOEM 2021) determined that the majority of the adverse impacts are negligible to moderate. The FEIS concluded that the Proposed Project would result in major impacts only to visual and cultural resources, commercial fishing, and NOAA surveys. For all adverse impacts, mitigation measures were identified and will be incorporated in the terms and conditions of COP approval. This includes measures identified during consultations.

BOEM's efforts to protect the environment and prevent undue harm to the resources listed herein began before Lease OCS-A 0517 was issued to South Fork Wind. For example, on August 18, 2011, as part of the WEA development process offshore Rhode Island/Massachusetts, BOEM published in the *Federal Register* a Call for Information and Nominations ("Call") to identify locations within the offshore Call Area[37] in which there was industry interest to seek commercial leases for developing wind projects. The Call Area was located off the coasts of Rhode Island and Massachusetts beginning approximately 10 nm south of Newport, Rhode Island and extending 20 nm seaward.[38] It was approximately 246 square nm and contained 31 whole OCS lease blocks and 10 partial OCS lease blocks.[39]

After considering the comments submitted in response to the Call, BOEM excluded certain areas identified as important for commercial fishing that could be adversely affected if developed with

---

[32] *See* COP vol. II, app. E, §§ 6, 10.
[33] *See* COP vol. I, §§ 1.6.3, 1.6.5, 2.3.1, 2.3.2, 3.1.3, 3.1.5, 3.2.3, 3.2.5 & COP vol. II app. E.
[34] *See id.* vol. I, § ES, tbl. ES.1.
[35] *See id.* vol. I, §§ 1.6.5, 3.2.3, 3.2.5 & & COP vol. II app. E.
[36] *See* 43 U.S.C. § 1337(p)(4)(B); 30 C.F.R. §§ 585.102(a)(2), 585.621(d).
[37] *See* Bureau of Ocean Energy Mgmt., Rhode Island/Massachusetts Call Area, https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/RIandMACallAreaonNOAANauticalChartforWebsite8-16-11.pdf
[38] *See generally* Com. Leasing for Wind Power on the Outer Continental Shelf Offshore Rhode Island and Mass.—Call for Info. and Nominations, 76 Fed. Reg. 51,383 (Aug. 18, 2011).
[39] *Id.* at 5824.

wind turbines.[40] On February 24, 2012, BOEM publicly announced the resulting WEA.[41] In the Environmental Assessment (EA) discussed below, BOEM evaluated the potential environmental effects of lease issuance and subsequent site assessment activities in this WEA.[42]

On August 18, 2011, BOEM published an NOI to prepare an EA for Commercial Wind Leasing and Site Assessment Activities on the Atlantic OCS Offshore Rhode Island and Massachusetts. The NOI requested public comments on important environmental issues and alternatives to be considered in the EA; measures (e.g., limitations on activities based on technology, distance from shore, or timing) that would minimize impacts to environmental resources; and socioeconomic conditions that could result from leasing, site characterization, and site assessment in and around the Lease Area.[43] In July 2012, BOEM published an NOA for the EA, which assessed reasonably foreseeable impacts resulting from commercial wind lease issuance and site characterization activities (including geophysical, geotechnical, archaeological, and biological surveys) and site assessment activities (i.e., meteorological towers and buoys) in the WEA on the OCS offshore Rhode Island and Massachusetts.[44] BOEM considered the comments received on the EA and, on June 5, 2013, published in the *Federal Register* an NOA for a Revised EA and Finding of No Significant Impact (FONSI).[45] Additionally, issuance of Lease OCS-A 0486 took place after the successful completion of all applicable consultations on protected resources. For a more detailed discussion of the leasing process for Lease OCS-A 0486 and the environmental consultations performed, see Section 1.5 of the Revised EA. On March 23, 2020, Lease OCS-A 0517 was assigned to Deepwater Wind South Fork, LLC, who subsequently changed their name to South Fork Wind, LLC, and contains 13,700 acres.

As described in Section 3.3 above, BOEM analyzed in the FEIS the potential environmental effects of the proposed activities described in the COP. Appendix G of the FEIS specifically references measures to be taken or mitigations recommended to protect the environment. BOEM has also engaged in consultations under the ESA, the MSA, and the NHPA. As a result of the ESA consultation, NMFS issued the BiOp for the Proposed Project on October 1, 2021. The BiOp concluded that approval of the COP is not likely to jeopardize the continued existence of fin, sei, sperm, or North Atlantic right whales (NARW), the Northwest Atlantic Distinct

---

[40] *See* Announcement of Area Identification, Commercial Wind Energy Leasing on the Outer Continental Shelf Offshore Rhode Island and Massachusetts, February 24, 2012, https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/AreaID_Announcement_022312.pdf

[41] *Id.*

[42] Bureau of Ocean Energy Mgmt., Rhode Island/Mass. Leases OCS-A 0486 and OCS-A 0487, https://www.boem.gov/renewable-energy/state-activities/commercial-wind-leasing-offshore-rhode-island-and-massachusetts (last visited Sept. 13, 2021).

[43] Com. Wind Lease Issuance and Site Characterization Activities on the Atl. Outer Continental Shelf Offshore Rhode Island and Mass., 76 Fed. Reg. 51,391 (Aug. 18, 2011).

[44] Env't Assessment for Com. Wind Lease Issuance and Site Assessment Activities on the Atl. Outer Continental Shelf Offshore Rhode Island and Mass., 77 Fed. Reg. 39,508 (Jul. 3, 2012). The EA did not analyze the development and operation of a wind energy facility since Lease OCS-A-0486 did not authorize the construction of an OCS facility and, at the time the EA was prepared, there was no proposal for a wind energy project that could be meaningfully evaluated under NEPA.

[45] Com. Wind Lease Issuance and Site Assessment Activities on the Atl. Outer Continental Shelf (OCS) Offshore Rhode Island and Mass., 78 Fed. Reg. 33,908 (June 5, 2013). The revised EA and FONSI are available at https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/BOEM%20RI_MA_Revised%20EA_22May2013.pdf.

Population Segment (DPS) of loggerhead sea turtles, or the North Atlantic DPS of green sea turtles, Kemp's ridley or leatherback sea turtles.[46] NMFS also concluded that the Proposed Action is not likely to adversely affect blue whales, the Northeast Atlantic DPS of loggerhead sea turtles, or any DPS of Atlantic sturgeon; thus, it is also not likely to jeopardize the continued existence of these species. NMFS also found that the Proposed Action will have no effect on critical habitat designated for the NARW.

In response to BOEM's informal ESA consultation with FWS, the service issued a letter dated March 4, 2021, concurring with BOEM's determination that the Proposed Project may affect, but is not likely to adversely affect, three listed species of birds (roseate terns, piping plovers, and red knots).[47]

BOEM also conducted an EFH consultation with NMFS to analyze potential adverse impacts of the Proposed Project on EFH.[48] NMFS issued two response letters, one each in June and August 2021, in which they provided 15 conservation recommendations to avoid and minimize impacts from the Proposed Action. BOEM responded to NMFS in October 2021 regarding how each of the conservation recommendations would be applied for the Proposed Project. BOEM fully or partially adopted 13 of the 15 recommended measures. Two measures were not adopted as they were not part of the Proposed Project and therefore beyond BOEM's regulatory authority. Measures that were not fully adopted were partially rejected due to technical and economic feasibility concerns.

BOEM also engaged in consultation under Section 106 of the NHPA with the Advisory Council on Historic Preservation, the State Historic Preservation Officers for New York, Massachusetts and Rhode Island, the National Park Service, Indian Tribes, USACE, South Fork Wind, and several organizations with a demonstrated interest in the affected historic properties.[49] Through that consultation, BOEM identified historic properties that may be adversely affected by activities resulting from COP approval, as well as measures to resolve those effects.

The COP proposed impact avoidance, minimization, and mitigation measures, which BOEM included as elements of the Proposed Project in its environmental analysis and consultations. Measures proposed by South Fork Wind can be found in Section 4.7 of the COP and include measures to avoid, minimize, and mitigate impacts to resources such as air quality, birds, and bats, among others.[50] If BOEM approves the COP, BOEM will incorporate South Fork Wind's

---

[46] *See* BiOp at 289.
[47] *See* Letter from Thomas Chapman, Supervisor, New Eng. Field Office, Fish and Wildlife Serv., to David Bigger, PhD, Office of Renewable Energy Programs, Bureau of Ocean Energy Mgmt. (Oct. 16, 2020).
[48] *See* Bureau of Ocean Energy Mgmt., Office of Renewable Energy Programs, SFW Essential Fish Habitat Assessment (2021), https://www.boem.gov/sites/default/files/documents/renewable-energy/SFWF-EFH-AssessmentNMFS.pdf.
[49] For a full list of consulting parties, *see* Bureau of Ocean Energy Mgmt., Finding of Adverse Effect for the South Fork Wind Farm and South Fork Export Cable Construction and Operations Plan (August 2021), https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/SFWF-Finding.pdf.
[50] COP vol. I, § 4.7; South Fork Wind Farm Construction and Operations Plan (May 7, 2021), https://www.boem.gov/sites/default/files/documents/renewable-energy/South-Fork-Construction-Operations-Plan.pdf.

proposed measures as COP conditions of approval and require South Fork Wind to comply with all measures and commitments resulting from state consistency determinations.

BOEM's Habitat Alternative also includes mitigation measures to avoid or reduce impacts on existing ocean uses and on environmental and socioeconomic resources associated with construction, operation, and maintenance activities across the various resource areas analyzed in the FEIS. Table G-2 in Appendix G of the FEIS contains resource-by-resource details on mitigation and monitoring measures considered for the Habitat Alternative.

Based on the foregoing, BOEM has determined that approval of the COP as contemplated under the Habitat Alternative will result in the protection of the environment and prevention of undue harm or damage to natural resources; life (including human and wildlife); property; the marine, coastal, or human environment; and sites, structures, or objects of historical or archaeological significance.

4.4 Prevention of waste and conservation of natural resources[51]

Natural resources are defined in 30 C.F.R. § 585.112 to "include, without limiting the generality thereof, renewable energy, oil, gas, and all other minerals (as defined in Section 2(q) of the OCS Lands Act), and marine animal and marine plant life." In this Section 4.4 analysis, BOEM is focused on the prevention of waste and conservation of natural resources only in the context of *wind energy resources, oil and gas, and marine minerals*. While reviewing this COP, BOEM considered how the Proposed Project would prevent waste by considering the location, installation, and operation of wind energy facilities proposed in the COP. Discussion of the conservation of *marine animal and plant life* can be found in Sections 3.3 and 4.3 and the FEIS [Section 3, Affected Environment and Environmental Consequences], both of which consider how BOEM addresses the Proposed Project's impacts on the marine environment. For similar reasons, it has been determined that the Proposed Project conserves natural marine animal and plant life consistent with 43 U.S.C. § 1337(p)(4)(B), 30 C.F.R. §§ 585.102(a)(2), and 585.621(d). See Section 4.3, above.

Lease OCS-A 0517 was the result of a comprehensive planning process, as discussed in Section 1.1 and Appendix A of the FEIS. The multiple stages of the planning process evaluated natural resources in the region and removed from consideration areas that would be incompatible with renewable energy activities in the area covered by Lease OCS-A 0517.[52] There is no evidence that the Proposed Project will waste oil, gas, or other mineral resources.

Assuming the concept of "waste" applies to renewable resources such as wind, the proposed COP reflects current industry practices (e.g., equipment, design, and orientation) for the region in which the Proposed Project will be located. The mitigation measures to be adopted with the

[51] *See* 43 U.S.C. §§ 1337(p)(4)(C)-(D); 30 C.F.R. §§ 585.102(a)(3)-(4), 585.105(a).
[52] *See* Announcement of Area Identification,
Commercial Wind Energy Leasing on the Outer Continental Shelf Offshore Rhode Island and Massachusetts
February 24, 2012,
https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/AreaID_Announcement_022312.pdf

selection of the Habitat Alternative strike a rational balance between deconflicting OCS uses and maximizing the harvesting of the wind energy resource in the area where the Project is proposed to be located. Indeed, the Habitat Alternative is consistent with the "developers' agreement" (discussed further in Section 4.7), in which South Fork Wind and four other leaseholders off Rhode Island and Massachusetts proposed 1 x 1 nm spacing in an east-west/north-south formation in November 2019 to prevent irregular transit corridors, despite significant reductions in their resulting area available for offshore wind development.[53]

Therefore, while BOEM is cognizant that the 1 x 1 nm layout does not maximize the potential wind energy produced, the Habitat Alternative strikes a rational balance between development and the conservation of natural resources and the prevention of interference with reasonable uses of the OCS.

4.5 Coordination with relevant Federal agencies[54]

Throughout BOEM's regulatory process, BOEM engaged with relevant Federal agencies to obtain expert advice, comply with regulatory requirements, and ensure proper coordination. Documentation of this coordination with Federal agencies through BOEM's Intergovernmental Renewable Energy Task Force meetings, Habitat Working Groups, Fisheries Working Groups, and public meetings from the early pre-lease planning stages to the Area Identification process (which resulted in the final WEA and, in turn, the Lease Area for the South Fork Wind Farm Project) can be found in Section 1.5 of the Revised EA.[55] Throughout the environmental and technical review of the COP, BOEM met with various Federal agencies, including BSEE, Department of Defense (DoD) Department of the Navy (DON), EPA, USACE, FWS, NOAA, North American Aerospace Defense Command (NORAD), United States Air Force (USAF), and USCG. Furthermore, during the EIS process, BOEM met with the cooperating and participating agencies as a group approximately six times. Many of these meetings were to obtain concurrence on decision points as required under the previous One Federal Decision process. In addition, BOEM hosted two sets of three public meetings (scoping and DEIS).[56] Furthermore, both NOAA and the USACE have extensively participated in the preparation of the FEIS. NOAA has indicated its intention to adopt it and sign a joint ROD with BOEM and USACE has indicated its intention to adopt the FEIS and sign a separate ROD concurrent with the issuance of its permit.

---

[53] *See* Letter from Equinor Wind US, Eversource Energy, Mayflower Wind, Orsted North America Inc., and Vineyard Wind LLC, to Michael Emerson, Director, Marine Transportation Systems (CG-5PW), U.S. Coast Guard (Nov. 1, 2019).

[54] *See* 43 U.S.C. § 1337(p)(4)(E); 30 C.F.R. § 585.102(a)(5).

[55] Bureau of Ocean Energy Mgmt., OCS EIS/EA BOEM 2014-603, Com. Wind Lease Issuance and Site Assessment Activities on the Atl. Outer Continental Shelf Offshore Rhode Island and Mass. (2013), https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/BOEM%20RI_MA_Revised%20EA_22May2013.pdf.

[56] *See* FEIS, app. A (detailing consultation and coordination process with other Federal and State agencies).

4.6 Protection of national security interests of the United States[57]

At each stage of the regulatory process involving Lease OCS-A 0517, BOEM has consulted with the DoD for the purposes of assessing national security considerations in its decision-making processes. On August 18, 2011, BOEM published a "Call for Information and Nominations for Commercial Leasing for Wind Power on the OCS Offshore Rhode Island and Massachusetts" in the Federal Register (under Docket ID: BOEM-2011-0049) to help BOEM determine whether competitive interest exists in the identified Call Area offshore Rhode Island and Massachusetts. The "Call" also requested information from the public on issues relevant to BOEM's review of nominations for potential leasing in the area. The Call Area was identified through consultation with BOEM's Rhode Island and Massachusetts Renewable Energy Task Forces, which include Federal, state, and tribal government partners, including DoD, NMFS, and the States of Massachusetts and Rhode Island, and using information gathered by the State of Rhode Island in its Special Area Management Plan. Furthermore, BOEM consulted with DoD on the Revised EA (described above in Section 4.3), which examined the potential environmental effects of issuing commercial wind energy leases and approving site assessment activities in the Rhode Island and Massachusetts WEA.[58] Section 4.1.3.2 of the revised EA discusses military activities and aviation within the WEA. Following BOEM's consultation with the DoD on the Proposed Action to issue leases in the entire WEA, DoD concluded that site-specific stipulations, designed in consultation with DoD, could mitigate the impact of site characterization surveys and the installation, operation, and decommissioning of meteorological towers/buoys on the Navy's training areas and other DoD activities in the WEA. Therefore, when addressed through coordination with the DoD, impacts would be negligible and avoidable.[59]

While reviewing the COP, BOEM coordinated with DoD to develop measures necessary to safeguard against potential liabilities and impacts on DoD activities. BOEM requested that the Military Aviation and Installation Assurance Siting Clearinghouse (DoD Clearinghouse) coordinate within the DoD a review of the COP. As a result of this review, DoD identified impacts to the mission of NORAD's radar operations. BOEM and the DoD Clearinghouse coordinated to address these concerns[60] and to avoid or mitigate them. The DoD Clearinghouse requested the specific mitigation measures listed below to be accomplished by the lessee via entering into an agreement with the DoD:

> 1) South Fork Wind would notify NORAD 30-60 days ahead of project completion and when the Project is complete and operational for Radar Adverse Impact Management (RAM) scheduling;
> 2) South Fork Wind would contribute $80,000 towards the execution of the RAM;

---

[57] *See* 43 U.S.C. § 1337(p)(4)(F); 30 C.F.R. §§ 585.102(a)(6), 585.621(c).
[58] Bureau of Ocean Energy Mgmt., Mass. Leases OCS-A 0486 and OCS-A 0517 (South Fork Wind Farm), *supra*, note 82.
[59] *See* Bureau of Ocean Energy Mgmt., Office of Renewable Energy Programs, OCS EIS/EA BOEM 2013-1131, Com. Wind Lease Issuance and Site Assessment Activities on the Atl. Outer Continental Shelf Offshore Rhode Island and Mass: Revised Env't Assessment (2013). https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/BOEM%20RI_MA_Revised%20EA_22May2013.pdf.
[60] For more information on these concerns, see FEIS § 3.5.7 (Military and National Security Uses).

3) Curtailment for National Security or Defense Purposes as described in Section 3.2 of Lease OCS-A 0517.

DoD requested that BOEM require South Fork Wind to enter into an agreement to mitigate the identified impact. To protect the security interests of the United States, BOEM will incorporate these measures as conditions of approval if the COP is approved.

4.7 Protection of the rights of other authorized users of the OCS[61]

BOEM must ensure that activities authorized by the COP provide for protection of the rights of other authorized users of the OCS. "Authorized users of the OCS" means other users authorized by BOEM to conduct OCS activities pursuant to any OCS lease, easement or grant, including those authorized for renewable energy, oil and gas, and marine minerals.[62] BOEM's regulatory authority allows the agency to protect the rights of other authorized users by virtue of its right to determine the location of leases, easements, and grants issued and, thereafter, to approve, disapprove, or require modification of plans to conduct activities on such leases, easements, and grants. Approval of the Habitat Alternative, including the project easement, will not result in adverse impacts to rights granted by BOEM pursuant to any other OCS lease or grant, including leases or grants for renewable energy, oil and gas, or marine minerals. The activities that would be authorized by the COP do not restrict equitable access and sharing of the seabed in a manner that significantly interferes with those parties' authorized uses.

Specifically, there are no nearby oil and gas leases or grants or deposits of sand, gravel, and shell resources subject to 43 U.S.C. § 1337(k)(2) (OCSLA) that would be affected by the activities proposed in the COP. While there are seven other adjacent and nearby wind energy leases comprising the Massachusetts and the Rhode Island/Massachusetts WEAs, the five New England offshore wind leaseholders holding these leases (including South Fork Wind) entered into the developers' agreement to establish a regional 1 x 1 nm wind turbine layout across their respective leases. This layout is consistent with the Habitat Alternative and would arrange the WTGs in an east-west/north-south orientation and require a minimum spacing of 1 nm between the WTGs.

Based on the foregoing, BOEM has determined that approval of the COP, as contemplated under the Habitat Alternative, will result in the protection of the rights of other authorized users of the OCS.

[61] *See* 43 U.S.C. § 1337(p)(4)(G); 30 C.F.R. § 585.102(a)(7).
[62] BOEM's Marine Minerals Program manages Outer Continental Shelf mineral leasing (primarily sand and gravel) for coastal restoration, and commercial leasing of gold, manganese, and other hard minerals.

4.8 A fair return to the United States[63]

BOEM has determined that the high bid resulting from the lease auction and terms of the lease provide a fair return to the United States.

On July 31, 2013, BOEM auctioned the Rhode Island/Massachusetts WEA, which represented the nation's first competitive lease sale. BOEM auctioned the area as two leases, referred to as the North Lease Area (Lease OCS-A 0486) and the South Lease Area (Lease OCS-A 0487). The North Lease Area consisted of about 97,500 acres and the South Lease Area consisted of about 67,250 acres. Deepwater Wind New England LLC was the winner of both lease areas because they submitted the bid with the highest As-Bid Price. The auction received $3,838,288 in high bids and lasted one day, consisting of 11 rounds. This included $748,827 in non-monetary credit and $3,089,461 in cash bid for both lease areas. At the time of the lease sale, BOEM determined that the minimum bid for these lease areas constituted a fair return to the United States, in addition to allowing for non-monetary factors to be considered. As published in the Federal Register notice for this lease sale,[64] the minimum bid for the South Lease Area was $1 per acre, or $67,252. The minimum bid for the North Lease Area was $2 per acre, of $194,996. Deepwater Wind New England's winning monetary bid exceeded these minimum bids at $18.75 per acre across both lease areas, and thereby exceeded fair return for the United States on that basis alone. This is in addition to the non-monetary factors.[65]

On January 16, 2020, Deepwater Wind New England, LLC. submitted an application to BOEM to assign 13,700 acres of OCS-A 0486 to Deepwater Wind South Fork, LLC. BOEM approved the assignment on March 23, 2020. The lease area assigned to Deepwater Wind South Fork, LLC now carries the new lease number OCS-A 0517.

Lease payments are enumerated in Lease OCS-A 0486, as confirmed in BOEM's March 23, 2020, letter approving the segregation of OCS-A 0486 and assigning the relevant portion to South Fork Wind under OCS-A 0517. Addendum "B" of Lease OCS-A 0486 requires payment of annual rent calculated per acre or fraction thereof. Rental payments compensate the public for lease development rights and serve as an incentive to timely develop the lease during the period

[63] *See* 43 U.S.C. § 1337(p)(4)(H); 30 C.F.R. § 585.102(a)(8).

[64] See Federal Register Vol 78 No 108. June 5, 2013. "Under a multiple-factor bidding format, as set forth at 30 C.F.R. 585.220(a)(4), BOEM may consider many factors as part of a bid. The regulation states that one bid proposal per bidder will be accepted, but does not further specify the procedures to be followed in the multiple-factor format. This multiple-factor format is intended to allow BOEM flexibility in administering the auction and in balancing the variables presented. The regulation leaves to BOEM the determination of how to administer the multiple-factor auction format in order to ensure receipt of a fair return under the Act, 43 U.S.C. 1337(p)(2)(A). BOEM has chosen to do this through an auction format that considers a non-monetary factor along with ascending bidding over multiple rounds, sharing certain useful information with bidders at the end of each auction round, such as the number of live bids associated with each Lease Area (LA), and ensuring that a bidder's live bid submitted in the final round of the auction will win the LAs included in that bid. This auction format enhances competition and reduces bidder uncertainty more effectively than other auction types that BOEM considered."

[65] The Final Sale Notice for Sale number ATL W-2 included two options for non-monetary credits. A Power Purchase Agreement of 30 MW was eligible for up to a 25% credit and a Joint Development Agreement was eligible for a 20% credit. The credit was only applicable to the bid for the highest price Lease Area. In the case of Deepwater Wind New England's winning bid for the Lease Area that ultimately became OCA-A 0517, non-monetary credits totaling $748,827 (20% of $3,744,135) were applied.

before operations. Per the assignment and segregation letter, this annual rent for the segregated and assigned 13,700 acres is $41,100.00. Once a Project begins commercial generation of electricity, a lessee must pay an operating fee, calculated in accordance with the formula found in Addendum "B" of Lease OCS-A-0486 and BOEM's regulations.[66] The operating fee compensates the public for offshore wind development on OCS submerged lands and the associated electricity generated and sold. Upon COP approval, and annually thereafter, South Fork Wind would be required to submit its first project-easement rent payment, calculated based on the acreage of the easement and the formula provided at 30 C.F.R. § 585.500(c)(5).

Combined, the competitive bonus bid, rental and operating fee payments reflect a fair return to the public. Based on the foregoing, BOEM has determined that approval of the COP as contemplated under the Habitat Alternative will continue to provide a fair return to the United States.

4.9 Prevention of interference with reasonable uses of the OCS, the exclusive economic zone, the high seas, and the territorial seas; does not unreasonably interfere with other uses of the OCS, including national security and defense[67]

Under OCSLA and its implementing regulations, the Secretary ensures that any authorized activities are carried out in a manner that provides for the prevention of interference with reasonable uses (as determined by the Secretary) of the exclusive economic zone, the high seas, and the territorial seas;[68] and that activities authorized by the Secretary may "not unreasonably interfere with other uses of the OCS."[69] Consistent with Principal Deputy Solicitor's Opinion M-37067, the Secretary strives to strike a rational balance between this and all other goals enumerated in subsection 8(p)(4) of OCSLA and discussed in Section 4 of this memorandum. The Secretary's striking of a rational balance among the enumerated goals of subsection 8(p)(4) of OCSLA results in the prevention of unreasonable interference with other OCS uses.

Throughout the planning and leasing process for Lease OCS-A 0517, as well as the NEPA process for the COP review, BOEM considered numerous other OCS uses in order to minimize or eliminate interference. To develop the WEA offshore Rhode Island and Massachusetts, BOEM worked closely with the Joint Rhode Island/Massachusetts Intergovernmental Task Force, Federal agencies, federally recognized Tribes, the public, and other stakeholders between November 2009 and January 2013. BOEM also met three times during 2011 and 2012 with state-led working groups established to facilitate non-governmental consultation: the Rhode Island Fisheries Advisory Board and the Rhode Island Habitat Advisory Board. As a result of the Request for Interest, Call for Information and Nominations, and Area Identification processes, BOEM removed high value fishing areas off of Cox Ledge from the originally identified area in order to avoid specific areas, including shipping lanes and traffic separation

[66] 30 C.F.R. § 585.506.
[67] *See* 43 U.S.C. § 1337(p)(4)(I); 30 C.F.R. §§ 585.102(a)(9), 585.621(c). It is worth noting that approval of a COP would not restrict the legal rights of others to conduct reasonable uses of the exclusive economic zone, the high seas, and the territorial sea (e.g., innocent passage, fishing).
[68] *See* 43 U.S.C. § 1337(p)(4)(I); 30 C.F.R. § 585.102(a)(9).
[69] *See* 30 C.F.R. § 585.621(c).

schemes, and commercial and recreational fishing areas of interest.[70] As a result, BOEM selected a lease area that struck a rational balance between identifying an area suitable for wind energy development and preventing interference with other reasonable uses of the OCS. Moreover, BOEM specifically selected the lease area "to reduce potential use conflicts between the wind energy industry and fishermen[,]" since the area does not have high revenue intensity compared to nearby waters.[71]

During the NEPA process for the COP, BOEM assessed alternatives and mitigations that could further avoid, minimize, or mitigate impacts to other OCS uses, including sealanes and navigation, aviation, fishing activities, and NOAA scientific research and surveys. The discussion below summarizes how BOEM considered these other OCS uses in the lease area and the actions taken to ensure that the proposed activities, if approved, would be carried out in a manner that provides for the prevention of interference with those uses.

- **Sealanes and Navigation.**[72] The major ports in the vicinity of the Proposed Project include ProvPort, Fall River, New Bedford, and Davisville. These ports serve the commercial fishing industry, passenger cruise lines, cargo, and other maritime activities. Of these, the largest deep draft port by volume is ProvPort. The primary vessel traffic and commercial shipping lanes to these ports are outside the Project area.

  The navigational risk assessment prepared for the Proposed Project shows that it is technically feasible to navigate and maneuver fishing vessels and mobile gear through the Lease Area.[73] The foregoing is consistent with USCG's determination that, if the Massachusetts/Rhode Island WEA turbine layout is developed along a standard and uniform grid pattern, formal or informal vessel routing measures would not be required, and, as such, a grid pattern will result in the functional equivalent of numerous navigation corridors that can safely accommodate both transits through and fishing within the WEA.[74] The USCG has indicated that no navigation-related measures within their jurisdiction conflict with the Proposed Project. This includes any formal routing measures (e.g., Traffic Separation Schemes, Precautionary Areas, Fairways).[75] In addition, the USCG's Final MARIPARS evaluated vessel traffic through the lease areas and concluded that: "(1) lanes for vessel transit should be oriented in a northwest to

[70] Bureau of Ocean Energy Mgmt., Office of Renewable Energy Programs, OCS EIS/EA BOEM 2014-603, Com. Wind Lease Issuance and Site Assessment Activities on the Atl. Outer Continental Shelf Offshore Mass: Revised Env't Assessment § 1.5.2 (2014), https://www.boem.gov/sites/default/files/renewable-energy-program/Fishing-BMP-Final-Report-July-2014.pdf.
[71] *See* FEIS.
[72] *See* FEIS.
[73] *See* FEIS.
[74] *See* Port Access Route Study: The Areas Offshore of Mass. and R.I., Notice of Availability, 85 Fed. Reg. 31,792 (May 27, 2020) (MARIPARS). By letter dated June 29, 2020, the Responsible Offshore Development Alliance (RODA) requested corrections to MARIPARS, citing five perceived errors in the study. The USCG reviewed RODA's request for corrections and, by letter dated October 27, 2020, advised RODA of its conclusion that neither retraction nor correction of information was warranted. BOEM's subject matter expert reviewed the USCG response and observed no facial errors that would indicate that the USCG was incorrect. Therefore, BOEM has no reason to believe that the conclusions in MARIPARS are incorrect.
[75] USCG does not have the authority to establish safety zones outside the territorial sea without rulemaking. FEIS vol. I, § 3.12.

southeast direction, 0.6 [nautical miles] NM to 0.8 NM wide. This width will allow vessels the ability to maneuver in accordance with the International Regulations for Preventing Collisions at Sea while transiting through the Rhode Island/Massachusetts WEA; (2) lanes for commercial fishing vessels actively engaged in fishing should be oriented in an east to west direction, 1 nm. wide; and (3) lanes for USCG search and rescue operations should be oriented in a north to south and east to west direction, 1 NM wide. This will ensure two lines of orientation for USCG helicopters to conduct Search and Rescue operations."[76]

As described in the FEIS, South Fork Wind has committed to voluntarily employ a Marine Coordinator, who would "act as a liaison with the USCG, pilots, port authorities, state and local law enforcement, volunteer marine patrols and commercial operators."[77] South Fork Wind would ensure that a Marine Coordinator would remain on duty for the life of the Proposed Action. Further, if the COP is approved, BOEM would require South Fork Wind to: (i) obtain USCG approval for private aids to navigation to be installed in the South Fork Wind Farm (SFWF); and (ii) coordinate with the USCG District 1 so that, to the extent possible, the FDR is consistent with the recommendations provided in the marking and lighting guidelines published by the USCG District 1[78] and BOEM[79] and chapter 4, section G of *Aids to Navigation Manual* (*COMDTINST Manual* (CIM 16500.7A)).

- **Aviation and Air Traffic.**[80] The Habitat Alternative would add 12 WTGs with maximum blade tip heights of up to 853 feet above mean sea level to the area. The addition of these structures would increase navigational complexity and could change aircraft navigation patterns for aircraft flying at low altitudes and for airports in the vicinity, increasing collision risks for some aircraft during the Proposed Action's operational timeframe. However, more than 90% of existing air traffic in the analysis area would occur at altitudes that would not be impacted by the presence of WTGs. Major airports serving the region include Boston Logan International Airport, located approximately 100 miles northeast of the Project; T.F. Green Airport in Providence, Rhode Island, located approximately 50 miles north of the Project; and Montauk Airport in Montauk, New York, approximately 30 miles west of the SFWF and 9 miles north of the offshore SFEC. The closest public airports to the Project are Nantucket Memorial Airport, approximately 55 miles east on Nantucket; Martha's Vineyard Airport, approximately 32 miles northeast on Martha's Vineyard; and Block Island State Airport, approximately 20 miles west on Block Island.

[76] U.S. Coast Guard, USCG 2019-0131, The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study (2020), https://www.navcen.uscg.gov/pdf/PARS/FINAL_REPORT_PARS_May_14_2020.pdf.
[77] *See* FEIS.
[78] Dep't of Homeland Sec., U.S. Coast Guard, Local Notice to Mariners, Dist. 1, Week 15/21, Coastal Waters from Eastport, Me. to Shrewsbury, N.J., https://www.navcen.uscg.gov/pdf/lnms/lnm01152021.pdf.
[79] Bureau of Ocean Energy Mgmt., Office of Renewable Energy Programs, Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Dev. (2021), https://www.boem.gov/sites/default/files/documents/renewable-energy/2021-Lighting-and-Marking-Guidelines.pdf.
[80] *See* FEIS.

The FAA has established methods for marking potential obstructions, mitigating potential impacts, and notifying aviation interests about any changes to airspace management. Implementation of these standard procedures is required within FAA jurisdiction and would reduce risks associated with impacts from structures on aviation and air traffic. As stated in the *Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development,* BOEM recommends consistency with FAA conditions for WTGs beyond FAA jurisdiction. If the COP is approved, BOEM would require, to the extent possible, South Fork Wind's FDR to be consistent with the recommendations in the *Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development*.[81]

- **Commercial Fisheries and For-Hire Recreational Fishing.**[82] Federally permitted fishing occurs in the SFWF and SFEC. NMFS currently has active permits for approximately 4,300 vessels engaged in various commercial and for-hire recreational fisheries in the Northeast Region (Virginia to Maine). Of these federally permitted vessels, approximately 249 per year (approximately 6 percent) have reported fishing in the SFWF.[83] Of approximately 249 vessels, NMFS data from 2008 to 2019 shows that most permits source less than 0.2 percent of their income from the Project area.[84] The FEIS found that the Habitat Alternative would result in negligible to major (for some individuals) impacts to commercial and for-hire recreational fisheries.[85] The FEIS also found that impacts from future planned actions, including future offshore wind approvals, could result in major impacts to commercial fisheries and for-hire recreational fishing.[86] The offshore wind factors that contributed to these impact determinations were mainly driven by the presence of structures and the resulting navigational hazards, space-use conflicts, and gear loss/damage.

  It is important to clarify that approval of the Proposed Project would not limit the right to navigate or fish within the Project area. That said, some project activities and components (e.g., foundations, cable protection measures) are expected to impact some types of fishing within the SFWF.[87] For example, temporary safety zones may be established in coordination with the USCG around active construction for the safety of the Project and the public. During this time, all fishing and transit would need to avoid the construction zone. During the operational period, fishing and transit would be permitted; however, some larger vessel size classes and/or vessels towing fishing gear may choose to avoid foundations due to operational concerns. It is anticipated that vessel operators that choose to avoid the area will fish or transit in other locations. Static gear

[81] Bureau of Ocean Energy Mgmt., Office of Renewable Energy Programs, Guidelines for Lighting and Marking of Structures.
[82] *See* FEIS.
[83] Nat'l Marine Fisheries Serv., Descriptions of Selected Fishery Landings and Estimates of Vessel Revenue from Areas: A Planning-level Assessment (Mar. 10, 2021), https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/WIND/WIND_AREA_REPORTS/South_Fork_Wind_1.html.
[84] *Id.*
[85] *See* FEIS, App. F.
[86] *See* FEIS.
[87] Nat'l Marine Fisheries Serv.

fishing including hook and line, lobster and crab traps, and gillnets are not anticipated to have the same operational constraints as mobile gear fishing, although fishing methodology (e.g., direction of setting the gear and/or length of set gear) may need to be adjusted for fishing within the Project area.

While BOEM expects that, with time, many fishermen will adapt to spacing and be able to fish successfully in the SFWF, BOEM has identified several ways to reduce the level of interference the Project would have with commercial fisheries. The Habitat Alternative would require an east-west/north-south project layout with 1 nm between WTGs. This project layout reduces interference with commercial fisheries, since the layout is representative of the traditional fishing arrangements in the area (e.g., mobile gear and fixed gear fishermen would fish in a nearly east-west orientation along alternating latitudinal lines).[88]

Concerning potential loss of revenues, it should be noted that South Fork Wind will be establishing the following compensation/mitigation funds to address expected impacts to fisheries:[89]

- Rhode Island Compensation Fund - $5,200,000[90]
- Massachusetts Compensation Fund - $2,600,000[91]

These funds generally cover two areas: (i) financial compensation for lost income and gear loss as a result of the Proposed Project's construction and operation; and (ii) programs to support future compatibility of offshore wind facilities and fishing activity. The gear loss and revenue compensation funds for fishing interests totals $7.8 million over the 25-year operations term and 5-year decommissioning period of the Project. The calculations were based on NOAA data from the years 2008–2018 adjusted for lobster and Jonah crab and included both upstream and downstream impacts.

Including all the measures above would mitigate impacts the Project is expected to have on commercial fisheries and for-hire fisherman and will prevent unreasonable interference with said fishing interests.

- **NOAA Scientific Research and Surveys.**[92] As described in Section 3.5.7.1 of the FEIS, the South Fork Wind Lease Area overlaps with six different coast-wide Northeast Fisheries Science Center fishery resource monitoring surveys. Based on layout and spacing of WTGs and current survey vessel operation policies, NMFS decided that its

[88] *See* FEIS.
[89] As applicable, these compensation/mitigation funds must also be established in accordance with consistency certifications issued for the Project under the Coastal Zone Management Act. SFW must submit annual certifications to BOEM, beginning on the second anniversary of the Project's commercial operation date. The certification must attest that the compensation/mitigation funds have been established and are currently processing claims/providing assistance to mitigate impacts to fisheries. The certification must be signed by SFW's Lease Representative.
[90] *See* FEIS app. G, Mitigation Measure No. 34.
[91] *See* FEIS app. G, Mitigation Measure No. 35.
[92] *See* FEIS.

vessels would not transit through or sample within 1 nm of wind energy lease areas. Aerial survey track lines at the altitude used in current cetacean and sea turtle abundance surveys (600 ft [183 m] above mean sea level [AMSL]) could not occur in offshore wind areas because the planned maximum-case scenario WTG blade tip height (837 ft [255 m] AMSL) for the Proposed Action and 853 ft [260 m] AMSL for other projects would exceed the survey altitude with current surveying methodologies. The Rhode Island and Massachusetts Lease Areas comprise less than 1.5 percent of the aerial survey stratum, although the visual aerial abundance surveys for this stratum contribute to the estimates of 30 or more stocks of cetaceans and sea turtles. As recognized in Section 3.5.7.2 of the FEIS, the approval of future offshore wind energy projects is expected to increase impacts to NMFS surveys.

BOEM and NMFS determined that, given the regional nature of the survey impacts expected to materialize if future projects are approved--and thus the shared responsibility of government and the offshore wind energy industry to address regional impacts as a whole-- a programmatic approach to mitigate impacts to surveys, rather than a narrower site-specific approach, is the most appropriate method to ensure the ongoing reliability of NMFS surveys and to "holistically mitigate impacts on NMFS core surveys."[93] BOEM and NMFS are of the view that the solution is a collaborative effort between both agencies and the offshore wind industry to establish a programmatic survey mitigation program to address the impacts to NOAA surveys identified in the FEIS.

Impacts to NOAA surveys result principally from the inability of established sampling platforms to access the SFWF due to NOAA's Office of Marine and Aviation Operations restriction of large vessel operations closer than 1 nm of wind installations and flight height restrictions.[94] The exclusion of sampling platforms from within the SFWF impacts the random-stratified statistical design used in surveys and could create uncertainty in survey results for fish and protected species population assessments, affecting both protected species and fisheries management. Accordingly, "[u]ncertainty in estimating fishery quotas could lead to unintentional underharvest or overharvest of individual fish stocks, which could have both beneficial and adverse impacts on fish stocks, respectively. However, such lower quotas would result in lower associated fishing revenue that would vary by species, which could result in impacts on fishing communities."[95] For a complete discussion on the potential impacts on NMFS' surveys, please see Section 3.5. of the FEIS.

To address these impacts, as discussed in the FEIS, NMFS recommended the development and implementation of a Federal Survey Mitigation Program that includes the following elements: 1) Evaluate survey design, 2) Identify and develop new survey approaches, 3) Calibrate new survey approaches, 4) Develop interim provisional survey indices, 5) Monitor wind energy to fill regional scientific survey data needs over the life of offshore wind operations, and 6) Develop and communicate new regional data streams (hereinafter, Federal Survey Mitigation Program). The Federal Survey Mitigation

[93] *See* FEIS.
[94] *Id.* at 260.
[95] *Id.* at 271.

Program would evaluate impacts to NOAA surveys and identify potential regional solutions that could be applied to future offshore wind projects. BOEM and NMFS have committed to this Federal Survey Mitigation Program and will take several steps to implement it as described in May 2021 joint statement.[96] These efforts are in line with the Federal Survey Mitigation Program described in the FEIS.[97] In addition to the foregoing, BOEM and NMFS have agreed to include conditions in the ROD which require South Fork Wind to participate in the efforts led by NMFS, in coordination with BOEM, for purposes of sharing information and engagement in scientific studies needed to understand the impact of wind energy development on NMFS surveys.[98]

- **National Security and Defense.** As explained in Section 4.6, BOEM has consulted extensively with the DoD. If BOEM approves the COP, BOEM will include in any COP approval the mitigation measures identified as a result of said consultations.

4.10 Consideration of (i) the location of, and any schedule relating to, a lease or grant under this part for an area of the OCS, and (ii) any other use of the sea or seabed, including use for a fishery, a sealane, a potential site of a deepwater port, navigation[99]

For a discussion on how BOEM selected the lease area, see Section 1.1. Approval of the COP is not expected to adversely affect the development of adjoining lease areas. Also, as noted above, the Habitat Alternative is consistent with the "developers' agreement," which proposed 1 x 1 nm spacing in an east-west/north-south formation to prevent irregular transit corridors.[100] Further, there are currently no scheduled lease sales or deepwater ports proposed in the vicinity of the Project area.

For a discussion on how BOEM considered potential conflicts with fisheries, sealanes, navigation, and aviation, see Section 4.9.

4.11 Public notice and comment on any proposal submitted for a lease or easement[101]

For a detailed discussion on public notice and comment opportunities associated with the issuance of the lease, please see Section 1.1 and Appendix A of the FEIS, and Section 1.5 of the Revised EA,[102] discussed in Sections 4.3, 4.5, and 4.6.

---

[96] *See* https://www.boem.gov/bureau-ocean-energy-management-and-national-oceanic-and-atmospheric-administration.
[97] *See* FEIS, § 3.12.2.5 (Scientific Research and Surveys)
[98] *See* app. A to Record of Decision, Mitigation Measure 2.3 and
[99] *See* 43 U.S.C. § 1337(p)(4)(J); 30 C.F.R. § 585.102(a)(10).
[100] *See* Letter from Equinor Wind US, Eversource Energy, Mayflower Wind, Orsted North America Inc., and Vineyard Wind LLC, to Michael Emerson, Director, Marine Transportation Systems (CG-5PW), U.S. Coast Guard (Nov. 1, 2019).
[101] *See* 43 U.S.C. § 1337(p)(4)(K); 30 C.F.R. § 585.102(a)(11).
[102] Com. Wind Lease Issuance and Site Assessment Activities on the Atl. Outer Continental Shelf (OCS) Offshore Rhode Island and Mass., 78 Fed. Reg. 33,908 (June 5, 2013). The revised EA and FONSI are available at https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/BOEM%20RI_MA_Revised%20EA_22May2013.pdf.

Prior to preparation of the DEIS, BOEM held three public scoping meetings near the Proposed Project area to solicit feedback and to identify issues and potential alternatives for consideration. The topics most referenced in the scoping comments included commercial fisheries and for-hire recreational fishing, the Beach Lane landing site, the Project description, socioeconomics, and alternatives. On January 8, 2021, BOEM published an NOA for the DEIS consistent with the regulations implementing NEPA to assess the potential impacts of the Proposed Action and alternatives.[103] The NOA commenced the public review and comment period of the DEIS. BOEM held three virtual public hearings (February 9–16, 2021) to solicit feedback and identify issues for consideration in preparing the FEIS. Throughout the public review and comment period, Federal agencies; state, local, and tribal governments; and the general public had the opportunity to provide comments on the DEIS. The topics most referenced during the DEIS comment period included climate change, commercial fisheries and for-hire recreational fishing, mitigation, finfish, invertebrates, EFH, and whales.

On August 20, 2021, BOEM published an NOA for the FEIS in the *Federal Register*.[104] The FEIS was also made available in electronic form at https://www.boem.gov/renewable-energy/state-activities/south-fork. BOEM's 30-day waiting period for the FEIS closed on September 20, 2021. BOEM's responses to comments on the DEIS are included in Appendix I of the FEIS.

4.12 Oversight, inspection, research, monitoring, and enforcement relating to a lease, easement, or right-of-way[105]

Following approval of the COP, BOEM maintains the authority to perform oversight, inspection, research, monitoring, and enforcement relating to Lease OCS-A 0517, as authorized under the lease, OCSLA, and its implementing regulations. Under BOEM's authority, BSEE will assist with ensuring that offshore renewable energy development in Lease OCS-A 0517 is conducted safely and maintains regulatory compliance. BSEE has reviewed the proposed COP and recommended technical conditions for the design, construction, operation, maintenance, and monitoring of the Project, and for periodic review and reporting. These proposed technical conditions are included as Appendix B of the ROD and, if the COP is approved, will be included as COP conditions of approval.

5.0 Status of the Lease

South Fork Wind is currently in compliance with the terms of Lease OCS-A 0517. South Fork Wind has maintained the lease in full force and effect by virtue of annual rent payments, all of which have been timely paid by South Fork Wind and received by BOEM.

[103] Notice of Availability of a Draft Env't Impact Statement, 86 Fed. Reg. 1520 (Jan. 8, 2021).
[104] Notice of Availability of a Final Env't Impact Statement, 86 Fed. Reg. 46,879 (Aug. 20, 2021).
[105] *See* 43 U.S.C. § 1337(p)(4)(L); 30 C.F.R. § 585.102(a)(12).

6.0 Financial Assurance

As required by 30 C.F.R. § 585.625(b)(19), Section 1.62 of the COP contains South Fork Wind's statement attesting that the activities and facilities proposed in the COP are or will be covered by an appropriate bond or security as required by 30 C.F.R. §§ 585.515 and 585.516. South Fork Wind has provided and currently maintains Irrevocable Standby Letter of Credit No. SBY59303 in the amount of $141,000.00 to meet the initial lease-specific and Site Assessment Plan supplemental financial assurance requirements on Lease OCS-A 0517 to guarantee compliance with all terms and obligations of the lease. BOEM's regulations at 30 C.F.R. § 585.516(a)(3) provide that, before BOEM will approve a COP, the lessee must provide a supplemental bond or other financial assurance in an amount determined by BOEM based on the complexity, number, and location of all facilities in the lessee's planned activities and commercial operation. If BOEM approves the COP, South Fork Wind must provide supplemental financial assurance beforehand to cover the additional annual rental amount for the project easement where transmission lines to shore will be located. In addition, BOEM may increase the amount of supplemental financial assurance at any time if BOEM determines it is necessary to guarantee compliance with the terms and conditions of the lease.[106] As required under 30 C.F.R. § 585.516(a)(4), South Fork Wind is required to satisfy its decommissioning financial assurance obligations prior to the installation of any facilities authorized in the COP. If approved, this obligation will be included as a COP condition of approval.

7.0 Conclusion

Minimizing environmental impacts and interference with other uses of the OCS is integral to OCS wind energy planning, leasing, and development. Over the last 12 years, the United States government, on behalf of the American people has, through the DOI, BOEM, and other agencies, devoted significant time and resources to identifying, analyzing, and developing strategies to mitigate potential environmental impacts and interference with other OCS uses. In 2009, OREP established and began meeting with an Intergovernmental Renewable Energy Task Force, as well as with other stakeholders and ocean users, to identify areas of interest for wind energy offshore Massachusetts and Rhode Island as well as areas deemed unsuitable. OREP then prepared an EA and issued a FONSI, which concluded that reasonably foreseeable environmental effects associated with lease issuance, including those resulting from site characterization surveys in the WEA and the deployment of meteorological towers or buoys, would not significantly impact the environment. By the time BOEM held the lease sale and issued Lease OCS-A 0486 (subsequently segregated and assigned to South Fork Wind as OCS-A 0517) in 2013, OREP had also identified potential conflicts with other uses, including commercial fisheries, and had minimized those conflicts by significantly reducing the size of the WEA.

Once South Fork Wind submitted its proposed COP in 2018, BOEM conducted a project-specific NEPA analysis, as well as other environmental consultations required by the ESA, MSA, and NHPA. Throughout its environmental and technical review of the COP, BOEM also coordinated with various Federal agencies, including BSEE, DoD, DON, USEPA, USACE, FWS, NOAA, NORAD, USAF, and USCG. All of those reviews, consultations, and coordination efforts

[106] *See* 30 C.F.R. § 585.517.

enabled BOEM to assess whether approval of the Habitat Alternative conforms with the 8(p)(4) factors and implementing regulations.

The Habitat Alternative, plus the mitigation measures discussed further in Section 4.9 of this memorandum, balance the need to prevent interference with OCS uses with BOEM's duty to further the United States policy to make OCS energy resources available for expeditious and orderly development, subject to environmental safeguards, including the consideration of natural resources and existing ocean uses.[107] The FEIS shows that approving the Project as modified by the Habitat Alternative would have negligible to moderate adverse impacts on most resources, including navigation and vessel traffic.

The Habitat Alternative is expected to have moderate impacts on commercial fisheries and for-hire fishing, and only the potential for major adverse impacts on: (i) certain, but not all, cultural and visual resources; (ii) certain, but not all, commercial fishing resources; and (iii) scientific research and surveys.[108] As discussed in Section 4.9 above, there are a suite of mitigations that are intended to ensure that authorized activities are carried out in a manner that provides for the prevention of unreasonable interference with OCS uses, including fishing activities, within the Project area and adjoining areas. The expected impacts on cultural and visual resources will depend on the community or specific resource affected.

Impacts on scientific research and surveys in the Project area ultimately will require a programmatic approach to mitigation. As described in Section 4.9, BOEM is committed to establishing a programmatic approach that will address potential impacts expected not only from South Fork Wind but also from future planned actions. While the programmatic approach is in development, BOEM will require the project-specific mitigation described in Section 4.9, which is intended to generate information related to the impacts of construction and operations through project-specific monitoring plans. The expectation is for the regional, programmatic approach to replace the project-specific approach, as described in the agencies' May 2021 joint statement.[109]In addition, as the FEIS concluded, the Habitat Alternative could have beneficial impacts on the following resources: (i) air quality; (ii) demographics, employment, and economics; (iii) recreation and tourism; and (iv) land use and coastal infrastructure. The numerous consultations performed under various Federal statutes, as well as the analysis in the FEIS, indicate that approval of the Habitat Alternative would not result in undue harm to resources of interest or in unreasonable interference with other OCS uses.[110]

Moreover, approval of the Habitat Alternative would further some of the goals stated in Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, by increasing renewable energy production on the OCS, "with the goal of doubling offshore wind by 2030 while ensuring robust protection for our lands, waters, and biodiversity and creating good jobs."

[107] 43 U.S.C. § 1332(3).
[108] *See* FEIS.
[109] *See* https://www.boem.gov/bureau-ocean-energy-management-and-national-oceanic-and-atmospheric-administration.
[110] *See* secs. 4.3 and 4.9 *supra*.

In conclusion, OREP has evaluated all the information that South Fork Wind provided in its COP and has assessed it in relation to the enumerated goals in OCSLA subsection 8(p)(4) and BOEM's implementing regulations at 30 C.F.R. part 585. In OREP's view, approval of the COP – as modified by the Habitat Alternative and the proposed technical, and navigational and aviation safety terms and conditions attached herein – would be in accordance with the regulations at 30 C.F.R. part 585 and would strike a rational balance among the various goals enumerated in subsection 8(p)(4) of OCSLA.

***

APPENDIX D.1. ETRB REVIEW MEMORANDUM

Memorandum

To: Chief, Projects and Coordination Branch

From: Jessica Stromberg
Acting Chief, Engineering and Technical Review Branch

Subject: Review of the South Fork Wind Farm and South Fork Export Cable Offshore Wind Energy Project Construction and Operations Plan (COP) for Commercial Lease OCS-A 0517

South Fork Wind, LLC (South Fork) submitted a COP to the Bureau of Ocean Energy Management (BOEM) on June 29, 2018, for lease OCS-A 0517. The COP for the South Fork Wind Farm (SFWF) project proposes the installation of the following major offshore components:

- Up to 15 Wind Turbine Generators (WTGs) with name plate capacity of 6-12 megawatts (MW);
- Each WTG would be supported by a monopile foundation;
- The inter-array cables would either be 34.5-kilovolt (kV) or 66-kV three-phase alternating current cable;
- One offshore substation (OSS) on a monopile foundation; and
- The export cable would consist of a 138-kV submarine power cable with target burial depth of 4 to 6 feet.

The Engineering and Technical Review Branch (ETRB) subject matter experts (SMEs) reviewed the proposed facilities, project design, project activities, and fabrication and installation details in the COP and coordinated with the following agencies:

- Bureau of Safety and Environmental Enforcement (BSEE), for safety;
- Federal Aviation Administration (FAA) & National Oceanic and Atmospheric Administration (NOAA), for radar interference; and
- The United States Coast Guard (USCG), for vessel navigation.

The SME comments and the responses from South Fork are logged in the COP review matrix on the Office of Renewable Energy Programs' shared drive [AEAU:\State of Rhode Island\Deepwater Wind South Fork, LLC\COP (South Fork Wind Farm)\Submissions\2021].

On August 5, 2020, BOEM approved the nomination of DNV, to be the Certified Verification Agent for the South Fork Wind Farm project, to review and to certify that the facilities would be designed, fabricated and installed in conformance with accepted engineering practices as described in the Facility Design Report and the Fabrication and Installation Report, pursuant to 30 CFR 585.705.

In review of the COP, ETRB determines that the technical information and supporting data submitted by South Fork: meets the requirements of 30 CFR 585.626 and is sufficient to allow the safe installation of the proposed project on the Outer Continental Shelf (OCS), does not

unreasonably interfere with other uses of the OCS, uses properly trained personnel, and uses best available and safest technology, pursuant to 30 CFR 585.621.

ETRB recommends approval of the COP along with the inclusion of the following terms and conditions (T&C), provided as Appendix B to the Record of Decision (ROD), developed in consultation with BSEE, FAA, NOAA, and USCG. The T&C are derived from the review of the information requirements in BOEM's regulations and the relevant mitigation measures identified in Appendix D of the Final Environmental Impact Statement (FEIS). The table below provides a cross-reference.

Information Requirement	**Regulation/Source**	**Terms and Condition**
▪ Shallow Hazards Review	§585.626(a)(1)	▪ Unexploded Ordnance and/or Discarded Military Munitions
▪ Geological Survey Review ▪ Geotechnical Survey Review ▪ Technical Feasibility Review	-§585.626(a)(2) -§585.626(a)(4) -§585.626(a)(6)	▪ WTG and OSS Foundations Depths
▪ Physical and Oceanographic Condition Review	-§585.626(a)(6)	▪ Foundation Scour Monitoring
▪ Cables	-§585.626(b)(7)	▪ Cable Depth ▪ Cable Routings ▪ Cable Protection Measures ▪ Cable Crossing Agreements ▪ Post Installation Cable Monitoring
▪ Certified Verification Agent Nomination	-§585.626(b)(20)	▪ Commissioning Surveillance of Safety Related Systems ▪ As-Built Drawings
▪ Radar	-§585.626(b)(23) -FEIS	▪ Onshore Radar Interference Analysis
▪ Navigation Safety Risk Assessment ▪ Lighting & Marking	-§585.626(b)(23) -§585.626(b)(23) -FEIS	▪ Conditions related to Navigational Safety
▪ Safety Management System (SMS) ▪ Oil Spill Response Plan (OSRP)	-§ 585.810 & -§ 585.254	▪ Conditions related to SMS ▪ Conditions related to OSRP

Attachment

APPENDIX E. ABBREVIATIONS AND ACRONYMS

ADLS	Aircraft Detection Lighting System
ALARP	As Low As Reasonably Practical
AMP	Alternative Monitoring Plan
AMSL	above mean sea level
ANSI	American National Standards Institute
APE	Area of Potential Effects
ASSE	American Society of Safety Engineers
ASV	autonomous surface vessel
BOEM	Bureau of Ocean Energy Management
BiOp	Biological Opinion
BSEE	Bureau of Safety and Environmental Enforcement
CBRA	Cable Burial Risk Assessment
CMECS	Coastal and Marine Ecological Classification Standard
COP	Construction and Operations Plan
CVA	Certified Verification Agent
CZMA	Coastal Zone Management Act
DAS	distributed acoustic sensing
dB	decibel(s)
DEIS	Draft Environmental Impact Statement
DMA	dynamic management area
DMM	discarded military munitions
DoD	Department of Defense
DOI	Department of the Interior
DON	Department of the Navy
DPS	distinct population segment
DTS	desktop study
CMECS	Coastal and Marine Ecological Classification Standard
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ETRB	Engineering and Technical Review Brach
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FDR	Facility Design Report
FIR	Fabrication and Installation Report
FONSI	Finding of No Significant Impact
FRMP	Fisheries Research and Monitoring Plan
FWS	Fish and Wildlife Service
GPS	global positioning
HF	high frequency
HRG	high resolution geophysical
HPTP	Historic Preservation Treatment Plan
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IEC	International Electric Code
IHA	Incidental Harassment Authorization
IMT	Incident Management Team
IOOS	Integrated Ocean Observing System
ISO	International Organization for Standardization
ITA	Incidental Take Authorization
LOI	Letter of Intent

LOS	line of sight
m	meter(s)
MARA	Marine Archaeological Resources Assessment
MARIPARS	Massachusetts and Rhode Island Port Access Route Study
MEC	munitions and explosives of concern
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MW	megawatt(s)
NARW	North Atlantic right whale
NHPA	National Historic Preservation Act
NMFS	NOAA National Marine Fisheries Service
nm	nautical mile(s)
nmi	nautical mile(s)
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NORAD	North American Aerospace Defense Command
NRHP	National Register of Historic Places
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act
OEM	original equipment manufacturer
OREP	Office of Renewable Energy Programs
OSRO	Oil Spill Removal Organization
OSRP	Oil Spill Response Plan
OSS	offshore substation
PAM	passive acoustic monitoring or passive acoustic monitor(s)
PATON	Private Aids to Navigation
PCB	Projects and Coordination Branch
PDC	Project Design Criteria
PDE	Project Design Envelope
PDM	pile-driving monitoring
PIT	passive integrated transponder
PSO	Protected Species Observer
QI	Qualified Individual
RAL	Reichs-Ausschuß für Lieferbedingungen und Gütesicherung
RAM	Radar Adverse Impact Management
RMS	root-mean-square
SDS	safety data sheets
SFW	South Fork Wind
SCPP	Scour and Cable Protection Plan
SFVP	Sound Field Verification Plan
SMA	seasonal management area
SMS	Safety Management System
SROT	Spill Response Operating Team
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

UXO	unexploded ordnance
VHF	very high frequency
WCD	worst-case discharge
WEA	Wind Energy Area
WTG	wind turbine generator

APPENDIX F. REFERENCES

BOEM (Bureau of Ocean Energy Management, Office of Renewable Energy Programs). 2013. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Rhode Island and Massachusetts: Revised Environmental Assessment. OCS EIS/EA BOEM 2013-1131. Accessed September 2021. Retrieved from: https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/BOEM%20RI_MA_Revised%20EA_22May2013.pdf. 417 pp.

BOEM (Bureau of Ocean Energy Management, Office of Renewable Energy Programs). 2021. South Fork Wind Farm and South Fork Export Cable Project, Final Environmental Impact Statement. OCS EIS/EA BOEM 2020-057. Accessed October 2021. Retrieved from: https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/SFWF%20FEIS.pdf. 1317 pp.

Jacobs (Jacobs Engineering Group Inc.). 2021. Construction and Operations Plan South Fork Wind Farm. Update 4: May 2021. Submitted to Bureau of Ocean Energy Management. Boston, Massachusetts: Jacobs. Available at: https://www.boem.gov/renewable-energy/state-activities/south-fork. 630 pp.

NMFS (National Marine Fisheries Service). 2021. Endangered Species Act Section 7 Consultation Biological Opinion: Construction, Operation, Maintenance, and Decommissioning of the South Fork Wind Offshore Energy Project (Lease OCS-A 0517). GARFO-2021-00353. 506 pp.

USCG (U.S. Coast Guard). 2020. The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study. Final Report. Docket Number USCG-2019-0131. May 14, 2020. Accessed: October 29, 2020. Retrieved from: https://downloads.regulations.gov/USCG-2019-0131-0101/content.pdf. 199 pp.