Record of Decision

Sunrise Wind Project
Construction and Operations Plan

March 25, 2024

U.S. Department of the Interior
Bureau of Ocean Energy Management
National Park Service

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

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1. Introduction

This document constitutes the Bureau of Ocean Energy Management (BOEM), the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS),[1] and the National Park Service (NPS) joint Record of Decision (ROD) for the Final Environmental Impact Statement (EIS) prepared for Sunrise Wind Project Construction and Operations Plan (COP) (the Project). The ROD addresses BOEM's action to approve the COP under subsection 8(p) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1337(p), NMFS' action to issue a Letter of Authorization (LOA) to Sunrise Wind, LLC (Sunrise Wind or Lessee) under Section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA), as amended, 16 U.S.C. § 1371(a)(5)(A), and NPS' action to issue a Right-of-Way (ROW), 54 USC § 100902; 36 C.F.R. Part 14, and special uses permits (SUPs), 36 C.F.R. § 5.7. 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. §§ 1500-1508.[2]

BOEM prepared the Sunrise Wind Final EIS with the assistance of a third-party contractor, Kleinschmidt Associates (Kleinschmidt). NMFS, the U.S. Army Corps of Engineers (USACE), the U.S. Coast Guard (USCG), the Bureau of Safety and Environmental Enforcement (BSEE), the U.S. Environmental Protection Agency (USEPA), NPS, and the U.S. Fish and Wildlife Service (USFWS) were cooperating agencies during the development and review of the document. The Massachusetts Office of Coastal Zone Management, Rhode Island Coastal Resources Management Council, Rhode Island Department of Environmental Management, and New York State Department of State supported the preparation of the EIS as cooperating agencies. The Advisory Council on Historic Preservation (ACHP), Federal Aviation Administration (FAA), Department of Defense, and U.S. Navy supported the environmental review as participating agencies.

NMFS received a request for authorization to take marine mammals incidental to construction activities related to the Project, which NMFS may authorize under the MMPA. NMFS's issuance of an MMPA incidental take authorization in the form of a LOA for Incidental Take Regulations (ITRs) is a major Federal action and, in relation to BOEM's action, is considered a connected action (40 C.F.R. § 1501.9(e)(1)). The purpose of the NMFS action—which is a direct outcome of Sunrise Wind's request for authorization to take marine mammals incidental to specified activities associated with the Project (e.g., pile driving, marine site assessment surveys)—is to evaluate Sunrise Wind's request pursuant to specific requirements of the MMPA and its implementing regulations administered by NMFS, considering impacts of the applicant's activities on relevant resources, and if appropriate, issue the authorization. NMFS needs to render a decision regarding the request for authorization due to NMFS's responsibilities under the MMPA (16 U.S.C. § 1371(a)(5)(A)) and its implementing regulations.

[1] For purposes of this Record of Decision, NMFS as an action agency has been delegated authority to issue marine mammal incidental take authorizations.
[2] The associated Final EIS was prepared using the 2022 Council on Environmental Quality (CEQ) NEPA Regulations. Therefore, this ROD follows the 2022 CEQ Regulations.

The NPS received an application for a ROW permit for Sunrise Wind to place a portion of the Sunrise Wind Export Cable in New York State waters (SRWEC-NYS) through submerged lands within Fire Island National Seashore (the Seashore), in an area of the Atlantic Ocean where the United States holds an easement for use and occupation for the purposes of the Seashore. The cable may be co-located only if the NPS grants a ROW permit (54 U.S.C. § 100902; 36 C.F.R. Part 14). The NPS also received an application for SUPs for construction (36 C.F.R. § 5.7) of the cable within the Seashore, in the Atlantic Ocean, and for construction-related activities within the NPS-administered water column in the intracoastal waterway between the Seashore and Long Island.

In addition to analyzing potential impacts resulting from BOEM's approval of the COP pursuant to Section 8(p) of OCSLA, the Final EIS also analyzed potential 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. § 403; Section 14 of the RHA, 33 U.S.C. § 408; Section 404 of the Clean Water Act (CWA), 33 U.S.C. § 1344; NMFS' action of issuing a LOA for incidental harassment of small numbers of marine mammals during construction to Sunrise Wind under the MMPA, 16 U.S.C. § 1371(a)(5)(A), see also 40 C.F.R. § 1501.9(e)(1)); the NPS permitting actions for the requested ROW, 54 U.S.C. § 100902; 36 C.F.R. Part 14, and SUPs, 36 C.F.R. § 5.7; and EPA's National Pollutant Discharge Elimination System (NPDES) permitting action under Section 402 of the CWA, 33 U.S.C. § 1342.

1.1. Background

In 2009, the U.S. Department of the Interior (DOI) announced final regulations for the Outer Continental Shelf (OCS) Renewable Energy Program, which was authorized by the Energy Policy Act of 2005. The Energy Policy Act provisions implemented by BOEM provide a framework for issuing renewable energy leases, easements, and rights-of-way for OCS activities. See Final EIS section 1.3. BOEM's renewable energy program occurs in four distinct phases: (1) regional planning and analysis, (2) lease issuance, (3) site assessment, and (4) construction and operations. The history of BOEM's planning and leasing activities offshore Rhode Island and Massachusetts is summarized in Table 1-1.

Table 1--1 History of BOEM Planning and Leasing Offshore Rhode Island and Massachusetts Related to Lease OCS-A 0487 and OCS-A 0500

Year	OCS-A 0487 Milestone	OCS-A 0500 Milestone
2009		BOEM established the BOEM Rhode Island Intergovernmental Renewable Energy Task Force (Task Force) and the BOEM Massachusetts Task Force at the request of the Governors of Rhode Island and Massachusetts, respectively, to facilitate coordination among affected Federal agencies and Tribal, state and local governments throughout the entire leasing process. BOEM convened the BOEM Rhode Island and Massachusetts Task Forces for its first meetings in

Year	OCS-A 0487 Milestone	OCS-A 0500 Milestone
		November 2009.
2010	N/A	BOEM began to work on and intended to issue a Request for Interest with the Rhode Island Task Force for an area offshore Rhode Island. However, the States of Rhode Island and Massachusetts developed a partnership that resulted in a Memorandum of Understanding (MOU) in July 2010, signed by the Governors of Rhode Island and Massachusetts. The MOU identified an Area of Mutual Interest for BOEM to consider for leasing and set a framework for the two states to collaborate on issues concerning offshore wind development on the OCS. In December 2010, BOEM held a joint BOEM Rhode Island and Massachusetts Task Force meeting to continue discussion on potential wind farm development offshore Rhode Island and Massachusetts with Call for Information and Nominations (Call). On December 29, 2010, BOEM published a Request for Interest (RFI) in the *Federal Register* to gauge commercial interest in wind energy development offshore Massachusetts (75 Fed. Reg. 82,055). BOEM invited the public to comment and provide information-including information on environmental issues and data—for consideration of the RFI area for commercial wind energy leases.
2011	On August 18, 2011, BOEM published a Call for Information and Nominations (Call) for Commercial Leasing for Wind Power on the OCS Offshore Rhode Island and Massachusetts in the *Federal Register*. The public comment period for the Call closed on October 3, 2011. In conjunction with the Call, BOEM published a Notice of Intent (NOI) to prepare an environmental assessment on the proposed leasing, site characterization and assessment activities in the offshore area under consideration in the Call. BOEM received eight indications of interest to obtain a commercial lease for a wind energy project and 81 comments on the Call; as well as 24 comments in response to the NOI.	The Massachusetts RFI area was delineated based on deliberation and consultation with the Massachusetts Renewable Energy Task Force. The subsequent selection of a Wind Energy Area (WEA) was based on input received on this RFI area. Responding to requests received from the public and the Commonwealth of Massachusetts, BOEM reopened the comment period for the RFI on March 17, 2011. The comment period ended on April 18, 2011.
2012	On February 24, 2012, BOEM announced the Rhode Island/Massachusetts WEA was comprised of approximately 164,750 acres (666.7 km^2) within an Area of Mutual Interest identified by Rhode	After careful consideration of the public comments, as well as input from BOEM's intergovernmental Massachusetts Renewable Energy Task Force, BOEM

Year	OCS-A 0487 Milestone	OCS-A 0500 Milestone
	Island and Massachusetts in a Memorandum of Understanding between the two states in 2010. BOEM published a Proposed Sale Notice in the *Federal Register* on December 3, 2012, for a 60-day public comment period (77 Fed. Reg. 71,612).	modified the planning area offshore Massachusetts and proceeded to publish a Call in the *Federal Register* on February 6, 2012 to identify locations within the offshore Call Area in which there was industry interest to seek commercial leases for developing wind projects (77 Fed. Reg. 5830). BOEM published a NOI to prepare an Environmental Assessment (EA) of the Call Area. The comment period for the Call closed March 22, 2012. On February 6, 2012, under Docket ID: BOEM-2011-0116 BOEM published a "Notice of Intent to Prepare an EA for Commercial Wind Leasing and site assessment activities on the Atlantic OCS Offshore Massachusetts". On November 2, 2012, BOEM announced the availability of the EA for public review and comment.
2013	On June 4, 2013, BOEM made available a revised EA for the WEA offshore Rhode Island and Massachusetts. As a result of the analysis in the revised EA, BOEM issued a Finding of No Significant Impact, which concluded that reasonably foreseeable environmental effects associated with the commercial wind lease issuance and related activities would not significantly impact the environment. On June 5, 2013, BOEM published the Final Sale Notice to auction two leases offshore Rhode Island and Massachusetts for commercial wind energy development (78 Fed. Reg. 33,898). On July 31, 2013, BOEM auctioned the two lease areas announcing Deepwater Wind New England, LLC as the winner of both. The competitive auction received $3,838,288 in high bids and consisted of 11 rounds of bidding between three participants. BOEM issued Renewable Energy Lease Area OCS-A 0487 (Lease Area) to the Applicant on October 1, 2013.	The Department of Energy's National Renewable Energy Laboratory (NREL), under an interagency agreement with BOEM, provided technical assistance to identify and delineate leasing areas for offshore wind energy development within WEAs on the Atlantic coast. In December 2013, NREL submitted a report to BOEM that focuses on the Massachusetts WEA.
2014	N/A	On June 17, 2014, Secretary of the Interior Sally Jewell and BOEM Acting Director Walter Cruickshank joined Massachusetts Governor Deval Patrick to announce that more than 742,000 acres (3,002.8 km^2) offshore Massachusetts would be available for commercial wind energy leasing. The proposed area was, at that time, the largest on the U.S. Outer Continental Shelf and would nearly double the federal offshore acreage available for commercial-scale wind

Year	OCS-A 0487 Milestone	OCS-A 0500 Milestone
		energy projects. The Massachusetts Proposed Sale Notice was made available for a 60-day public comment period, which closed on August 18, 2014.
2015	N/A	On Jan. 29, 2015, BOEM held a competitive lease sale (i.e., auction) for the WEA offshore Massachusetts. The auction lasted two rounds. RES America Developments, Inc. was the winner of Lease Area OCS-A 0500 (187,523 acres [758.9 km^2]) and Offshore MW LLC was the winner of Lease Area OCS-A 0501 (166,886 acres [675.3 km^2]). The commercial wind energy leases were signed by BOEM on March 23, 2015, and went into effect on April 1, 2015.
2017	N/A	On June 29, 2017, BOEM approved the Site Assessment Plan (SAP) for Lease OCS-A 0500 (Bay State Wind). The SAP approval allows for the installation of two floating light and detection ranging (FLIDAR) buoys and one metocean/current buoy.
2018	On September 18, 2018, Deepwater Wind New England, LLC requested an extension of the site assessment term for commercial Lease OCS-A 0487 pursuant to 30 C.F.R. § 585.235(b). On October 24, 2018, BOEM approved a 3.5-year extension of the site assessment term, from July 1, 2019, to January 1, 2023.	N/A
OCS-A 0487 Milestone		
2020	On August 3, 2020, Deepwater Wind New England, LLC assigned Lease OCS-A 0487 to Sunrise Wind LLC (Sunrise Wind). Sunrise Wind submitted its initial Construction and Operations Plan (COP) to BOEM on September 1, 2020. On September 3, 2020, Bay State Wind LLC assigned 100 percent of its record title interest in a portion of Lease OCS-A 0500, which BOEM designated OCS-A 0530, to Sunrise Wind LLC. The effective date of Lease OCS-A 0487 remains as October 1, 2013. On December 18, 2020, Sunrise Wind submitted an updated COP to BOEM.	
2021	On March 15, 2021, BOEM completed the consolidation of Lease OCS-A 0530 into Lease OCS-A 0487. The resulting OCS-A 0487 Lease Area is 109,952 acres (445.0 km^2; shown in mint green on Figure 1-1.1). Sunrise Wind proposes to develop the entire Lease Area EXCEPT for the isolated aliquot cluster in OCS block 3959 (Figure 1-1.1).	
2021	On June 7, 2021, Sunrise Wind submitted an updated COP to BOEM.	

Year	OCS-A 0487 Milestone	OCS-A 0500 Milestone
2021	Sunrise Wind submitted an updated COP to BOEM on August 23, 2021. On August 31, 2021, BOEM published in the *Federal Register* a NOI to Prepare an Environmental Impact Statement for Sunrise Wind's Proposed Wind Energy Facility Offshore New York. A revision to the NOI was published in the *Federal Register* on September 3, 2021, to extend the comment period to October 4, 2021, and to make technical corrections (86 Fed. Reg. 49,563).	
2021	On October 29, 2021, Sunrise Wind submitted an updated COP to BOEM.	
2022	On April 8, 2022, Sunrise Wind submitted an updated COP to BOEM.	
2022	On August 19, 2022, Sunrise Wind submitted an updated COP to BOEM.	
2022	On December 12, 2022, BOEM announced the availability of the Draft Environmental Impact Statement (Draft EIS) for the proposed Sunrise Wind project offshore New York. The Notice of Availability (NOA) for the Sunrise Wind Draft EIS published in the *Federal Register* on December 16, 2022, opening a 60-day public comment period, which ended on February 14, 2023 (87 Fed. Reg. 77,106). The input received via this process informed preparation of the Final Environmental Impact Statement (Final EIS).	
2023	On September 27, 2023, Sunrise Wind submitted an updated COP to BOEM.	
2023	On June 29, 2023, the U.S. Fish and Wildlife Service issued a Biological Opinion for Endangered Species Act (ESA)-listed species within its jurisdiction. On September 28, 2023, NMFS issued a Biological Opinion for ESA-listed species and designated critical habitat within its jurisdiction.	
2023	On December 15, 2023, BOEM published a NOA for the Sunrise Wind Final EIS in the *Federal Register* (88 Fed. Reg. 86,927) initiating a minimum 30-day mandatory waiting period, during which BOEM is required to pause before issuing a ROD.	
2024	On March 20, 2024, BOEM published an errata on its website that included certain edits to the NARW cumulative impact determination of the No Action Alternative in Chapter 3. The errata also provide correction for benthic resources in a No Action Alternative table in Chapter 2. None of these corrections are substantive or affect the analysis or conclusions in the Final EIS.	

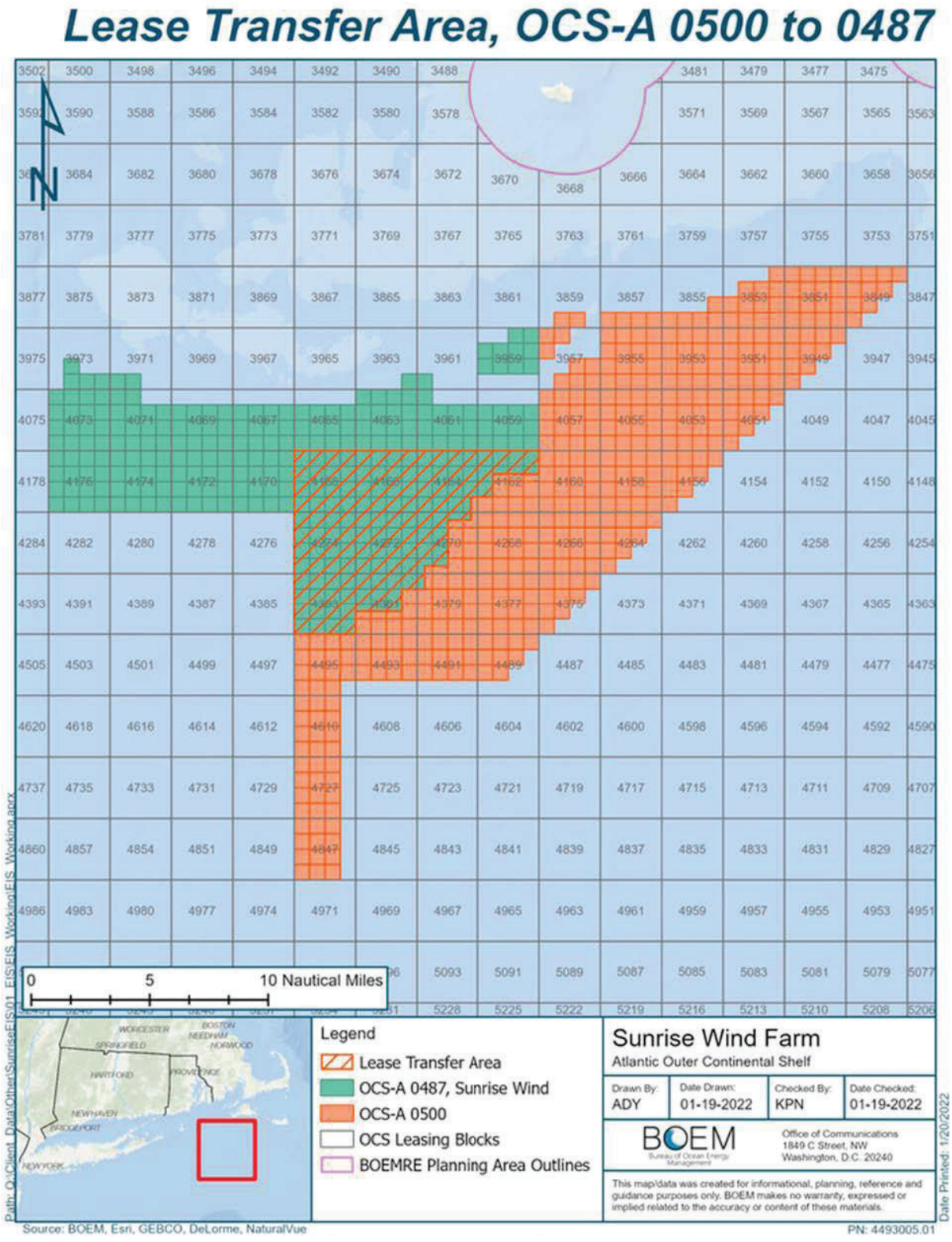


Figure 1-1.1 Sunrise Wind Lease Area Assigned from OCS-A 0500 to OCS-A 0487

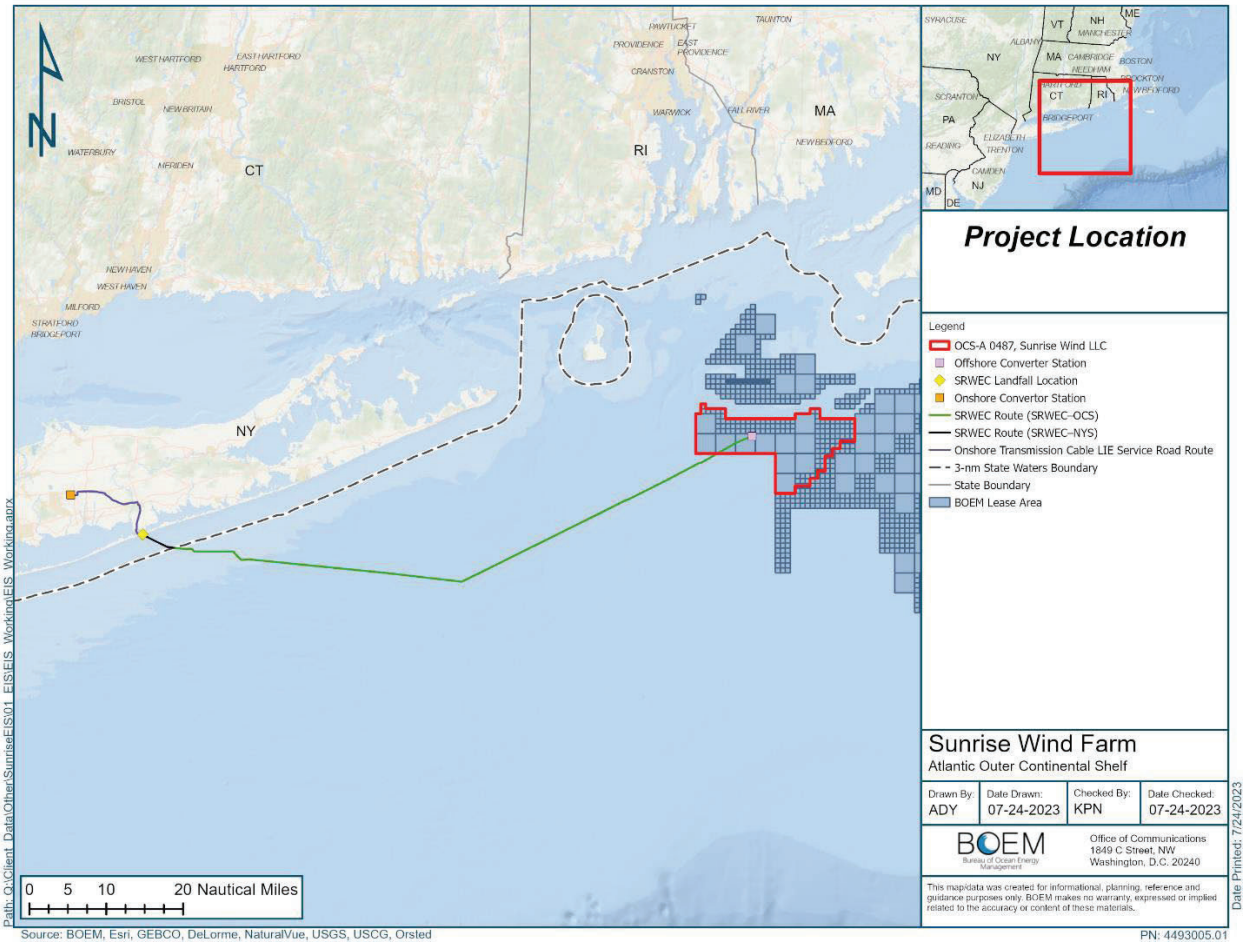


Figure 1-1.2 Proposed Project Area and Facilities

1.2. Authorities

The following summarizes BOEM's authority regarding the approval of the proposed Project; NMFS' authority to authorize the take, by harassment, of marine mammals incidental to the proposed Project; and the NPS' authority to issue a ROW and SUPs for certain construction and operation activities. The Final EIS includes a description of consultations, authorizations, and permits related to the Project in Appendix A. The agencies adopting the Final EIS are those agencies that have defined authorizations and permitting responsibilities for the Project itself or for effects related to the Project. The NMFS MMPA LOA is briefly discussed here; its decision and supporting rationale are discussed in Section 5.2. NMFS is serving as a cooperating agency pursuant to 40 C.F.R. § 1501.8 because the scope of the Proposed Action and alternatives involves activities that could affect marine resources, and due to its jurisdiction by law and special expertise. Issuance of an LOA under the MMPA triggers independent NEPA compliance obligations, which may be satisfied by adopting the Final EIS prepared by BOEM. The NPS will sign this ROD and then issue its permits at a later time. Aside from BOEM, NMFS, and NPS, additional cooperating agencies participated in the NEPA process and will sign their ROD and make their permitting decisions at a later time (e.g., USACE, EPA's NPDES Permit).

1.2.1. BOEM Authority

The Energy Policy Act of 2005, Pub. L. No. 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 (Secretary) to issue leases, easements, and rights-of-way on the OCS for renewable energy development, including wind energy projects.

The Secretary delegated to BOEM the authority to decide whether to approve COPs. Final regulations implementing this authority were promulgated by BOEM's predecessor agency, the Minerals Management Service, on April 29, 2009; 74 Fed. Reg. 19,637 (Apr. 29, 2009). These regulations prescribe BOEM's responsibility for determining whether to approve, approve with modifications, or disapprove Sunrise Wind's COP. In accordance with CEQ NEPA regulations, 40 C.F.R. Part 1501, BOEM served as the lead Federal agency for the preparation of the EIS.

The Secretary's authorization must comply with OCSLA subsection 8(p)(4), 43 U.S.C. § 1337(p)(4), which "imposes a general duty on the Secretary to act in a manner providing for the subsection's [various policy] goals." Sol. Op. M-37067, "Secretary's Duties under Subsection 8(p)(4) of the Outer Continental Shelf Lands Act When Authorizing Activities on the Outer Continental Shelf" (Apr. 9, 2021). According to M-Opinion 37067, "[t]he 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" (Sol. Op. M-37067).

1.2.2. NMFS Authority

Sections 101(a)(5)(A) and (D) of the MMPA allow NMFS to authorize, upon request, the incidental, but not intentional, take of small numbers of marine mammals, provided certain determinations are made and statutory and regulatory procedures are met; 16 U.S.C. §

1371(a)(5)(A), (D). 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[3] 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.

Pursuant to Section 7(a)(2) of the Endangered Species Act (ESA), NMFS must also ensure that issuing the MMPA incidental take authorization is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(a)(2).

For those marine mammal species that are listed under the ESA, NMFS Office of Protected Resources (OPR) must also consult with NMFS Greater Atlantic Regional Fisheries Office (GARFO) Protected Resources Division to receive an exemption for the incidental take of those species and adhere to the requirements listed under Section 7 of the ESA to ensure that the MMPA-authorized incidental take is not likely to jeopardize the continued existence of those species. The ESA Section 7 consultation for this action resulted in issuance of a Biological Opinion (BiOp) that concluded the proposed Federal actions are not likely to jeopardize the continued existence of any ESA-listed species or result in the destruction or adverse modification of any critical habitat (National Marine Fisheries Service 2023). The BiOp includes an Incidental Take Statement (ITS), which exempts an identified amount and extent of incidental take of ESA-listed species from the ESA prohibitions on take subject to specified reasonable and prudent measures and implementing terms and conditions considered necessary and appropriate for the identified action agencies, including NMFS OPR, to minimize and monitor the effects of the exempted take of ESA-listed marine mammals. The BiOp and ITS also identify measures, which may be specific to the regulatory authorities of each action agency, to ensure compliance with the MMPA incidental take authorization with respect to the incidental take of ESA-listed marine mammals (i.e., measures in the Proposed Action and those identified as reasonable and prudent measures and terms and conditions, respectively).

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 Final EIS, is discussed in section 5.2 of this ROD.

[3] The MMPA's implementing regulations define "negligible impact" as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival. 50 C.F.R. § 216.103.

1.2.3. NPS Authority

The National Park System includes any area of land or water administered by the National Park Service (NPS). 54 U.S.C. § 100501. The mission of the NPS is to preserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment of this and future generations. 54 U.S.C. § 100101.

Pursuant to 54 U.S.C. § 100902, the Secretary, acting through the NPS, may issue ROW permits for public utilities and communication facilities within System units. A ROW permit authorizes the use of such lands and waters for the operation and maintenance of infrastructure associated with utilities such as fiber, water and sewer lines, power lines, and cellular antennas. The NPS may not issue a ROW permit for any purpose that is not identified in 54 U.S.C. § 100902, unless the NPS is separately authorized to do so by law, such as through legislation specific to a System unit. The NPS may issue a ROW permit only on a finding that the ROW is not incompatible with the public interest. The statute establishes duration and size limits for ROWs and authorizes the NPS to revoke ROWs. The Secretary, acting through the NPS, is authorized to implement the statute through regulations. The NPS regulations are codified at 36 C.F.R. Part 14 as revised in 1995 (60 Fed. Reg. 55,791) and 2018 (83 Fed. Reg. 2069). Permittees may use a ROW permit only for the allowed uses and subject to permit terms and conditions that protect System unit resources, values, staff, and visitors.

The NPS may also issue SUPs necessary for carrying out certain construction activities associated with the Selected Alternative, which would otherwise be prohibited by 36 C.F.R. § 5.7. SUPs are written authorization to conduct an activity on land or in waters administered by the NPS that will not result in derogation of the values and purposes for which the park was established with terms and conditions for using the park that take into consideration safety, resource protection, and normal park visitation.

When the NPS evaluates a request for a ROW permit and SUPs, it considers whether the use will be consistent with applicable laws and policies that govern the administration of the System. Applicable laws include, but are not limited to, the NPS Organic Act and the National Historic Preservation Act (NPHA). Applicable policies include, but are not limited to, 2006 NPS Management Policies, Reference Manual 53: Special Park Uses, Reference Manual 53B: Rights of Way, and guidance and planning documents for particular System units. The NPS, to the greatest extent possible, seeks to minimize impacts to System unit resources, values, visitors, and staff from the construction, installation, maintenance and operation of infrastructure in System units. For this reason, it only issues ROW permits when there is no practicable alternative to the use of lands and waters within a System unit.

The NPS is a cooperating agency under NEPA (40 C.F.R. § 1501.8) for the Sunrise Wind EIS. The EIS covers the NPS ROW and SUP actions for the Selected Alternative. The decisions being made by the NPS, including its decision to issue the ROW and SUPs, are discussed in section 5.1.2 of this ROD.

2. Proposed Project

2.1. Project Description

The Proposed Action would construct, operate, maintain, and eventually decommission an up-to 1,034-megawatt (MW) wind energy facility consisting of up to 94 wind turbine generators (WTGs) and one offshore converter substation (OCS-DC) in Lease Area OCS-A 0487 and associated export cables that would occur offshore New York, Massachusetts, and Rhode Island (Figure 1-1.2). The Lease Area is approximately 16.4 nm (18.9 mi, 30.4 km) south of Martha's Vineyard, Massachusetts; approximately 26.5 nm (30.5 mi, 48.1 km) east of Montauk, New York; and approximately 14.5 nm (16.7 mi, 26.8 km) from Block Island, Rhode Island. One bundled export cable would connect to the onshore export cable system which would connect to the onshore converter station (OnCS-DC) in the Town of Brookhaven, Long Island, New York at the Union Avenue site. Development of the wind energy facility would occur within the range of design parameters outlined in Volume I of the Sunrise Wind Project COP (Sunrise Wind 2023), as found on BOEM's webpage at https://www.boem.gov/renewable-energy/state-activities/sunrise-wind, subject to applicable mitigation measures.

2.2. Purpose and Need for the Proposed Action

Through a competitive leasing process under 30 C.F.R. § 585.211, Sunrise Wind was awarded commercial Renewable Energy Lease OCS-A 0487[4] (Lease Area) covering an area offshore of Massachusetts, Rhode Island, and New York. Under the terms of the lease, Sunrise 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, operations and maintenance (O&M), and conceptual decommissioning of up to a 1,034MW offshore wind energy facility in accordance with BOEM's COP regulations under 30 C.F.R. §§ 585.626 et seq. (Figure 1-1.2).

Sunrise Wind's stated goal is to develop a commercial-scale, offshore wind energy facility in the Lease Area, with up to 94 wind turbine generators (WTGs) in 102 potential positions, an offshore converter station (OCS-DC), inter-array cables, an onshore converter station (OnCS-DC), an offshore transmission cable making landfall on Long Island, New York, and an onshore interconnection cable to the Long Island Power Authority Holbrook Substation. The Project

[4] A portion of the area covered by Renewable Energy Lease OCS-A 0500 and the entirety of the area covered by Renewable Energy Lease OCS-A 0487 were merged and included in a revised Lease OCS-A 0487 issued to Sunrise Wind on March 15, 2021. On July 31, 2013, BOEM conducted a competitive auction and awarded Lease OCS-A 0487, consisting of about 67,250 ac (272.2 km2), to Deepwater Wind New England LLC. On August 3, 2020, Deepwater Wind New England LLC assigned Lease OCS-A 0487 to Sunrise Wind LLC. Following the January 2015 competitive lease sale for the Wind Energy Area offshore Massachusetts, Lease OCS-A 0500 (187,523 ac [758.9 km2]) was awarded to RES Developments with an effective date of April 1, 2015. On June 12, 2015, BOEM approved reassignment of OCS-A 0500 to DONG Energy Massachusetts LLC (note: DONG Energy has since renamed its American subsidiary as Orsted). On September 3, 2020, Bay State Wind LLC, an Orsted subsidiary, assigned 100 percent of its record title interest in a portion of lease OCS-A 0500, which BOEM designated OCS-A 0530, to Sunrise Wind LLC. On March 15, 2021, BOEM completed the consolidation of lease OCS-A 0530 into Lease OCS-A 0487 through an amendment to Lease OCS-A 0487. The effective date of lease OCS-A 0487 remains October 1, 2013.

would generate up to approximately 1,034 MW of renewable energy. This Project would help the state of New York achieve the aggressive clean energy goals set forth in the Clean Energy Standards Order and the Climate Leadership and Community Protection Act through an Offshore Wind Renewable Energy Certificate Purchase and Sale Agreement (OREC) with the New York State Energy Research and Development Authority (NYSERDA) to deliver 880 MW of offshore wind energy.[5] Sunrise Wind has the ability under the OREC to deliver a maximum capacity of 924 MW of offshore wind energy (NYSERDA 2019).

Based on BOEM's authority under the OCSLA to authorize renewable energy activities on the OCS, and Executive Order 14008; the shared goals of the Federal agencies to deploy 30 GW of offshore wind energy capacity in the United States by 2030, while protecting biodiversity and promoting ocean co-use;[6] and in consideration of the Sunrise Wind's goals, the purpose of BOEM's action is to determine whether to approve, approve with modifications, or disapprove Sunrise Wind's COP. BOEM will make this determination after weighing the factors in subsection 8(p)(4) of the OCSLA that are applicable to plan decisions and in consideration of the above goals. BOEM's action is needed to fulfill its duties under the lease, which requires BOEM to make a decision on the Lessee's plans to construct and operate a commercial-scale offshore wind energy facility within the Lease Area (the Proposed Action).

NMFS, which has MMPA authorization decision responsibilities in addition to serving as a cooperating agency, has reviewed BOEM's purpose and need statement above, and has determined that it aligns with NMFS' purpose and need (more specific statements of the purpose and need for the actions by NMFS are found in section 5.2 of this ROD).

The NPS, which has ROW and SUP permitting decision responsibilities (54 U.S.C. §§ 100101, 100902) in addition to serving as a cooperating agency, has reviewed BOEM's purpose and need

[5] In June of 2023, Sunrise Wind, along with other parties, submitted petitions to the New York Public Service Commission seeking to amend the offshore renewable energy credit agreements that resulted from these solicitations (along with other analogous agreements) to account for unforeseen economic conditions that resulted in cost increases for Sunrise Wind. On October 12, 2023, the Commission denied these petitions, and shortly thereafter, NYSERDA issued a Request for Information to support an expedited solicitation. In November 2023, NYSERDA announced New York's fourth competitive offshore wind solicitation. In January 2024, NYSERDA held its fourth solicitation, which allowed contracted project developers to bid in order to propose new pricing and economic benefits packages. Sunrise Wind participated in the January 2024 solicitation, and accordingly submitted a proposal for a project having technical parameters identical to those described in its COP, as amended. On February 29, 2024, NYSERDA announced that Sunrise Wind's proposal was selected for an award. According to NYSERDA's website, NYSERDA anticipates contract execution during Quarter 2 2024. As of the date of this ROD, Sunrise Wind has not amended its COP nor otherwise changed its goal of developing the proposed project as it is described in the COP. If the revised contract results in changes to the COP that are not described in Sunrise Wind's approved COP, BOEM would require revisions to Sunrise Wind's COP.

[6] Fact Sheet: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs | The White House. Interior, Energy, Commerce, and Transportation Departments Announce New Leasing, Funding, and Development Goals to Accelerate and Deploy Offshore Wind Energy and Jobs: https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/. See also § 207 of E.O. 14008, Tackling Climate Change at Home and Abroad, 86 Fed. Reg. 7619 (Feb. 1, 2021) ("doubling offshore wind by 2030 while ensuring robust protection for our lands, waters, and biodiversity and creating good jobs").

statement above, and has determined that it aligns with the NPS purpose and need (more specific statements of the purpose and need for the actions by NPS are found in section 5.1.2 of this ROD).

3. Alternatives

The Final EIS considered a reasonable range of alternatives to the Proposed Action.[7] BOEM carried forward two action alternatives for detailed analysis (one of which includes sub-alternatives each with multiple variations) and the No Action Alternative. Other action alternatives were considered but not further analyzed because they did not meet the purpose and need or did not meet other screening criteria. Refer to Final EIS, section 2.2, *Alternatives Considered but not Analyzed in Detail*.

[7] DOI's implementing NEPA regulations 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).

3.1 Alternatives Carried Forward for Detailed Analysis

Table 3-1 Description of Alternatives

Alternative	Description
Alternative A: No Action Alternative	Under the No Action Alternative, BOEM would not approve the COP; the Project construction and installation, O&M, and conceptual decommissioning would not occur; and no additional permits or authorizations for the Project would be required. Any potential environmental and socioeconomic impacts, including benefits, associated with the Project as described under the Proposed Action would not occur. Therefore, NMFS would not issue the requested authorization under the MMPA to the Applicant. However, all other past and ongoing impact-producing activities would continue. The current resource condition, trends, and impacts from ongoing activities under the No Action Alternative serve as the existing baseline against which all action alternatives are evaluated. Over the life of the proposed Project, other reasonably foreseeable future impact-producing offshore wind and non-offshore wind activities would be implemented, which would cause changes to the existing baseline conditions even in the absence of the Proposed Action. The continuation of all other existing and reasonably foreseeable future activities described in Final EIS, Appendix E (*Planned Activities Scenario*) without the Proposed Action serves as the baseline for the evaluation of cumulative impacts.
Alternative B: Proposed Action	Under Alternative B, the construction, O&M, and conceptual decommissioning of up to a 1,034-MW wind energy facility consisting of up to 94 WTGs within 102 potential positions, one OCS-DC, and inter-array cables linking the individual WTGs to the OCS-DC would be developed in the Lease Area. The Lease Area is approximately 16.4 nm (18.9 mi, 30.4 km) south of Martha's Vineyard, Massachusetts; approximately 26.5 nm (30.5 mi, 48.1 km) east of Montauk, New York; and approximately 14.5 nm (16.7 mi, 26.8 km) from Block Island, Rhode Island. A bundled export cable would connect to the onshore export cable systems which would connect to the onshore converter station (OnCS-DC) in the Town of Brookhaven, Long Island, New York at the Union Avenue site. Development of the wind energy facility would occur within the range of design parameters outlined in the COP (Sunrise Wind 2023), subject to applicable mitigation measures.
Alternative C: Fisheries Habitat Impact Minimization	Under Alternative C, the construction, O&M, and eventual decommissioning of up to a 1,034-MW wind energy facility consisting of up to 94 WTGs within 102 potential positions, one OCS-DC, and inter-array cables linking the individual WTGs to the OCS-DC would be developed in the Lease Area. The Wind Energy Area would occur within the range of the design parameters outlined in the COP, subject to applicable mitigation measures. However, this alternative considered and prioritized contiguous areas of complex bottom habitat to be excluded from development to potentially avoid and/or minimize impacts to complex fisheries habitats, while still meeting BOEM's purpose and need for the project. Each of the sub-alternatives outlines below may be individually selected or combined with any or all other alternatives or sub-alternatives, subject to the combination meeting the purpose and need. **Alternative C-1:** A total of 94 WTGs would be developed under this alternative that prioritizes relocating WTGs out of the Priority Areas identified by NMFS. Areas for prioritization were identified by NMFS on May 2, 2022, based upon the proximity of Atlantic cod spawning activity in the vicinity of the Project Area, assumed hard bottom complex substrate, and the

Alternative	Description
	presence of large boulders.[8] This alternative would result in the exclusion of up to 8 WTG positions from development within the identified Priority Areas. The specific 8 WTG positions that would be excluded from the identified Priority Areas are informed through the impact analysis described in Final EIS Chapter 3. Alternative C-1 was determined to be infeasible through the EIS process as data was further collected and analyzed. However, BOEM determined that including all variants of Alternative C in Final EIS, Section 2.1 provided important context regarding the development of the Preferred Alternative C-3(b). Additional information is provided in Final EIS, Section 2.1.3 and Chapter 3 regarding the variants of Alternative C. **Alternative C-2:** Up to a total of 94 WTGs would be developed under this alternative that prioritizes relocating WTGs out of the Priority Areas identified by NMFS. This alternative would exclude up to 8 WTG positions identified in Alternative C-1 from development, and up to an additional 12 WTG positions would be removed from the Priority Areas and relocated to the eastern side of the Lease Area. The specific WTG positions that would be excluded from the identified Priority Areas are informed through the impact analysis described in Final EIS Chapter 3. Alternative C-2 was determined to be infeasible through the EIS process as data was further collected and analyzed. However, BOEM determined that including all variants of Alternative C in Final EIS, Section 2.1 provided important context regarding the development of the Preferred Alternative C-3(b). Additional information is provided in Final EIS, Section 2.1.3 and Chapter 3 regarding the variants of Alternative C. **Alternative C-3:** Up to a total of 87 WTGs would be developed under this alternative that prioritizes relocating WTGs out of the Priority Areas identified by NMFS, while considering feasibility due to pile refusal risk from the presence of glauconite sands in the southeastern portion of the Lease Area. Sub-alternatives C-3a, C-3b (Preferred Alternative), and C-3c consider different WTG configurations to avoid sensitive habitats and engineering constraints while still meeting the minimum capacity required by the NYSERDA OREC of 880 MW. Final EIS Sections 2.1.3.3 and 3.7.8 provide additional details on the number of WTG positions and layouts considered for each of the sub-alternatives for Alternative C-3.

Note: Components of alternatives may be individually selected and combined with any or all other alternatives, subject to the combination meeting the purpose and need.

3.2. Environmental Consequences of Alternatives

Table 3-2 summarizes and compares the potential impacts from the proposed Project under each action alternative assessed in Chapter 3 of the Final EIS. Under the No Action Alternative, BOEM would not approve the COP. Therefore, any potential environmental and socioeconomic impacts associated with the Project, including both adverse impacts and benefits, would not occur. However, impacts could occur from other ongoing and planned activities.

[8] Priority Area 1 was deemed the higher priority by NMFS due to close proximity to Cox Ledge, and documented Atlantic cod spawning activity based upon recent acoustic and telemetry data. Cox ledge is approximately 3.1 to 6.2 mi (5 to 10 km) north of Priority Area 1. Priority Area 1 includes 18 WTG positions as well as the OCS-DC. Priority Area 2 includes 18 WTG positions and contains areas of high reflectance (indicative of hard substrates), large boulders, and is adjacent to detected Atlantic cod spawning activity. Priority Area 3 includes 14 WTG positions and areas of high reflectance but fewer large boulders. Priority Area 4 includes 4 WTG positions and mid to high reflectance with large boulders.

Table 3-2 Summary and Comparison of Impacts among Alternatives with Mitigation Measures

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
Air Quality	*No Action Alternative*: Continuation of existing environmental trends and activities under the No Action Alternative would result in **minor** to **moderate** adverse impacts on air quality from air emissions, climate change, and accidental releases. **Minor** to **moderate beneficial** indirect impact from reduced emissions from fossil-fueled energy sources and associated health benefits. *Cumulative Impacts of the No Action Alternative:* The No Action Alternative combined with all other planned activities (including other offshore wind activities) would result in **minor** to	*Proposed Action*: The Proposed Action would have a short-term **minor** to **moderate** adverse effect from air emissions, climate change, and accidental releases. While there would be emissions of GHGs and criteria pollutants during the construction, O&M, and decommissioning phases, these emissions would be less than the total avoided emissions possible from the proposed Project and would provide **minor** to **moderate beneficial** impacts. *Cumulative Impacts of the Proposed Action:* The potential emissions from onshore and offshore activities during the construction and installation, O&M,	*Alternative C-1*: Alternative C-1 would have a **minor** to **moderate** adverse effect from air emissions, climate change, and accidental releases. **Minor** to **moderate beneficial** indirect impact from reduced emissions from fossil-fueled energy sources and associated health benefits. *Cumulative Impacts of Alternative C-1*: The potential emissions from onshore and offshore activities during the construction and installation, O&M, and decommissioning phases would have a **minor** to **moderate** adverse cumulative impact on air quality but would be short-term and dispersed throughout the	*Alternative C-2*: Alternative C-2 would have a **minor** to **moderate** adverse effect from air emissions, climate change, and accidental releases. **Minor** to **moderate beneficial** indirect impact from reduced emissions from fossil-fueled energy sources and associated health benefits. *Cumulative Impacts of Alternative C-2*: The potential emissions from onshore and offshore activities during the construction and installation, O&M, and decommissioning phases would have a **minor** to **moderate** adverse cumulative impact on air quality but would be short-term and dispersed throughout the	*Alternative C-3*: Alternative C-3 would have a **minor** to **moderate** adverse effect from air emissions, climate change, and accidental releases. Impacts on air quality from offshore construction, O&M, and decommissioning would be slightly less than the Proposed Action, Alternative C-1, and Alternative C-2 because less construction, O&M, and decommissioning emissions would occur because less WTGs would be installed. **Minor** to **moderate beneficial** indirect impact from reduced emissions from fossil-fueled energy sources and associated health benefits.	*Preferred Alternative:* The Preferred Alternative has been identified as Alternative C-3b, and would have a **minor** to **moderate** adverse impact on air quality. These impacts would be slightly less under Alternative C-3 compared to the impacts described for the Proposed Action, Alternative C-1, and Alternative C-2 because less construction, O&M, and decommissioning emissions would occur due to fewer WTGs. The Preferred Alternative, C-3b, further reduces impact by having 10 fewer WTGs than the Proposed Action, or Alternatives C-1 and C-2 resulting in an 11 percent reduction in construction, and O&M emissions in comparison.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	moderate adverse cumulative impacts due to emissions of criteria pollutants, volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and greenhouse gases (GHGs) from the continued use of fossil fuel electricity generation. Planned offshore wind activities would have an indirect **minor** to **moderate beneficial** impact on air quality after the offshore wind projects are operational.	and decommissioning phases would have a **minor** to **moderate** adverse cumulative impact on air quality but would be short-term and dispersed throughout the construction, O&M, or decommissioning phases. BOEM anticipates that overall emissions from fossil fuel power generation would decrease and would contribute to a **minor** to **moderate beneficial** indirect impact on air quality through avoided emissions and health benefits.	construction, O&M, or decommissioning phases. Ongoing and planned activities, including Alternative C-1, would have a **minor** to **moderate beneficial** impact on air quality because of reduced emissions from fossil-fuel powered electricity generation sources and the associated health benefits.	construction, O&M, or decommissioning phases. Ongoing and planned wind projects, including Alternative C-2, would have a **minor** to **moderate beneficial** impact on air quality because of reduced emissions from fossil-fuel powered electricity generation sources and the associated health benefits.	*Cumulative Impacts of Alternative C-3*: The potential emissions from onshore and offshore activities during the construction and installation, O&M, and decommissioning phases would have a **minor** to **moderate** adverse cumulative impact on air quality but would be short-term and dispersed throughout the construction, O&M, or decommissioning phases. Ongoing and planned wind projects, including Alternative C-3, would have a **minor** to **moderate beneficial** impact on air quality because of reduced emissions from fossil-fuel powered electricity generation sources and the associated health benefits.	**Minor** to **moderate beneficial** indirect impact from reduced emissions from fossil-fueled energy sources and associated health benefits. *Cumulative Impacts of Alternative C-3b*: The potential emissions from onshore and offshore activities during the construction and installation, O&M, and decommissioning phases would have a **minor** to **moderate** adverse cumulative impact on air quality but would be short-term and dispersed throughout the construction, O&M, or decommissioning phases. Ongoing and planned wind projects, including Alternative C-3, would have a **minor** to **moderate beneficial** impact on air quality because of reduced emissions from fossil-fuel

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
						powered electricity generation sources and the associated health benefits.
Water Quality	*No Action Alternative*: The No Action Alternative would result in overall **minor** adverse impacts on water quality through sediment suspension and deposition, anchoring, new cable emplacement, accidental releases or discharges, port utilization, presence of structures, or land/seafloor disturbance. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the potential cumulative impacts on water quality from the Proposed Action would be **minor**.	*Proposed Action*: Impacts on water quality from the Proposed Action would be **minor** adverse. The risk of an accidental discharge or release of chemicals, oils, fuel, lubricants, trash, or debris is low during all phases of the Proposed Action, in the event a release was to occur, the impact on water quality would be minor or moderate depending on the volume of the spill and the type of material spilled. Impacts from port utilization or the presence of structures would be negligible or minor. Sediment suspension, deposition, and increased turbidity would have a minor impact during anchoring, cable	*Alternative C-1*: Impacts on water quality from onshore and offshore construction, O&M, and decommissioning would be similar to the Proposed Action. Alternative C-1 would have a **minor** adverse impact on water quality. *Cumulative Impacts of Alternative C-1*: BOEM anticipates that the cumulative impacts of Alternative C-1 would be **minor** adverse on water quality.	*Alternative C-2*: Impacts on water quality from construction, O&M, and decommissioning of the WTGs would be similar to the Proposed Action because the same number of WTGs would be installed. Alternative C-2 would have a **minor** adverse impact on water quality. *Cumulative Impacts of Alternative C-2*: BOEM anticipates that the cumulative impacts of Alternative C-2 would be **minor** adverse on water quality.	*Alternative C-3*: Impacts on water quality from onshore construction, O&M, and decommissioning would be the same as the Proposed Action. Impacts on water quality from offshore activities would be slightly less than the Proposed Action because of the smaller number of WTGs and shorter length of cable. Alternative C-3 would have a **minor** adverse impact on water quality. *Cumulative Impacts of Alternative C-3*: BOEM anticipates that the cumulative impacts of Alternative C-3 would be **minor** adverse on water quality.	*Preferred Alternative:* Under Alternative C-3b, impacts on water quality from onshore construction, O&M, and decommissioning would be the same as those described for the Proposed Action. Impacts on water quality from offshore activities would be slightly less under Alternative C-3b compared to the impacts described for the Proposed Action, Alternative C-1, and Alternative C-2 because of fewer WTGs and shorter length of cable. Alternative C-3b would have a **minor** adverse impact on water quality. *Cumulative Impacts of Alternative C-3b*:

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
		emplacement and maintenance, and seafloor/land disturbance; sediment plumes would be localized and short-term. *Cumulative Impacts of the Proposed Action:* BOEM anticipates that the potential cumulative impacts on water quality from the Proposed Action would be **minor** adverse.				BOEM anticipates that the cumulative impacts of Alternative C-3b would be **minor** adverse on water quality.
Bats	*No Action Alternative*: BOEM anticipates that the overall impacts associated Alternative A, the No Action Alternative, when combined with all other ongoing activities (including ongoing offshore wind projects) in the geographic analysis area (GAA) would	*Proposed Action*: BOEM anticipates the impacts resulting from the Proposed Action alone would range from negligible to minor adverse impacts. Therefore, BOEM expects the overall impact on bats from the Proposed Action to be **minor** adverse, as the overall effect would be measurable	*Alternative C-1*: Alternative C-1 includes changes to turbine installation locations that would not alter any of the findings for bat compared to the Proposed Action. BOEM expects the overall impact on bats to be **minor** adverse, as the overall effect would be measurable but	*Alternative C-2*: Alternative C-2 includes changes to turbine installation locations that would not alter any of the findings for bats. BOEM expects the overall impact on bats to be **minor** adverse, as the overall effect would be measurable but the impacts to individuals and their	*Alternative C-3*: Alternative C-3 includes changes to turbine installation locations that would not alter any of the findings for bats. BOEM expects the overall impact on bats to be **minor** adverse, as the overall effect would be measurable but the impacts to individuals and their	*Preferred Alternative (C-3b):* Although Alternative C-3b would reduce the number of WTGs, the presence of WTGs could still increase the potential for collision, albeit at lower levels than the Proposed Action. The reduction in effects from impacts would not result in different impact level

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	result in overall **minor** adverse. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the overall impacts associated Alternative A, the No Action Alternative, when combined with all ongoing and planned activities (including offshore wind) in the GAA would result in **minor** adverse cumulative impacts.	but the impacts to individuals and their habitats would not lead to population-level effects. *Cumulative Impacts of the Proposed Action:* BOEM anticipates that the overall impacts associated with the Proposed Action when combined with past, present, and reasonably foreseeable activities would result in **minor** adverse cumulative impacts to bats. Even though the overall effect would be detectable and measurable, the impacts to individuals and their habitats would not lead to population-level effects.	the impacts to individuals and their habitats would not lead to population-level effects. *Cumulative Impacts of Alternative C-1*: Alternative C-1 includes changes to turbine installation locations that would not alter any of the findings for bat compared to the Proposed Action. The conclusions for cumulative impacts of Alternative C-2 are the same as described under the Proposed Action. BOEM expects the cumulative impact on bats to be **minor** adverse, as the effect would be measurable but the impacts to individuals and their habitats would not lead to population-level effects.	habitats would not lead to population-level effects. *Cumulative Impacts of Alternative C-2*: Alternative C-2 includes changes to turbine installation locations that would not alter any of the findings for bats. The conclusions for cumulative impacts of Alternative C-2 are the same as described under the Proposed Action. BOEM expects the cumulative impact on bats to be **minor** adverse, as the effect would be measurable but the impacts to individuals and their habitats would not lead to population-level effects.	habitats would not lead to population-level effects. *Cumulative Impacts of Alternative C-3*: Alternative C-3 includes changes to turbine installation locations that would not alter any of the findings for bats. The conclusions for cumulative impacts of Alternative C-3 are the same as the Proposed Action. BOEM expects the cumulative impact on bats to be **minor** adverse, as the effect would be measurable but the impacts to individuals and their habitats would not lead to population-level effects.	determinations. BOEM expects the overall impacts of these alternatives to bats would be similar to the Proposed Action: **minor** adverse. *Cumulative Impacts:* The overall impacts of Alternative C-3b when combined with past, present, and reasonably foreseeable activities would result in the same cumulative impacts as under the Proposed Action: **minor** adverse.
Benthic Resources	*No Action Alternative*: BOEM anticipates that the overall impacts associated	*Proposed Action*: BOEM anticipates the impacts resulting from the Proposed Action alone would	*Alternative C-1*: Impacts to benthic resources would be slightly reduced as a result of the	*Alternative C-2*: Impacts to benthic resources would be slightly reduced as a result of the	*Alternative C-3*: Impacts resulting from the installation of up to 87 WTG positions could be	*Preferred Alternative (C-3b):* Under Alternative C-3b, impacts on benthic resources

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	with ongoing activities, including permitted offshore wind projects, and environmental trends in the GAA would result in **moderate** adverse impacts and could potentially include **minor beneficial** impacts on benthic resources due to the artificial reef effect (habitat conversion) *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that future offshore wind activities in the GAA combined with ongoing activities, reasonably foreseeable environmental trends, and reasonably foreseeable activities other than offshore wind would result in **moderate** adverse cumulative impacts and could potentially include **moderate beneficial** cumulative impacts	range from negligible to moderate. Therefore, BOEM expects the overall impact on benthic resources from the Proposed Action and ongoing activities to be **moderate**, as the overall effect would be notable, but the resource would be expected to recover completely without remedial or mitigating action. Additionally, **minor beneficial** impacts may result due to the artificial reef effect (habitat conversion to hard bottom). *Cumulative Impacts of the Proposed Action:* BOEM anticipates that the overall impacts associated with the Proposed Action and future offshore wind activities in the GAA combined with ongoing activities, reasonably foreseeable environmental	relocation of the 8 WTGs. BOEM expects the overall impact on benthic resources to be similar to the Proposed Action, **moderate** adverse and minor **beneficial**. *Cumulative Impacts of Alternative C-1*: BOEM anticipates that Alternative C-1 and future offshore wind activities in the GAA combined with ongoing activities, reasonably foreseeable environmental trends, and reasonably foreseeable activities would result in **moderate** adverse cumulative impacts and could potentially include **moderate beneficial** cumulative impacts on benthic resources due to the artificial reef effect (habitat conversion).	relocation of the 20 WTGs. BOEM expects the overall impact on benthic resources to be similar to the Proposed Action, **moderate** adverse and minor **beneficial**. *Cumulative Impacts of Alternative C-2*: BOEM anticipates that Alternative C-2 and future offshore wind activities in the GAA combined with ongoing activities, reasonably foreseeable environmental trends, and reasonably foreseeable activities would result in **moderate** adverse cumulative impacts and could potentially include **moderate beneficial** cumulative impacts on benthic resources due to the artificial reef effect (habitat conversion).	reduced as compared to the other action alternatives. The magnitude of this reduction would likely be **minor**. BOEM expects the overall impacts to be similar to the Proposed Action, **moderate** adverse and minor **beneficial**. *Cumulative Impacts of Alternative C-3*: BOEM anticipates that Alternative C-3 and future offshore wind activities in the GAA combined with ongoing activities, reasonably foreseeable environmental trends, including climate change, and reasonably foreseeable activities would result in **moderate** adverse cumulative impacts and could potentially include **moderate beneficial** cumulativ e impacts on benthic resources due to the	from onshore construction would be the same as those described for the Proposed Action. Impacts on benthic resources from offshore activities including construction, O&M, and decommissioning would be slightly less under Alternative C-3b compared to the impacts described above for the Proposed Action, Alternative C-1, and Alternative C-2 because of fewer WTGs and reductions in cable length on the sea floor. These incremental decreases in impacts from Alternative C-3b may have minor beneficial impacts to the OCS habitat overall as compared to the Proposed Action. BOEM expects the overall impact on benthic resources to be similar to the Proposed Action and has characterized

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	on benthic resources due to the artificial reef effect (habitat conversion).	trends, and reasonably foreseeable activities would result in **moderate** adverse cumulative impacts and could potentially include **moderate beneficial** cumulative impacts on benthic resources due to the artificial reef effect (habitat conversion).			artificial reef effect (habitat conversion).	them as **moderate** adverse and minor **beneficial**. *Cumulative Impacts of Alternative C-3b*: BOEM anticipates that Alternative C-3b and future offshore wind activities in the GAA combined with ongoing activities, reasonably foreseeable environmental trends, including climate change, and reasonably foreseeable activities would result in **moderate** adverse cumulative impacts and could potentially include **moderate** beneficial cumulative impacts on benthic resources due to the artificial reef effect (habitat conversion to hard bottom).
Birds	*No Action Alternative*: The IPFs associated with existing and ongoing projects are not expected to significantly alter	*Proposed Action*: BOEM anticipates adverse impacts resulting from the Proposed Action alone would range from negligible to	*Alternative C-1*: The conclusions for impacts of Alternative C-1 are the same as described under the Proposed Action.	*Alternative C-2*: The conclusions for impacts of Alternative C-2 are the same as described under the Proposed Action.	*Alternative C-3*: The conclusions for impacts of Alternative C-3 are the same as described under the Proposed Action.	*Preferred Alternative (C-3b):* Although Alternative C-3b would reduce the number of WTGs and their associated IACs, which would

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	bird populations. BOEM anticipates that impacts to birds due to ongoing activities associated with the No Action Alternative would include **minor** adverse impacts as well as the potential for **minor beneficial** impacts. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the cumulative impacts under the No Action Alternative would be long-term **moderate** adverse but could potentially include **minor beneficial** impacts because of the presence of structures.	minor with additional minor beneficial impacts to some species (diving seabirds) from the presence of structures and underwater armoring. Overall, impacts to individual birds and/or their habitat from the Proposed Action would be **minor** adverse and **minor beneficial** because impacts would be detectable and measurable but would not lead to long-term or population-level effects. *Cumulative Impacts of the Proposed Action:* When combined with past, present, and reasonably foreseeable environmental trends and planned non-offshore wind and offshore wind activities, the Proposed Action would result in **moderate** adverse cumulative impacts to birds because	BOEM anticipates adverse impacts resulting from Alternative C-1 would be **minor** adverse with additional **minor beneficial** impacts to some species (diving seabirds) from the presence of structures and underwater armoring. *Cumulative Impacts of Alternative C-1*: The conclusions for cumulative impacts of Alternative C-1 are the same as described under the Proposed Action. Combined with past, present, and reasonably foreseeable environmental trends and planned non-offshore wind and offshore wind activities, the Alternative C-1 would result in **moderate** adverse and potential **minor beneficial** cumulative impacts to birds.	BOEM anticipates adverse impacts resulting from Alternative C-2 would be **minor** adverse with additional **minor beneficial** impacts to some species (diving seabirds) from the presence of structures and underwater armoring. *Cumulative Impacts of Alternative C-2*: The conclusions for cumulative impacts of Alternative C-2 are the same as described under the Proposed Action. Combined with past, present, and reasonably foreseeable environmental trends and planned non-offshore wind and offshore wind activities, the Alternative C-2 would result in **moderate** adverse and potential **minor beneficial** cumulative impacts to birds.	BOEM anticipates adverse impacts resulting from Alternative C-3 would be **minor** adverse with additional **minor beneficial** impacts to some species (diving seabirds) from the presence of structures and underwater armoring. *Cumulative Impacts of Alternative C-3*: The conclusions for cumulative impacts of Alternative C-3 are the same as described under the cumulative impacts of the Proposed Action. Combined with past, present, and reasonably foreseeable environmental trends and planned non-offshore wind and offshore wind activities, the Alternative C-3 would result in **moderate** adverse and potential **minor beneficial** cumulative impacts to birds.	have an associated reduction in potential collision risk, the reduction in effects from impacts would not result in different impact level determinations. BOEM expects the overall impact on birds from the Proposed Action to be **minor** adverse with additional **minor beneficial**, because, the resource would recover completely after decommissioning without remedial or mitigating action. *Cumulative Impacts of Alternative C-3b*: In the context of other reasonably foreseeable environmental trends and planned actions, BOEM expects that Alternative C-3b impacts would be similar to the Proposed Action (with individual IPFs leading to impacts ranging from negligible to minor adverse and minor beneficial). The

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
		those impacts that are detectable and measurable would not lead to long-term or population-level effects. Potential **minor beneficial** cumulative impacts may result from the presence of structures.				overall cumulative impacts of Alternative C-3b when combined with past, present, and reasonably foreseeable activities would therefore be the same level as under the Proposed Action: **moderate** adverse and potential **minor beneficial** cumulative impacts to birds.
Coastal Habitat and Fauna	*No Action Alternative*: The impacts of ongoing activities, especially land disturbance due to development, would be potentially **moderate** adverse. *Cumulative Impacts of the No Action Alternative:* Considering the combined effects of IPFs on coastal habitats and fauna, the overall cumulative impacts associated with future offshore wind	*Proposed Action*: Overall impacts to coastal habitats and fauna from the Proposed Action would be **moderate** adverse as a result of the loss of individuals and disturbance to habitats for the duration of Project construction but no population-level impacts to fauna and no permanent loss of habitat is expected as a direct result of the Proposed Action.	*Alternative C-1*: None of the components under Alternative C-1 would alter the proposed onshore activities and facilities, O&M, or conceptual decommissioning described for the Proposed Action. Therefore, impacts to coastal habitats and fauna from the reconfigured layout under Alternative C-1 would be the same as those described for the Proposed Action, **moderate** adverse.	*Alternative C-2*: None of the components under Alternative C-2 would alter the proposed onshore activities and facilities, O&M, or conceptual decommissioning described for the Proposed Action. Therefore, impacts to coastal habitats and fauna from the reconfigured layout under Alternative C-1 would be the same as those described for the Proposed Action, **moderate** adverse.	*Alternative C-3*: None of the components under Alternative C-3 would alter the proposed onshore activities and facilities, O&M, or conceptual decommissioning described for the Proposed Action. Therefore, impacts to coastal habitats and faunafrom the reconfigured layout under Alternative C-3 would be the same as those described for the Proposed Action, **moderate** adverse.	*Preferred Alternative (C-3b):* None of the components under Alternative C-3 would alter the proposed onshore activities and facilities, O&M, or conceptual decommissioning described for the Proposed Action. Therefore, impacts to coastal habitats and fauna from the reconfigured layout under Alternative C-3 would be the same as those described for the Proposed Action, **moderate** adverse.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	activities, combined with ongoing activities, reasonably foreseeable environmental trends, and reasonably foreseeable planned actions other than offshore wind would be **moderate** adverse.	*Cumulative Impacts of the Proposed Action:* The overall cumulative impacts associated with the Proposed Action in combination with future offshore wind activities, ongoing activities, reasonably foreseeable environmental trends, and reasonably foreseeable planned actions other than offshore wind would be **moderate** adverse. Land disturbance is expected to continue to have the greatest impact on the condition of coastal habitats and fauna in the GAA.	*Cumulative Impacts of Alternative C-1*: Cumulative impacts to coastal habitats and fauna under Alternative C-1 would be the same as those described for the cumulative Proposed Action impacts, **moderate** impacts.	*Cumulative Impacts of Alternative C-2*: Cumulative impacts to coastal habitats and fauna under Alternative C-2 would be the same as those described for the cumulative Proposed Action impacts, **moderate** impacts.	*Cumulative Impacts of Alternative C-3*: Cumulative impacts to coastal habitats and fauna under Alternative C-3 would be the same as those described for the cumulative Proposed Action, **moderate** impacts.	*Cumulative Impacts of Alternative C-3b*: Cumulative impacts to coastal habitats and fauna under Alternative C-3 would be the same as those described for the cumulative Proposed Action, **moderate** impacts.
Finfish, Invertebrates, and Essential Fish Habitat	*No Action Alternative*: Under the No Action Alternative, finfish, invertebrates, and Essential Fish Habitat (EFH) would likely continue to be affected by existing environmental trends in the region. Ongoing activities	*Proposed Action*: BOEM anticipates construction and installation, O&M, and conceptual decommissioning of the Proposed Action would have **moderate** adverse impacts on finfish, invertebrates and EFH. The primary	*Alternative C-1*: Alternative C-1 could potentially result in reduced overall impacts on finfish, invertebrates, and EFH due to the change in layout aimed to reduce the amount of WTGs located in the presumed Atlantic	*Alternative C-2*: Alternative C-2 could potentially result in reduced overall impacts on finfish, invertebrates, and EFH due to the change in layout aimed to reduce the number of WTGs located in the presumed Atlantic	*Alternative C-3*: Alternative C-3 would result in reduced overall impacts on finfish, invertebrates, and EFH due to the change in layout that would reduce the number of WTGs. However, the reduction would be	*Preferred Alternative:* Alternative C-3b would result in reduced overall impacts on finfish, invertebrates, and EFH due to the change in layout that would reduce the number of WTGs. However, the

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	are expected to have continuing short-term and permanent impacts (disturbance, displacement, injury, mortality, and habitat conversion) on finfish, invertebrates, and EFH. Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate** adverse impacts on finfish, invertebrates, and EFH. *Cumulative Impacts of the No Action Alternative:* Cumulative impacts due to reasonably foreseeable activities, such as increased vessel traffic, any new submarine cable installations or pipelines, onshore construction activities, marine survey or explorations, mineral extractions, port expansions, channel dredging activities,	risks would be associated with cable installation, and noise from construction, most prominently associated with pile-driving activities Entrainment estimates for egg and larval species regarding the OCS-DC are anticipated to be minor as demonstrated by the calculated equivalent adult. *Cumulative Impacts of the Proposed Action:* BOEM anticipates that the cumulative impacts on finfish, invertebrates and EFH in the GAA would be **moderate** adverse. Considering all IPFs together, BOEM anticipates that the overall impacts on finfish, invertebrates, and EFH in the GAA associated with the Proposed Action when combined with the impacts from	cod spawning locations and complex bottom habitat areas. Overall, the potential impacts associated from the Alternative C-1 are anticipated to be **moderate** adverse. *Cumulative Impacts of Alternative C-1*: The cumulative impacts on finfish, invertebrates and EFH from Alternatives C-1 would likely be **moderate** adverse due to a reduced impact on finfish, invertebrates and EFH given that the WTGs would be removed from prioritized contiguous areas of complex habitat to be excluded from development to avoid and minimize impacts to complex fisheries habitats, while still meeting BOEM's purpose and need for the Project.	cod spawning locations and complex bottom habitat areas. Overall, the potential impacts associated from the Alternative C-2 are anticipated to be **moderate** adverse. *Cumulative Impacts of Alternative C-2*: The cumulative impacts on finfish, invertebrates and EFH from Alternative C-2 would likely be **moderate** adverse due to a reduced impact on finfish, invertebrates and EFH given that the WTGs would be removed from prioritized contiguous areas of complex habitat to be excluded from development to avoid and minimize impacts to complex fisheries habitats, while still meeting BOEM's purpose and need for the Project.	located in Priority Area 3 and not in Priority Area 1 where Atlantic cod spawning locations and complex bottom habitat areas are located. Overall, the potential impacts associated from the Alternative C-3 are anticipated to be **moderate** adverse. *Cumulative Impacts of Alternative C-3*: The cumulative impacts on finfish, invertebrates and EFH from Alternative C-3 would likely be **moderate** adverse**. D**ue to the presence of glauconite sands in the southeastern part SRWF, more WTGs are proposed for the northwestern part of the SRWF closer to the prioritized contiguous areas of Atlantic cod spawning. Overall impact on finfish, invertebrates and EFH would be	reduction would be located in Priority Area 3 and not in Priority Area 1 where Atlantic cod spawning locations and complex bottom habitat areas are located. Overall, the potential impacts for the Preferred Alternative would be **moderate** adverse**.** *Cumulative Impacts of Alternative C-3b*: Cumulative impacts are anticipated to be **moderate** adverse.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	and the installation of any new offshore structures, buoys, or piers, are anticipated to be **moderate** adverse.	ongoing and planned activities including offshore wind would be **moderate** adverse.			reduced as compared to the Proposed Alternative due to less WTGs being proposed under this alternative.	
Marine Mammals	*No Action Alternative (without baseline):* Not approving the COP and not issuing the requested MMPA ITA would have no additional incremental effect on marine mammals (i.e., no effect). *No Action Alternative (with baseline):* Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate** adverse impacts on mysticetes (other than NARWs), and **minor** to **moderate** adverse impacts on odontocetes, and pinnipeds. The presence of structures could	*Proposed Action (without baseline)*: The incremental impact of the Proposed Action when compared to the No Action Alternative would be **moderate** adverse for NARWs and **minor** to **moderate** adverse for other mysticetes, odontocetes, and pinnipeds. Adverse impacts are expected to result mainly from pile-driving noise and increased vessel traffic. **Minor beneficial i**mpacts on odontocetes and pinnipeds may result from increased prey availability as related to the artificial reef effect. *Proposed Action (with baseline):* BOEM expects the	*Alternative C-1 (without baseline)*: Alternative C-1 includes changes to turbine installation locations that would not alter any of the findings for marine mammals. Therefore, the incremental impact of Alternative C-1 when compared to the No Action would be the same as described under the Proposed Action, **moderate** adverse impacts on NARWs, **minor** to **moderate** adverse impacts on other mysticetes, odontocetes, and pinnipeds**,** with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability.	*Alternative C-2 (without baseline)*: Alternative C-2 includes changes to turbine installation locations that would not alter any of the findings for marine mammals. Therefore, the incremental impacts of Alternative C-2 are the same as described under the Proposed Action, **moderate** adverse impacts on NARWs, **minor** to **moderate** adverse impacts on other mysticetes, odontocetes, and pinnipeds**,** with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability. *Alternative C-2 (with baseline)*:	*Alternative C-3 (without baseline)*: Alternative C-3 includes changes to turbine installation locations that would not alter any of the findings for mysticetes, odontocetes, or pinnipeds. Therefore, the conclusions for impacts and cumulative impacts of Alternative C-3 are the same as described under the Proposed Action, **moderate** adverse impacts on NARWs, **minor** to **moderate** adverse impacts on other mysticetes, odontocetes, and pinnipeds**,** with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability.	*Preferred Alternative C-3b (without baseline):* The incremental impact of Alternative C-3b, when compared to the No Action Alternative, would be similar to the Proposed Action: **moderate** adverse impacts on NARWs, **minor** to **moderate** adverse impacts on other mysticetes, odontocetes, and pinnipeds, with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability. *Preferred Alternative C-3b (with baseline):* **Alternative C-3b** would result in similar impacts on marine mammals as described under the

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	potentially result in **minor beneficial** impacts for pinnipeds and odontocetes. Adverse impacts on mysticetes, odontocetes, and pinnipeds would be primarily due to underwater noise, commercial and recreational fishing gear interactions, and ongoing climate change. Vessel activity (vessel collisions) would also be a primary contributor to adverse impacts on mysticetes. For the NARW, continuation of existing environmental trends and activities under the No Action Alternative would result in **major** adverse impacts due to low population numbers and potential to compromise the viability of the species from the loss of a single individual.	overall impact on marine mammals from the Proposed Action to be **major** adverse for NARWs, and **minor** to **moderate** adverse for other mysticetes, odontocetes, and pinnipeds. The overall impacts on individuals and/or their habitat could have population-level effects, but the population can sufficiently recover from the impacts or enough habitat still is functional to maintain the viability of the species both locally and throughout their range. **Minor beneficial** impacts on odontocetes and pinnipeds may result from increased prey availability as related to the artificial reef effect. *Cumulative Impacts of the Proposed Action:* BOEM anticipates that the Proposed	*Alternative C-1 (with baseline)*: Alternative C-1 includes changes to turbine installation locations that would not alter any of the findings for marine mammals. Therefore, the conclusions for Alternative C-1 are the same as described under the Proposed Action, **major** adverse for NARWs, and **minor** to **moderate** adverse for other mysticetes, odontocetes, and pinnipeds**,** with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability. *Cumulative Impacts of Alternative C-1*: Alternative C-1 includes changes to turbine installation locations that would not alter any of the findings for marine mammals. Therefore, the conclusions for cumulative impacts	Alternative C-2 includes changes to turbine installation locations that would not alter any of the findings for marine mammals. Therefore, the conclusions for Alternative C-2 are the same as described under the Proposed Action, **major** adverse for NARWs, and **minor** to **moderate** adverse for other mysticetes, odontocetes, and pinnipeds with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability. *Cumulative Impacts of Alternative C-2*: Alternative C-2 includes changes to turbine installation locations that would not alter any of the findings for marine mammals. Therefore, the conclusions for cumulative impacts of Alternative C-2 are the same as	*Alternative C-3 (with baseline)*: Alternative C-3 includes changes to turbine installation locations that would not alter any of the findings for mysticetes, odontocetes, or pinnipeds. Therefore, the conclusions for Alternative C-3 are the same as described under the Proposed Action, **major** adverse for NARWs, and **minor** to **moderate** adverse for other mysticetes, odontocetes, and pinnipeds with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability. *Cumulative Impacts of Alternative C-3*: Alternative C-3 includes changes to turbine installation locations that would not alter any of the	Proposed Action, with some impacts being minimally decreased in duration and geographic extent due to the reduced number of WTGs than the maximum WTGs proposed under the PDE of the Proposed Action; **major** adverse for NARWs, and **minor** to **moderate** adverse for mysticetes (other than NARWs), odontocetes, and pinnipeds with **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability. *Cumulative Impacts of Alternative C-3b*: BOEM anticipates that the cumulative impacts of Alternative C-3b when combined with ongoing and planned activities, including offshore wind, would be the same as the Proposed Action: **major** for NARWs

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	Cumulative Impacts of the No Action Alternative: Alternative A, the No Action Alternative, when combined with all other planned activities (including offshore wind) would result in **moderate** adverse impacts on mysticetes (except for NARW), odontocetes, and pinnipeds. For NARWs impacts would be **major** adverse due to low population numbers and potential to compromise the viability of the species from the loss of a single individual. Adverse impacts would be primarily due to underwater noise, vessel activity (vessel collisions), fishing entanglement, and climate change.	Action when combined with past, present, and reasonably foreseeable activities would result in **moderate** adverse impacts on mysticetes, odontocetes, and pinnipeds, except for the NARW, on which impacts would be **major** adverse due to low population numbers and potential to compromise the viability of the species from the loss of a single individual. **Minor beneficial** impacts on odontocetes and pinnipeds may result from increased prey availability as related to the artificial reef effect but would be insufficient to offset negative impacts associated with baseline conditions combined with the Proposed Action.	of Alternative C-1 are the same as described under the cumulative impacts of the Proposed Action: **major** for NARWs and **moderate** for other mysticetes, odontocetes, and pinnipeds; **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability.	described under the cumulative impacts of the Proposed Action: **major** for NARWs and **moderate** for other mysticetes, odontocetes, and pinnipeds; **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability.	findings for marine mammals. Therefore, the conclusions for cumulative impacts of Alternative C-3 are the same as described under the cumulative impacts of the Proposed Action: **major** for NARWs and **moderate** for other mysticetes, odontocetes, and pinnipeds; **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability.	and **moderate** for other mysticetes, odontocetes, and pinnipeds; **minor beneficial** impacts on odontocetes and pinnipeds from increased prey availability.
Sea Turtles	*No Action Alternative*:	*Proposed Action*: BOEM anticipates the impacts resulting	*Alternative C-1*: Alternative C-1 includes changes to	*Alternative C-2*: Alternative C-2 includes changes to	*Alternative C-3*: Alternative C-3 includes changes to	*Preferred Alternative C-3b:*

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	BOEM anticipates that the sea turtle impacts due to current environmental trends and ongoing activities associated with the No Action Alternative would be **minor** adverse with the potential for **minor beneficial** impacts. *Cumulative Impacts of the No Action Alternative:* Under the No Action Alternative, existing environmental trends and ongoing activities, natural and human-caused IPFs would continue to affect sea turtles. BOEM anticipates that the overall cumulative impacts associated Alternative A, the No Action Alternative, when combined with all other planned activities (including offshore wind) in the GAA would result in overall **minor**	from the Proposed Action would be **minor** adverse impacts and could include potentially **minor beneficial** impacts. Adverse impacts are expected to result mainly from pile-driving noise and increased vessel traffic. Beneficial impacts are expected to result from the presence of structures. *Cumulative Impacts of the Proposed Action:* Considering all the IPFs together, BOEM anticipates that the overall cumulative impacts associated with the Proposed Action when combined with past, present, and reasonably foreseeable activities would result in **minor** adverse impacts to sea turtles and could include potentially **minor beneficial** impacts. The main drivers for	turbine installation locations that would not alter any of the findings for sea turtles. Therefore, the conclusions for impacts and cumulative impacts of Alternative C-1 are the same as described under the Proposed Action, **minor** adverse impacts and potentially **minor beneficial** impact. *Cumulative Impacts of Alternative C-1*: Alternative C-1 includes changes to turbine installation locations that would not alter any of the findings for sea turtles. Therefore, the conclusions for cumulative impacts of Alternative C-1 are the same as described under the cumulative impacts of the Proposed Action, **minor** adverse impacts and potentially **minor beneficial** impact.	turbine installation locations that would not alter any of the findings for sea turtles. Therefore, the conclusions for impacts and cumulative impacts of Alternative C-2 are the same as described under the Proposed Action **minor** adverse impacts and potentially **minor beneficial** impact. *Cumulative Impacts of Alternative C-2*: Alternative C-2 includes changes to turbine installation locations that would not alter any of the findings for sea turtles. Therefore, the conclusions for cumulative impacts of Alternative C-2 are the same as described under the cumulative impacts of the Proposed Action, **minor** adverse impacts and potentially **minor beneficial** impact.	turbine installation locations that would not alter any of the findings for sea turtles. Therefore, the conclusions for impacts and cumulative impacts of Alternative C-3 are the same as described under the Proposed Action, **minor** adverse impacts and potentially **minor beneficial** impacts. *Cumulative Impacts of Alternative C-3*: Alternative C-3 includes changes to turbine installation locations that would not alter any of the findings for sea turtles. Therefore, the conclusions for cumulative impacts of Alternative C-3 are the same as described under the cumulative impacts of the Proposed Action, **minor** adverse impacts and potentially **minor beneficial** impacts.	BOEM anticipates that any incremental reduction in impacts would not change the resulting effects on sea turtles to the extent necessary to alter the impact-level conclusions for any impact mechanism. The impact of Alternative C-3b, would be similar to the Proposed Action: **minor** adverse impacts with potential **minor beneficial** impacts. *Cumulative Impacts of Alternative C-3b*: The overall cumulative impacts of Alternative C-3b when combined with past, present, and reasonably foreseeable activities would therefore be the same level as under the Proposed Action: **minor** adverse with potentially **minor beneficial** impacts.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	adverse and **minor beneficial** impacts.	impact ratings are pile-driving noise and associated potential for auditory injury, the presence of structures, ongoing climate change, and ongoing vessel traffic posing a risk of collision.				
Wetlands and Waters of the United States (WOTUS)	*No Action Alternative*: BOEM anticipates that the impact on wetlands resulting from ongoing activities associated with the No Action Alternative would be **minor**. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the overall cumulative impacts associated with Alternative A, the No Action Alternative, when combined with all other planned activities (including offshore wind) in the GAA would result in	*Proposed Action*: BOEM expects the impacts resulting for the Proposed Action would likely have **minor** impact on wetlands and other WOTUS. *Cumulative Impacts of the Proposed Action:* Considering all the IPFs together, BOEM expects that the overall cumulative impacts associated with the Proposed Action when combined with past, present, and reasonably foreseeable activities would result in **moderate** impacts to	*Alternative C-1*: Because changes in the WTGs arrangement would not impact onshore wetlands and other WOTUS, BOEM expects that the impacts resulting from Alternative C-1 would be the same as the Proposed Action: **minor**. *Cumulative Impacts of Alternative C-1*: Considering all the IPFs together, the overall cumulative impacts of the alternatives when combined with past, present, and reasonably foreseeable activities would be the same as the Proposed Action	*Alternative C-2*: Since changes in the WTGs arrangement would not impact onshore wetlands and other WOTUS, BOEM expects that the impacts resulting from Alternative C-2 would be the same as the Proposed Action: **minor**. *Cumulative Impacts of Alternative C-2*: Considering all the IPFs together, the overall cumulative impacts of the alternatives when combined with past, present, and reasonably foreseeable activities would be the same as the Proposed Action and result in	*Alternative C-3*: Since changes in the WTGs arrangement would not impact onshore wetlands and other WOTUS, BOEM expects that the impacts resulting from Alternative C-3 would be the same as the Proposed Action: **minor**. *Cumulative Impacts of Alternative C-3*: In the context of ongoing and planned activities, the incremental contribution of Alternative C-3 to the impacts of individual IPFs would be similar to the Proposed Action, negligible to minor. Considering all the	*Preferred Alternative C-3b:* BOEM anticipates Alternative C-3b would have **minor** impacts to wetlands and other WOTUS within the GAA. *Cumulative Impacts of Alternative C-3b:* Overall cumulative impacts to wetlands from the Preferred Alternative combined with past, present, and reasonably foreseeable activities would be **moderate** due to the short-term impacts on wetlands from onshore construction activities adjacent to wetlands and other WOTUS. These resources would be

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	overall **moderate** impacts.	wetlands and other WOTUS.	and result in **moderate** impacts to wetlands and other WOTUS.	**moderate** impacts to wetlands and other WOTUS.	IPFs together, the overall cumulative impacts of the alternatives when combined with past, present, and reasonably foreseeable activities would be the same as the Proposed Action and result in **moderate** impacts to wetlands and other WOTUS.	expected to recover completely from these activities.
Commercial Fisheries and For-Hire Recreation Fishing	*No Action Alternative*: BOEM anticipates that the adverse impacts of ongoing activities on commercial fisheries fishing would be **minor** to **major** and **minor** to **moderate** for for-hire recreational. The major impact rating for some fisheries and fishing operations is primarily driven by regulated fishing effort and climate change associated with ongoing activities. The impacts could also include long-term **minor beneficial**	*Proposed Action*: In the event that these specific fishing operations are unable to find suitable alternative fishing locations, they could experience long-term, major disruptions. However, it is estimated that the majority of vessels would only have to adjust somewhat to account for disruptions due to impacts. BOEM expects that the impacts resulting from the Proposed Action would be range from **minor** to **major** on commercial fishing	*Alternative C-1*: The impacts to commercial fishing and for-hire recreational fishing would be expected to be similar to those discussed under Alternative B; however, slightly less due to the habitat minimization layout. BOEM expects that the impacts resulting from Alternative C-1 would be range from **minor** to **major** for commercial fishing and **minor** to **moderate** for for-hire recreational fishing, depending on the fishery and fishing operation. In addition, the impacts	*Alternative C-2*: The impacts resulting from individual IPFs associated with Alterative C-2 would be similar to, but slightly less adverse than those described under Alternative C-1 (as well as Alternative B). The overall impact magnitudes under Alternative C-2 are anticipated to range from **minor** to **major** for commercial fishing and **minor** to **moderate** for for-hire recreational fishing, depending on the fishery and fishing operation. Although impacts	*Alternative C-3*: The impacts resulting from individual IPFs associated with Alternative C-3 would be similar to, but slightly less adverse than those described under Alternative C-1, C-2 (as well as Alternative B). The overall impact magnitudes under Alternative C-3 are anticipated to range from **minor** to **major** for commercial fishing and **minor** to **moderate** for for-hire recreational fishing, depending on the fishery and fishing operation.	*Preferred Alternative C-3b:* It is expected that there would be a disruption to commercial fisheries and for-hire recreational fishing vessels during construction, O&M and conceptual decommissioning. The amount of disruption and impact would vary based upon several factors but could include long-term major disruptions to certain operators; however, the overall impact magnitudes under Alternative C-3 are anticipated to range from **minor** to

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	impacts for certain commercial fisheries and some for-hire recreational fishing operations, due to the artificial reef effect. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the cumulative impact of the No Action Alternative would result in a **moderate** to **major** adverse impact on commercial fisheries and **minor** to **moderate** adverse impacts on for-hire recreational fishing. This impact rating would primarily result from future fisheries use and management, the increased presence of offshore structures and climate change. The impacts could also include long-term **minor** to **moderate beneficial** impacts for certain commercial fisheries and some for-hire recreational fishing	and **minor** to **moderate** for for-hire recreational fishing, depending on the fishery and fishing operation. In addition, the impacts of the Proposed Action could include long-term, **minor beneficial** impacts for some for-hire recreational fishing operations due to the artificial reef effect. *Cumulative Impacts of the Proposed Action:* In the context of reasonably foreseeable environmental trends in the area, the contribution of the Proposed Action to the impacts of individual IPFs resulting from ongoing and planned activities would range from minor to moderate. Considering all the IPFs together,	of Alternative C-1 could include long-term, **minor beneficial** impacts for some for-hire recreational fishing operations due to the artificial reef effect. *Cumulative Impacts of Alternative C-1*: In context of reasonably foreseeable environmental trends in the area, the contribution of Alternative C-1 to the impacts of individual IPFs resulting from ongoing and planned activities would range from minor to moderate. Considering all the IPFs together, BOEM anticipates that the contribution of Alternative C-1 to the cumulative impacts from ongoing and planned activities would result in **major** impacts on commercial fisheries and for-hire	related to Alternative C-2 are anticipated to be slightly less adverse than Alternative B or C-1. In addition, the impacts of Alternative C-2 could include long-term, **minor beneficial** impacts for some for-hire recreational fishing operations due to the artificial reef effect. *Cumulative Impacts of Alternative C-2*: Impacts related to Alternative C-2 combined with ongoing and planned activities would result in similar, but slightly less adverse impacts than as described in the Proposed Action (and Alternative C-1), which would range from minor to moderate. Considering all the IPFs together, BOEM anticipates that the contribution of Alternative C-2 to the cumulative	Although impacts related to Alternative C-3 are anticipated to be slightly less adverse than Alternatives B, C-1 and C-2, the actual difference is dependent on many variables, as discussed above, and has not been quantified. In addition, the impacts of Alternative C-3 could include long-term, **minor beneficial** impacts for some for-hire recreational fishing operations due to the artificial reef effect. *Cumulative Impacts of Alternative C-3*: Considering all the IPFs together, BOEM anticipates that the contribution of Alternative C-3 to the cumulative impacts from ongoing and planned activities would result in **major** impacts on commercial fisheries and for-hire	**major** for commercial fishing and **minor** to **moderate** for for-hire recreational fishing, depending on the fishery and fishing operation. Although impacts related to Alternative C-3 are anticipated to be slightly less adverse than Alternatives B, C-1 and C-2, the actual difference is dependent on many variables, as discussed above, and has not been quantified. In addition, the impacts of Alternative C-3 could include long-term, **minor beneficial** impacts for some for-hire recreational fishing operations due to the artificial reef effect. *Cumulative Impacts of Alternative C-3b*: Overall, BOEM expects that the cumulative impacts resulting from Alternative C-3b

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	operations due to the artificial reef effect.	BOEM anticipates that the contribution of the Proposed Action to the cumulative impacts from ongoing and planned activities would result in **major** impacts on commercial fisheries and for-hire recreational fishing because some commercial and for-hire recreational fisheries and fishing operations would experience substantial disruptions indefinitely, even with Applicant Proposed Measures (APMs).	recreational fishing because some commercial and for-hire recreational fisheries and fishing operations would experience substantial disruptions indefinitely, even with APMs.	impacts from ongoing and planned activities would result in **major** impacts on commercial fisheries and for-hire recreational fishing because some commercial and for-hire recreational fisheries and fishing operations would experience substantial disruptions indefinitely, even with APMs.	recreational fishing because some commercial and for-hire recreational fisheries and fishing operations would experience substantial disruptions indefinitely, even with APMs.	would be **major** on commercial fishing and for-hire recreational fishing but less than that of the Proposed Action (Alternative B).
Cultural Resources	*No Action Alternative*: The primary source of onshore impacts from ongoing activities would include ground-disturbing activities and the introduction of intrusive visual elements, while the primary source of offshore impacts or those activities that disturb the seafloor,	*Proposed Action*: Based on the preceding IPF analysis, BOEM has determined that the Proposed Action would likely result in **major** adverse impacts on cultural resources. The Proposed Action would still result in adverse visual effects on above-ground historic properties	*Alternative C-1*: Alternative C-1 would result in the same **major** adverse impacts on marine and terrestrial cultural resources as the Proposed Action. *Cumulative Impacts of Alternative C-1*: Alternative C-1 would result in the	*Alternative C-2*: Alternative C-2 would result in the same negligible to **major** adverse impacts on marine and terrestrial cultural resources as the Proposed Action. *Cumulative Impacts of Alternative C-2*:	*Alternative C-3*: Alternative C-3 would result in the same **major** adverse impacts on marine and terrestrial cultural resources as the Proposed Action. *Cumulative Impacts of Alternative C-3*: Alternative C-3 would result in the	*Preferred Alternative C-3b*: Alternative C-3b would result in the same **major** adverse impacts on marine and terrestrial cultural resources as the Proposed Action. *Cumulative Impacts of Alternative C-3b*:

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	such as anchoring, new cable emplacement, and installation/presence of structures. BOEM anticipates that the cultural resource impacts as a result of ongoing activities associated with the Alternative A - No Action of ongoing activities would be **major** adverse. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the overall cumulative impacts associated with the No Action Alternative when combined with all other planned activities (including offshore wind) in the GAA would result in overall **major** adverse impacts on individual onshore and offshore cultural resources depending on the scale and extent of impacts and the unique	and adverse physical effects to ancient, submerged landform feature historic properties which would require mitigation to resolve those adverse effects. Therefore, the overall impacts on historic properties from the Proposed Action would qualify as **major** as it would result in adverse effects on historic properties, as defined at 36 *C.F.R.* 800.5(a)(1), that would require mitigation to resolve. *Cumulative Impacts of the Proposed Action:* Overall, BOEM anticipate the cumulative impacts from the Proposed Action and reasonably foreseeable offshore wind projects could result in **major** adverse impacts and **minor beneficial** impacts on cultural resources.	same cumulative **major** adverse impacts and **minor beneficial** impacts on marine and terrestrial cultural resources as the cumulative impacts of the Proposed Action.	Alternative C-2 would result in the same cumulative **major** adverse impacts and **minor beneficial** impacts on marine and terrestrial cultural resources as the cumulative impacts of the Proposed Action.	same cumulative **major** adverse impacts on marine and terrestrial cultural resources as the cumulative impacts of the Proposed Action. Additionally, Alternative C-3 and present and reasonably foreseeable offshore wind projects would also result in **minor beneficial** impacts to terrestrial, marine, and above-ground resources by slowing or arresting the effects of climate change.	Alternative C-3 would result in the same cumulative **major** adverse impacts on marine and terrestrial cultural resources as the cumulative impacts of the Proposed Action. Additionally, Alternative C-3b and present and reasonably foreseeable offshore wind projects would also result in **minor beneficial** impacts to terrestrial, marine, and above-ground resources by slowing or arresting the effects of climate change.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	characteristics of individual resources. The construction and operation of reasonably foreseeable offshore wind projects would also **minor beneficial** impacts on individual onshore and offshore cultural resources as these projects would make incremental contributions to arresting the pace of global warming and climate change and associated impacts on cultural resources from sea level rise, increased storm severity/frequency, and increased erosion/deposition of sediments.					
Demographics, Employment, and Economics	*No Action Alternative*: BOEM anticipates that ongoing activities in the GAA (continued commercial shipping and commercial fishing; ongoing port maintenance and	*Proposed Action*: BOEM anticipates that the Proposed Action would have **minor** adverse impacts on demographics within the analysis area. Short-term increases in noise during	*Alternative C-1*: The impacts resulting from individual IPFs associated with Alterative C-1 would result in no change to the overall impact magnitudes to demographics, employment and	*Alternative C-2*: The impacts resulting from individual IPFs associated with Alterative C-2 would be the same as Alternative C-1. The overall impact magnitudes under Alternative C-2 are	*Alternative C-3*: The impacts resulting from individual IPFs associated with Alterative C-3 would be similar to, but slightly less adverse than those described under Alternatives C-1, C-2, as well as	*Preferred Alternative C-3b:* The impacts resulting from individual IPFs associated with Alterative C-3b would be similar to, but slightly less adverse than those described under

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	upgrades; periodic channel dredging; maintenance of piers, pilings, seawalls, and buoys; and the use of small-scale, onshore renewable energy) would have **minor adverse** and **minor beneficial** impacts on demographics, employment, and economics. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the No Action Alternative, when combined with all planned activities (including other offshore wind activities), would result in **minor adverse** and **moderate beneficial** cumulative impacts due primarily to the impacts on commercial fishing and for-hire recreational fishing businesses and marine recreational businesses (tour boats, marine	construction, cable emplacement, land disturbance, and the long-term presence of offshore lighting and structures would have negligible to minor adverse impacts on demographics, employment, and economics. The impacts on commercial fishing and onshore seafood businesses would have minor impacts on demographics, employment, and economics for this component of the GAA's economy. The IPFs associated with the Proposed Action would also result in impacts on certain recreation and tourism businesses that range from negligible to minor, with an overall **minor** adverse and **minor beneficial** impact on employment and economic activity for this component of the analysis area's economy.	economics as compared to the Proposed Action. These are anticipated to be **minor** adverse impacts and **minor beneficial** impacts on demographics, employment, and economics. *Cumulative Impacts of Alternative C-1*: Overall, Alternative C-1 combined with ongoing and planned activities would result in the same impacts as described in the Proposed Action, which include **minor** adverse impacts and **moderate beneficial** cumulative impacts on demographics, employment and economics in the GAA.	anticipated be **minor** adverse impacts and **minor beneficial** impacts on demographics, employment, and economics. *Cumulative Impacts of Alternative C-2*: Impacts related to Alternative C-2 combined with ongoing and planned activities would result in the same impacts as described in the Proposed Action (and Alternative C-1), which include **minor** adverse impacts and **moderate beneficial** cumulative impacts on demographics, employment and economics in the GAA.	Alternative B. The overall impact magnitudes under Alternative C-3 are anticipated to be **minor** adverse impacts and **minor beneficial** impacts on demographics, employment, and economics. *Cumulative Impacts of Alternative C-3*: Impacts related to Alternative C-3 combined with ongoing and planned activities would result in similar impacts as described in the Proposed Action (and Alternatives C-1 and C-2), which include **minor** adverse impacts and **moderate beneficial** cumulative impacts on demographics, employment and economics in the GAA.	Alternatives C-1, C-2, as well as Alternative B. The overall impact magnitudes under Alternative C-3b are anticipated to be **minor** adverse impacts and **minor beneficial** impacts on demographics, employment, and economics. *Cumulative Impacts of Alternative C-3b:* The overall cumulative impacts related to the implementation of Alternative C-3b would be similar to, but slightly less than those described under Alternative B, which include **minor** adverse impacts and **moderate beneficial,** since less WTGs would be installed.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	suppliers) primarily through cable emplacement, noise and vessel traffic during construction, and the presence of offshore structures during operations.	*Cumulative Impacts of the Proposed Action:* Overall, BOEM anticipates that the Proposed Action and ongoing and planned activities would result in **minor** adverse impacts and **moderate beneficial** cumulative impacts on demographics, employment, and economics in the GAA. The moderate beneficial impacts primarily would be associated with the investment in offshore wind, job creation and workforce development, income and tax revenue, and infrastructure (i.e., ports, etc.) improvements, while the **minor** adverse effects would result from aviation hazard lighting on WTGs, new cable emplacement and maintenance, the presence of structures, vessel traffic and collisions				

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
		during construction, and land disturbance.				
Environmental Justice (EJ)	*No Action Alternative*: BOEM anticipates that the EJ impacts as a result of ongoing activities associated with the Alternative A - No Action of these ongoing activities would be **minor** to **moderate** adverse to **minor beneficial**. *Cumulative Impacts of the No Action Alternative:* Considering all the IPFs, BOEM anticipates that the overall cumulative impacts associated with future offshore wind activities in the GAA combined with ongoing activities and reasonably foreseeable activities other than offshore wind would result in overall **minor** to **moderate**. BOEM also anticipates that the impacts associated with	*Proposed Action*: BOEM anticipates that the impacts of individual IPFs from the Proposed Action alone would be negligible to moderate on EJ populations within the GAA. Considering the combined impacts of all IPFs, BOEM anticipates that the Proposed Action would have overall **moderate** adverse impacts on all EJ populations. In addition, **minor beneficial** effects to EJ populations may result from reductions in air emissions if offshore wind displaces energy generation using fossil fuels, as well as beneficial effects from economic activity and job creation.	*Alternative C-1*: The impacts resulting from individual IPFs associated with Alterative C-1 would be the same for both offshore activities and facilities and onshore activities and facilities. Therefore, the overall impact magnitudes to EJ populations would be impacted to the same degree when compared to the Proposed Action. These are anticipated to range from **moderate** adverse impacts and **minor beneficial** impacts on EJ populations. *Cumulative Impacts of Alternative C-1*: Overall, Alternative C-1 combined with ongoing and planned activities would result in the same cumulative impacts as described in the Proposed Action,	*Alternative C-2*: The impacts resulting from individual IPFs associated with Alterative C-2 would be essentially the same the Proposed Action for both offshore activities and facilities and onshore activities and facilities. Therefore, the overall impact magnitudes to EJ populations would be impacted to the same degree when compared to the Proposed Action and Alternative C-1. These are anticipated to be **moderate** adverse impacts and **minor beneficial** impacts on EJ populations. *Cumulative Impacts of Alternative C-2*: Overall, Alternative C-2 combined with ongoing and planned activities would result in the same	*Alternative C-3*: The impacts resulting from individual IPFs associated with Alterative C-3 would be essentially the same as those described under Alternatives C-1, C-2 as well as Alternative B (the Proposed Action) for both offshore activities and facilities and onshore activities and facilities. Therefore, the overall impact magnitudes to EJ populations would be impacted to the same degree when compared to the Proposed Action and Alternatives C-1 and C-2. These are anticipated to be **moderate** adverse impacts and **minor beneficial** impacts on EJ populations. *Cumulative Impacts of Alternative C-3*:	*Preferred Alternative C-3b:* BOEM anticipates that there would be a **moderate** impact on EJ populations within the GAA under Alternative C-3b, which would be similar to those described under Alternative B. There would also be **minor beneficial** impacts to EJ populations resulting from reductions in air emissions if offshore wind displaces energy generation using fossil fuels, as well as beneficial effects from economic activity and job creation. These beneficial effects would be similar to those described under Alternative B, but potentially a small degree less due to less overall WTGs being installed.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	future offshore wind activities in the GAA would result in **minor beneficial** effects on minority and low-income populations through economic activity and job creation.	*Cumulative Impacts of the Proposed Action:* The Proposed Action in combination with other offshore wind energy projects would result in a greater number of offshore structures affecting larger offshore areas, and additional onshore construction and port utilization within the GAA. In context of reasonably foreseeable environmental trends, the Proposed Action would contribute a noticeable increment to the combined cumulative impacts on EJ populations from ongoing and planned activities, which are anticipated to be **moderate** overall. Additionally, **minor beneficial** impacts may result from reductions in air emissions, as well as beneficial effects from economic activity and job creation.	which include **moderate** adverse impacts and **minor beneficial** impacts on EJ populations in the GAA.	cumulative impacts as described in the Proposed Action and Alternative C-1, which include **moderate** adverse impacts and **minor beneficial** impacts on EJ populations in the GAA.	Alternative C-3 combined with ongoing and planned activities would result in the same cumulative impacts as described in the Proposed Action and Alternatives C-1 and C-2, which include **moderate** adverse impacts and **minor beneficial** impacts on EJ populations in the GAA.	*Cumulative Impacts of Alternative C-3b*: Alternative C-3 combined with ongoing and planned activities would result in the same cumulative impacts as described in the Proposed Action and Alternatives C-1 and C-2, which include **moderate** adverse impacts and **minor beneficial** impacts on EJ populations in the GAA.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
Land Use and Coastal Infrastructure	*No Action Alternative*: The No Action Alternative would result in **minor beneficial** and **minor adverse** impacts on land use and coastal infrastructure. The identified IPFs relevant to land use and coastal infrastructure from ongoing non-offshore wind and offshore wind activities include accidental releases and discharges, lighting, land disturbance, presence of structures, noise, traffic, and port utilization. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the cumulative impacts of the No Action Alternative would be both **minor beneficial** and **minor** adverse in the GAA. There are potential adverse impacts from future offshore wind	*Proposed Action*: BOEM anticipates that impacts on land use and coastal infrastructure from the Proposed Action would be **moderate** adverse with **minor beneficial** impacts. *Cumulative Impacts of the Proposed Action:* Considering all the IPFs together, BOEM anticipates that the contribution of the Proposed Action to the cumulative impacts associated with ongoing and planned activities would result in **moderate** adverse impacts and **minor beneficial** impacts on land use and coastal infrastructure in the GAA.	*Alternative C-1*: BOEM expects that the impacts from Alternative C-1 to land use and coastal infrastructure would be similar to the Proposed Action, **moderate** adverse impacts to **minor beneficial** impacts. *Cumulative Impacts of Alternative C-1*: In context of reasonably foreseeable environmental trends, the contribution of Alternative C-1 to the cumulative impacts resulting from individual IPFs associated with ongoing and planned activities would be the same as that of the Proposed Action **moderate** adverse impacts for onshore land use and coastal infrastructure and **minor beneficial** impacts.	*Alternative C-2*: BOEM expects that the impacts from Alternative C-2 to land use and coastal infrastructure would be similar to the Proposed Action, **moderate** adverse impacts to **minor beneficial** impacts. *Cumulative Impacts of Alternative C-2*: In context of reasonably foreseeable environmental trends, the contribution of Alternative C-2 to the cumulative impacts resulting from individual IPFs associated with ongoing and planned activities would be the same as that of the Proposed Action, **moderate** adverse impacts for onshore land use and infrastructure and **minor beneficial** impacts.	*Alternative C-3*: BOEM expects that the impacts from Alternative C-3 to land use and coastal infrastructure would be similar to the Proposed Action, **moderate** adverse impacts to **minor beneficial** impacts. *Cumulative Impacts of Alternative C-3*: In context of reasonably foreseeable environmental trends, the contribution of Alternative C-3a, C-3b, and C-3c to the cumulative impacts resulting from individual IPFs associated with ongoing and planned activities would be the same as that of the Proposed Action, **moderate** adverse impacts for onshore land use and infrastructure and **minor beneficial** impacts.	*Preferred Alternative C-3b:* Under Alternative C-3b, impacts on land use and coastal infrastructure would be similar to the Proposed Action, **moderate** adverse with **minor beneficial** impacts for the Preferred Alternative. *Cumulative Impacts of Alternative C-3b*: In context of reasonably foreseeable environmental trends, the contribution of Alternative C-3b to the cumulative impacts resulting from individual IPFs associated with ongoing and planned activities would be the same as that of the Proposed Action, **moderate** adverse impacts for onshore land use and infrastructure and **minor beneficial** impacts.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	to land use and coastal infrastructure through accidental releases and discharges during onshore construction, land disturbance during installation of onshore cables and substations, the presence of WTGs on the viewshed, nighttime lighting on WTGs and from onshore construction, and the presence of other structures. Potential beneficial impacts to land use and coastal infrastructure would result from the expansion and productive utilization of ports and associated infrastructure that would be utilized for future offshore wind activity.					
Navigation and Vessel Traffic	*No Action Alternative*: Continuation of existing environmental trends and activities under the No Action Alternative would result in **moderate**	*Proposed Action*: BOEM anticipates that the adverse impacts resulting from the Proposed Action would be moderate. Therefore, BOEM expects the overall impact on	*Alternative C-1*: BOEM anticipates that the impacts on navigation and vessel traffic from Alternative C-1 would be **moderate**, as the change in	*Alternative C-2*: BOEM anticipates that the impacts from Alternative C-2 would be **moderate**, as the change in navigation and safety risk would be small.	*Alternative C-3*: BOEM anticipates that the impacts from Alternative C-3 would be **moderate**, as the change in navigation and safety risk would be small.	*Preferred Alternative C-3b:* Under Alternative C-3b, impacts on navigation and vessel traffic from onshore and offshore construction, O&M, and

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	adverse impacts on navigation and vessel traffic. *Cumulative Impacts of the No Action Alternative:* Considering all the IPFs together, BOEM anticipates that the impacts associated with future offshore wind activities in the GAA combined with ongoing activities, reasonably foreseeable environmental trends, and reasonably foreseeable activities other than offshore wind would result in **moderate** adverse impacts because the overall effect would be notable, but vessels could adjust to account for disruptions and environmental protection measures (EPMs) would reduce impacts	navigation from the Proposed Action and ongoing activities to be **moderate**, as the change in navigation and safety risk would be small. *Cumulative Impacts of the Proposed Action:* In the context of reasonably foreseeable environmental trends and planned actions, the incremental impacts under the Proposed Action resulting from individual IPFs would be **moderate**. The main IPF is the presence of structures, which could alter navigation patterns as large vessels would likely navigate around the Project.	navigation and safety risk would be small. *Cumulative Impacts of Alternative C-1*: In the context of reasonably foreseeable environmental trends, the contribution of Alternative C-1 to navigation and vessel traffic impacts from ongoing and future activities would be **moderate** and the same as the Proposed Action.	*Cumulative Impacts of Alternative C-2*: In the context of reasonably foreseeable environmental trends, the contribution of Alternative C-2 to navigation and vessel traffic impacts from ongoing and future activities would be **moderate** and the same as the Proposed Action.	*Cumulative Impacts of Alternative C-3*: In the context of reasonably foreseeable environmental trends, the contribution of Alternative C-3 to navigation and vessel traffic impacts from ongoing and future activities would be **moderate** and the same as the Proposed Action.	decommissioning would be the slightly less than described for the Proposed Action. The anticipated impacts would be generated through increased vessel traffic, obstructions to navigation, delays within or approaching ports, increased navigational complexity, changes to navigation patterns, detours to offshore travel or port approaches; or increased risk of incidents such as collision, allision, and groundings. Therefore, BOEM expects the overall impact on navigation from the Alternative C-3b to be **moderate**, as the change in navigation and safety risk would be slightly less. *Cumulative Impacts of Alternative C-3b*: In the context of reasonably

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
						foreseeable environmental trends, the contribution of Alternative C-3 to navigation and vessel traffic impacts from ongoing and future activities would be **moderate** and the same as the Proposed Action.
Other Uses	*No Action Alternative*: BOEM Anticipates the No Action Alternative would be **negligible** for marine mineral extraction, marine and national security uses, aviation and air traffic, cables and pipelines, and radar systems. Military and national security use, aviation and air traffic, vessel traffic, commercial fishing, and scientific research and surveys are expected to continue in the GAA. Impacts of ongoing non-offshore and offshore wind activities on scientific research surveys are	*Proposed Action*: **Negligible** for marine mineral extraction, cables and pipelines; **minor** for aviation and air traffic, most military and national security uses, and radar systems; **moderate** for United States Coast Guard (USCG) Search and rescue (SAR) operations; and **major** for scientific research and surveys. *Cumulative Impacts of the Proposed Action:* Considering all IPFs together, BOEM anticipates that the cumulative impacts associated with the Proposed Action	*Alternative C-1*: The overall level of impact would remain similar to the Proposed Action, n**egligible** for marine mineral extraction, cables and pipelines; **minor** for aviation and air traffic, most military and national security uses, and radar systems; **moderate** for United States Coast Guard (USCG) Search and rescue (SAR) operations; and **major** for scientific research and surveys *Cumulative Impacts of Alternative C-1*: In context of reasonably	*Alternative C-2*: The overall level of impact would remain similar to the Proposed Action, n**egligible** for marine mineral extraction, cables and pipelines; **minor** for aviation and air traffic, most military and national security uses, and radar systems; **moderate** for United States Coast Guard (USCG) Search and rescue (SAR) operations; and **major** for scientific research and surveys *Cumulative Impacts of Alternative C-2*: In context of reasonably	*Alternative C-3*: The overall level of impact would remain similar to the Proposed Action, n**egligible** for marine mineral extraction, cables and pipelines; **minor** for aviation and air traffic, most military and national security uses, and radar systems; **moderate** for United States Coast Guard (USCG) Search and rescue (SAR) operations; and **major** for scientific research and surveys *Cumulative Impacts of Alternative C-3*: In context of reasonably	*Preferred Alternative C-3b:* The Preferred Alternative would result in **negligible** impacts to marine mineral extraction and cables and pipelines. However, the presence of WTGs would result in **minor** impacts to aviation and air traffic, military and national security uses, and radar systems. **Moderate** impacts to USCG SAR operations and **major** impacts to scientific research and surveys are expected due to the presence of SRWF WTGs.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	anticipated to be **major** due to the impacts of ongoing offshore wind activities. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the overall cumulative impacts associated with Alternative A, the No Action Alternative, when combined with all other planned activities (including offshore wind) in the GAA would result be **negligible** for marine mineral extraction; **minor** for aviation and air traffic, cables and pipelines; **moderate** for radar systems; **minor** for military and national security; **moderate** for SAR activities; and **major** for scientific research and surveys.	when combined with ongoing and planned activities would be **negligible** for marine mineral extraction, and cables and pipelines; **minor** for aviation and air traffic, and most military and national security uses; **moderate** for radar systems; and **major** for USCG SAR operations and scientific research and surveys.	foreseeable environmental trends, the contribution of Alternative C-2 to the individual IPFs resulting from ongoing and planned activities would be similar to that of the cumulative impacts of the Proposed Action. Overall cumulative adverse impacts would be **negligible** for marine mineral extraction, and cables and pipelines; **minor** for aviation and air traffic, and most military and national security uses; **moderate** for radar systems; and **major** for USCG SAR operations and scientific research and surveys.	foreseeable environmental trends, the contribution of Alternative C-2 to the individual IPFs resulting from ongoing and planned activities would be similar to that of the cumulative impacts of the Proposed Action. Overall cumulative adverse impacts would be **negligible** for marine mineral extraction, and cables and pipelines; **minor** for aviation and air traffic, and most military and national security uses; **moderate** for radar systems; and **major** for USCG SAR operations and scientific research and surveys.	foreseeable environmental trends, the contribution of Alternative C-3 to the individual IPFs resulting from ongoing and planned activities would be similar to that of the cumulative impacts for the Proposed Action. Overall cumulative adverse impacts would be **negligible** for marine mineral extraction, and cables and pipelines; **minor** for aviation and air traffic, and most military and national security uses; **moderate** for radar systems; and **major** for USCG SAR operations and scientific research and surveys.	*Cumulative Impacts of Alternative C-3b*: In context of reasonably foreseeable environmental trends, the contribution of Alternative C-3b to the individual IPFs resulting from ongoing and planned activities would be similar to that of the cumulative impacts for the Proposed Action. The impacts would range from **negligible** to **minor** for aviation and air traffic, cables and pipelines, marine mineral extraction, and most military and national security uses; **moderate** for radar systems; and **major** for USCG SAR operations and scientific research and surveys. These impact ratings are primarily driven by the presence of offshore structures such as WTGs in the

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
						offshore wind lease areas.
Recreation and Tourism	*No Action Alternative*: The No Action Alternative would result in **moderate** adverse and **minor beneficial** impacts. Recreation and tourism in the GAA would continue to be affected by ongoing activities, including vessel traffic, noise and trenching from periodic maintenance or installation of coastal and nearshore infrastructure, and onshore development activities. *Cumulative Impacts of the No Action Alternative:* BOEM anticipates that the cumulative impacts of the No Action Alternative would likely be **moderate** adverse and **minor beneficial**. The impacts associated with future offshore wind activities in the	*Proposed Action*: BOEM anticipates the construction, operations and maintenance, and conceptual decommissioning of the Proposed Action would have **moderate** adverse and **minor beneficial** impacts to recreation and tourism. The impacts of O&M activities associated with the Proposed Alternative would range from negligible to moderate adverse and minor beneficial impacts to recreation and tourism. The overall effect of the Proposed Action on recreation and tourism would be expected to be negligible to moderate adverse and minor beneficial impacts, as recreation and tourism activities are expected to continue with most impacts	*Alternative C-1*: BOEM expects that the impacts from Alternative C-1 to recreation and tourism would be similar, but potentially less, to the Proposed Action. All other impacts are anticipated to be similar to those described under the Proposed Action and would be **moderate** adverse with **minor beneficial** impacts. *Cumulative Impacts of Alternative C-1*: In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-1 to the cumulative impacts on recreation and tourism would be marginal. BOEM anticipates that the cumulative impacts of Alternative C-1	*Alternative C-2*: BOEM expects that the impacts from Alternative C-2 to recreation and tourism would be similar, but potentially less, to the Proposed Action. All other impacts are anticipated to be similar to those described under the Proposed Action and would be **moderate** adverse with **minor beneficial** impacts. *Cumulative Impacts of Alternative C-2*: In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-2 to the cumulative impacts on recreation and tourism would be marginal. BOEM anticipates that the cumulative impacts of Alternative C-2	*Alternative C-3*: BOEM expects that the impacts from Alternative C-3 to recreation and tourism would be similar to the Proposed Action. All other impacts are anticipated to be similar to those described under the Proposed Action and would be **moderate** adverse with **minor beneficial** impacts. *Cumulative Impacts of Alternative C-3*: In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-3 to the cumulative impacts on recreation and tourism would be marginal. BOEM anticipates that the cumulative impacts of Alternative C-3 would be **moderate**	*Preferred Alternative C-3b:* Construction, O&M, and decommissioning of Alternative C-3b would have overall **moderate** adverse impacts and **minor beneficial** impacts on recreation and tourism. *Cumulative Impacts of Alternative C-3b*: In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-3b to the cumulative impacts on recreation and tourism would be marginal. BOEM anticipates that the cumulative impacts of Alternative C-3 would be **moderate** adverse impacts with **minor beneficial** impacts. This impact rating is driven by

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	analysis area, considered with other reasonably foreseeable activities, current activities, and environmental trends, would be negligible to moderate adverse effects if no other offshore wind farms are authorized. Most of the adverse impacts could be avoided with APMs, but some impacts would only be minimized with APMs in place. If other offshore wind farms are authorized, BOEM would anticipate negligible to moderate adverse impacts to recreation and tourism with minor beneficial impacts.	being avoided with APMs in place. *Cumulative Impacts of the Proposed Action:* BOEM anticipates that the cumulative impacts on recreation and tourism in the GAA would be **moderate** adverse with **minor beneficial** impacts. In the context of reasonably foreseeable environmental trends, the incremental impacts contributed by the Proposed Action would be marginal.	would be **moderate** adverse with **minor beneficial** impacts. This impact rating is driven by ongoing and planned activities as well as short-term and permanent disturbance associated with both onshore and offshore construction, O&M and decommissioning of the Alternative.	would be **moderate** adverse with **minor beneficial** impacts. This impact rating is driven by ongoing and planned activities as well as short-term and permanent disturbance associated with both onshore and offshore construction, O&M and decommissioning of the Alternative.	adverse with minor **beneficial** impacts. This impact rating is driven by ongoing and planned activities as well as short-term and permanent disturbance associated with both onshore and offshore construction, O&M and decommissioning of the Alternative.	ongoing and planned activities as well as short-term and permanent disturbance associated with both onshore and offshore construction, O&M and decommissioning of the Alternative.
Scenic and Visual Resources	*No Action Alternative*: The No Action Alternative would result in **moderate** adverse impacts on scenic and visual resources. Ongoing O&M of the Block Island project and construction of the	*Proposed Action*: Under the Proposed Action, impacts of the Sunrise Wind Project to scenic and visual resources would be **major** adverse. The presence of offshore WTGs and OCS-DC would result in	*Alternative C-1*: Under Alternative C-1, the seascape character units, ocean character unit, landscape character units, and viewer experience would have similar **major** adverse impacts to those of the Proposed	*Alternative C-2*: Under Alternative C-2, the seascape character units, ocean character unit, landscape character units, and viewer experience would have similar **major** adverse impacts to those of the Proposed	*Alternative C-3*: Under Alternative C-3a, C-3b, and C-3c, the seascape character units, ocean character unit, landscape character units, and viewer experience would have similar **major** adverse impacts to	*Preferred Alternative C-3b:* The installation of WTGs and other facilities associated with the SRWF would result in changes to the existing seascape character. The seascape character

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
	Vineyard Wind 1 project and South Fork project would have impacts on a viewer's experience, as they change the expected environment and contrasts to the previous seascape, landscape, and open ocean environments. *Cumulative Impacts of the No Action Alternative:* The cumulative impacts of the No Action Alternative would result in **major** impacts on visual and scenic resources within the GAA due to the presence of new structures, nighttime lighting, land disturbance, and increased traffic.	moderate to major adverse impacts to the seascape character and landscape character. Onshore structures would be located either underground or in previously developed areas, which would result in negligible impacts during O&M activities. *Cumulative Impacts of the Proposed Action:* BOEM anticipates that the cumulative impacts on scenic and visual resources in the GAA would be **major** adverse. In context of reasonably foreseeable environmental trends, the Proposed Action would contribute a detectable increment to the presence of structures, lighting, traffic, land disturbance, port utilization, and accidental releases. The Proposed Action	Action. The negligible chances in distance of the WTGs would be unnoticeable to the casual viewer at the distance and impacts to scenic and visual resources would be similar. *Cumulative Impacts of Alternative C-1*: In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-1 to the cumulative impacts on scenic and visual resources would be detectable. However, the differences in impacts among the Proposed Action and Alternative C-1 would be negligible. BOEM anticipates that the cumulative impacts of Alternative C-1 would be **major** adverse.	Action. The negligible chances in distance of the WTGs would be unnoticeable to the casual viewer at the distance and impacts to scenic and visual resources would be similar. *Cumulative Impacts of Alternative C-2*: In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-2 to the cumulative impacts on scenic and visual resources would be detectable. However, the differences in impacts among the Proposed Action and Alternative C-2 would be negligible. BOEM anticipates that the cumulative impacts of Alternative C-2 would be **major** adverse.	those of the Proposed Action. The negligible changes in distance of the WTGs relocation and reduction of total WTGs installed would be unnoticeable to the casual viewer and impacts to scenic and visual resources would be similar. *Cumulative Impacts of Alternative C-3*: In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-3a, C-3b, and C-3c to the cumulative impacts on scenic and visual resources would be detectable. However, the differences in impacts among the Proposed Action and Alternative C-3a, C-3b, and C-3c would be negligible. BOEM anticipates that the cumulative impacts of Alternative C-3a,	units, open ocean character unit, landscape character units, and viewer experience would have **major** adverse impacts. *Cumulative Impacts of Alternative C-3b:* In context of reasonably foreseeable environmental trends, the incremental impacts contributed by Alternative C-3b to the cumulative impacts on scenic and visual resources would be detectable. However, the differences in impacts among the Proposed Action and Alternative C-3b would be negligible. BOEM anticipates that the cumulative impacts of Alternative C-3b would be **major** adverse.

Resource	No Action	Proposed Action	Alternative C-1	Alternative C-2	Alternative C-3	Preferred Alternative
		would contribute to the cumulative impacts through changes in seascape character units, ocean character units, landscape character units, and viewer experience.			C-3b, C-3c would be **major** adverse.	

BOEM = Bureau of Ocean Energy Management, CWA = Clean Water Act, IPF = impact-producing factor, NARW = North Atlantic right whale, NOAA = National Oceanic and Atmospheric Administration, WTG = wind turbine generator.

[1] BOEM assessed the impacts of the No Action Alternative and action alternatives to marine mammals without the environmental baseline to support determinations under the Marine Mammal Protection Act.

[2] BOEM provides the range of impacts for the individual IPFs evaluated by species groups for the assessment of impacts of the No Action Alternative and action alternatives with the baseline. Individual IPFs were not evaluated for the No Action Alternative, and so impact conclusions are presented as a single determination by species group.

[3] Major impacts are identified here rather than a range because individual IPFs were not evaluated for the No Action Alternative. Based on the status and current population of the North Atlantic right whale, the loss of a single North Atlantic right whale would affect the population.

[4] BOEM provides the range of impacts for the individual IPFs evaluated by species groups for the assessment of the impacts of the No Action Alternative and action alternatives with the baseline in combination with ongoing and other foreseeable future activities. The individual rating includes all IPFs combined.

3.3. Environmentally Preferable Alternatives

BOEM is required by CEQ regulations to identify in the ROD the *environmentally preferable alternative(s)* (40 C.F.R. § 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. § 46.30), the DOI's responsible official, who is approving this ROD, has determined that the environmentally preferable alternatives are the No Action Alternative, Sub-Alternative C-3c, and Sub-Alternative C-3b (Preferred Alternative).

Adverse environmental impacts in the Project area would generally be less under the No Action Alternative because construction, O&M, 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 Project would be avoided. Nonetheless, the No Action Alternative would likely 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 disproportionately 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 in U.S. offshore wind energy facilities, which in turn could result in the loss of beneficial cumulative impacts, such as increased employment, improvements in air quality, and reductions in greenhouse gas emissions. As noted in Final EIS, Appendix Q, Section 3.16, public and private investors have committed substantial amounts of new funding to offshore wind development, including commitments to develop manufacturing facilities, and advancement of the Project is critical to continue to attract investment in the U.S. offshore wind market.

Offshore wind has been identified as a key factor for Atlantic states to reach their greenhouse gas emission goals. It is a presently 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, Alternative C would allow 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 Alternative C could encourage investment in 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.

Alternative C-3 was developed in response to the infeasibility of the other habitat impact minimization alternatives previously analyzed in the Sunrise Wind Draft EIS, which considers the feasibility constraints due to the presence of glauconite sands within the Lease Area, while also still considering benthic habitat and presence of Atlantic cod within the developed NMFS Priority Areas. Under the Sub-Alternative C-3b (924 MW Option), zero WTGs would be removed from areas of cod spawning activity (Priority Area 1). Two WTGs would be effectively excluded from development in NMFS Priority Area 2 (areas of complex habitat), and eleven WTGs would be effectively excluded from development in NMFS Priority Area 3 (areas of

scattered boulders) due to the infeasibility of installing WTGs at those locations because of glauconite soils. While Alternative C-3 was not developed for habitat impact minimization, the overall exclusion of these 13 WTGs from the NMFS Priority Areas would result in an overall reduction in benthic impacts to NMFS Priority Areas, in comparison to the Proposed Action. Sub-Alternative C-3b (924 MW) is the largest capacity project that would result in the largest avoidance in GHG emissions. Under Sub-Alternative C-3c, which allows for 80 WTGs in 84 potential positions (880 MW Option), 4 WTGs would be excluded from development in NMFS Priority Area 1 in order to reduce cod spawning and benthic habitat impacts in comparison to the Proposed Action. Additionally, two WTGs would be effectively excluded from development in NMFS Priority Area 2, and eleven WTGs would be effectively excluded from development in NMFS Priority Area 3, due to the infeasibility of installing WTGs at those locations because of glauconite soils. The overall exclusion of these 17 WTGs from the NMFS Priority Areas would result in an overall reduction in benthic habitat impacts to NMFS Priority Areas, in comparison to the Proposed Action. Sub-Alternative C-3c (880 MW) would minimize (to the extent technically possible) impacts resulting from the proposed temporary disturbance and long-term habitat conversion of EFH, including Cox Ledge, as well as disruption to Atlantic cod spawning during project construction and potential loss of Atlantic cod spawning habitat. Total long-term impacts of Sub-Alternative C-3c (880 MW) would be 82.94 acres, 4.16 acres less than Sub-Alternative C-3b (924 MW).

4. Mitigation, Monitoring, and Reporting

Appendix H of the Final EIS identifies measures to avoid, minimize, and mitigate adverse environmental impacts that could result from the proposed activities as well as the anticipated enforcing agency.[9]

BOEM is adopting all the measures identified in Table H-2 (measures resulting from consultations) of Appendix H of the Final EIS under BOEM's authority to enforce, except for 7 of the Essential Fish Habitat Conservation Recommendations (CRs). BOEM fully or partially adopted 37 of the 44 Essential Fish Habitat CRs which are identified in Table H-2 of Appendix H of the Final EIS. CRs #30-39 are within USACE jurisdiction. BOEM has decided to not adopt CR #1 as proposed because BOEM intends to require a restriction on all pile driving between January 1 and April 30. This measure, while primarily focused on the highly endangered North Atlantic right whale, will also confer benefits to spawning Atlantic cod in the Project area for January through March. BOEM also intends to require that Sunrise Wind develop a Sequencing Plan to avoid and minimize pile driving and construction in and near NMFS Priority Area 1. BOEM believes the proposed approach will minimize potential impacts to spawning cod to the maximum extent practicable. BOEM is not adopting CR #2 because the implementation of a time-of-year restriction for bottom-disturbing activities in the lease area or federal portions of export cable corridors would significantly impact the overall construction schedule. BOEM is not adopting CR #4 because sub-bottom profiling would need to potentially occur throughout the construction period to determine the appropriate depth of lowering for subsea cables and may be needed for other installation activities as well. BOEM is not adopting CR #5 because removing or relocating the specified WTGs is technically and economically infeasible. BOEM is not adopting CR #7 because relocation of the OCS-DC outside of Priority Area 1 was already considered as a Project alternative in the Sunrise Wind Draft EIS. The alternative was dismissed because the location of the OCS-DC was selected specifically because it is centrally located to balance length of the export and collection infrastructure and account for the electrical constraints on the number of WTGs that can be connected to a single interarray cable. BOEM has decided not to adopt CR #11 because Sunrise Wind committed to an HVDC system assuming a 924-MW project and has already entered into contracts to purchase 84 WTGs and foundations. However, BOEM intends to include a WTG Position Prioritization condition to prioritize removal of WTGs in and near Priority Area 1, if any WTGs can be removed. BOEM has decided to not adopt CR #40 because BOEM believes that the Fisheries and Benthic Monitoring Plan and the opportunities for agency input are adequate for monitoring potential Project impacts to benthic habitat and benthic community structure in the Project area.

BOEM is adopting all measures identified in Table H-3 (other measures) of Appendix H of the

[9] Appendix H separately identifies measures proposed by the Lessee as a part of its COP. The Lessee is required, as a condition of BOEM's approval, to conduct activities as proposed in its approved COP, which includes all the applicant-proposed mitigation measures identified in Appendix H.

Final EIS, except for those that are identified in those tables as outside of BOEMs authority to enforce.

The mitigation, monitoring, and reporting measures that BOEM intends to include as conditions of approval are identified in this ROD in Appendix A. Consultation under Section 106 of the National Historic Preservation Act concluded on March 25, 2024, and stipulations included in the executed Memorandum of Agreement (MOA) for Section 106 are included in Appendix A to the ROD. Appendix A also clarifies the language of certain measures that were identified in the Final EIS to ensure that they are enforceable, or to reflect updates to measures being considered by NMFS for the final ITR and associated LOA.

5. Final Agency Decisions

5.1. The Department of the Interior Decision

After carefully considering the Final EIS alternatives, including comments on the Draft EIS, DOI has decided to approve, with modifications, the COP for Sunrise Wind adopting the Preferred Alternative (Alternative C-3b). By selecting the Preferred Alternative (hereinafter the "selected alternative"), DOI will allow for the construction, operation, maintenance, and eventual decommissioning of a 924 MW wind energy facility consisting of 84 WTGs and one OCS-DC within Lease Area OCS-A 0487 and associated export cables, which would occur offshore New York within the range of design parameters outlined in the COP, subject to applicable mitigation measures. Similar to the Proposed Action, Sunrise Wind would utilize WTGs in a 1 by 1-nautical-mile offset grid pattern (east-west/north-south gridded layout). The selected alternative was developed to address concerns regarding pile refusal due to glauconite sands in the eastern portion of the Lease Area. It was not specifically developed to minimize impacts to benthic habitat and fisheries resources, but the further removal of turbines would result in reduced impacts to those resources due to a reduced project size.

WTGs in the southeastern portion of the Lease Area are unsuitable for development based on the presence of glauconite sands. Because of the infeasibility of installing WTGs at certain locations due to glauconite soils, BOEM developed the selected alternative which would result in zero WTGs excluded from NMFS Priority Area 1, two WTGs excluded from development in NMFS Priority Area 2 where complex habitats occur, and eleven WTGs excluded from development in NMFS Priority Area 3, areas of scattered boulders. The selected alternative would include micrositing of WTG positions and certain segments of inter-array cable to avoid complex benthic habitats, boulders, UXOs, shipwrecks, and other sensitive seafloor resources.

5.1.1 Bureau of Ocean Energy Management Decision

Following publication of the Draft EIS, BOEM received additional information from Sunrise Wind regarding geotechnical feasibility for the Proposed Action and the Habitat Impact Minimization Sub-Alternatives C-1[10], C-2a, C-2b, C-2c, and C-2d. Between the Draft EIS and Final EIS, BOEM conducted an independent review of the information, including engagements with the National Renewable Energy Laboratory (NREL), BOEM's Engineering and Technical Review Branch (ETRB), and BOEM's Economics Division. A summary of BOEM's findings is described below.

On March 2, 2023, Sunrise Wind provided BOEM with a memorandum analyzing the geotechnical feasibility of the potential 102 WTG positions included in the Proposed Action. This geotechnical feasibility memorandum indicated that, of the 102 potential WTG positions within the Proposed Turbine Layout, only 80- 11 MW WTG positions were feasible and 22 of

[10] Under Alternative C-1, up to 8 WTG positions would be removed from NMFS Priority Area 1 as described in the Sunrise Wind Draft EIS. Similarly, under Alternative C-2, up to 8 WTG positions would be removed from NMFS Priority Areas and 12 WTG positions would be relocated to the eastern side of the Lease Area, including in areas of NMFS Priority Area 3 (sub alternatives C-2a, C-2b, C-2c, and C-2d).

the 11-MW WTG positions were infeasible due to presence of glauconitic sands. Per Sunrise Wind's NYSERDA OREC, 880 MW is the minimum capacity required for the Project, with the ability to deliver a maximum capacity of 924 MW of offshore wind energy.

Under Alternative C-1, 94 WTGs were proposed for installation in 102 positions, excluding 8 positions from NMFS Priority Area 1. However, due to glauconite sands feasibility analysis, only 72 of the proposed positions remain available for installation under Alternative C-1, which would only produce 792 MW and would not meet the Project's goal of delivering the required 880 MW of offshore wind energy. Similarly, under Alternative C-2, 94 WTGs were proposed for installation, with the removal of 8 and relocation of 12 WTGs. Due to glauconite sands, fewer than 12 WTG positions would be able to be relocated to the eastern portion of the Lease Area. In addition, 22 positions that were part of the original layout were determined to be infeasible for development due to glauconite sands, resulting in a total of 31 infeasible WTG positions under Alternative C-2. Therefore, only 63 of the proposed positions remain available for installation, resulting in only 693 MW, which does not meet the Project's goal of delivering the required 880 MW of offshore wind energy.

BOEM engaged its subject matter experts within BOEM's Environmental Branch for Renewable Energy, ETRB, BOEM's Economics Division, as well as NREL, to review and advise on data and information received and considered in the development of Sub-Alternatives C-3a, C-3b, and C-3c.

The rationale for which WTGs would be removed from the Habitat Impact Minimization Alternative C was developed through combining the most recent available acoustic telemetry Atlantic cod data, as well as discussions with NMFS.

BOEM's independent review confirmed the infeasibility of Alternatives C-1 and C-2 analyzed in the Sunrise Wind Draft EIS. BOEM subsequently developed an additional Fisheries Habitat Impact Minimization Alternative (Alternative C-3), which considers the feasibility constraints due to the presence of glauconite sands within the Lease Area, while also still considering impacts to benthic habitat and the presence of Atlantic cod within the NMFS Priority Areas. Under the initial development of Alternative C-3, in addition to the 80 feasible positions, 7 potential spare WTG positions (WTG positions #77, #78, #107, #108, #136, #137, and #154) were identified, allowing for the potential exclusion of up to 7 WTG positions within NMFS Priority Areas and relocation of those NMFS Priority Area WTG positions into the potential spare WTG positions. Under Sub-Alternative C-3a, up to 87 WTGs would be installed in the 87 potential positions. Under Sub-Alternative C-3b, up to 84 WTGs would be installed in the 87 potential positions. Under Sub-Alternative C-3c, 80 WTGs would be installed in the 87 positions.

On June 30, 2023, Sunrise Wind provided the final geotechnical feasibility of the 7 potential spare positions in the northeastern portion of the lease area and not originally included in the Proposed Action (WTG positions #78, #77, #108, #107, #137, #136 and #154). Sunrise Wind determined WTG positions #77, #107, and #137 were infeasible primarily due to presence of thick layers of glauconitic sands and in one case dense sands below the glauconite layer. This

final geotechnical feasibility analysis indicated that only 4 of the 7 additional assessed WTG positions were feasible for installation, leaving a total of up to 84 11-MW WTG positions feasible for installation. Thus, the feasible version of Sub-Alternative C-3a (with 84 WTGs), is effectively the same as the preferred alternative C-3b. Sub-Alternatives C-3a, C-3b and C-3c remained technically feasible. Under Sub-Alternative C-3b, which allows up to 84 WTGs to be installed within 84 potential positions, there are four feasible WTG configurations for BOEM's consideration: (i) Alternative C-3b (891 MW Option); (ii) Alternative C-3b (902 MW Option); (iii) Alternative C-3b (913 MW Option); and (iv) Alternative C-3b (924 MW Option).

Under the Alternative C-3b (891 MW Option), three WTGs would be excluded from development in NMFS Priority Area 1 in order to reduce cod spawning and benthic habitat impacts in comparison to the Proposed Action. Two WTGs would be effectively excluded from development in NMFS Priority Area 2 and eleven WTGs would be effectively excluded from development in NMFS Priority Area 3 due to the infeasibility of installing WTGs at those locations because of glauconite soils. The overall exclusion of these 16 WTGs from the NMFS Priority Areas would result in an overall reduction in benthic habitat impacts to NMFS Priority Areas, in comparison to the Proposed Action. Under the Sub-Alternative C-3b (902 MW Option), two WTGs would be excluded from development in NMFS Priority Area 1 in order to reduce benthic habitat impacts in comparison to the Proposed Action. Two WTGs would be effectively excluded from development in NMFS Priority Area 2, and eleven WTGs would be effectively excluded from development in NMFS Priority Area 3 due to the infeasibility of installing WTGs at those locations because of glauconite soils. The overall exclusion of these 15 WTGs from the NMFS Priority Areas would result in an overall reduction in benthic impacts to NMFS Priority Areas, in comparison to the Proposed Action.

Under the Sub-Alternative C-3b (913 MW Option), one WTG would be excluded from development in NMFS Priority Area 1 in order to reduce cod spawning and benthic habitat impacts in comparison to the Proposed Action. Additionally, two WTGs would be effectively excluded from development in NMFS Priority Area 2, and eleven WTGs would be effectively excluded from development in NMFS Priority Area 3 due to the infeasibility of installing WTGs at those locations because of glauconite soils. The overall exclusion of these 14 WTGs from the NMFS Priority Areas would result in an overall reduction in benthic impacts to NMFS Priority Areas, in comparison to the Proposed Action.

Lastly, under the Sub-Alternative C-3b (924 MW Option), zero WTGs would be removed from Priority Area 1. Two WTGs would be effectively excluded from development in NMFS Priority Area 2, and eleven WTGs would be effectively excluded from development in NMFS Priority Area 3 due to the infeasibility of installing WTGs at those locations because of glauconite soils. The overall exclusion of these 13 WTGs from the NMFS Priority Areas would result in an overall reduction in benthic impacts to NMFS Priority Areas, in comparison to the Proposed Action.

Under Sub-Alternative C-3c, which allows for 80 WTGs in 84 potential positions (880 MW Option), 4 WTGs would be excluded from development in NMFS Priority Area 1 in order to reduce cod spawning and benthic habitat impacts in comparison to the Proposed Action. Two

WTGs would be effectively excluded from development in NMFS Priority Area 2, and eleven WTGs would be effectively excluded from development in NMFS Priority Area 3, due to the infeasibility of installing WTGs at those locations because of glauconite soils. The overall exclusion of these 17 WTGs from the NMFS Priority Areas would result in an overall reduction in benthic habitat impacts to NMFS Priority Areas, in comparison to the Proposed Action.

In summary, five geotechnically feasible Habitat Impact Minimization Sub-Alternatives under Alternative C-3 remained for BOEM's consideration as the Preferred Alternative. The below analysis comparing (1) the potential impacts from the smallest capacity project (880 MW Option) that would reduce the most potential impacts to EFH and Atlantic cod spawning and (2) the largest capacity project (924 MW Option) that would result in the largest avoidance in GHG emissions was one of two major considerations driving BOEM's selection of the Preferred Alternative. In addition, BOEM considered the economic consequences of selecting a Sub-Alternative with fewer than 84 positions which further informed the selection of the Preferred Alternative. From an economics perspective, choosing fewer than 84 WTGs (880 MW) would make the Sunrise Wind project less profitable to the developer and the developer has asserted to BOEM that it needs all 84 positions to achieve economic viability.

Selecting the smallest capacity project, Sub-Alternative C-3c (880 MW), would minimize (to the extent technically possible) impacts resulting from the proposed temporary disturbance and long-term habitat conversion of EFH, including Cox Ledge, as well as temporary disruption to Atlantic cod spawning during project construction and potential loss of Atlantic cod spawning habitat. Sub-Alternative C-3c (880 MW) would result in long-term impacts to 30.38 acres of complex habitat, 2.09 acres less than Sub-Alternative C-3c (924 MW). Total long-term impacts of Sub-Alternative C-3c (880 MW) would be 82.94 acres, 4.16 acres less than Sub-Alternative C-3b (924 MW) (Table 5-1). Additional tables with areal extent of short-term and long-term impacts to habitat types for C-3b and C-3c sub-alternatives can be found in the Sunrise Wind Farm Benthic Habitat Mapping and Benthic Assessment dated August 2023.

Table 5-1: Sunrise Wind Sub Alternative C-3b and C-3c Habitat Impact Tables

Alternative	Sub Alternative Alt C-3b (891 MW Option)	Sub Alternative Alt C-3b (902 MW Option)	Sub Alternative Alt C-3b (913 MW Option)	Sub Alternative Alt C-3b (924 MW Option)	Sub Alternative Alt C-3c (880 MW Option)
Total Long-Term Impacts, Complex Habitat (acres)	31.42	31.42	32.47	32.47	30.38
Total Long-Term Impacts, Large Grained Complex Habitat (acres)	0.0001	0.0001	0.0001	0.0001	0.0001
Total Long-Term Impacts, Soft Bottom Habitat	52.57	53.61	53.61	54.63	52.57

(acres)					
Total Long-Term Impacts (acres)	83.98	85.02	86.08	87.10	82.94

Selecting the Sub-Alternative C-3b (924 MW Option) would meet the OREC's "Maximum Project Capacity." It would protect the environment and satisfy more than 10% of the Climate Leadership and Community Protection Act (CLCPA), which established greenhouse gas reduction mandates to combat climate change.[11] Choosing 84 turbines is also efficient because it prevents waste and spreads out fixed costs including the costly high voltage direct current transmission system over a greater number of turbines. This benefits New York ratepayers by providing lower cost clean energy. Sunrise Wind has already lost 23% of its potential turbine positions due to the presence of glauconite in the lease area and has already entered into contracts to purchase 84 WTGs and foundations. Since each foundation is designed for the specific geotechnical conditions at each location, it is unknown if monopiles could be used on other offshore wind projects if fewer than 84 positions are approved.

Selection of Alternative B would have resulted in the construction, O&M, and eventual decommissioning of an up-to 1,034 MW wind energy facility consisting of up to 94 WTGs and one OCS-DC in the Lease Area. Associated export cables would occur offshore New York and within the range of the design parameters outlined in the COP (Sunrise Wind 2023), subject to applicable mitigation measures. WTGs would be placed in all potential 94 positions in the lease area, including in the NMFS Priority areas. WTG spacing and gridded layout of the OCS would be the same under Alternative B as the selected alternative, however there would have been more WTGs. Alternative B would have had more permanent seafloor alteration compared to the selected alternative and would result in more total impacts on resources of concern than the selected alternative. Alternative B would allow for 110 MW of additional energy production compared to the other action alternatives. However, other action alternatives still allowed for Sunrise Wind to meet Sunrise Wind's minimum capacity (880 MW) of offshore wind energy to support goals of New York State's CLCPA, while accounting for geotechnically infeasible WTGs. Therefore, BOEM has not selected the Proposed Action as the selected alternative.

Under the No Action Alternative, DOI would not approve the Sunrise Wind Project. In addition, no other permits or authorizations for this proposed Project would be issued. Adverse environmental impacts across resources would generally be less under the No Action Alternative as no construction, operation, or decommissioning activities would occur on the OCS. As a result, impacts on physical, biological, social, or cultural resources from the selected alternative would be avoided. However, the No Action Alternative would still be expected to result in moderate, long-term, adverse impacts on regional air quality because other energy generation

[11] Based on the calculations in the Sunrise Wind COP and the Final EIS, the avoided GHG emissions assume an 880 MW array with either a 40% (low) and 50% (high) capacity factor. This would put avoided emissions per turbine between 25,928 and 32,410 CO2e tons annually. The difference between a 924 MW wind farm and an 880 MW wind farm's avoided emissions for this project would be an additional avoided 103,712 and 129,640 CO2e tons annually. For reference, 103,712 CO2e tons are equivalent to 20,937 gasoline-powered cars being driven for one year, or 11,858 homes' energy use for a year.

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 climate change. The No Action Alternative was not selected in this ROD because it would not allow for the development of DOI-managed resources and would not meet the purpose and need.

In summary, DOI considered which of the action alternatives would result in fewer environmental impacts and use conflicts, while meeting the purpose and need for the action. The Final EIS found that Alternative C-3b would result in fewer impacts than some of the other action alternatives and is consistent with the purpose and need. Accordingly, DOI has selected the C-3b 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 harm associated with the selected alternative and the approval of the COP. Appendix A of this ROD identifies the mitigation, monitoring, and reporting requirements that will be adopted as terms and conditions of COP approval. Additional terms and conditions, which would address mitigation, monitoring and reporting requirements, may also be included in the subsequently issued permits, including those of NPS. The mitigation and monitoring measures identified in Appendix A are representative of those included in Appendix H of the Final EIS. Concurrent with the NEPA process, BOEM conducted a thorough National Historic Preservation Act Section 106 review of the Project with Federally recognized Tribes, the New York State Historic Preservation Office (SHPO), the Massachusetts SHPO, the Rhode Island SHPO, the ACHP, and consulting parties and, through the Section 106 review, identified historic properties and assessed potential effects to historic properties, and identified measures to resolve adverse effects. Draft measures to resolve adverse effects were described and analyzed in the Draft EIS. After the Final EIS was made available to the public, BOEM addressed consulting party comments on the MOA and distributed the MOA for signature by the consulting parties. The Section 106 review concluded with the execution and implementation of the MOA on March 25, 2024, which was signed by BOEM, ACHP, and New York, Rhode Island, Connecticut, and Massachusetts SHPOs. The MOA memorializes measures that will resolve the selected alternative's adverse effects to historic properties including avoidance, minimization, and mitigation measures.

As set forth in the Final EIS, all alternatives, including the selected alternative, are anticipated to have up to major adverse impacts to the following resource areas:

Commercial Fisheries and For-Hire Recreational Fishing: Major adverse impacts are anticipated to occur due to the presence of structures (e.g., through gear loss, navigational hazards, space use conflicts, potential impacts on fisheries surveys, new cable emplacement and pile-driving noise) (see Final EIS section 3.14). Such adverse impacts would be mitigated through a requirement for Sunrise Wind to establish and implement a direct compensation program to provide monetary compensation to commercial and for-hire recreational fishermen impacted by the Project and through a requirement for Sunrise Wind to maintain a fisheries gear loss claims procedure

throughout the life of the Project. BOEM is including terms and conditions 6.1 and 6.2 (see ROD Appendix A) to address this issue.

Cultural Resources: Mitigation was developed with consulting parties through the Section 106 consultation process to resolve adverse effects on historic properties pursuant to 36 C.F.R. § 800.6 and are executed in the MOA. Mitigation is also described in section 3.15.11 of the Final EIS. Mitigation that would reduce major impacts on onshore and offshore cultural resources are Sunrise Wind's compliance with stipulations outlined in the MOA, such as compliance with horizontal protective buffers for all 51 identified marine archaeological resources (43 ancient submerged landforms and 8 potential shipwrecks), implementation of actions that are consistent with the Post Review Discovery Plan for marine archaeology (enforcement of this measure would be under the jurisdiction of New York SHPO if in state waters, and BOEM/BSEE if on the OCS), implementation and compliance with temporary fencing to avoid historic properties in the terrestrial area of potential effect, and implementation of and compliance with archaeology monitoring to avoid resources.

Marine Mammals, North Atlantic Right Whale (NARW): Under all alternatives, including the No Action alternative, when considering ongoing and planned activities, major adverse impacts to NARWs could occur due to the risk of vessel strikes and fishing gear entanglement posed by those activities. The incremental impacts of the Project alone are not expected to include entanglements or vessel strikes. Mitigation measures such as vessels maintaining a safe distance from marine mammals and reduced vessel speeds are designed to avoid interactions with marine mammals. The incremental impacts of all action alternatives to NARWs would be minor due to implementation of several mitigation measures, e.g., clearance and shutdown zones, use of sound attenuation measures, numerous vessel strike avoidance measures, and use of Protected Species Observers (PSO) and Passive Acoustic Monitoring (PAM).

Other Uses, Scientific Research and Surveys: As set forth in the FEIS, the selected alternative is anticipated to have major adverse impacts to NMFS Northeast Fisheries Science Center scientific surveys (hereinafter "NMFS surveys"). NMFS and BOEM have developed the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region* (Hare et al. 2022) that describe the impacts on development on NMFS surveys, and the actions that can be implemented to address the adverse impacts. BOEM and NMFS are of the view that the solution is a collaborative effort between both agencies and the offshore wind industry to establish project specific monitoring programs that follow specific guidelines, thereby allowing the information to be combined regionally into a programmatic approach (see Final EIS section 3.20). There are 14 NMFS scientific surveys that are impacted by wind energy development in the northeast region. Ten of these surveys overlap with the Project. BOEM is including term and condition 6.3 (see ROD Appendix A) to address this issue. Consistent with NMFS and BOEM Survey Mitigation strategy actions 1.3.1, 1.3.2, 2.1.1, and 2.1.2 in the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region*, the Lessee must submit to BOEM a survey mitigation agreement between NMFS and the Lessee. The survey mitigation agreement must describe how the Lessee will mitigate the Project's impacts on the ten NMFS surveys. The Lessee must conduct activities in accordance with such agreement. If the Lessee and NMFS fail

to reach a survey mitigation agreement, then the Lessee must submit a survey mitigation plan to BOEM and NMFS.

Scenic and Visual Resources: Major adverse impacts are anticipated to occur due to the presence of offshore WTGs and the OCS-DC and associated nighttime lighting changing the character of the open ocean landscape (see Final EIS 3.22). These adverse impacts would be mitigated through a requirement for Sunrise Wind to use of uniform WTG spacing, design, speed, height, and rotor diameter to reduce visual contrast and decrease visual clutter. Additionally, Sunrise Wind must equip all WTGs and electrical service platforms (ESPs) with Aircraft Detection Lighting System to reduce the duration of nighttime lighting. The WTGs and ESPs will be lit and marked in accordance with FAA and USCG lighting standards, consistent with *BOEM's Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development* (April 28, 2021) to reduce light intrusion (see Appendix A 7.10).

Additional engineering and technical terms and conditions that will be required with COP approval are included in Appendix A of this ROD.[12] Sunrise 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. § 285.633(b)). Sunrise Wind must also comply with all other applicable requirements of 30 C.F.R. Parts 285 and 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 where they conflict and does not hold one as controlling over all others is consistent with the duties required under subsection 8(p)(4) of OCSLA, which requires the Secretary to ensure that approved activity is carried out in a manner that provides for Congress's enumerated goals.

My approval of this decision constitutes the final decision of DOI. The action taken herein is pursuant to an existing delegation of authority.

STEVEN FELDGUS Digitally signed by STEVEN FELDGUS
Date: 2024.03.25 17:43:32 -04'00'

Steven H. Feldgus
Principal Deputy Assistant Secretary
Land and Minerals Management

Date

[12] 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 Sunrise Wind.

5.1.2 National Park Service Decision

The Seashore is located on Fire Island, a barrier island lying south of Long Island in Suffolk County, New York. The Seashore encompasses 19,580 acres of upland, tidal, and submerged lands along a 26-mile stretch of the 32-mile barrier island, part of a much larger system of barrier islands and bluffs stretching from New York City to the very eastern end of Long Island at Montauk Point. Easily accessed on Fire Island are nearly 1,400 acres of federally designated wilderness that include an extensive dune system, centuries-old maritime forests, solitary beaches, and the Fire Island Lighthouse. The purpose of the Seashore is to conserve, preserve, and protect Fire Island's larger landscape including its relatively undeveloped beaches, dunes, and other natural features and processes, and its marine environment; to conserve, preserve, and protect the historic structures, cultural landscapes, museum collections, and archeological resources associated with the Seashore including the Fire Island Light Station and the William Floyd Estate; and to preserve the primitive and natural character of the Otis Pike Fire Island High Dune Wilderness and protect its wilderness character. 16 U.S.C. § 459e(a) (Seashore establishing legislation); *Foundation Document Fire Island National Seashore* (Foundation Document), 2018; *see also* 16 U.S.C. §§ 459e-6(b) (protection of Otis Pike Fire Island High Dune Wilderness); 16 U.S.C. § 1131 *et seq.* (Wilderness Act); Pub. L. No. 96-585 (designating Otis Pike Fire Island High Dune Wilderness).

A small portion of the Sunrise Wind project is within federally managed waters and submerged lands within the Seashore boundary.[13] As contemplated in the action alternatives, a portion of the proposed Sunrise Wind export cable will lie within submerged lands administered by the NPS, where the United States holds an easement for use and occupation by the United States for the purposes of the Seashore, from the mean high-water line to 1,000 feet into the Atlantic Ocean. This 1,000-foot portion of the project requires an NPS ROW permit to proceed. Sunrise Wind submitted a SF-299 application for the ROW permit in June 2022. The application included information to support the use or occupancy of NPS-administered lands or waters within the Seashore to operate and maintain offshore wind farm power cables within a conduit buried in the submerged land. The conduit will be installed by horizontal directional drill (HDD) boring at a depth of forty-five to sixty (45-60) feet below the ocean bottom with the two power cables and a fiber optic cable then pulled through and connected to onshore infrastructure within Smith Point County Park. In addition to the ROW, SUPs will be required for construction of the conduit and cables (1) in those submerged lands and the overlying waters of the Atlantic Ocean and (2) for transport of equipment and infrastructure materials within the Intracoastal Waterway within Seashore boundaries.

The NPS may issue a ROW permit only on a finding that the ROW is not incompatible with the public interest. 54 U.S.C. § 100902. The development of renewable energy, including the Sunrise Wind project, benefits air quality and other natural resources by potentially reducing the long-term greenhouse gas emissions from other energy sources. The project should improve regional air quality because other energy generation facilities would be needed to meet future power demands. Additionally, the project is consistent with Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, which supports renewable energy as a means to countering potential adverse

[13] Most of the export cables, fiber optic cable and conduit placement within the Seashore boundary will occur in Smith Point County Park, a Suffolk County, NY park. The NPS ROW and SUPs do not pertain to those of the Sunrise Wind project within Smith Point County Park.

impacts of climate change. While the project will impact some of the Seashore's resources, those impacts are not expected to be significant. Thus, the NPS has determined that Sunrise Wind's power cables bringing renewable energy onshore through a small portion of the Seashore's submerged lands is not incompatible with the public interest. Additionally, ROW permits may only be issued when there is no practicable alternative to the use of lands and waters within a System unit. Alternative locations for the underground cabling were evaluated during the EIS process. After close review, the NPS determined that there is no feasible, practicable alternative for bringing electricity from the Sunrise Wind WTGs onshore except through the Seashore. Thus, the NPS may issue a ROW permit consistent with the statutory authority in 54 U.S.C. § 100902 and NPS policy. A description of the other alternatives the NPS considered, and their feasibility are described in detail in Section 2.0 of the Final EIS.

The Selected Alternative will also require SUPs for construction activities in NPS waters and submerged lands. There must be specific authority in the law to allow the type of special park use requested. Here, the SUPs are attendant to the ROW, authorized pursuant to 54 U.S.C. § 100902. SUPs may be issued so long as the activity will not result in derogation of the values and purposes for which the park was established. The purpose of the Seashore is to conserve, preserve, and protect Fire Island's larger landscape including its relatively undeveloped beaches, dunes and other natural features and processes, and its marine environment; to conserve, preserve, and protect the historic structures, cultural landscapes, museum collections, and archeological resources associated with the Seashore including the Fire Island Light Station and the William Floyd Estate; and to preserve the primitive and natural character of the Otis Pike Fire Island High Dune Wilderness and protect its wilderness character (Foundation Document, page 4). The Selected Alternative does not alter the undeveloped beaches, dunes, or other natural features and processes. The construction activities associated with the installation of the cable and conduit will have short-term (no more than 2 years) impacts on some marine organisms, including benthic organisms and some fish; however, those species will not experience long-term or population-level impacts. Water quality, once the installation is complete, will not be impacted within the Seashore boundaries. Impacts to these resources are relatively minor and temporary and do not derogate the marine environment of the Seashore over the long-term. Additionally, the Selected Alternative has no impacts on the other resources enumerated in the Seashore's purpose statement above. Thus, the issuance of SUPs for the Selected Alternative will not result in derogation of the values and purposes for which the Seashore was established. SUPs must also include conditions for using the park that take into consideration safety, resource protection, and normal park visitation. SUPs issued for the Sunrise Wind project will include terms and conditions to address these factors, including additional mitigation plans, oil spill response plans, prohibitions against landing onshore, prohibitions against activities within the Otis Pike Fire Island High Dune Wilderness, and provisions to ensure that impacts to visitor access are limited.

The NPS has also considered whether issuance of the ROW permit and SUPs would impair Seashore resources or values. For the reasons explained in the NPS Non-Impairment Determination (Section 5.1.2.1), the NPS has determined that the issuing the ROW and SUPs, and moving forward with the Selected Alternative, will not impair Seashore resources or values.

As a cooperating agency under NEPA, the NPS participated in the development of the Draft and Final EIS to ensure that the potential actions described in the SF-299 were analyzed in the Draft EIS

and Final EIS. As noted above in Section 3.3 of this ROD, the no action alternative and the Selected Alternative both are environmentally preferable alternatives. While the Selected Alternative results in localized environmental impacts within the Project area, including within the Seashore and its environs, those impacts resulting from the NPS' permitting decisions are anticipated to be minor and temporary. At the same time, the Selected Alternative will improve the regional air quality over the long-term and aid Atlantic states in reaching their greenhouse gas emission goals in the effort to reduce and reverse global climate change. *See* Section 3.3 of this ROD.

NEPA requires agencies to consider a reasonable range of alternatives to a proposed action. *See* 40 C.F.R. §§ 1502.10(a)(5), 1502.14; 43 C.F.R § 46.415(b). As noted above, while developing the EIS, several alternatives which would have placed the cable outside of the Seashore lands or in other locations were dismissed because they were infeasible. Therefore, all of the action alternatives, including the Selected Alternative, include the installation of the conduit and cables and construction activity within NPS-administered submerged lands and waters. The specific location and construction activities within the Seashore waters and submerged lands were identified because they best limited impacts to the Seashore's resources, including adjacent wilderness, while providing that the conduit and cables bringing the energy onshore could be installed.

The EIS evaluated potential impacts from placement of the conduit and cables through submerged lands, and construction within waters of the Seashore, including potential impacts to the following resources within the Seashore's jurisdiction: Birds; Benthic Resources; Water Quality; Coastal Habitat and Fauna; Finfish, Invertebrates and Essential Fish Habitat; Cultural Resources, specifically archeology; Scenic and Visual Resources; Land Use and Coastal Infrastructure or Recreation and Tourism. Section 3.2 of this ROD summarizes the environmental consequences of the alternatives analyzed, including the Selected Alternative. While the EIS focused on impacts to these resources project-wide, site-specific analysis for the Seashore was included. Under all action alternatives, impacts to these resources would be limited to a very small area of the park (approximately 1 acre), primarily offshore, and would be temporary in nature. Any disturbance to these resources would not exceed two years. Because of the small geographic scope of the impacts, temporary duration, and limited changes or impacts expected to these resources, NPS has determined that the impacts do not inhibit the Seashore from achieving its purpose, nor cause unacceptable impacts or impairment of Seashore resources and values. Additionally, permit terms and conditions will further mitigate impacts to Seashore resources. These mitigations will include a prohibition against landing on the Seashore's beaches at any time, except in an emergency, during construction, operations and decommissioning, a prohibition on any incursion into the Wilderness for any reason no matter how short the time or how small the incursion, a requirement to include NPS in the development of an oil spill response plan and requirements to contact Seashore staff should there be a need to access Seashore waters for maintenance or repair activities. These NPS-specific terms and conditions ensure that the NPS will include all practicable means to avoid or minimize environmental harm to the Seashore's resources and values.

The NPS considered impacts to the Seashore's Otis Pike Fire Island High Dune Wilderness. The placement of the conduit and cables and any associated construction activities are not permitted within the Wilderness. Terms and conditions associated with the ROW permit and SUPs will include prohibitions against entering the Wilderness. Thus, there are no actions within the Wilderness that are subject to a Minimum Requirements Analysis. Legislation specific to the

Seashore's Wilderness requires that every effort must be exerted to maintain and preserve the area between the easterly boundary of the Ocean Ridge portion of Davis Park and the westerly boundary of the Smith Point County Park, including the Wilderness, in nearly the same condition as it was when the Seashore was established. Pub. L. No. 88-587 (codified at 16 U.S.C. § 459e-6(b)). The Selected Alternative does not include any activities within this area. However, construction noise from within Smith Point County Park will likely enter this Wilderness. This detracts from the opportunity for solitude while the noise is present. Off-shore activities may also result in noise within this Wilderness as the conduit is being constructed and pulled into place via HDD. The presence of construction equipment may temporarily disrupt views from within the Wilderness. However, these impacts will be temporary and intermittent and thus the Wilderness will continue to be preserved long-term in its current condition. Overall, because the impacts are temporary and intermittent, and because the Selected Alternative is consistent with the Seashore's Wilderness legislation, the Seashore's Wilderness will not be impaired for future use and enjoyment as wilderness. *See* 16 U.S.C. § 1131(a).

The Selected Alternative meets the purpose and need of the EIS and is expected fulfill the NPS's statutory mission and responsibilities, considering all the requirements for the issuance of ROW permits and SUPs. The Selected Alternative incorporates all practical means to avoid or minimize environmental harm to Seashore resources. NPS permit terms and conditions further ensure that impacts to the Seashore resources and values will be minimized. The Selected Alternative will not result in the impairment of Seashore resources or values or violate the NPS Organic Act. The NPS approval authority is limited to the actions within the NPS-administered lands and waters within the Seashore boundary.

5.1.2.1 NPS Non-Impairment Determination Impairment Prohibition

The Organic Act of 1916 directs the U.S. Department of the Interior and the NPS to manage units "to conserve the scenery, natural and historic objects, and wildlife in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wildlife in such manner and by such a means as will leave them unimpaired for the enjoyment of future generations" (54 U.S.C. § 100101(a)). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which the System units have been established, except as directly and specifically provided by Congress" (54 U.S.C. § 100101(b)(2)).

Impairment Definition

According to NPS Management Policies 2006, Section 1.4.5, an impairment is an impact that, "in the professional judgment of the responsible NPS manager, would harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values". Section 1.4.5 goes on to state that, "an impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or

- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified as a goal in the park's general management plan or other relevant NPS planning documents as being of significance."

Per Section 1.4.6 of the NPS Management Policies 2006, the "'park resources and values' that are subject to the non-impairment standard include

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established."

Impairment Determination

This impairment determination has been prepared for the selected action described in this Record of Decision and Chapter 2.0 of the Final EIS. The determination is for all portions of the selected action that will impact park resources, including water quality; benthic resources; birds; coastal habitat and fauna; finfish, invertebrates, and essential fish habitats; cultural resources; scenic and visual resources; and soundscapes. Consistent with NPS Management Policies, Section §1.4.6 and as described in NPS guidance for preparing non-impairment determinations, a non-impairment determination is not made for land use and coastal infrastructure or recreation and tourism because, under the Organic Act, the NPS does not consider these impact topics to be park resources or values subject to the non-impairment standard. *See Guidance for Non-Impairment Determinations and the NPS NEPA Process*.

The purpose of Fire Island National Seashore, along with park significance statements and a description of the park's fundamental resources and values, are described in the *Foundation Document Fire Island National Seashore* (Foundation Document), 2018. The park's purpose is:

"…conserve, preserve, and protect Fire Island's larger landscape including its relatively undeveloped beaches, dunes, and other natural features and processes, and its marine environment; to conserve, preserve, and protect the historic structures, cultural landscapes, museum collections, and archaeological resources associated with the Seashore including the Fire Island Light Station and the William Floyd Estate; and to preserve the primitive and natural character of the Otis Pike Fire Island High Dune Wilderness and protect its wilderness character." (Foundation Document,

page 4).[14] The park's significance statements and fundamental resources and values highlight resources that may be impacted by the Sunrise Wind project, including barrier island / coastal processes, dynamic natural systems, and Fire Island Wilderness. Two fundamental resources and values will not be impacted by Sunrise Wind. The project will not impact the park's shared resource, and seashore experience (Foundation Document, pages 6-8).

Water Quality

The onshore transmission cable will cross the Great South Bay between Smith Point County Park on Fire Island and Smith Point Marina on Long Island. The state of New York classifies the water use in Great South Bay for shellfishing for market purposes, primary and secondary contact recreation, and fishing. As such, state water quality standards focus on ensuring the waters are suitable for fish, shellfish, and wildlife propagation and survival (NYCRR 2021b). The offshore cable will come onshore within FIIS jurisdictional waters that extend 1,000 feet into the Atlantic Ocean from the mean high water line. The National Coastal Condition Reports rate Northeast coastal region water as fair based on data for dissolved oxygen, chlorophyll-a, dissolved inorganic nitrogen, and dissolved inorganic phosphorus.

Onshore and offshore activities during the construction and operation phases have the potential for accidental release of fuels, oils, solvents, lubricants, drilling, or hydraulic fluids to surface, ground, or coastal waters. Any impact will be avoided or minimized through implementation of permit terms and conditions, best management practices (BMPs), and development and implementation of a stormwater pollution prevention plan (SWPPP), a spill prevention control and countermeasures (SPCC) plan, and an inadvertent return plan. The decommissioning phase is expected to have the same type of impacts as the construction phase and follow the same mitigation measures.

Installing the conduit and cables will temporarily increase sedimentation and turbidity. Horizontal directional drilling (HDD) will be used to install the cable, which will minimize land disturbance and thus minimize effects on water quality due to land disturbance. The disturbance will cease after the conduit and cables are installed. Areas disturbed for construction will be returned to pre-existing conditions. The operations and maintenance phase will cause minimal land disturbance for cable inspections, resulting in temporary and localized impacts to water quality.

Construction and decommissioning activities, when impacts to water quality are expected to be the highest, will last for portions of approximately two years each with individual areas being disturbed for between 7 and 12 months. Any potential impacts to sensitive habitats are expected to be avoided or temporary. Impacts on water quality will be detectable but will not result in degradation of water quality in exceedance of standards. BMPs and permit terms and conditions will limit the potential for spills and include containment measures to limit the extent of contamination, if any. These

[14] Likewise, the enabling legislation for Fire Island National Seashore states that the park was established "[f]or the purpose of conserving and preserving for the use of future generations certain relatively unspoiled and undeveloped beaches, dunes, and other natural features within Suffolk County, New York, which possess high values to the Nation as examples of unspoiled areas of great natural beauty in close proximity to large concentrations of urban population." 16 U.S.C. § 459e(a).

BMPs will be applied during all stages of the proposed action – construction, operation, maintenance, and decommissioning. Therefore, the selected action will not impair water quality.

Benthic Resources

A portion of the onshore transmission cable will cross the Great South Bay within NPS jurisdictional waters. Benthic surveys for the Great South Bay show this area to have soft sediments ranging from very fine sand to medium sand with visual evidence of generally low organic matter content. The macrohabitat characteristics indicate decreasing wave action effects proceeding from shallower waters out into deeper areas. The surveys commonly observed hermit crabs (*Coenobitidae*), sand dollars (*Echinarachnius parma*), burrowing anemones (*cerianthids*), and tube-building polychaetes (*Diopatra sp.*). Sediment grab analysis revealed the infaunal community was generally dominated by two polychaetes (*Polygordius sp.* and *Mediomastus sp.*), with high occurrences of the amphipod (*Protohaustorius wigleyi*) at the nearshore stations. The benthic surveys did not identify any sensitive taxa, species of special concern, or non-native taxa.

A portion of the offshore cable will cross NPS jurisdictional waters in the Atlantic Ocean, which extends from the mean high tide line on the shore to 1,000 feet out. Benthic surveys for nearshore Atlantic Ocean show sediments with medium sand and fine sand. Generally, this area has high densities of sand dollars.

A temporary landing structure for the construction phase will disturb up to 4,800 square feet of benthic habitat within waters subject to the jurisdiction of the United States located within the boundaries of the park. The structure will be positioned to avoid and minimize impacts to sensitive benthic habitat to the extent practicable. Installing the conduit and cables in both the Intracoastal Waterway from Fire Island to Long Island and from the wind farm to Fire Island will use HDD and could temporarily increase sedimentation and turbidity. The disturbance is expected to be less than periodic dredging operations and will cease after the conduit and cables are installed and the temporary landing structure is removed.

Areas disturbed during construction will be returned to pre-existing conditions. The decommissioning phase is expected to have the same type of impacts as the construction phase and will follow the same mitigation measures. During the operations and maintenance phase, cable inspections will cause minimal land disturbance resulting in temporary and localized impacts to benthic resources.

Construction and decommissioning activities, during which impacts to benthic resources are expected to be highest, will last for portions of approximately two years in total with individual areas being disturbed for between 7 and 12 months. The selected action will not have population-level effects on benthic species because of its small scale and the availability of similar habitat in the surrounding area. Mitigation measures will limit the potential for construction, operation, maintenance, and decommissioning activities to impact benthic resources. Therefore, the selected action will not impair benthic resources.

Birds

Coastal Long Island surveys have reported active breeding sites for colonial seabird, piping plover (*Charadrius melodus*), the least tern (*Sternula antillarum*), common tern (*Sterna hirundo*), Forster's tern (*Sterna forsteri*), black skimmer (*Rynchops niger*), and gull-billed tern (*Gelochelidon nilotica*). Pied-billed grebe (*Podilymbus escrys*) may breed at locations in the vicinity of the onshore transmission cable/interconnection cable. The piping plover and roseate tern could nest and/or forage in or near the construction area. Both species have historically nested on Fire Island. The migratory rufa red knot could forage near the landfall site. Land birds using the surrounding coastal region include songbirds and raptors. A variety of these passerines and other birds migrate along the Atlantic coast and could fly over the project area during migration and may utilize stopover sites and staging areas along the coast.

Noise from construction activities will disturb shorebirds, some sea birds, and some land birds. On-beach construction activities are not scheduled to occur during the roseate tern and piping plover breeding periods (i.e., April 1 through August 31), and rufa red knots are migratory and do not nest in the United States. Moreover, as reflected in a June 29, 2023, letter from the U.S. Fish and Wildlife Service (FWS) to the Bureau of Ocean Energy Management (BOEM), and FWS' October 2023 Amended Biological Opinion on the Effects of the Sunrise Wind Farm and Sunrise Wind Export Cable, the selected action is not likely to adversely affect piping plover, rufa red knot, or roseate terns, except for adverse effects to piping plover and rufa red knot due to activities outside the jurisdiction of the NPS (*i.e.*, due to collisions with wind turbine generators).

The decommissioning phase is expected to have the same type of impacts as the construction phase and follow the same mitigation measures.

Construction and decommissioning activities will last for portions of approximately two years each with individual areas being disturbed for an accumulated period ranging between 7 and 12 months. Any potential impacts to sensitive habitats are expected to be avoided or temporary if disturbance occurs. As documented through the analysis in the EIS, there are not expected to be direct or cumulative severe impacts to birds within the Park on an individual or population level. While there will be some disturbance to birds, it will not rise to the level of impairment because most of the work will occur outside breeding periods. Consistent with the "may affect, not likely to adversely affect" determination, birds, including threatened and endangered species, will persist in the Park without a loss of integrity due to the selected action.

Coastal Habitat and Fauna

Vegetation patterns on Fire Island coincide with gradients of tidal inundation, salinity, and wind across the island from ocean to bay side. Dune ridges often parallel the shoreline, and extensive sand flats, interdunal swales, and tidal marshes are behind the dunes. Plant species commonly found seaward of the primary dune and on the foredune include American beach grass (*Ammophila breviligulata*), beach pea (*Lathyrus maritimus*), dusty miller (*Artemisia stelleriana*), seaside goldenrod (*Solidago sempervirens*), common saltwort (*Salsola kali*), seaside spurge (*Euphorbia polygonifolia*), and sea rocket (*Cakile edentula*). On the leeward side of the primary dune, less salt-tolerant woody vegetation such as beach plum (*Prunus maritima*), northern bayberry (*Myrica pensylvanica*), Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy (*Rhus radicans*) are

also present. Bearberry (*Arctostaphylos uva-ursi*) and beach-heather (*Hudsonia tomentosa*) may also be found in the swale or near secondary dunes.

Interdunal swales have freshwater inputs via groundwater and may be characterized by wetland species such as purple gerardia (*Agalinis purpurea*), sundews (*Drosera spp.*), large cranberry (*Vaccinium macrocarpon*), and highbush blueberry (*V. corymbosum*). Farther inland, bogs, maritime thickets/forest and salt marshes may be present. On Fire Island, highbush blueberry swamp shrub, northern interdunal cranberry swale, and reedgrass marsh communities occur. Plant species in the bogs include cranberry, highbush blueberry, swamp azalea, (*Rhododendron viscosum*), narrow leaved cattail (*Typha angustifolia*), wool grass (*Scirpus cyperinus*), common reed (*Phragmites australis*), swamp maple (*Acer rubrum*), sour gum (*Nyssa sylvatica*), sphagnum moss (*Sphagnum spp.*), royal ferns (*Osmunda spp.*), marsh St. Johnswort (*Hypericum virginicum*), red chokeberry (*Pyrus arbutifolia*), inkberry (*Ilex glabra*), smartweed (*Polygonum spp.*), various species of sedge (*Carex spp.*), and rushes. Tidal marshes are present along the low energy bay side of Fire Island in broad overwash areas and common species include saltmarsh cord grass (*Spartina alterniflora*), salt-meadow cordgrass (*S. patens*) and coastal salt grass (*Distichlis spicata*), depending on the level of tidal inundation.

Dunes on Fire Island are habitat to species such as red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), and whitetail deer (*Odocoileus virginianus*). Fire Island also supports a major breeding population of the state endangered eastern mud turtle (*Kinosternon subrubrum*), which inhabits a variety of wetland habitats and is considered critically imperiled at this northern edge of its distribution. A survey identified an occurrence of hairy-necked tiger beetle (*Cincindela hirticollis*), a rare but unlisted species associated with sand beaches, near the landfall work area on Fire Island.

A temporary landing structure for the construction phase will disturb eelgrass within waters within park boundaries. However, the eelgrass is not part of a larger patch and in some areas are composed of single shoots.

HDD will be used to install the conduit and cables on both the ocean and ICW sides, which will minimize coastal habitat disturbance compared to other construction options. Installing the conduit and cable will temporarily increase sedimentation and turbidity. Any impact will be minimized through implementation of permit terms and conditions, BMPs, and development and implementation of a SWPPP, and a SPCC plan.

Sandplain gerardia has not been recorded as occurring in the area where construction will occur, and the selected action was determined to have no effect on sandplain gerardia. As reflected in the June 29, 2023, letter from FWS to BOEM, any adverse effects to seabeach amaranth from the selected action are expected to be discountable and insignificant, due to the use of HDD, temporary nature of any disturbance, temporary erosion controls, and pre-construction presence/absence surveying (with additional monitoring, minimization, and/or mitigation plans as appropriate).

Additionally, activities in close proximity to the sand beach habitat will be confined to existing developed areas to avoid and minimize potential impacts to the rare but unlisted hairy-necked tiger beetle.

Disturbed habitats are expected to return to their previous condition following construction completion without further restoration. Displaced mobile wildlife will repopulate former habitats once construction is complete and the habitat will recover to pre-construction conditions. The decommissioning phase is expected to have the same type of impacts as the construction phase and follow the same mitigation measures. During the operations and maintenance phase, cable inspections will cause minimal land disturbance resulting in temporary and localized impacts to coastal habitat and fauna.

Construction and decommissioning activities, during which impacts to coastal habitat and fauna are expected to be the highest, will last for portions of approximately two years each with individual areas being disturbed for an accumulated period ranging between 7 and 12 months. The selected action will not have population-level effects on coastal habitat and fauna and no permanent loss is expected. Mitigation measures will limit the potential for construction, operation, maintenance, and decommissioning activities to impact coastal habitat and fauna. Therefore, the selected action will not impair coastal habitat and fauna since these resources will not lose their integrity and will function into the future.

Finfish, Invertebrates, and Essential Fish Habitat

While a recent survey did not show any submerged aquatic vegetation (SAV) or benthic macroalgae habitats at the landing site, historic data shows that these previously populated the area. The landing site has 0.9 acres of tidal wetlands in the west area and 0.05 acres in the east area. Areas on the east and west sides are also suitable habitat for finfish and invertebrates to scatter their eggs.

A temporary landing structure will be installed during the construction phase. Should SAV and/or benthic macroalgae be present during construction, then up to 1,500 square feet of finfish and invertebrate habitat will be disturbed from shading during that phase of the project. Using the temporary landing structure between fall and spring will mitigate impacts by avoiding the growing season.

Small areas on the east and west side of the temporary landing structure are suitable habitat for benthic eggs. However, the areas have low sedimentation and are thus less suitable than surrounding habitat. Therefore, any temporary impacts during construction will be very limited. The temporary landing structure will be removed at the end of the construction phase. It will likely not be needed for decommissioning as the William Floyd Parkway Bridge will have been replaced and capable of carrying heavy loads.

Installing the conduit and cables will temporarily increase sedimentation and turbidity. HDD will be used to install the conduit and cables, which will minimize land and water disturbance. Mobile species could be temporarily displaced by a turbidity plume and, depending on the thickness of materials settling on the seafloor, demersal eggs/larvae could be at risk of smothering or other injury. The disturbance will be limited to the construction area and will cease after the conduit and cable installation has been completed. Areas disturbed for the construction phase will be returned to pre-existing conditions. Cable inspections during the operations and maintenance phase will cause minimal land disturbance resulting in temporary and localized impacts to finfish, invertebrates, and essential fish habitat.

Construction and decommissioning activities, during which impacts to finfish, invertebrates, and essential fish habitat are expected to be the highest, will last for portions of approximately two years each with individual areas being disturbed for between 7 and 12 months. Any potential impacts to sensitive habitats are expected to be temporary. Although some habitats may take longer to recover from the conduit and cable installation, the overall habitat disturbance will be relatively minor in relation to available habitat, and most disturbance will take place outside of NPS waters. All construction, installation, operations, maintenance, and decommissioning activities will use mitigation measures to reduce adverse impacts to aquatic resources. Because impacts to these resources are temporary and because the amount of NPS habitat impacted is relatively small compared to available habitat, the selected action will not impair finfish, invertebrates, and essential fish habitat.

Cultural Resources

The offshore cable will come onshore within FIIS jurisdictional waters and seafloor that extend 1,000 feet into the Atlantic Ocean from the mean high water line. A marine archaeological resources assessment did not identify any possible resources within FIIS jurisdiction.

Ground-disturbing activities during construction have the potential to impact archaeological resources. The proponent will develop and implement an unanticipated discovery plan that will include stop-work and notification procedures. Decommissioning activities are expected to have the same impacts as the construction phase.

Construction and decommissioning activities will last for portions of approximately two years each with individual areas being disturbed for between 7 and 12 months. Any potential impacts to archaeological resources are expected to be avoided. The project will not impair cultural resources because it will use a cultural resource avoidance minimization mitigation plan, which will include an unanticipated discovery plan for any unidentified archaeological resources. Additionally, NPS will work with the SHPO and Tribes to ensure that any resources discovered during construction and decommissioning are properly addressed consistent with NPS policy.

Scenic and Visual Resources

The landfall site will occur at Smith Point County Park, which is located within the Fire Island National Seashore boundaries and adjacent to the Otis Pike Fire Island High Dune Wilderness and Fire Island Wilderness Center. The Otis Pike Fire Island High Dune Wilderness of the Fire Island National Seashore is a federally designated wilderness directly west of Smith Point County Park. The Otis Pike Fire Island High Dune Wilderness' scenic and visual resources show relatively little evidence of modern human occupation.

The temporary landing structure, a barge carrying many loads of large construction machinery, equipment and supplies, and a tug boat used during construction and decommissioning activities will visually impact the Otis Pike Fire Island High Dune Wilderness and the Fire Island Wilderness Center. These are areas where a user would anticipate seeing undisturbed visual resources. Although these activities will not occur directly in these areas, activities will influence the scenic and visual character during construction. To help minimize impacts, these activities will take place at a time of year when visitor use is low. Conditions will return to baseline once activities cease.

Construction and decommissioning activities will last for portions of approximately two years each with individual areas being disturbed for between 7 and 12 months. Any potential visual impacts to scenic vistas will be limited to that timeframe. Additionally, visitors will only be able to see construction activities from two sections of the park – the Fire Island Wilderness Center and limited portions of the Otis Pike Wilderness Area. Construction activities will be limited to outside peak visitor season to minimize impacts. Therefore, the selected action will not impair scenic and visual resources.

Soundscapes

The landfall site will occur at Smith Point County Park, which is located within the Fire Island National Seashore boundaries and adjacent to the Otis Pike Fire Island High Dune Wilderness and Fire Island Wilderness Center. The Otis Pike Fire Island High Dune Wilderness of the Fire Island National Seashore is a federally designated wilderness directly west of Smith County Park. The Otis Pike Fire Island High Dune Wilderness' soundscape shows relatively little evidence of modern human occupation.

Noise from construction and decommissioning activities will impact the Wilderness and Fire Island Wilderness Center. Although these activities will not occur directly in these areas, they will influence the soundscape during construction. To limit soundscape impacts, construction activity is expected to occur outside the summer tourist season. Also, the project's Safety Plan, Communications Plan, and Noise Mitigation Measures for construction activities will outline BMPs to reduce noise. Conditions will return to baseline once activities cease.

Construction and decommissioning activities will last for portions of approximately two years each with individual areas being disturbed for between 7 and 12 months. Any potential soundscape impacts will be limited to that timeframe. Additionally, visitors will only be able to hear construction activities from two sections of the park – the Fire Island Wilderness Center and limited portions of the Otis Pike Fire Island High Dune Wilderness. Construction activities will be limited to outside peak visitor season to minimize impacts. Therefore, the selected action will not impair soundscapes.

Conclusion

The NPS does not anticipate that implementing the selected action will constitute an impairment of the park's resources or values, which include the barrier island / coastal processes, dynamic natural systems, Otis Pike Fire Island High Dune Wilderness, cultural resources, shared resource, and seashore experience (Foundation Document, pages 6-8). This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the environmental impact statement, the comments provided by the public and others, and the professional judgment of the decision-maker guided by the direction of the NPS Management Policies (2006).

GAY VIETZKE Digitally signed by GAY VIETZKE Date: 2024.03.26 08:54:21 -04'00'

_____ **___3/26/2024_____**

Gay E. Vietzke
Regional Director

Date

5.2. National Marine Fisheries Service Decision

This section documents NMFS' intent to promulgate ITR and issue an incidental take authorization in the form of an LOA to Sunrise Wind pursuant to its authorities under the MMPA, if specific findings are made. It also references NMFS' decision to adopt the BOEM Final EIS to support NMFS' anticipated decision to promulgate the ITR and issue the associated LOA. NMFS prepared and signed a separate memorandum independently evaluating the sufficiency and adequacy of the BOEM Final EIS. That memorandum provides NMFS' rationale to adopt the Final EIS to satisfy its independent NEPA obligations related to the potential ITR and LOA. In that memorandum NMFS concluded: (i) the action analyzed in the Final EIS covers NMFS's proposed decision to issue an LOA to Sunrise Wind, 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 November 10, 2021, NMFS received an application from Sunrise Wind pursuant to MMPA Section 101(a)(5)(A) for an authorization to take small numbers of marine mammals, by harassment, incidental to the construction of an offshore wind energy project on the OCS off of New York in OCS-A 0487, for a period of five years. NMFS reviews applications and, if specific findings are made, promulgate regulations and issues an incidental take authorization pursuant to the MMPA. Incidental take authorizations may be issued as either: (1) regulations and associated LOAs under Section 101(a)(5)(A) of the MMPA or (2) Incidental Harassment Authorizations under Section 101(a)(5)(D) of the MMPA. In addition, 40 C.F.R. §§ 1500-1508 and NOAA policy and procedures require all proposals for major federal actions to be reviewed with respect to their effects on the human environment. Issuance of an incidental take authorization to Sunrise Wind is a major federal action, triggering NMFS' independent NEPA compliance obligation. When serving as a cooperating agency, NMFS may satisfy its independent NEPA obligations by either preparing a separate NEPA analysis for its issuance of an incidental take authorization or, if appropriate, by adopting the NEPA analysis prepared by the lead agency. 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 MMPA and its implementing regulations. Thus, the purpose of NMFS' action—which was a direct outcome of Sunrise Wind's request for authorization to take marine mammals incidental to specified activities associated with the Project (e.g., pile driving, marine site assessment surveys)—is to evaluate Sunrise Wind's request under requirements of the MMPA (16 U.S.C. § 1371(a)(5)(A)) and its implementing regulations (50 C.F.R. Part 216) and to determine whether the findings necessary to promulgate the ITR and issue the LOA can be made, based on the best available scientific information. NMFS must render a decision regarding the request for authorization under its responsibilities under the MMPA (16 U.S.C. § 1371(a)(5)(A)) and its implementing regulations. 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' notice of receipt, which was published in the *Federal Register* (87 Fed. Reg. 33,470, June 6, 2022), and NMFS' proposed rulemaking which was published in the *Federal Register* (88 Fed. Reg. 8996, February 10, 2023). NMFS' final action will take into account those comments, as well

as the corresponding formal consultation process under Section 7 of the ESA for promulgation of the final ITR and issuance of the LOA.

5.2.1. NMFS Decision (40 C.F.R. § 1505.2(a)(1))

Pending completion of all statutory processes, NMFS intends to promulgate the ITR and issue an LOA to Sunrise Wind, if specific findings are made, which would authorize take of marine mammals incidental to construction activities associated with the proposed Project for five years. NMFS' final decision to promulgate the ITR and issue the requested LOA will be documented in separate Decision Memorandums prepared in accordance with internal NMFS' policy and procedures. The LOA would authorize the incidental take of marine mammals while prescribing the number and means of incidental take, as well as mitigation, monitoring, and reporting requirements, including those in the BiOp's ITS, as relevant. The September 2023 BiOp completes the formal Section 7 consultation process under the ESA. A final rule promulgating the regulations would describe NMFS' final determinations. Separately, NMFS would publish a notice in the *Federal Register* announcing a LOA has been issued within 30 days of the action, in accordance with NMFS' regulations implementing the MMPA.

5.2.2. Alternatives NMFS Considered (40 C.F.R. § 1505.2(a)(2))

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(a)(5) and § 1502.14. NMFS considered two alternatives, the No Action Alternative in which NMFS would deny Sunrise Wind's request for an authorization and an action alternative in which it would issue an LOA to Sunrise Wind with mitigation, monitoring, and reporting requirements.

Consistent with BOEM's No Action Alternative, NMFS would not issue the requested authorization to Sunrise Wind, in which case, NMFS assumes Sunrise Wind would not proceed with its proposed project as described in the application since it would be likely to cause harassment of marine mammals prohibited under the MMPA. Since NMFS is also required by 40 C.F.R. § 1505.2(a)(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, the promulgation of regulations and issuance of the LOA to Sunrise Wind, which would authorize take of marine mammals incidental to five years 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 rule (88 Fed. Reg. 8996, February 10, 2023), and may be modified in the final rule and LOA, if issued, in response to public comment, agency review, and ESA Section 7 consultation. The Proposed Action alternative evaluated by NMFS (i.e., the promulgation of regulations and issuance of the LOA to Sunrise Wind) will provide the incidental take authorization necessary to undertake the activities identified in the Preferred Alternative evaluated by BOEM in the Final EIS and selected in this ROD.

5.2.3. Primary Factors NMFS Considers Favoring Selection of the Proposed Action (40 C.F.R. § 1505.2(a)(2))

As noted earlier, NMFS must promulgate regulations and issue an LOA to Sunrise Wind in response to its request for an incidental take authorization if specific findings are made after consideration of public comments. NMFS' Proposed Action to issue an LOA for BOEM's Preferred Alternative effectively meets NMFS' stated purpose and need.

5.2.4 Mitigation, Monitoring and Reporting Considered by NMFS (40 C.F.R. § 1505.2(a)(3))

NMFS has a statutory requirement 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 must also include requirements pertaining to monitoring and reporting. Mitigation, monitoring, and reporting requirements related to marine mammals were preliminarily identified in the proposed ITR (88 Fed. Reg. 8996 [February 10, 2023]). These measures may be modified in the final ITR and LOA in consideration of public comments and based on the outcome of the formal ESA Section 7 consultation. If NMFS promulgates regulations and issues an LOA, it 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 Sunrise Wind. In summary, the mitigation, monitoring, and reporting measures include the following: vessel strike avoidance measures; seasonal moratorium on foundation pile driving and UXO detonation; usage of PSOs and PAM operators; establishment of clearance and shutdown zones; soft-start and ramp-up procedures for impact pile driving and acoustic source use during high-resolution geophysical surveys, respectively; use of sound attenuation measures and PAM during foundation pile driving and UXO detonations; requirements to conduct sound field verification (SFV) during foundation pile driving and UXO detonations; fishery survey mitigation to avoid interactions and entanglements; and various situational and incremental (i.e., weekly, monthly, annual) reporting requirements. 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 included in the proposed ITR; however, the final LOA may contain modified or additional measures that are more protective than those listed in Appendix A.

ROBINSON.CARRIE.DIANE.1365872135 Digitally signed by ROBINSON.CARRIE.DIANE.1365872135 Date: 2024.03.25 17:56:48 -04'00' on behalf of

Samuel D. Rauch, III
Deputy Assistant Administrator for Regulatory Programs

Date

6. References

Bureau of Ocean Energy Management (BOEM). 2013. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts: Revised Environmental Assessment. Sterling, Virginia: U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. June. Available at: https://www.boem.gov/sites/default/files/renewable-energy-program/StateActivities/MA/Revised-MA-EA-2014.pdf.

Bureau of Ocean Energy Management (BOEM). 2016. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New York: Environmental Assessment. Sterling, Virginia: U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. July. Available at: https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/NY/NY-Public-EA-June-2016.pdf

Hare, J.A., Blythe, B.J., Ford, K.H., Godfrey-McKee, S., Hooker, B.R., Jensen, B.M., Lipsky, A., Nachman, C., Pfeiffer, L., Rasser, M. and Renshaw, K., 2022. NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region. NOAA Technical Memorandum 292. Woods Hole, MA. 33 pp.

National Marine Fisheries Service (NMFS). 2023. Endangered Species Act Section 7 Consultation: Biological Opinion for Construction, Operation, Maintenance, and Decommissioning of the Sunrise Wind Commercial Project (Lease OCS-A 0487). September 28, 2023.

New York State Energy Research and Development Authority (NYSERDA). 2019. Launching New York's offshore wind industry: phase 1 report. Report no. 19-41. [accessed 2022 Jun 29]. https://docslib.org/doc/7563888/launching-new-yorks-offshore-wind-industry-phase-1-report.

Sunrise Wind LLC (Sunrise Wind). 2023. Construction and operations plan. Sunrise Wind Farm Project. Prepared by Stantec Consulting Services Inc. Submitted to Bureau of Ocean Energy Management. September 2023. 945 p.

Appendix A. Anticipated Terms and Conditions of COP Approval

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

Anticipated Conditions of Construction and Operations Plan Approval
Lease Number OCS-A 0487
March 25, 2024

Subject to the conditions set forth in this document, the Bureau of Ocean Energy Management's (BOEM) approves Orsted North America (Lessee or Sunrise Wind) to conduct activities under the Construction and Operations Plan (COP)[1] for the Sunrise Wind Farm and the Sunrise Wind Export Cable (Project). The Department of the Interior (DOI) reserves the right to amend these conditions or impose additional conditions authorized by law or regulation on any future approvals of COP revisions.

The Lessee must maintain a full copy of these terms and conditions on every Project-related vessel and is responsible for the implementation of, or the failure to implement, each of these terms and conditions by the Lessee's contractors, consultants, operators, or designees.

Contents:

[1] Sunrise Wind LLC. December 2023. Construction and Operations Plan, Sunrise Wind.

1 GENERAL PROVISIONS

1.1 Adherence to the Approved Construction and Operations Plan, Statutes, Regulations, Permits, and Authorizations. The Lessee must conduct all activities as proposed in its approved COP for the Project as stated in these terms and conditions and as described in any final plans with which the DOI BOEM and/or the Bureau of Safety and Environmental Enforcement (BSEE) have concurred. Additionally, the Lessee must comply with all applicable requirements and mitigations in commercial lease OCS-A 0487 (Lease), statutes, regulations, consultations, and permits and authorizations issued by federal, state, and local agencies for the Project. BOEM and/or BSEE, as applicable, may issue a notice of noncompliance, pursuant to 30 C.F.R. § 585.106(b) and 30 C.F.R. § 285.400(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. § 585.106 and 30 C.F.R. § 285.400, where appropriate.

1.1.1 As depicted in the COP and modified by the selected Alternative C-3b in the Record of Decision (ROD), the Lessee may construct and install on the Outer Continental Shelf (OCS) in the area described in Lease OCS-A 0487 (Lease Area) up to 84 wind turbine generators (WTGs), 1 offshore converter station, inter-array cables linking the individual WTGs to the offshore substation (OSS) (referred to as OCS-DC within the Sunrise Wind approved COP and hereinafter), and one offshore export cable on the OCS within the area.

1.2 Record of Decision. All mitigation measures selected in the ROD for this Project are incorporated herein by reference and are considered terms and conditions of this COP. If there is any inconsistency between the language used in the ROD and that found in the terms and conditions herein, the language in the latter will prevail.

1.3 Effectiveness. This COP approval and these associated terms and conditions become effective on the date BOEM notifies the Lessee that its COP has been approved, and remain effective until the termination of the Lease, which, unless renewed, has an operations term of 25 years from the date of COP approval.

1.4 Consistency with Other Agreements and Authorizations. In the event that these terms and conditions are, or become, inconsistent with the terms and conditions of the Project's Biological Opinion (BiOp) issued by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) on September 28, 2023;[2] BiOp issued by the U.S. Fish and Wildlife Service (USFWS) on December 15,

[2] *See* BiOp Letter from Michael Pentony, Regional Administrator US Dept of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service Greater Atlantic Regional Fisheries Office, to Karen Baker, Chief Office of Renewable Energy Programs, BOEM. (September 28, 2023), https://www.fisheries.noaa.gov/s3/2023-10/Sunrise-Wind-Biological-Opinion-092823-508-Compliant10172023.pdf [hereinafter NMFS BiOp]. This is inclusive of the avoidance, minimization, and mitigation measures described in the proposed action and included in the BiOp's ITS.

2023;[3] Letters of Authorization (LOAs) issued for the Project under the Marine Mammal Protection Act (MMPA); the two special use permits (SUPs) and the right-of-way (ROW) permit issued by the National Park Service (NPS); the Section 106 Memorandum of Agreement (Section 106 MOA) executed on March 25, 2024, or amendments to these documents; the language in the NMFS BiOp, USFWS BiOp, LOAs, NPS SUPs and ROW permit, Section 106 MOA or amendments to these documents, will prevail. To the extent the Lessee identifies inconsistencies within or between the language in the NMFS BiOp, USFWS BiOp, LOAs, Section 106 MOA or amendments to these documents, it must direct questions regarding potential inconsistencies to BSEE via TIMSWeb and via email to the BSEE Renewable Energy Operations Director and BOEM via email to the BOEM Office of Renewable Energy Programs Chief. BSEE, in consultation with BOEM, will determine how the Lessee must proceed. Activities authorized by COP approval will be subject to any terms and conditions and reasonable and prudent measures resulting from a BOEM-reinitiated consultation for the Project's NMFS BiOp or USFWS BiOp, and any stipulations resulting from amendments to the Section 106 MOA.

1.5 Variance Requests. The Lessee may submit a written request via email to the BOEM Office of Renewable Energy Programs Chief and to BSEE through TIMSWeb (https://timsweb.bsee.gov/), requesting a variance from particular requirements of these terms and conditions. The request must explain why compliance with a particular requirement is not technically and/or economically practicable or feasible. BSEE may require a Certified Verification Agent (CVA) to review and make a recommendation to BSEE and/or BOEM on the technical acceptability and compliance with the COP as part of the Lessee's variance request. To the extent not otherwise prohibited by law and after consideration of all relevant facts and applicable legal requirements, BOEM or BSEE in consultation with the other Bureau, may grant the request for a variance if the appropriate Bureau determines that the variance: (1) would not result in a change in the Project impact levels described in the Final Environmental Impact Statement (Final EIS) and ROD for the Project, (2) would not alter obligations or commitments resulting from consultations performed by BOEM and BSEE under Federal law in connection with this COP approval, in a manner that would require BOEM to reinitiate or perform additional consultation (e.g., under the Endangered Species Act (ESA), Coastal Zone Management Act (CZMA), National Historic Preservation Act (NHPA), Magnuson-Stevens Fishery Conservation and Management Act (MSA)), and (3) would not alter BOEM's determination that the activities associated with the Project would be conducted in accordance with Section 8(p)(4) of OCSLA. After making a determination regarding a request for variance, BOEM or BSEE will notify the Lessee in writing whether the appropriate Bureau will allow the proposed variance from the identified requirements set forth in this COP approval. Approvals of variance requests will be

[3] *See* BiOp Letter from Ian Drew, Field Supervisor Long Island Field Office, Fish and Wildlife Serv., to Paige Marrin, BOEM. (June 29, 2023), https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Sunrise%20Wind%20BA%20for%20USFWS.pdf [hereinafter USFWS BiOp]. This is inclusive of the avoidance, minimization, and mitigation measures described in the proposed action and included in the BiOp's ITS.

made publicly available. This provision applies to the extent it is not inconsistent with more specific provisions in these terms and conditions for variances or departures.

1.6 48-Hour Notification Prior to Construction Activities. The Lessee must submit a 48-hour notification to BSEE through TIMSWeb (https://timsweb.bsee.gov/) prior to the start of each of the following construction activities occurring on the OCS: seabed preparation activities such as boulder relocation and pre-lay grapnel runs, export cable installation, inter-array cable installation, WTG and OCS-DC foundation installation, WTG tower and nacelle installation, OCS-DC topside installation, cable and scour protection installation.

1.7 Inspections. As provided for in Terms and Conditions Item 13 of the NMFS BiOp, the Lessee must consent to on-site observations and inspections by Federal agency personnel, including NOAA personnel during activities described in the NMFS BiOp, for the purposes of evaluating the effectiveness and implementation of measures designed to minimize or monitor incidental take.

1.8 Project Website. The Lessee must develop and maintain a Project website to provide a means for the public to communicate with the Lessee about the Project, including fisheries communication and outreach. The website must provide a method for the public to register comments or ask questions, through either a direct link to a comment form or email, or by providing the contact information (phone and/or email address) of a Lessee representative who will, as practicable, respond to these communications.

1.8.1 The Lessee must post construction notices and other publicly relevant information to the Project website on a monthly basis. The Project website must allow users to subscribe (or unsubscribe) to an electronic mailing list for Project update notifications.

1.8.2 The Lessee must post the following information to the Project website within 5 business days of availability.

1.8.2.1 Locations where target burial depths were not achieved and locations of cable protection measures.

1.8.2.2 Project-specific information in the most current Local Notice to Mariners (LNM).

1.8.2.3 Fisheries Communication Plan.

1.8.2.4 The Project Mitigation Report identified in Section 1.9. The Project Mitigation Report must be submitted to BOEM (renewable_reporting@boem.gov) and BSEE via TIMSWeb for a 30-day review prior to being finalized.

1.8.3 Geographic information system (GIS) location data must be downloadable and packaged in an ESRI-compatible format, preferably as an ESRI shapefile. Files must utilize a NAD83 UTM Zone 19 or a geographic coordinate system in

NAD83. A text file with table field descriptions that contain measurement units, where applicable, must be included.

1.9 Project Mitigation Report. The Lessee must develop a Project Mitigation Report that reflects public engagement and consultation concerning environmental mitigation measures completed to date with the appropriate Tribal Nations, federal and state agencies, and regional and non-governmental organizations. The Project Mitigation Report will be a comprehensive compilation of all environmental mitigation measures or commitments required by the terms and conditions of COP approval, as well as other federal and state authorizations and consultations (e.g., ESA, CZMA, MOA, Clean Water Act, Rivers and Harbors Act) required for the construction and operation of the Project. The Project Mitigation Report must (1) describe and provide technical details for each mitigation measure (including the type of Project impact to which it relates and the consultation, authorization, or conditions under which it is required) and (2) identify procedures to evaluate additional or modified measures that respond to impacts detected in Project monitoring and other monitoring and research studies and initiatives, including the Lessee's Fisheries Mitigation and Monitoring Plan. The Lessee must update the Project Mitigation Report periodically, as described in such Report, for status and completion of mitigation measures.

1.10 Submissions. Unless otherwise stated, the Lessee must provide any submissions required under these conditions to stated agencies through the following:

1.10.1 BOEM[4] and/or BSEE:

1.10.1.1 For Sections 1 through 4 of this appendix, via email to the Office of Renewable Energy Programs Project Coordinator for submissions to BOEM,

1.10.1.2 For Sections 5 through 8 of this appendix, via email to renewable_reporting@boem.gov for submissions to, and

1.10.1.3 TIMSWeb for submissions to BSEE.

1.10.2 NMFS:

1.10.2.1 NMFS Greater Atlantic Regional Fisheries Office Protected Resources Division (GARFO-PRD) at nmfs.gar.incidental-take@noaa.gov.

1.10.2.2 NMFS Office of Protected Resources (NMFS-OPR) at PR.ITP.MonitoringReports@noaa.gov.

1.10.2.3 NMFS GARFO Habitat and Ecosystem Services Division (GARFO-HESD) at NMFS.GAR.HESDoffshorewind@noaa.gov.

[4] BOEM will notify the Lessee in writing if BOEM designates a different process for BOEM submissions.

1.10.2.4 NMFS Northeast Fisheries Science Center (NEFSC) at nefsc.survey.mitig@noaa.gov.

1.10.3 U.S. Army Corps of Engineers (USACE) – New England District at cenae-r-@usace.army.mil

1.10.4 USFWS – Long Island Ecological Services Field Office at FW5ES_NYFO@fws.gov.

1.10.5 Environmental Protection Agency (EPA) at Bird.Patrick@epa.gov. The Lessee must confirm the correct point of contact with the EPA prior to submitting.

1.10.6 United States Coast Guard (USCG) First District. The Lessee must confirm the correct point of contact with the USCG First District prior to submitting.

1.11 Calendar Days. Unless otherwise specified in the terms and conditions, the term "days" means "calendar days".

2 TECHNICAL CONDITIONS

2.1 Munitions and Explosives of Concern/Unexploded Ordnance Process. The Lessee must investigate the areas of potential disturbance, as described in the COP, for the presence of Munitions and Explosives of Concern (MEC)/Unexploded Ordnance (UXO) and evaluate the risk consistent with the As Low as Reasonably Practical (ALARP) risk mitigation principle. The ALARP risk mitigation principle requires: (1) a desktop study (DTS); (2) an investigation survey to determine the presence of objects and report of findings; (3) an identification survey to determine the nature of the identified objects and report of findings; (4) MEC/UXO mitigation (avoidance, in situ disposal, or relocation); and (5) a certification that MEC/UXO risks from installation and operation of the facility have been reduced to ALARP levels. The Lessee must implement the mitigation methods identified in the approved COP, the DTS, and the subsequent survey report(s) following the resolution of all comments provided by BOEM and BSEE. As part of the Fabrication and Installation Report (FIR) and prior to commencing installation activities, the Lessee must make available to the approved CVA, BOEM, and BSEE for review the complete and final versions of information on implementation and installation activities associated with the ALARP mitigation process, including the: (1) DTS; (2) investigation surveys to determine the presence of objects; (3) identification surveys to determine the nature of the identified objects; and (4) MEC/UXO mitigation.

2.2 MEC/UXO ALARP Certification. The Lessee must provide to BOEM, BSEE, and the approved CVA, a certification confirming that MEC/UXO risks related to the installation and operation of the facility have been reduced to ALARP levels. The certification must be made by a qualified third party. ALARP Certification must be made available prior to seabed preparation activities associated with Pre-Lay Grapnel Run Plan (Section 2.23) and Boulder Identification and Relocation Plan (Section 5.6.6), and prior to commencing installation activities with the submission of the relevant FIR.

2.3 MEC/UXO Discovery Notification. In the event of a confirmed MEC/UXO, the Lessee must coordinate with U.S. Coast Guard (USCG) to ensure the MEC/UXO discovery is published in the next version of the LNM for the specified area and provide BOEM and BSEE a copy of the LNM once it is available. The Lessee must also provide the following information to BOEM (BOEM_MEC_Reporting@boem.gov), BSEE (via TIMSWeb, renops@bsee.gov, env-compliance-arc@bsee.gov), and relevant agency representatives within 24 hours of discovery for seabed clearance activities, construction, and operations:

2.3.1 A narrative describing activities that resulted in the identification of confirmed MEC/UXO;

2.3.2 A description of the activity at the time of discovery (survey, seabed clearance, cable installation, etc.);

2.3.3 A description of the location (Latitude (DDD°MM.MMM'), Longitude (DDD°MM.MMM)), Lease Area, and block;

2.3.4 The water depth (meters(m)) of the confirmed MEC/UXO;

2.3.5 A description of the MEC/UXO type, dimensions, and weight; and

2.3.6 The MEC/UXO vertical position (description of exposure or estimated depth of burial).

2.4 Munitions Response Plan for Confirmed MEC/UXO. Should the Lessee determine a Munitions Response Plan is needed, the Lessee must implement methods identified in the approved COP and as described in the MEC/UXO Survey Results Implementation for MEC/UXO mitigation activities. Under all circumstances of confirmed MEC/UXO, the Lessee must demonstrate to BSEE and BOEM that avoidance through micrositing of planned infrastructure (e.g., wind turbines, offshore substations, inter-array cables, or export cables) of confirmed MEC/UXO is not feasible. For confirmed MEC/UXO on the OCS where avoidance through micrositing is not feasible, the Lessee must provide a Munitions Response Plan. When a Munitions Response Plan is necessary, the plan must include the following:

2.4.1 A description of the method of munitions response (in situ disposal, or relocation through "lift and shift") and an analysis describing the identification and determination of the method chosen for each confirmed MEC/UXO;

2.4.2 A hazard analysis of the response;

2.4.3 A description of the type and designation of work vessels, remotely operated vehicles, unmanned surface vehicles, or craft planned to be used in proximity to the MEC/UXO;

2.4.4 The contact information of the identified munitions response contractor

2.4.5 The contractor qualifications and competencies to safely carry out the response work;

2.4.6 A proposed timeline of activities;

2.4.7 The position of confirmed MEC/UXO and, if applicable, planned relocation position;

2.4.8 A description of the potential impact of weather and sea state on munitions response operations;

2.4.9 A description of the potential for human exposure;

2.4.10 A medical emergency procedures plan;

2.4.11 A description of the protective measures to be implemented to reduce risk and/or monitor effects to protected species and habitats or other ocean users;

2.4.12 A plan for accidental detonation.

2.5 Munitions Response After Action Report. The Lessee must submit a Munitions Response After Action Report if a Munitions Response Plan was initiated. The Munitions Response After Action Report must detail the activity and outcome to BOEM and BSEE. The report must include the following information:

2.5.1 A narrative describing the activities the Lessee undertook, including the following:

2.5.1.1 The as Found Location and, if applicable, As Left Location (latitude [DDD°MM.MMM'], longitude [DDD°MM.MMM]), lease area, and block;

2.5.1.2 The water depth (m);

2.5.1.3 The weather and sea state at the time of munitions response;

2.5.1.4 The number and detailed characteristics (e.g., type, size, classification) of MEC items subject to response efforts;

2.5.1.5 The duration of the munitions response activities, including start and stop times;

2.5.2 A summary of how the Lessee followed its Munitions Response Plan and any deviations from the plan;

2.5.3 A description of safety measures used, including but not limited to the presence of a USCG safety-zone, notices to mariners, other USCG safety actions in place prior to taking any munitions response actions, and how security call protocols were used;

2.5.4 The results of the munitions response;

2.5.5 A description of any threats and effects to health, safety, or the marine environment;

2.5.6 A description of any effects on protected species and marine mammals and measures implemented to reduce risk and monitor effects;

2.5.7 The details and results of any geophysical surveys conducted after the completion of the munitions response activities;

2.5.8 If applicable, a description of anticipated future munitions response activities.

2.6 Safety Management System. Pursuant to 30 C.F.R. § 285.810, the Lessee, designated operator, contractor, or subcontractor constructing, operating, or decommissioning renewable energy facilities on the OCS must have a Safety Management System (SMS) that will guide all activities described in the approved COP (hereinafter the "Lease Area's Primary SMS").

2.6.1 The Lessee will submit all SMS related documentation to BSEE via TIMSWeb.

2.6.2 The Lessee will submit its Lease Area's Primary SMS to BSEE within 30 days of COP approval. BSEE will review the Lease Area's Primary SMS and compare it to the regulations and requirements in Section 2.6.3 and verify whether it is acceptable.

2.6.3 The Lease Area's Primary SMS must identify and assess risks to health, safety, and the environment associated with the offshore wind facilities and operations and must include an overview of the methods that will be used and maintained to control the identified risks.

2.6.4 Pursuant to 30 C.F.R. § 285.811, the Lease Area's Primary SMS must be functional when the Lessee begins activities described in the approved COP. The Lessee must provide to BSEE a description of any changes to the Lease Area's Primary SMS to address new or increased risk before each phase of the Project commences (i.e., construction, operation, maintenance, decommissioning). In addition, the Lessee must demonstrate to BSEE's satisfaction, the functionality of the Lease Area's Primary SMS by providing evidence of such functionality no later than 30 days prior to beginning the relevant activities described in the COP.

2.6.5 The Lessee must conduct periodic Lease Area Primary SMS audits and provide BSEE with a report summarizing the results of the most recent audit at least once every 3 years, and upon BSEE's request. The report must include any corrective actions implemented or being implemented as a result of that audit, and an updated description of the Lease Area's Primary SMS highlighting changes that were made since the last such submission to BSEE. Following BSEE's review of the report, the Lessee must engage with and respond to BSEE

until any questions or concerns BSEE has are resolved and BSEE is satisfied that the Lease Area Primary SMS is effective and functional.

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

2.7 Emergency Response Procedure. Prior to construction of the Project, the Lessee must submit an Emergency Response Procedure to address non-routine events for review and concurrence by BSEE. The Lessee must submit any revisions of the procedure once every 3 years and upon BSEE's request, consistent with Section 2.5.5. The Emergency Response Procedure must address the following:

2.7.1 Standard Operating Procedures. The Lessee must describe the procedures and systems that will be used at Project facilities in the case of emergencies, accidents, or non-routine conditions, regardless of whether man-made or natural. The Lessee must include, as a part of the standard operating procedures for non-routine conditions, descriptions of high-consequence and low probability events and methods to address those events, including methods for: (1) establishing and testing WTG rotor shutdown, braking and locking; (2) lighting control; (3) notifying the USCG of mariners in distress or potential/actual search and rescue incidents; (4) notifying BSEE and the USCG of any events or incidents that may impact maritime safety or security; and (5) providing the USCG with environmental data, imagery, communications, and other information pertinent to search and rescue or marine pollution response.

2.7.2 Communications. The Lessee must describe the capabilities the control center will maintain in order to communicate with the USCG.

2.7.3 Monitoring. The Lessee must ensure that the control center maintains the capability to monitor (e.g., utilizing cameras already installed to support Lessee's operations) the Lessee's installation and operations in real time, including at night and in periods of poor visibility.

2.8 Oil Spill Response Plan. Pursuant to 30 C.F.R. § 585.627(c), the Lessee must submit an Oil Spill Response Plan (OSRP) to the BSEE Oil Spill Preparedness Division (OSPD) at BSEEOSPD_ATL_OSRPs@bsee.gov for review and approval prior to the installation of any component that may handle or store oil on the OCS. The Lessee should not include any confidential or proprietary information in the OSRP. The OSRP may be lease specific, or it may be a regional OSRP covering multiple leases. Facilities and leases covered in a regional OSRP must have the same owner or operator (including affiliates) and must be located in the Atlantic OCS region. For a regional OSRP, subject to BSEE OSPD approval, the Lessee may group leases into sub-regions for the purposes of determining worst-case discharge (WCD) scenarios, conducting

stochastic trajectory analyses, and identifying response resources. The Lessee's OSRP must be consistent with the National Contingency Plan, Regional Contingency Plan, and the appropriate Area Contingency Plan(s), as defined in 30 C.F.R. § 254.6. To continue operating, the Lessee must operate consistent with the OSRP approved by BSEE. The Lessee's OSRP, including any regional OSRP, must contain the following information:

2.8.1 Bookmarks. Appropriately labeled bookmarks that are linked to their corresponding sections of the OSRP.

2.8.2 Table of Contents.

2.8.3 Record of Change. A table identifying the changes made to the current version of the OSRP and, as applicable, a record of changes made to previously submitted versions of the OSRP.

2.8.4 Facility and Oil Information. "Facility", as defined in 30 C.F.R. § 585.113, means an installation that is permanently or temporarily attached to the seabed of the OCS. An OSS and WTG, as examples, each meet this definition of facility. "Oil," as defined in 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. Dielectric fluid, as an example, meets this definition of oil. The OSRP must:

2.8.4.1 List the latitude and longitude, water depth, and distance to the nearest shoreline for each facility that may handle and/or store oil.

2.8.4.2 List the oil(s) by product/brand name and corresponding volume(s) on each type of facility covered under the Lessee's OSRP.

2.8.4.3 Include a map depicting the location of each facility that may handle and/or store oil within the boundaries of the covered lease area(s) and their proximity to the nearest shoreline. The map must also feature a compass rose, scale, and legend.

2.8.5 Safety Data Sheets. The OSRP must include a safety data sheet for every type of oil present on any OCS facility in quantities equal to or greater than 100 gallons.

2.8.6 Response Organization. The OSRP must identify a trained Qualified Individual (QI), and at least one alternate, with full authority to implement removal actions and ensure immediate notification of appropriate Federal officials and response personnel. The Lessee must designate personnel to serve as trained members of an Incident Management Team (IMT) and identify them by name and Incident Command System (ICS) position in the OSRP.

2.8.6.1 "Qualified Individual" means an English-speaking representative of the Lessee who is located in the United States, available on a 24-hour basis, and given 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.

2.8.6.2 "Incident Management Team" (IMT) means the group of personnel identified within the Lessee's organizational structure who manage the overall response to an incident in accordance with the Lessee's OSRP. The IMT consists of the Incident Commander (IC), Command and General Staff, and other personnel assigned to key ICS positions designated in the Lessee's OSRP. With respect to the IMT, the Lessee must identify at least one alternate in the OSRP as the IC, Planning Section Chief (PSC), Operations Section Chief (OSC), Logistics Section Chief (LSC), and Finance Section Chief (FSC). If a contract has been established with a third-party IMT, the Lessee must provide evidence of such a contract in the OSRP.

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

2.8.7.1 The QI and an alternate, including phone numbers and email addresses;

2.8.7.2 IMT members, including phone numbers and email addresses;

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

2.8.7.4 The Oil Spill Removal Organizations (OSRO) and Spill Response Operating Teams (SROT) that are available to respond;

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

2.8.8 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 would follow when responding 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 scenario covered under the Lessee's OSRP. To achieve compliance with this section, the OSRP must include the following:

2.8.8.1 Procedures for the early detection of a spill (i.e., monitoring procedures for detecting dielectric fluid and other oil-based substances handled or stored on the facility when spilled to the ocean).

2.8.8.2 General procedures for ensuring the source of a discharge is controlled as soon as possible after a spill occurs.

2.8.8.3 Procedures to remove oil and oiled debris from shallow waters and along shorelines.

2.8.8.4 Procedures to store, transfer, and dispose of recovered oil and oil-contaminated materials and to ensure that all disposal is in accordance with Federal, State, and local requirements.

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

2.8.10 OSRO(s) and SROT(s). The OSRO is an entity contracted by the Lessee to provide spill response equipment and/or manpower in the event of an oil spill. The SROT are the trained persons who deploy and operate oil spill response equipment in the event of a spill, threat of a spill, or an exercise. The OSRP must include a list (with contact information) of the OSRO(s) and SROT(s) who are under contract and/or membership agreement to respond to the WCD of oil from the Lessee's offshore facilities. Evidence of such contracts and/or membership agreements must be provided in the OSRP.

2.8.11 Oil Spill Response Equipment. The OSRP must include a list, or a hyperlink to a list, of the oil spill response equipment that is available to the Lessee through a contract and/or membership agreement with the OSRO(s). The OSRP must include a map that shows the oil spill response equipment storage depot(s) and planned/potential staging area(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.

2.8.11.1 The Lessee must ensure that the oil spill response equipment is maintained in proper operating condition.

2.8.11.2 The Lessee must ensure that all oil spill response maintenance, modification, and repair records are kept for a minimum of 3 years.

2.8.11.3 The Lessee must provide oil spill response equipment maintenance, modification, and repair records to BSEE OSPD upon request.

2.8.11.4 The Lessee or the OSRO must provide BSEE OSPD with physical access to the oil spill response equipment storage depots and perform functional testing of the equipment upon request.

2.8.11.5 BSEE OSPD may require maintenance, modifications, or repairs to oil spill response equipment or require the Lessee to remove equipment from being listed in the OSRP if it does not operate as intended.

2.8.12 Training. The OSRP must include a description of the training necessary to ensure that the QI, IMT, OSRO(s) and SROT(s) are sufficiently trained to perform their respective duties. The Lessee must ensure that the IMT, OSRO(s), and SROT(s) receive annual training. The Lessee's OSRP must provide the most recent dates of applicable training(s) completed by the QI, IMT, OSRO(s) and SROT(s). The Lessee must maintain and retain training records for 3 years and must provide the training records to BSEE upon request.

2.8.13 Worst-Case Discharge (WCD) Scenario. The OSRP must describe the WCD scenario for the facility containing the highest cumulative volume of oil(s). For a regional OSRP covering multiple sub-regions, a WCD scenario must be described for each sub-region.

2.8.13.1 If multiple candidate WCD facilities contain the same cumulative volume of oil(s), the WCD facility is the one closest to shore.

2.8.13.2 The WCD facility must identified on the facility map consistent with the "Facility and Oil Information" Section 2.8.4.

2.8.13.3 The OSRP must identify the subset of oil spill response equipment from the inventory listed in the OSRP that will be used to contain and recover the WCD volume. The OSRP must include timeframes for response resources to deploy to the WCD facility. Timeframes should include times for equipment procurement, loadout, travel, and deployment.

2.8.14 Stochastic Trajectory Analysis. The OSRP must include a stochastic spill trajectory analysis for the WCD facility. For a regional OSRP containing multiple WCD scenarios, a stochastic trajectory analysis must be included for each WCD scenario. The stochastic trajectory analysis must:

2.8.14.1 Be based on the WCD volume.

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

2.8.14.3 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 g/m^2. Stochastic analysis must incorporate a minimum of 100 different trajectory simulations using random start dates selected over a multi-year period.

2.8.15 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. Compliance with the National Preparedness for Response Exercise Program (NPREP) guidelines will satisfy the exercise requirements of this section. If the Lessee chooses to follow an alternative exercise program, the OSRP must provide a description of that program. For a regional OSRP covering multiple sub-regions, the IMT exercise scenarios must be rotated between each sub-region within the triennial exercise period.

2.8.15.1 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 IMT exercise.

2.8.15.2 The Lessee must conduct an annual oil spill response equipment deployment exercise.

2.8.15.3 The Lessee must notify BSEE OSPD at least 30 days in advance of any exercise it intends to conduct for compliance with this condition.

2.8.15.4 BSEE will advise the Lessee about the options it 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.

2.8.15.5 BSEE may evaluate the results of the exercises and advise the Lessee of any needed changes in response equipment, procedures, tactics, or strategies.

2.8.15.6 BSEE may periodically initiate unannounced exercises to test the Lessee's spill preparedness and response capabilities.

2.8.15.7 The Lessee must maintain and retain exercise records for at least 3 years and must provide the exercise records to BSEE upon request.

2.8.16 OSRP Review and Update. The Lessee must review and update the OSRP at least once every 3 years and more frequently as needed, starting from the date the OSRP was initially approved. The Lessee must send a written notification to BSEE OSPD upon completion of this review and submit any updates for concurrence. BSEE OSPD may require the Lessee to make changes to the OSRP at any time if it is determined to be outdated or to contain significant inadequacies as discovered through a review of the Lessee's OSRP, information obtained during exercises or actual spill responses, or other relevant information obtained by BSEE OSPD.

2.8.17 OSRP Maintenance. The Lessee must submit a revised OSRP to BSEE OSPD within 15 days if any of the following conditions occur:

2.8.17.1 The Lessee experiences a change that would significantly reduce their oil spill response capability.

2.8.17.2 The calculated WCD volume has significantly increased.

2.8.17.3 The Lessee removes a contracted IMT, OSRO, or SROT from the Lessee's plan.

2.8.17.4 There has been a significant change to the applicable area contingency plan(s).

2.9 Cable Routings. The Lessee must submit the final Cable Burial Risk Assessment (CBRA) package and engineered cable routings for all cable routes on the OCS to BSEE for review and concurrence no later than the submittal of the relevant Facility Design Report (FDR). The final CBRA package must include a summary of final information on (1) natural and man-made hazards; (2) sediment mobility, including high and low seabed levels, from both mobile and stable seabed, expected over the Project lifetime; (3) feasibility and effort level information required to meet burial targets; (4) profile drawings of the cable routings illustrating cable burial target depths, and (5) minimum burial depths from stable seabed to address threats to the cable including, but not limited to, anchoring risk, military activity, third party cable crossings, and fishing gear interaction. Detailed supporting data and analysis may be incorporated by reference or attachments, including relevant geospatial data. The Lessee must resolve any BSEE comments on the CBRA to BSEE's satisfaction before BSEE completes its review of the associated FDR under 30 C.F.R § 285.700.

2.10 Cable Burial. The Lessee must install the export and inter-array cables using jetting, vertical injection, control flow excavation, trenching, or plowing as described in Section 3.3.3.4 of the approved COP. For the purpose of the approved COP, BOEM has determined the proper burial depth to be a minimum of 4 feet (1.2 m) below stable seabed along sections of the export and inter-array cables on the OCS. This depth is consistent with the approved COP and the cable burial performance assessment provided in Appendix G4 Cable Burial Feasibility Assessment. Unless otherwise authorized by BSEE, 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 on the OCS and at least 95 percent of the inter-array cable routing, excluding cable crossings and approaches to foundations. The Lessee must demonstrate proper burial depth by providing cable monitoring reports (Section 2.13) and final, as-built information (Section 2.20).

2.11 Cable Protection Measures. The Lessee must install the export and inter-array cables using jetting, vertical injection, control flow excavation, trenching, or plowing as described in Section 3.3.3.4 and 3.3.7.2 of the approved COP. In areas where final cable burial depth is less than 1.2 m below stable seabed, excluding within the vicinity of WTG/OCS-DC foundations where cables are enclosed within a Cable Protection System, the Lessee must install secondary protection such as concrete mattresses,

fronded mattresses, rock bags or rock placement and must adhere to the scour and cable protection measures in Section 5.4.7.

2.11.1 The use of cable protection measures must not exceed 5 percent of the total export cable length on the OCS or 5 percent along the inter-array cable routing, excluding cable crossings and approaches to foundations. The Lessee must employ cable protection measures when proper burial depth is not achieved, as defined in Section 2.10. The Lessee must include design information and drawings as part of the relevant cable FDR and installation information as a part of the relevant FIR. The Lessee must provide BSEE with detailed drawings/information of the actual burial depths and locations where protective measures were used, within 6 months following installation of the export and inter-array cables. The Lessee must post on the project website (Section 1.8 Project Website) notice of locations where target burial depths were not achieved and where cable protection measures were used, including accessible graphic/geo-referenced repository.

2.11.2 If the Lessee requests a variance under Section 1.5, the Lessee must include with the request CVA verification of the proposed alternative.

2.12 Crossing Agreements. 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 BOEM at least 60 days before seabed preparation activities, including boulder clearance. The Lessee must make the agreements and crossing designs available to the CVA for review, unless otherwise determined by BOEM.

2.12.1 If 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 60-days before seabed preparation activities, including boulder clearance. 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. Information to support a claim of reasonable efforts may include call logs, emails, letters, or other methods of communication.

2.13 Post-Installation Cable Monitoring. The Lessee must conduct an inspection of each inter-array and export cable to determine cable location, burial depths, and site conditions, and to assesses the state of the cables. Inspections must occur within 6 months following installation of the export and inter-array cables, and additional inspections within 1 year following completion of the initial post-installation inspection, and every 3 years thereafter. These surveys must also be conducted within 180 days of a storm event (as defined in the Post-Storm Monitoring Plan, described in Section 2.17). The Lessee must provide BSEE and BOEM with a cable monitoring report within 90 days following each inspection. Inspections of the cable location and burial must include high resolution geophysical (HRG) methods, involving, for

example, multibeam bathymetric survey equipment; and identify seabed features, natural and man-made hazards, and site conditions along Federal sections of the cable routing. Inspections of the state of the cable must evaluate degradation to cable integrity and operational performance, including assessments of thermal, electrical, mechanical, and ambient stress factors acting on the cables.

2.13.1 If BSEE determines that the condition of the cable or conditions along the cable corridor warrant adjusting the frequency of inspections (e.g., due to changes in cable burial or seabed conditions that may impact cable stability or other users of the seabed), then BSEE may require the Lessee to submit a revised inspection schedule for review and concurrence.

2.13.2 If BSEE determines that conditions along the cable corridor or the state of the cable have deteriorated or changed significantly and remedial actions are warranted, BSEE will notify the Lessee that the Lessee must submit to BSEE the following via TIMS Web within 90 days of being notified: seabed stability analysis and/or cable integrity analysis, remedial action plan, and a schedule for completing remedial actions. All remedial actions must be consistent with the approved COP. BSEE will review the plan and schedule and provide any comments within 60 days of receiving the plan. The Lessee must resolve all comments to BSEE's satisfaction.

2.13.3 If the Lessee determines that conditions along the cable corridor or the state of the cable have deteriorated or changed significantly and remedial actions are warranted, the Lessee must submit the following to BSEE via TIMS Web within 90 days of making the determination: the data used to make the determination, a seabed stability analysis and/or cable integrity analysis, a plan for remedial actions, and a schedule for the proposed work. All remedial actions must be consistent with those described in the approved COP. BSEE will review the plan and schedule and provide comments within 60 days, if applicable. The Lessee must resolve all comments to BSEE's satisfaction.

2.14 WTG and OSS[5] Foundation Depths. The FDR must include geotechnical investigations at all approved foundation locations along with associated geotechnical design parameters and recommendations consistent with 30 C.F.R. § 585.626(a)(4) and pursuant to BOEM's April 26, 2021, departure approval[6]. The geotechnical investigations at each OSS must include at a minimum, one deep boring located within the footprint of each OSS.

2.15 Structural Integrity Monitoring. In accordance with 30 C.F.R. § 285.824 (Annual Self-Inspection Plan), the Lessee must submit the inspection plan covering the design life of the facility to BSEE for concurrence with the FDR. The Lessee must provide a

[5] The approved Sunrise Wind COP refers to the single offshore substation as OCS-DC.
[6] BOEM April 26, 2021 Departure Request Approval to Sunrise Wind, LLC, https://www.boem.gov/sites/default/files/documents/renewable-energy/3613-FINAL-Letter-to-Sunrise-Wind-Approving-COP.pdf

summary of the findings in the Annual Self-Inspection Report pursuant to 30 C.F.R. § 285.824(b).

2.15.1 Underwater Inspection. The Lessee must conduct a baseline underwater inspection to establish the as-installed platform condition. The baseline underwater inspection must be conducted prior to implementation of a risk-based inspection plan for the platform. The minimum scope of work must include the following, unless the information is available from the installation records: a) a visual survey of the platform for structural damage, from the mudline to waterline, including coating integrity through the splash zone; b) a visual survey to verify the presence and condition of the anodes; c) a visual survey to confirm the presence and condition of installed appurtenances; d) measurement of the as-installed mean water surface elevation, with appropriate correction for tide and sea state conditions; e) record the as-installed platform orientation; and f) measurement of the as-installed platform elevation from the mean lower low water datum.

2.15.2 Above-water Inspection. The Lessee must conduct annual above-water inspections to ensure structural integrity is maintained. The Lessee must inspect the condition of cathodic protection system(s) and for indications of obvious overloading, deteriorating coating systems, excessive corrosion, and bent, missing, or damaged members of the structure in the splash zone and above the water line.

2.16 Foundation Scour Protection Monitoring. The Lessee must inspect scour protection performance. The Lessee must submit an Inspection Plan to BSEE with the appropriate FDR submittal. BSEE will review the Inspection Plan and provide comments, if any, on the plan within 60 days of its submittal. The Lessee must resolve all comments on the Inspection Plan to BSEE's satisfaction and receive BSEE's concurrence prior to initiating the inspection program. If BSEE does not send comments within 60 days, the Lessee may presume concurrence.

2.16.1 The Lessee must carry out an initial foundation scour inspection within 6 months of completing installation of each foundation location; thereafter at intervals not greater than 5 years; and within 180 calendar days after a storm event (as defined in the Post-Storm Monitoring Plan, described in Section 2.17).

2.16.2 The Lessee must provide BSEE and BOEM with a foundation scour monitoring report within 90 days of completing each foundation scour inspection. If multiple foundation locations are inspected within a single survey effort, the foundation scour monitoring reports for those locations may be combined into a single foundation scour monitoring report provided within 90 days of completing the last foundation scour inspection. The schedule of reporting must be included in the Inspection Plan for BSEE review and concurrence.

2.16.3 The Lessee must submit a plan for additional monitoring and/or mitigation to BSEE for review and concurrence if scour protection losses develop within 10

percent of the maximum loss allowance, edge scour develops within 10 percent of the maximum allowance, or spud depressions from installation affect scour protection stability.

2.17 Post-Storm Event Monitoring Plan. The Lessee must provide a plan for post-storm event monitoring of the facility infrastructure, foundation scour protection, and cables to BSEE for review at least 60 days prior to commencing installation activities. The Lessee must address BSEE's comment(s) to BSEE's satisfaction and receive concurrence prior to commencing installation activities. Plans may be submitted separately for the cables (including cable protection), WTGs, and OCS-DC. The plan must describe how the Lessee will measure and monitor environmental conditions and duration of storm events; describe potential monitoring, mitigation, and damage identification methods; and state when the Lessee must notify BSEE of post-storm event related activities. At a minimum, post-storm event inspections must be conducted following each storm where conditions exceed the 10-year return period. BSEE reserves the right to require post-storm mitigations to address conditions that could result in safety risks and/or impacts to the environment.

2.18 High Frequency Radar Interference Analysis and Mitigation. The Lessee's Project has the potential to interfere with oceanographic high-frequency (HF) radar systems in the U.S. Integrated Ocean Observing System (IOOS), which is managed by the IOOS Office within the National Oceanic and Atmospheric Administration (NOAA) pursuant to the Integrated Coastal and Ocean Observation System Act of 2009 (Pub. L. No. 111-11), as amended by the Coordinated Ocean Observation and Research Act of 2020 (Pub. L. No. 116-271, Title I), codified at 33 U.S.C. 3601–3610 (referred to herein as "IOOS HF-radar"). IOOS HF-radar measures the sea state, including ocean surface current velocity and waves in near real time. These data have many vital uses ("mission objectives"), including tracking and predicting the movement of spills of hazardous materials or other pollutants, monitoring water quality, and predicting sea state for safe marine navigation. The U.S. USCG also integrates IOOS HF-radar data into its Search and Rescue systems. The Lessee's Project is within the measurement range of twelve IOOS HF-radar systems listed in the table below:

Table 2.18-1 Identified IOOS HF-radar Systems

Radar Name	Radar Operator
Nantucket, MA SeaSonde (NANT)	Rutgers University
Nantucket, MA LERA (NWTP)	Woods Hole Oceanographic Institute (WHOI)
Martha's Vineyard, MA SeaSonde (MVCO)	Rutgers University
Long Point Wildlife Refuge, MA LERA (LPWR)	WHOI
Horseneck Beach State Reserve, MA LERA (HBSR)	WHOI
Camp Varnum, RI LERA (CPVN)	WHOI
Misquamicut, RI SeaSonde (MISQ)	University of Rhode Island
Block Island, RI Long-range SeaSonde (BLCK)	Rutgers University
Block Island, RI Standard-range SeaSonde (BISL)	University of Rhode Island
Montauk, NY SeaSonde (MNTK)	University of Rhode Island

Radar Name	Radar Operator
Amagansett, NY SeaSonde (AMAG)	Rutgers University
Moriches, NY SeaSonde (MRCH)	Rutgers University

2.18.1 Mitigation Requirement. Due to the potential interference with IOOS HF-radar and the risk to public health, safety, and the environment, the Lessee must mitigate unacceptable interference with IOOS HF-radar from the Project. Interference must be mitigated before commissioning the first WTG or blades start spinning, whichever is earlier, and interference mitigation must continue throughout operations and decommissioning of the Project until the point of decommissioning where all rotor blades are removed. Interference is considered unacceptable if, as determined by BOEM in consultation with NOAA's IOOS Office, IOOS HF-radar performance falls or may fall outside any of the specific radar systems' operational parameters or fails or may fail to meet IOOS's mission objectives.

2.18.2 Mitigation Review. The Lessee must submit to BOEM documentation demonstrating how it will mitigate unacceptable interference with IOOS HF-radar in accordance with Section 2.18.1. The Lessee must submit this documentation to BOEM at least 120 days prior to commissioning the first WTG or blades start spinning, whichever is earlier. If, after consultation with the NOAA IOOS Office, BOEM deems the mitigation unacceptable, the Lessee must resolve all comments on the documentation to BOEM's satisfaction.

2.18.3 Mitigation Agreement. The Lessee is encouraged to enter into an agreement with the NOAA IOOS Office to implement mitigation measures, and any such Mitigation Agreement may satisfy the requirement to mitigate unacceptable interference with IOOS HF radar. The point of contact for development of a Mitigation Agreement with the NOAA IOOS Office is the Surface Currents Program Manager, whose contact information is available at https://ioos.noaa.gov/about/meet-the-ioos-program-office/ and upon request from BOEM. The Lessee may satisfy its obligations under Section 2.18.2 by providing BOEM with an executed Mitigation Agreement between the Lessee and NOAA IOOS. If there is any discrepancy between Section 2.18.2 and the terms of a Mitigation Agreement, the terms of the Mitigation Agreement will prevail.

2.18.4 Mitigation Data Requirements. Mitigation required under Section 2.18.2 must address the following:

2.18.4.1 Before commissioning the first WTG, or blades start spinning, whichever is earlier, and continuing throughout the life of the Project until the point of decommissioning when all rotor blades are removed, the Lessee must make publicly available via NOAA IOOS near real-time, accurate numerical telemetry of surface current velocity, wave height, wave period, wave direction, and other oceanographic data

measured at Project locations selected by the Lessee in coordination with the NOAA IOOS Office.

2.18.4.2 If requested by the NOAA IOOS Office, the Lessee must share with IOOS accurate numerical time-series data of blade rotation rates, nacelle bearing angles, and other information about the operational state of each WTG in the Lease Area to aid interference mitigation.

2.18.5 Additional Notification and Mitigation.

2.18.5.1 If at any time NOAA IOOS or a HF-radar operator informs the Lessee that the Project will cause unacceptable interference to a HF-radar system, the Lessee must notify BOEM of the determination and propose new or modified mitigation pursuant to Section 2.18.5.2 as soon as possible and no later than 30 days from the date on which the determination was communicated.

2.18.5.2 If a mitigation measure other than that identified in Section 2.18.2 is proposed, then the Lessee must submit information on the proposed mitigation measure to BOEM for its review and concurrence. If, after consultation with the NOAA IOOS Office, BOEM deems the mitigation acceptable, the Lessee must conduct activities in accordance with the proposed mitigations. The Lessee must resolve all comments on the documentation to BOEM's satisfaction, in consultation with the NOAA IOOS office, prior to implementation of the mitigation.

2.19 Critical Safety Systems and Equipment. The Lessee must provide to BSEE qualified third-party verification of (1) the identification, (2) proper installation, and (3) commissioning of all critical safety systems and equipment designed to prevent or ameliorate fires, spillages, or other major accidents that could result in harm to health, safety, or the environment (hereinafter "critical safety systems"). The documentation provided to BSEE must demonstrate that the qualified third party verified that the critical safety systems were identified based on a standardized risk assessment methodology, were installed and commissioned in conformity with the Original Equipment Manufacturer's (OEM's) standards and the Project's functional requirements, and are functioning properly as required by the surveillance reporting requirements in Section 2.19.5.

2.19.1 Qualified Third Party. A qualified third party must be either 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.

2.19.2 Critical Safety Systems. Critical safety systems include but are not limited to equipment, devices, engineering controls, or system components that are

designed to prevent, detect, or mitigate impacts from fire, spillages, or other major accidents that could results in harm to health, safety or the environment including systems that facilitate the escape and survival of personnel.

2.19.3 Identification of Critical Safety Systems Risk Assessment(s). The Lessee must conduct a risk assessment(s) to identify the hazards and the critical safety systems used within its facilities including WTG(s), tower(s), and the OCS-DC, to prevent or mitigate identified risks. The Lessee must submit each risk for which a Critical Safety System acts as a control to BSEE and the qualified third party for review in a single document, no later than submission of the FDR. The submission must include a description of the specific hazard along with the determined likelihood and consequence. The Lessee must arrange with the qualified third party and provide the information necessary for a qualified third party to make a recommendation to BSEE on the acceptability of the identified risks and its associated conclusions regarding identified hazards and implemented or changed critical safety systems and equipment. The Lessee must resolve BSEE's comments to BSEE's satisfaction before BSEE completes its review of the associated FDR under 30 C.F.R. § 285.700.

2.19.4 Installation and Commissioning Surveillance Requirements. The Lessee must ensure the proper installation and commissioning of the critical safety systems. The Lessee must arrange for a qualified third party to evaluate whether the installation and commissioning of the critical safety systems are in conformance with the OEM requirements and the Project's functional requirements. BSEE and the Lessee may agree to perform additional tests during commissioning surveillance activities. The third-party evaluation must include: (1) an examination of the commissioning records of the critical safety systems and equipment for every WTG and OSS (i.e., OCS-DC), (2) witnessing the commissioning of the critical safety systems and equipment of 5 percent of the WTG, including at least one WTG in the first array string, and each OSS (i.e., OCS-DC). The Lessee must arrange for a qualified third party, at a minimum, to verify the following:

2.19.4.1 The installation procedures and/or commissioning instructions supplied by the manufacturer and identified in the Project's functional requirements are adequate.

2.19.4.2 During commissioning, the Lessee is following the instructions supplied by the manufacturer and identified in the Project's functional requirements are followed during commissioning.

2.19.4.3 The systems and equipment function as designed.

2.19.4.4 The completion of the final commissioning records.

2.19.5 Surveillance Reporting. The Lessee must submit surveillance records, including for the examination of commissioning records and witnessing, (for example, the

final results and acceptance of the commissioning test by the qualified third party) or a Conformity Statement and supporting documentation (prepared consistent with *International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications* [IECRE OD-502, 2018]) for the critical safety systems identified in Section 2.19.2. Surveillance records for OCS-DC must be submitted within one month of verification by the qualified third party. After the commissioning of the critical safety systems has been completed for the first WTG, the Lessee must, on a monthly basis, submit the surveillance records or Conformity Statement and supporting summary documentation for all WTG which have been verified by a qualified third party within the previous month. If BSEE has not responded to the surveillance records or Conformity Statement and supporting documentation submitted by the qualified third party within 5 business days, then the Lessee may presume concurrence and continue operating. If the surveillance records or Conformity Statement and supporting documentation are not submitted within a month of qualified third-party verification of the commissioning of the safety systems, or if BSEE objects to the submission, BSEE may require the facility to which the surveillance records or Conformity Statement pertains to cease operations.

2.20 Engineering Drawings. The Lessee must compile, retain, and make available to BSEE the drawings and documents specified in Table 2.20-1.

Table 2.20-1 Engineering Drawings		
Drawing Type	**Time Frame to Make Available "Issued for Construction" Drawings**	**Deadline to Make Available Final, As-Built Drawings**
Complete set of structural drawing(s) including major structural components and evacuation routes[7]	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	No later than March 31st of each calendar year, for all structures installed the prior year and submitted annually until completion of installation.
Front, side, and plan view drawings[8]	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A
Location plat for all Project facilities[9]	With FDR submittal. Drawings must be reviewed and stamped by a registered professional land surveyor.	No later than March 31st of each calendar year, for all facilities installed the prior year and updated annually until completion of installation. Drawings must be reviewed and stamped by a registered professional land surveyor.
Complete set of cable drawing(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit preliminary as-built reports quarterly for all facilities installed in the previous quarter. Submit final as-built reports within 6 months following installation of the export and inter-array cables.
Proposed Anchoring Plat as required by Section 5.6.2, 7.3, 7.4, and 7.5	120 days before anchoring activities. If there are fewer than 120 days between anchoring activities and this COP approval, no later than 60 days prior to commencing anchoring.	N/A
As-placed Anchor Plats for all anchoring activities	N/A	Submit 90 days after completion of an activity or construction of a major facility component.
Piping and instrumentation diagram(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit quarterly for all facilities installed in the previous quarter.
Safety diagram(s)[10]	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit quarterly for all facilities installed in the previous quarter.

Electrical drawings, i.e. - Electrical one-line drawing(s) and Protective Relay Coordination Study/Diagram	With FDR- submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit quarterly for all facilities installed in the previous quarter.
Cause and Effect Chart	With FDR submittal.	N/A
Schematics of fire and gas-detection system(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit quarterly for all facilities installed in the previous quarter.
Area classification diagrams	With FDR Submittal.	Submit quarterly for all facilities installed in the previous quarter.

2.20.1 Engineering drawings, as outlined in Table 2.20-1, and the associated engineering report(s) must be reviewed and stamped by a licensed professional engineer or a professional land surveyor. Pursuant to 30 C.F.R. § 285.705(2), any changes to the approved design must be evaluated by BSEE to determine if you are required to use a CVA for any project modifications under 30 C.F.R. § 285.703(c). This applies from the submission date of FDR and FIR through construction, commissioning, and operations and includes structural, mechanical, electrical, and safety systems. For modified systems, only the modifications are required to be stamped by a licensed professional engineer(s) or a professional land surveyor. The professional engineer or land surveyor must be licensed in a State or Territory of the United States and have sufficient expertise and experience to perform the duties.

2.20.2 The Lessee must ensure that the engineer of record submits a stamped report showing that the as-built design documents have been reviewed and do not make material changes from the issued for construction (IFC) drawings and accurately represent the as-installed facility. The Lessee must also ensure that the engineer of record documents any differences between the IFC drawings and the as-built drawings in the stamped report and submits the report with the as-built drawings.

2.20.3 As-Placed Anchor Plats. The Lessee must provide as-placed anchor plats to BOEM and BSEE within 90 days of completion of an activity (including during operations and decommissioning) or construction of a major facility component

[7] As required by 30 C.F.R. § 285.701(a)(4). This is applicable to the WTGs and OSSs.
[8] As required by 30 C.F.R. § 285.701(a)(3). This is applicable to the WTGs and OSSs.
[9] As required by 30 C.F.R. § 85.701(a)(2). This is applicable for all installed assets on the OCS including scour protection, cables, WTGs, OSSs.
[10] Safety 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. This should include, but not be limited to, escape routes, station bill, fire/gas detectors, firefighting equipment, etc.

(e.g., buoys, export cable installation, WTG or OSS (i.e., OCS-DC) installation, inter array cables, UXO/MEC detonation, etc.) or decommissioning to demonstrate that seabed-disturbing activities complied with avoidance requirements for seafloor features and hazards, archaeological resources, and/or anomalies. As-placed plats must show the "as-placed" location of all anchors and any associated anchor chains and/or wire ropes and relevant locations of interest or avoidance on the seafloor for all seabed disturbing activities. The plats must be at a scale of 1 inch = 1,000 feet (300 m) with Differential Global Positioning (DGPS) accuracy.

2.21 Construction Status. On at least a monthly basis, the Lessee must provide BSEE, BOEM, and the USCG with a construction status update and any changes to the construction schedule or process described in the plan required by Section 3.2.1 (Installation Schedule).

2.22 Maintenance Schedule. On a quarterly basis, the Lessee must provide BSEE with its maintenance schedule for any planned WTG or OSS (i.e., OCS-DC) maintenance.

2.23 Pre-lay Grapnel Run Plan. The Lessee must submit a Pre-lay Grapnel Run Plan for BSEE review and concurrence. The plan must be submitted at least 60 days prior to pre-lay grapnel run activities. BSEE will review the plan and provide comments, if applicable, within 60 days. The Lessee must resolve BSEE's comments to BSEE's satisfaction. If BSEE does not provide comments on the plan within 60 days of its submittal, then the Lessee may presume BSEE concurrence with the plan. The plan must be consistent and meet the conditions of the SMS in Section 2.6.

2.23.1 The plan must include the following:

2.23.1.1 Figures of the location of pre-lay grapnel run activities.

2.23.1.2 A description of pre-lay grapnel run methods, including expected grapnel penetration depth, vessel specifications, and metocean limits on operation, etc.

2.23.1.3 A description of removal and disposal methods of debris collected by grapnel run and applicable environmental regulations for disposal.

2.23.1.4 A description of safety distances or zones to limit pre-lay grapnel activities near third part assets. Descriptions should be consistent with Cable Crossing Agreements (Section 2.12).

2.23.1.5 The environmental footprint of disturbance activities and measures taken to avoid further adverse impacts to archeological resources, seafloor hazards, complex habitat and fishing operations.

2.23.1.6 A description of MEC/ UXO ALARP certified areas, which must be consistent with MEC/UXO ALARP Certification (Section 2.2).

2.23.1.7 A summary of any consultation and outreach with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners).

2.23.2 The Lessee must submit a letter to BSEE outlining any deviations from the Pre-lay Grapnel Run Plan within 90 days following the pre-lay grapnel run activities.

3 NAVIGATIONAL AND AVIATION SAFETY CONDITIONS

3.1 Design Conditions.

3.1.1 Marking. The Lessee must mark each WTG and OSS (i.e., OCS-DC) with private aids to navigation. No sooner than 60 days and no less than 30 days before foundation installation, the Lessee must file an application (form CG-2554 or CG-4143, as appropriate), with the Commander of the First USCG District to establish Private Aids to Navigation (PATON), per 33 C.F.R. Part 66. USCG approval of the application must be obtained before the Lessee begins installation of the facilities. The lighting, marking, and signaling plan and design specifications for maritime navigation lighting must be included in the PATON application. The Lessee must:

3.1.1.1 Provide a lighting, marking, and signaling plan for review by BOEM, BSEE, and USCG and concurrence by BOEM and BSEE at least 120 days before foundation installation. The plan must conform to applicable Federal law and regulations, and guidelines, e.g., International Association of Marine Aids to Navigation and Lighthouse Authorities Recommendation G1162, *The Marking of Man-Made Offshore Structures*; and BOEM's Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development (April 28, 2021).

3.1.1.2 Mark each individual WTG and OSS (i.e., OCS-DC) with clearly visible, unique, alpha-numeric identification characters consistent with the attached Rhode Island and Massachusetts Structure Labeling Plot, as identified in the lighting, marking, and signaling plan. The Lessee must additionally display this label on each WTG nacelle, visible from above. If the Lessee's OSS (i.e., OCS-DC) includes helicopter landing platforms, the Lessee must also display this label on the platforms, visible from above.

3.1.1.3 For each WTG, install red obstruction lighting that is consistent with the Federal Aviation Administration (FAA) (Advisory Circular 70/7460-lM).

3.1.1.4 Provide signage that is visible to mariners in a 360-degree arc around the structures to inform vessels of the vertical blade-tip clearance, as determined at Highest Astronomical Tide.

3.1.1.5 Submit documentation to BSEE via TIMSWeb, no later than January 31 of each calendar year for all facilities installed within the preceding calendar year, of the Lessee's compliance with Sections 3.1.1.1 through 3.1.1.4.

3.1.1.6 Immediately report discrepancies in the status of all PATONs to the local USCG Sector Command Center (a timeline of when discrepancies can be resolved must be sent to USCG within 14 days (of identifying the discrepancy).

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

3.1.2.1 Control mechanisms must enable the Lessee to immediately initiate the shutdown of any WTGs upon emergency order from the Department of Defense (DoD) or the USCG. The Lessee must initiate braking and shut down of each WTG after shutdown order. The Lessee may resume operations only upon notification from the entity (DoD or USCG) that initiated the shutdown.

3.1.2.2 The Lessee must include a shutdown procedure in its Emergency Response Procedure and test the shutdown capability (functioning) of at least one WTG within the field at least annually. The Lessee must submit the results of testing with the Project's annual inspection results to BSEE.

3.1.2.3 The Lessee must work with the USCG to establish the proper blade configuration during WTG shutdown for USCG air assets conducting search and rescue operations.

3.1.2.4 The Lessee must notify USCG and BSEE in advance of trainings and exercises to test and refine notification and shutdown procedures, allow USCG and BSEE to participate in trainings and exercises, and provide search and rescue training opportunities for USCG Command Centers, vessels, and aircraft.

3.1.3 Structure Micrositing. The Lessee must not adjust approved structure locations in a way that narrows any linear rows and columns oriented both northwest-southeast or northeast-southwest to less than 0.6 nautical miles nor to a layout which eliminates two distinct lines of orientation in a grid pattern. The Lessee must submit the final as-built structure locations as part of the as-built documentation outlined in Section 2.20.

3.2 Installation Conditions.

3.2.1 Installation Schedule. Not less than 60 days prior to commencing offshore construction activities, the Lessee must provide USCG with a plan that

describes the schedule and process for seabed preparation, export, and inter-array cable installation, and installing the WTGs and OSS (i.e., OCS-DC) installation, including all planned mitigations to be implemented to minimize any adverse impacts to navigation while installation is ongoing. Appropriate LNM submissions must accompany the plan and its revisions.

3.2.2 Design Modifications. Any changes or modification in the design of the lease area that may impact navigation safety (including, but not limited to a change in number, size, or location of WTGs, or a change in construction materials or construction method), requires written approval by BSEE.

3.2.3 Cable Burial. A detailed cable burial plan, containing the proposed locations and burial depths, must be submitted to USCG no later than the relevant FIR submittal. In accordance with Section 2.20, the Lessee must submit to BOEM and the USCG a copy of the final as-built cable burial report containing a positioning list that depicts the precise location and burial depths of the entire cable system (export and array routes).

3.2.4 Nautical Charts/Navigation Aids. The Lessee must submit as-built cable burial reports (containing precise locations and burial depths), OSS (i.e., OCS-DC) locations and WTG locations to USCG and NOAA, consistent with Section 2.20, to facilitate government-produced and commercially available nautical charts and government aids.

3.3 Reporting Conditions.

3.3.1 Complaints. On a monthly basis, the Lessee must (1) provide BSEE 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) a description of remedial action(s) taken in response to complaints received, if any. BSEE reserves the right to require additional remedial action, consistent with 30 C.F.R. Part 285.

3.3.2 Correspondence. On a monthly basis, the Lessee must provide BSEE, BOEM, and the USCG with copies of any correspondence received from other Federal, state, or local agencies regarding navigation safety issues.

3.4 Meeting Attendance. As requested by BSEE, BOEM and the USCG, the Lessee must attend meetings (i.e., Harbor Safety Committee, Area Committee) to provide briefings on the status of construction and operations, and on any problems or issues encountered with respect to navigation safety.

4 NATIONAL SECURITY CONDITIONS

4.1 Hold and Save Harmless – United States Government. Whether compensation for such damage or injury might otherwise be due under a theory of strict or absolute liability or any other theory, the Lessee assumes all risks of damage or injury to any person or

property that occurs in, on, or above the 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 U.S. Government, its contractors and 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

The Lessee assumes this risk, whether or not 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 appropriate command headquarters, whether the same is 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.

4.2 North American Aerospace Defense Command (NORAD) Operations. The Lessee must enter into a mitigation agreement with the DoD/NORAD for purposes of implementing Section 4.2 below. If there is any discrepancy between Section 4.3 and the terms of the mitigation agreement, the terms of the mitigation agreement will prevail. Within 15 days of entering into the mitigation agreement, the Lessee must provide BOEM and BSEE with a copy of the executed mitigation agreement. Within 45 days of completing the requirements in Section 4.2, the Lessee must provide BOEM with evidence of compliance with those requirements. The NORAD point-of-contact for the development of the agreement is John Rowe: John.Rowe.14@us.af.mil. If the NORAD point-of-contact is no longer active, the Lessee must identify a point-of-contact through the DoD Clearinghouse at osd.dod-siting-clearinghouse@mail.mil.

4.2.1 Radar Adverse Impact Management (RAM) Scheduling. To mitigate impacts on NORAD's operation of the Falmouth, MA, Air Surveillance Radar-8 (ASR-8), the Lessee must complete the following:

4.2.1.1 NORAD Notification. At least 30, but no more than 60, days prior to the completion of commissioning of the last WTG (i.e., that date by which every WTG in the Project is installed with potential for blade rotation), the Lessee must notify NORAD for RAM scheduling.

4.2.1.2 Funding for RAM Execution. At least 30, but no more than 60, days prior to completion of commissioning of the last WTG (i.e., that date

by which every WTG in the Project is installed with potential for blade rotation), the Lessee must contribute funds in the amount of $80,000 to NORAD toward the execution of the RAM. If the time gap between the commissioning of the first and last WTG is 3 years or greater, the Lessee must contribute funds in the amount of $80,000 to NORAD toward the execution of the RAM when 50 percent of the WTGs are commissioned, and an additional $80,000 to NORAD toward the execution of additional RAM when the last WTG is commissioned. This allows NORAD to manage radar adverse impacts over an extended period of construction.

4.3 Distributed Fiber-Optic Sensing Technology. The Lessee must 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 use distributed fiber-optic sensing technology as part of the Project or associated transmission cables. The DON point-of-contact for coordination is Matthew Senska: matthew.senska@navy.mil; 571-970-8400.

4.4 Electromagnetic Emissions. 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 days of entering into the agreement.

5 PROTECTED SPECIES[11] AND HABITAT CONDITIONS

5.1 General Environmental Conditions.

5.1.1 Aircraft Detection Lighting System. The Lessee must use an 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 once the system is commissioned. The Lessee must confirm the use of and submit to BOEM and BSEE, information about the FAA-approved vendor for ADLSs on WTGs and OCS-DC at the time the relevant FIR is submitted.

5.1.2 Marine Debris[12] Awareness and Elimination.

[11] 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.

[12] 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.

5.1.2.1 The Lessee must submit required documents related to marine debris awareness training, reporting, and recovery (e.g., annual training compliance, incident reporting, 24-hour notices, recovery plans, recovery notifications, monthly reporting, annual survey and reporting, and decommissioning and site clearance) described in Section 5.1.2.2 through 5.1.2.10 to BSEE via TIMSWeb with a notification email sent to marinedebris@bsee.gov.

5.1.2.2 Marine Debris Awareness Training and Certification. The Lessee must ensure that all vessel operators, employees, and contractors engaged in offshore activities pursuant to the approved COP complete marine debris awareness training initially (i.e., prior to engaging in offshore activities pursuant to the approved COP) and annually. Operators must implement a marine debris awareness training and certification process that ensures that their employees and contractors are adequately trained. The training and certification process must include the following elements: (1) training through viewing of either a marine debris video or training slide pack posted on the BSEE website or by contacting BSEE; (2) an explanation from management personnel that emphasizes their commitment to the requirements; and (3) documented certification that all personnel listed above have completed their initial and annual training. The Lessee must make this certification available for inspection by BSEE upon request.

5.1.2.3 Training Compliance Report. By January 31 of each year, the Lessee must submit to BSEE an annual report that describes its marine debris awareness training process and certifies that the training process has been followed for the preceding calendar year.

5.1.2.4 Marking. Any materials, equipment, tools, containers, and other items that are used in OCS activities and that are of a shape or configuration that make them likely to snag or damage fishing devices or be lost or discarded overboard, must be clearly marked with the vessel or facility identification number and must be properly secured to prevent loss overboard. All markings must clearly identify the owner and must be able to resist the effects of the environmental conditions to which they may be exposed.

5.1.2.5 Recovery. Discarding trash or debris in the marine environment is prohibited. Debris accidentally released by the Lessee into the marine environment while performing any activities associated with the Project must be recovered within 24 hours when the marine debris is likely to (1) cause undue harm or damage to natural resources (e.g., entanglement or ingestion by protected species); or (2) interfere with OCS uses (e.g., snagging or damaging fishing equipment, or presenting a hazard to navigation). If the marine debris was lost within the boundaries of an archaeological resource/avoidance area, or a

sensitive ecological/benthic resource area, the Lessee must contact BSEE for concurrence before conducting any recovery efforts. The Lessee must take steps to prevent similar releases of marine debris and must submit a description of these preventative actions to BSEE within 30 days from the date on which the release of marine debris occurred.

5.1.2.6 Notification. The Lessee must notify BSEE within 24 hours of any releases of marine debris and indicate whether the released marine debris was immediately recovered. If the marine debris was not recovered, the Lessee must provide its rationale for not recovering the marine debris (e.g., marine debris is located within the boundaries of a sensitive area, recovery was not possible because conditions were unsafe, or recovery was not practicable and warranted because the released marine debris is not likely to result in items (1) or (2) listed in Section 5.1.2.5.

5.1.2.7 Remedial Recovery. After reviewing the notification and rationale for any decision by the Lessee to forego recovery as described in Section 5.1.2.5, BSEE may order the Lessee to recover the marine debris if BSEE finds that the reasons provided by the Lessee in the notification are insufficient and the marine debris would cause undue harm or damage to natural resources or interfere with OCS uses.

5.1.2.7.1 Recovery Plan. If BSEE requires the Lessee to recover the marine debris, the Lessee must submit a Recovery Plan to BSEE within 10 days after receiving BSEE's order. Unless BSEE objects within 48 hours after the Recovery Plan has been accepted or is in review status by BSEE in TIMSWeb, the Lessee may proceed with the activities described in the Recovery Plan. Recovery activities must be completed 30 days from the date on which marine debris was released unless BSEE grants the Lessee an extension.

5.1.2.7.2 Recovery Completion Notification. Within 30 days after the marine debris is recovered, the Lessee must provide notification to BSEE that recovery was completed and, if applicable, describe any substantial variance from the activities described in the Recovery Plan that was required during the recovery efforts.

5.1.2.8 Monthly Reporting. The Lessee must submit to BSEE a monthly report, no later than the fifth day of the month, of all marine debris lost or discarded during the preceding month. The Lessee is not required to submit a report for those months in which no marine debris was lost or discarded. The monthly report must include the following:

5.1.2.8.1 If applicable, information related to 48-Hour Reporting and Recovery Plan information that occurred and include the referenced TIMSWeb Submittal ID (SID);

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

5.1.2.8.3 Date and time of the incident;

5.1.2.8.4 Lease number, OCS area and block, and coordinates of the object's location (latitude and longitude in decimal degrees);

5.1.2.8.5 Detailed description of the dropped object, including dimensions (approximate length, width, height, and weight), composition (e.g., plastic, aluminum, steel, wood, or paper), and buoyancy (floats or sinks);

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

5.1.2.8.7 Indication of whether the lost or discarded object could be detected as a magnetic anomaly of greater than 50 nanotesla, a seafloor target of greater than 1.6 feet (0.5 m), or a sub-bottom anomaly of greater than 1.6 feet (0.5 m) when operating a magnetometer or gradiometer, side scan sonar, or sub-bottom profiler.

5.1.2.8.8 Explanation of how the object was lost;

5.1.2.8.9 Description of immediate recovery efforts and results, including photos.

5.1.2.9 Annual Surveying and Reporting, Periodic Underwater Surveys, Reporting of Monofilament and Other Fishing Gear Around WTG Foundations. The Lessee must monitor indirect impacts associated with charter and recreational fishing gear lost from expected increases in fishing around WTG foundations by annually surveying at least 10 of the WTGs in the Lease Area for the first three years following COP approval and every 5 years thereafter. The Lessee may 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 and BSEE in an annual report, submitted by January 31, for the preceding calendar year. Annual reports must be submitted in both Microsoft Word and Adobe PDF format. Photographic and videographic materials (TIFF or Motion JPEG 2000) must be provided in TIMSWeb with the submittal of the annual report. Photographic and videographic files can also be submitted to marinedebris@bsee.gov if the files cannot be uploaded in

TIMSWeb. Survey design and effort (i.e., the number of WTGs and frequency of reporting) may be modified only upon review and concurrence by BOEM and BSEE.

5.1.2.9.1 Annual reports must include a summary of the survey reports that includes survey date(s); contact information of the operator; location and pile identification number; photographic and/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). Annual reports must also include claim data attributable to the Project from the Lessee's corporate gear loss compensation policy and procedures. Required data and reports may be archived, analyzed, published, and disseminated by BOEM and BSEE.

5.1.2.10 Site Clearance and Decommissioning. The Lessee must include information on unrecovered marine debris in the description of the site clearance activities provided in the decommissioning application required under 30 C.F.R. §§ 585.906 and 285.906.

5.2 Avian and Bat Protection Conditions.

5.2.1 The Lessee must submit all required documents related to avian and bat protection conditions in Sections 5.2.2 through Section 5.2.17 to BOEM, USFWS, and to BSEE via TIMSWeb with a notification email to protectedspecies@bsee.gov. The Lessee must confirm the relevant point of contact before submitting the required documents and must also confirm that the agencies have received the documents.

5.2.2 Bird-Deterrent Devices and Plan. To minimize the attraction of birds that are prone to perching, the Lessee must install bird perching-deterrent devices where such devices can be safely deployed on the WTGs and OCS-DC. The Lessee must submit for BOEM and BSEE approval a plan to deter perching on offshore infrastructure. BOEM, BSEE, and USFWS will review the Bird Perching Deterrent Plan and provide any comments on the plan to the Lessee within 60 days of its submittal. The plan must include the type(s) and locations of bird perching-deterrent devices, include a maintenance plan for the life of the project, allow for modifications and updates as new. information and technology become available, track the efficacy of the deterrents, and a timeline for installation. The plan will be based on best available science regarding the efficacy of perching deterrent devices on avoiding and minimizing collision risk. The location of bird-deterrent devices must be proposed by the Lessee based on BMPs applicable to the appropriate operation and safe installation of the devices. The Lessee must submit the Bird Perching Deterrent Plan with the FDR. The Bird Perching Deterrent Plan must be approved before the Lessee may commence installation of any WTGs or OSS (i.e., OCS-DC). The Lessee

must also provide the location and type of bird-deterrent devices as part of the as-built submittals to BSEE.

5.2.3 Navigation Lighting Upward Illumination Minimization. Nothing in this condition supersedes or is intended to conflict with lighting, marking, and signaling requirements of FAA, USCG, or BOEM. The Lessee must use lighting technology that minimizes impacts on avian species to the extent practicable including lighting designed to minimize upward illumination. The Lessee must provide USFWS with a courtesy copy of the final Lighting, Marking, and Signaling plan, and the Lessee's approved application to USCG to establish PATON.

5.2.4 Incidental Mortality Reporting. The Lessee must provide an annual report to BOEM, BSEE and the USFWS documenting any dead (or injured) birds or bats found on vessels and structures during construction, operations, and decommissioning. 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 USGS Bird Band Laboratory, available at https://www.pwrc.usgs.gov/BBL/bblretrv/. Incidental observations are extremely unlikely to document any fatalities of listed birds that may occur due to WTG collision. While this Conservation Measure appropriately requires documentation and reporting of any fatalities observed incidental to O&M activities, the Avian and Bat Post-Construction Monitoring Plan (ABPCMP) will make clear that lack of documented fatalities in no way suggests that fatalities are not occurring. Likewise, the agencies will not presume that any documented fatalities were caused by colliding with a WTG unless there is evidence to support this conclusion. The Lessee must also submit to BOEM, BSEE, and USFWS an annual report covering each calendar year, due by January 31, documenting the implementation of any collision measures during the preceding year.

5.2.5 Immediate Reporting. Any occurrence of a dead or injured ESA-listed bird or bat must be reported to BOEM, BSEE, and USFWS as soon as practicable (taking into account crew and vessel safety), but no later than 72 hours after the sighting. If practicable, the Lessee must carefully collect the dead specimen and preserve the material in the best possible state, contingent on the acquisition of the any necessary wildlife permits and compliance with the Lessee's health and safety standards (see Monitoring Requirements in the USFWS BiOp).

5.2.6 Collision Minimization. Within 5 years of the commissioning of the first WTG and every 5 years thereafter for the operational life of the Project, the Lessee must provide BOEM with a review of best available scientific and commercial data on technologies and methods that have been implemented or are being studied to reduce or minimize bird collisions at WTGs. The review must be worldwide and include both offshore and onshore WTGs. This review will inform BOEM's Collision Minimization Report, consistent with the Terms and

Conditions of the USFWS BiOp. Within 60 days of BOEM's issuance of the final Collision Minimization Report, the Lessee must participate in a meeting to discuss the report with BOEM, BSEE, and USFWS.

5.2.7 Avian and Bat Post-Construction Monitoring Plan. The Lessee must develop and implement an ABPCMP based on the Lessee's Avian and Bat Post-Construction Monitoring Framework (COP Appendix P2), in coordination with BSEE, the USFWS, appropriate state agencies, and other relevant regulatory agencies. Annual monitoring reports will be used to determine the need for adjustments to monitoring approaches, consideration of new monitoring technologies, and/or additional periods of monitoring. Prior to, or concurrent with, offshore construction activities, the Lessee must submit an ABPCMP for BOEM, BSEE, and USFWS review. BOEM, BSEE, and USFWS will review the ABPCMP and provide any comments on the plan within 60 days of its submittal. The Lessee must resolve all comments on the ABPCMP to the satisfaction of BOEM and BSEE before implementing the plan and prior to the commissioning of the first WTG. The goals of the ABPCMP will be: (1) to advance understanding of how the target species utilize the offshore airspace and do (or do not) interact with the wind farm; (2) to improve the collision estimates from the Stochastic Collision Risk Assessment for Movement model (SCRAM) (or its successor) for listed bird species; and (3) to inform any efforts aimed at minimizing collisions or other project effects on target species.

5.2.7.1 Monitoring. The Lessee must conduct monitoring as outlined in the Avian and Bat Post-Construction Monitoring Plan, which must include use of radio-tags to monitor movement of ESA-listed birds in the vicinity of the project. The ABPCMP will allow for changing methods over time in order to regularly update and refine collision estimates for listed birds. Specific to this purpose, the plan must include an initial monitoring phase involving the deployment of Motus radio tags on listed birds in conjunction with the installation and operation of Motus receiving stations on WTGs in the Lease Area following offshore Motus recommendations (https://motus.org/groups/atlantic-offshore-wind/). The initial phase may also include the deployment of satellite-based tracking technologies (e.g., Global Positioning System [GPS] or Argos tags). The monitoring must also include acoustic monitoring of bats, radar monitoring to estimate nocturnal migrants flux and flight heights, and radar monitoring of marine bird avoidance.

5.2.7.2 Annual Monitoring Reports. The Lessee must submit to BOEM, USFWS, and BSEE (via TIMSWeb and at protectedspecies@bsee.gov) a comprehensive report after each full year of monitoring (post-construction) within 12 months of completion of the survey season. The report must include all data, analyses, and summaries regarding ESA-listed and non-ESA-listed birds and bats. In addition, the Lessee must report observations of injured or dead piping plovers and rufa red knots; any listed species perching on Project

infrastructure (including offshore substations); implementation and effectiveness of avoidance and minimization measures; and any other relevant activity and information related to the proposed action and potential impacts to listed species. BOEM, BSEE, and the USFWS must use the annual monitoring reports to assess the need for reasonable revisions (based on subject matter expert analysis) to the ABPCMP. BOEM, BSEE, and the USFWS reserve the right to require reasonable revisions to the ABPCMP and may require new technologies as they become available for use in offshore environments.

5.2.7.3 Post-Construction Quarterly Progress Reports. During the first 12 months the Project is fully operational and commissioned (all installed WTGs producing power), the Lessee must submit quarterly progress reports concerning the implementation of the ABPCMP to BOEM, BSEE, and USFWS by the 15th day of the first month following the end of each quarter. The Lessee must include a summary of all work performed, an explanation of overall progress, and any technical problems encountered in the progress reports.

5.2.7.4 Monitoring Plan Revisions. Within 30 days of submitting the annual monitoring report, the Lessee must meet with BOEM, BSEE, USFWS, and appropriate state wildlife agencies to discuss the monitoring results, the potential need for revisions to the ABPCMP, including technical refinements or additional monitoring, and the potential need for any additional efforts to reduce impacts. If, following that meeting, BOEM, BSEE, and USFWS jointly determine that revisions to the ABPCMP are necessary, the Lessee must modify the ABPCMP. If the reported monitoring results deviate substantially from the impact analysis included in the Final EIS,[13] the Lessee must transmit to BOEM, BSEE, and USFWS recommendations for new mitigation measures and/or monitoring methods. In consultation with USFWS, BOEM and BSEE may adjust the frequency, duration, and methods for various monitoring efforts in future revisions of the ABPCMP based on current technology (including its cost), and the evolving weight of evidence regarding the likely levels of collision mortality for each listed bird species. The effectiveness and cost of various technologies/methods will be key considerations when revising the plan. Grounds for revising the ABPCMP include, but are not limited to: (i) greater than expected levels of collision of listed birds; (ii) evolving data input needs for SCRAM (or its successor); (iii) changing technologies for tracking or otherwise monitoring listed birds in the offshore environment that are relevant to assessing collision risk; (iv) new information or understanding of how listed birds utilize the

[13] https://www.boem.gov/renewable-energy/state-activities/sunrise-wind-final-environmental-impact-statement-feis-commercial

offshore environment and/or interact with wind farms; and (v) coordination and alignment of tracking, monitoring, and other data collection efforts for listed birds across multiple wind farms/leases on the OCS. The Lessee must continue implementation of appropriate monitoring activities for listed birds (under the current and future versions of the ABPCMP) until one of the following occurs: (i) the WTGs cease operation; (ii) the Service concurs that a robust weight of evidence has demonstrated that collision risks to all two listed birds from WTG operations are negligible (i.e., the risk of take from WTG operation is discountable); or (iii) the USFWS concurs that further data collection is unlikely to improve the accuracy or robustness of collision mortality estimates and is unlikely to improve the ability of BOEM and the Lessee to reduce or offset collision mortality.

5.2.7.5 Operational Reporting. Upon commissioning of the first WTG, the Lessee must submit to BOEM and BSEE an annual report, due by January 31, summarizing monthly operational data from the preceding year calculated from 10- minute supervisory control and data acquisition (SCADA) data for all WTGs together in tabular format, including the proportion of time the WTGs were spinning each month, the average rotor speed (monthly revolutions per minute) of spinning WTGs plus 1 standard deviation, and the average pitch angle of blades (degrees relative to rotor plane) plus 1 standard deviation. Any data considered by the Lessee to be privileged or confidential must be clearly marked as confidential business information and will be handled by BOEM and BSEE in a manner consistent with 30 C.F.R. § 585.114.

5.2.8 Raw Data. The Lessee must store the raw data from all avian and bat surveys and monitoring activities using accepted archiving practices. Such data must be accessible to BOEM, BSEE, and USFWS upon request for the duration of the Lease. The Lessee must work with BOEM to ensure the data are publicly available. All avian tracking data (i.e., from radio and satellite transmitters) must be stored, managed, and made available to BOEM and USFWS following the protocols and procedures outlined in the agency document entitled, *Guidance for Coordination of Data from Avian Tracking Studies* effective at the time of COP approval.

5.3 Compensatory Mitigation for Piping Plover and Red Knot. At least 180 days prior to the start of commissioning of the first WTG, the Lessee must distribute a Compensatory Mitigation Plan to BOEM, BSEE, and the USFWS for review and comment. BOEM, BSEE, and USFWS will review the Compensatory Mitigation Plan and provide any comments on the plan to the Lessee within 60 days of its submittal. The Lessee must resolve all comments on the Compensatory Mitigation Plan to BOEM's and BSEE's satisfaction before implementing the plan and before commissioning of the first WTG. The Compensatory Mitigation Plan must provide compensatory mitigation actions to offset take of Piping Plover and Red Knot by the

fifth year of WTG operation. The Compensatory Mitigation Plan must include (1) detailed description of the mitigation actions; (2) the specific location for each mitigation action; (3) a timeline for completion of the mitigation measures; (4) itemized costs for implementing the mitigation actions; (5) details of the mitigation mechanisms (e.g., mitigation agreement, applicant-proposed mitigation; and (6) monitoring to ensure the effectiveness of the mitigation actions in offsetting take.

5.4 Benthic Habitat and Fisheries Monitoring Conditions.

5.4.1 Fisheries and Benthic Monitoring Plan. The Lessee must conduct fisheries and benthic monitoring consistent with the Lessee's Fisheries and Benthic Monitoring Plan in Appendix AA of the COP to assess fisheries status in the Project area pre-, during, and post-construction.

5.4.2 The Lessee must submit an annual report to BOEM, BSEE, and NMFS GARFO-PRD for benthic habitat and fisheries monitoring activities in the preceding calendar year by February 15 (i.e., the report of 2023 activities is due by February 15, 2024). The report must include a summary of all activities conducted, the dates and locations of all fisheries surveys, number of tows, location, and duration for all trawl surveys summarized by month, number of vessel transits, and a summary table of any observations and captures of ESA listed species during these surveys. The report must also summarize all acoustic telemetry and benthic monitoring activities that occurred, inclusive of vessel transits. The Lessee must share data consistent with its data sharing plan and upon BOEM's or BSEE's request.

5.5 Non-Avian Protected Species Monitoring Plan Conditions[14].

5.5.1 The Lessee must submit all required documents related to protected species in Sections 5.5.2 through 5.5.10 (e.g., passive acoustic monitoring (PAM), pile driving monitoring plans, UXO/MEC PAM Plan, sound field verification (SFV), and vessel strike) to BOEM, BSEE via TIMSWeb with a notification email sent to BSEE at protectedspecies@bsee.gov, NMFS GARFO-PRD, NMFS-OPR, and USACE. The Lessee must follow final plans.

5.5.2 Passive Acoustic Monitoring (PAM) During Construction. The Lessee must conduct PAM to supplement visual monitoring of marine mammals before, during, and after all monopile and jacket foundation installations and UXO/MEC detonations.

5.5.3 UXO/MEC PAM Plan. The Lessee must prepare and implement a UXO/MEC PAM Plan that describes all proposed equipment, deployment locations,

[14] The requirements in this section set forth BOEM's conditions pursuant the reasonable and prudent measures and the implementing terms and conditions of the NMFS Biological Opinion. *See* Reasonable and Prudent Measure 5 and Term and Condition 11, in the Incidental Take Statement. BOEM intends to implement its conditions of approval, including those in this section, consistently with the Terms and Conditions in the Biological Opinion. *See*, Condition 1.4, above.

detection review methodology, and other procedures and protocols related to the use of PAM to supplement visual monitoring prior to, during, and after UXO/MEC detonation. The Lessee must submit this plan to the contacts listed in Section 5.5.1 for review and BOEM's and BSEE's concurrence at least 180 days before the planned start of UXO/MEC detonation activities. The UXO/MEC PAM Plan must incorporate the list of requirements for the Pile Driving PAM Plan described in Section 5.5.4.

5.5.4 Pile Driving PAM Plan. The Lessee must prepare and implement a Pile Driving PAM Plan. The Lessee must submit this plan to BOEM, BSEE, NMFS GARFO-PRD, and NMFS-OPR at least 180 days before impact pile driving is planned. BOEM, BSEE, and NMFS GARFO will review the plan and will provide comments within 45 days of receipt of the plan BOEM and BSEE will inform the Lessee if the plan is inconsistent with those requirements. The Lessee must resubmit a modified plan that addresses the identified issues within 30 days of the receipt of the comments but at least 15 days before the start of the associated activity. BOEM, BSEE and NMFS will discuss a timeline for review of the modified plan to meet the Lessee's schedule to the maximum extent practicable. The Lessee must obtain BOEM's and BSEE's concurrence with this Plan prior to the start of any pile driving. The plan must include a description of all proposed PAM equipment and hardware, the calibration data, bandwidth capability and sensitivity of hydrophones, and address how the proposed PAM will follow standardized measurement, processing methods, reporting metrics, and metadata standards for offshore wind (Van Parijs et al., 2021). The plan must describe and include all procedures, documentation, and protocols, including information (i.e., testing, reports, equipment specifications) to supporting the PAM system's capacity to detect vocalizing whales, including the North Atlantic right whale (NARW), within the clearance and shutdown zones (see Section 5.10.5). This information must include deployment locations, procedures, detection review methodology, and protocols; hydrophone detection ranges with and without foundation installation activities and data supporting those ranges; where PAM Operators will be stationed relative to hydrophones and PSOs on pile driving vessel calling for delay/shutdowns; and a full description of all proposed software, call detectors and their performance metrics (i.e., false positives and false negatives), and filters. The plan must also incorporate the requirements relative to NARW reporting in 5.14.1.

The Lessee must submit full detection data, metadata, and location of recorders (or GPS tracks, if applicable) from all real-time hydrophones used for monitoring during construction within 90 days after pile-driving has ended and instruments have been pulled from the water. Reporting must use the webform templates on the NMFS Passive Acoustic Reporting System website at https://www.fisheries.noaa.gov/resource/document/passive-acoustic-reporting-system-templates. The Lessee must submit the full acoustic recordings from all the real-time hydrophones to the National Centers for Environmental Information (NCEI) for archiving within 90 days after pile-driving has ended

and instruments have been pulled from the water. Confirmation of both submittals must be sent to NMFS GARFO-PRD.

5.5.5 Sound Field Verification (SFV) Plan. The Lessee must submit, prepare, and implement (as approved by BOEM and BSEE) a SFV Plan prior to pile driving and UXO/MEC detonation. The Lessee must submit a SFV Plan or Plans, if separate Pile Driving SFV Plans and UXO/MEC SFV Plans are prepared, to BOEM, BSEE, NMFS-OPR, and NMFS GARFO-PRD at least 180 days before impact pile driving or UXO detonation is planned to begin. BOEM, BSEE, and NMFS GARFO will review the plan(s) and provide comments within 45 days of receipt of the plan. NMFS GARFO's comments to BOEM, BSEE, and the Lessee will include a determination as to whether the plan is consistent with the requirements outlined in the September 28, 2023, BiOp and its ITS. BOEM and BSEE will inform the Lessee if the plan is inconsistent with those requirements. The Lessee must resubmit a modified plan that addresses the identified issues within 30 days of the receipt of the comments but at least 15 days before the start of the associated activity. The Lessee must obtain BOEM's and BSEE's concurrence with this plan prior to the start of pile driving or UXO detonation activities. The purpose of SFV and the steps outlined here are to ensure that the Lessee does not exceed the distances to the modeled auditory injury (i.e., harm) or behavioral harassment threshold (Level A and Level B harassment respectively) for marine mammals assuming 10 dB attenuation, the harm or behavioral harassment thresholds for sea turtles, or the harm or behavioral disturbance thresholds for Atlantic sturgeon that are identified in the NMFS BiOp.

5.5.5.1 Pile Driving. The plan must describe how the Lessee will conduct Thorough SFV, including consideration of whether any monitored foundation locations would be different from those used for acoustic modeling. In the case that these sites are determined to not be representative of all other foundation installation sites for a scenario, the Lessee must include information on how additional sites will be selected for Thorough SFV. The Lessee must provide justification for why these locations are representative of the scenario modeled. The Plan must provide a table of the identification number and coordinates of each foundation location, and specify the underwater acoustics analysis model scenario against which each foundation location's SFV results will be compared. The Plan(s) must also include the piling schedule and sequence of events, communication and reporting protocols, and methodology for collecting, analyzing, and preparing SFV data for submission to NMFS, including instrument deployment, locations of all hydrophones (including direction and distance from the pile), hydrophone sensitivity, recorder/measurement layout, and analysis methods. The Plan must also identify the number and distance of relative location of hydrophones for Thorough and Abbreviated SFV. Thorough SFV consists of: SFV measurements made at a minimum of four distances from the pile(s) being driven, along a

single transect, in the direction of lowest transmission loss (i.e., projected lowest transmission loss coefficient), including, but not limited to, 750 m and three additional ranges selected such that measurement of identified isopleths are accurate, feasible, and avoid extrapolation. At least one additional measurement at an azimuth 90 degrees from the array at approximately 750 m must be made. At each measurement location, there must be a near-bottom and mid-water column hydrophone (measurement systems); the recordings must be continuous throughout the duration of all pile driving (inclusive of any relief drilling) of each foundation. Abbreviated SFV consists of: SFV measurements made at a single acoustic recorder, consisting of a near-bottom and mid-water hydrophone, at approximately 750 m from the pile, in the direction of lowest transmission loss, to record sounds throughout the duration of all pile driving (inclusive of relief drilling) of each foundation. The plan must include a template of the interim report to be submitted and describe all the information that will be reported in the SFV Interim Reports including the number, location, depth, distance, and predicted and actual isopleth distances that will be included in the final report(s). The Plan must describe how the interim SFV report results will be evaluated against the modeled results, including which modeled scenario the results will be reported against, and decision tree of what happens if measured values exceed predicted values. The Plan must address how the Lessee will implement the measures associated with the required SFV which includes, but is not limited to, identifying additional or modified noise attenuation measures (e.g., additional noise attenuation device, adjust hammer operations, adjust or modify the noise mitigation system) that will be applied to reduce sound levels if measured distances are greater than those modeled as well as implementation of any expanded clearance or shutdown zones, including deployment of additional PSOs.

5.5.5.2 Thorough SFV consists of: SFV measurements made at a minimum of four distances from the pile(s) being driven, along a single transect, in the direction of lowest transmission loss (i.e., projected lowest transmission loss coefficient), including, but not limited to, 750 m and three additional ranges selected such that measurement of identified isopleths are accurate, feasible, and avoid extrapolation. At least one additional measurement at an azimuth 90 degrees from the array at 750 m must be made. At each location, there must be a near bottom and mid-water column hydrophone (measurement systems); the recordings must be continuous throughout the duration of all pile driving of each foundation. Abbreviated SFV consists of: SFV measurements made at a single acoustic recorder, consisting of a bottom and midwater hydrophone, at approximately 750 m from the pile, in the direction of lowest transmission loss, to record sounds throughout the duration of all pile driving of each foundation.

5.5.5.3 Thorough SFV for the first construction year includes: the first 3 monopiles and first 2 jacket foundations (all piles) installed; the first monopile and jacket foundation (all piles) installed with a different foundation installation technique the first monopile and first jacket foundation installed in December (winter sound profile); and, the first foundation for any subsequent foundation scenarios that were modeled for the exposure analysis (e.g., rated hammer energy, number of strikes, representative location).

Thorough SFV for any subsequent construction year includes:

- if there are no planned changes to the pile driving equipment (i.e., same hammer, same Noise Attenuation System) – the first monopile and first jacket foundation.
- if a revised FDR/FIR or other information is submitted to BOEM and BSEE that details changes to the equipment (e.g., different hammer, different noise attenuation system) – Thorough SFV requirements for the first construction year apply.
- any foundation type or technique included in the requirements for the first construction year that was not installed until the subsequent construction year.

5.5.5.4 Clearance and Shutdown Zones. If any of the Thorough SFV measurements indicate that the distances to level A thresholds for marine mammals (peak or cumulative) or PTS peak or cumulative thresholds for sea turtles are greater than the modeled distances (assuming 10 dB attenuation), the clearance and shutdown zones for subsequent piles of the same type (e.g., if triggered by SFV results for a monopile, for the next monopile) must be increased so that they are at least the size of the distances to those thresholds as indicated by SFV (e.g., if threshold distances are exceeded on pile 1 then the clearance and shutdown zones for pile 2 must be expanded). For every 1,500 m that a marine mammal clearance or shutdown zone is expanded, additional PSOs must be deployed from additional platforms/vessels to ensure adequate and complete monitoring of the expanded shutdown and/or clearance zone; the Lessee must deploy any additional PSOs consistent with the approved Pile Driving Monitoring Plan in consideration of the size of the new zones and the species that must be monitored (i.e., sea turtles and/or whales). Use of the expanded clearance and shutdown zones must continue for additional piles until BOEM, BSEE, and NMFS GARFO receive a request from the Lessee and agree to revert to the original clearance and shutdown zones.

5.5.5.5 UXO/MEC. The plan must describe how the Lessee will conduct the required Thorough SFV for all planned UXO detonation. Thorough

SFV consists of: SFV measurements made at a minimum of four distances from the detonation, along a single transect, in the direction of lowest transmission loss (*i.e.,* projected lowest transmission loss coefficient), including, but not limited to, 750 m and three additional ranges selected such that measurement of identified isopleths are accurate, feasible, and avoid extrapolation. At least one additional measurement at an azimuth 90 degrees from the array at 750 m must be made. At each location, there must be a near bottom and mid-water column hydrophone (measurement systems). The Plan must describe how the interim SFV report results will be evaluated against the modeled results and decision tree of what happens if measured values exceed predicted values. The Plan must address how the Lessee will implement the measures associated with the required SFV, including by, for example, identifying additional or modified noise attenuation measures (e.g., additional noise attenuation device, adjust hammer operations, adjust or modify the noise mitigation system) that will be applied to reduce sound levels if measured distances are greater than those modeled. The Plan must also include the implementation of any expanded clearance or shutdown zones, including deployment of additional PSOs.

5.5.5.6 SFV Interim Reports - Pile Driving and UXO/MEC detonation. The Lessee must provide BOEM, BSEE, USACE, and NMFS GARFO the initial results of the Thorough SFV measurements in an interim report. Each report must be submitted as it is available but no later than 48 hours after the installation of each pile for which Thorough SFV is carried out and, for UXO detonation, no later than 48 hours after the detonation. If technical or other issues prevent submission within 48 hours, the Lessee must notify BOEM, BSEE, and NMFS GARFO within that 48-hour period with the reasons for delay and provide an anticipated schedule for submission of the report. These reports are required for each of the first three monopiles installed, the pin pile OCS-DC foundation, and any additional piles for which SFV is required. The interim report must include data from hydrophones identified for interim reporting in the SFV Plan and include a summary of pile installation activities (pile diameter, pile weight, pile length, water depth, sediment type, hammer type, total strikes, total installation time (start time, end time), duration of pile driving, max single strike energy, NAS deployments), pile location, recorder locations, modeled and measured distances to thresholds, received levels (rms, peak, and SEL) results from Conductivity, Temperature, and Depth (CTD) casts/sound velocity profiles, signal and kurtosis rise times, pile driving plots, activity logs, weather conditions. Additionally, any important sound attenuation device malfunctions (suspected or definite), must be summarized and substantiated with data (e.g. photos, positions, environmental data, directions, etc.) and observations. Such malfunctions include gaps in the bubble curtain,

significant drifting of the bubble curtain, and any other issues which may indicate sub-optimal mitigation performance or are used by the Lessee to explain performance issues. All Thorough SFV reports must include a table with expected levels at 750 m, to be compared against measurements from Abbreviated SFV monitoring. Expected single strike metrics are the maxima of the 95th-percentile of measured unweighted SPL, SEL, and Peak for any single Thorough SFVs for which isopleths were calculated to be within modeled ranges assuming 10 dB attenuation rounded up to the next integer decibel. The expected cumulative metric of unweighted SEL for all impact pile-driving strikes must also be reported and compared to measured levels. All Abbreviated SFV reports must include the results from the hydrophones at 750m and a comparison to the expected levels at 750 m based on the previously completed Thorough SFV for comparable pile type and installation method. Abbreviated SFV reports must be submitted with the weekly pile driving report. SFV Final Reports - The final results of Thorough SFV for monopile and pin pile installations must be submitted as soon as possible, but no later than within 90 days following completion of pile driving for which the Thorough SFV was carried out. The final results of Thorough SFV for UXO detonations must be submitted as soon as possible, but no later than within 90 days following completion of each UXO detonation.

5.5.5.7 Attenuation Measures. The following conditions are based on the expectation that the initial pile driving methodology and sound attenuation measures will result in noise levels that do not exceed the identified distances (as modeled assuming 10 dB attenuation) but, if that is not the case, the following step-wise approach for modifying operations and/or modifying or adding sound attenuation measures that can reasonably be expected to avoid exceeding those thresholds prior to the next pile being driven. If any of the SFV measurements from any foundation pile indicate that the distance to any isopleth of concern is larger than those modeled assuming 10 dB attenuation (see September 28, 2023, BiOp Tables 7.1.8, 7.1.9, 7.1.10, 7.1.34, 7.1.35, 7.1.45, noting appropriate consideration of use of acoustic ranges rather than exposure ranges), the Lessee must identify and implement measures that are expected to reduce sound levels to the modeled distances assuming 10dB attenuation before the next pile is installed. Attenuation measures that could reduce sound levels to the modeled distances include, but are not limited to: adding noise attenuation device, adjusting hammer operations, and adjusting the noise mitigation system (NMS). Additionally, the Lessee must also provide an explanation to BOEM, BSEE, NMFS GARFO-PRD and NMFS-OPR as to why the additional measures to be implemented for the next pile will reduce sound levels to the modeled distances. The Lessee must implement those additional measures before installing

subsequent piles (e.g., if threshold distances are exceeded on pile 1 then additional measures must be deployed before installing pile 2).

5.5.5.7.1 If after implementation of the additional/modified sound attenuation measures, any subsequent Thorough SFV measurements still indicate ranges larger than those modeled assuming 10 dB attenuation, then the Lessee must identify and implement additional noise attenuation measures (e.g., additional bubble curtain or modify the pile driving operations) in a way that is expected to reduce noise and the distance to thresholds of concern to no greater than the modeled distances (assuming 10 dB attenuation). The Lessee must provide a written explanation to BOEM, BSEE, NMFS GARFO-PRD and NMFS-OPR as to why the additional measures to be implemented for the next pile will reduce sound levels to the modeled distances. The Lessee must implement those additional noise attenuation measures before installing subsequent piles (e.g., if threshold distances are still exceeded on pile 2 the additional measures must be deployed for pile 3). Thorough SFV must be carried out for this foundation installation. Following installation of the pile with the second round of additional, modified, and/or alternative noise attenuation measures or operational changes, if SFV results indicate that any isopleths of concern are still greater than those modeled assuming 10 dB attenuation, the Lessee must implement the requirements for additional/modified attenuation measures in a above. Thorough SFV must be carried out for this foundation installation.

If no additional measures or modifications are identified for implementation, or if the SFV required by 2.b (i.e., for the pile installed with a second round of additional/modified noise attenuation or pile driving operations) indicates that the distance to any isopleths of concerns for any ESA listed species are still greater than those modeled assuming 10 dB attenuation, NMFS GARFO-PRD, NMFS-OPR, BOEM, BSEE, and USACE will meet within three business days to discuss: the results of SFV monitoring, the severity of exceedance of distances to identified isopleths of concern, the species affected, modeling assumptions, and whether any triggers for reinitiation of consultation are met (50 C.F.R. § 402.16), including consideration of whether the SFV results constitute new information revealing effects of the action that may affect listed species in a manner or to an extent not previously considered in the consultation.

Additional Thorough SFV may also be required by DOI as a result of this meeting.

5.5.5.7.2 Following installation of the pile with additional, alternative, or modified noise attenuation measures/operational changes required by 2a or 2b, if SFV results indicate that all isopleths of concern are within distances to isopleths of concern modeled assuming 10 dB attenuation, Thorough SFV must be conducted on two additional piles of the same type/installation method (for a total of at least three piles with consistent noise attenuation measures). If the SFV results from all three of those piles are within the distances to isopleths of concern modeled assuming 10 dB attenuation the Lessee must continue to implement the approved additional, alternative, or modified sound attenuation measures/operational changes. The Lessee can request concurrence from BOEM and BSEE to return to the original clearance and shutdown zones or can continue with the expanded clearance and shutdown zones with any additional PSOs.

5.5.5.7.3 The Lessee must implement Abbreviated SFV for all piles for which the Thorough SFV monitoring outlined above is not carried out. To that end, the Lessee must place a single acoustic recorder at approximately 750 m from the pile to record sounds during pile driving. The monitoring data collected will be used to compare to expected levels from Thorough SFV results to assess whether the representative levels at approximately 750 m were exceeded.

5.5.5.7.4 The Lessee must review Abbreviated SFV results for each pile within 24 hours of completion of the foundation installation and, assuming measured levels at 750 m did not exceed the thresholds defined during Thorough SFV, does not need to take any additional action. Results of Abbreviated SFV must be submitted with the weekly pile driving report.

5.5.5.7.5 If measured levels from Abbreviated SFV are greater than expected levels, the Lessee must evaluate the available information from the pile installation to determine if there is an identifiable cause of the exceedance (i.e., a failure of the noise attenuation system), identify and implement corrective action, and report this information to BOEM, BSEE, USACE, and NMFS GARFO within 48 hours of completion of the pile driving activity, during which the exceedance occurred. If the Lessee can demonstrate that the exceedance was the result of a failure of the noise

attenuation system (e.g., loss of a generator supporting the bubble curtain such that one bubble curtain failed during pile driving) that can be remedied in a way that returns the noise attenuation system to pre-failure conditions, the Lessee can request concurrence from BOEM and BSEE to proceed without Thorough SFV monitoring that would otherwise be required within 72 hours.

5.5.5.7.6 If results of Abbreviated SFV monitoring exceed expected values at 750 m, the Lessee must resume Thorough SFV monitoring (as described in 5.5.5.2 above) for foundation installations no later than the first foundation 72 hours after the completion of the pile driving with an exceedance (e.g., if pile driving was completed at 3pm on Monday, any pile installed after 3pm on Thursday must have Thorough SFV monitoring).

5.5.5.7.7 The Lessee can request BOEM and BSEE concurrence to resume Abbreviated SFV monitoring following submission of an interim report from Thorough SFV with ranges to the identified thresholds within expected values. The Lessee may resume Abbreviated SFV monitoring if three consecutive Thorough SFV reports indicate ranges to regulatory thresholds within predicted values. Interim Abbreviated and Thorough monitoring reports must be submitted to BOEM, BSEE, USACE, and NMFS GARFO within 48 hours of completion of the monitored pile.

5.5.5.7.8 If results from any Thorough SFV monitoring triggered by results from Abbreviated SFV indicate that ranges to the identified thresholds are larger than expected values, the Lessee must delay installation of subsequent piles to allow for a meeting between BOEM, BSEE, USACE, and NMFS. The agencies will meet within three business days to discuss: the results of SFV monitoring, the severity of exceedance of distances to identified isopleths of concern, the species affected, modeling assumptions, and whether any triggers for re-initiation of consultation are met (50 C.F.R. § 402.16), including consideration of whether the SFV results constitute new information revealing effects of the action that may affect listed species in a manner or to an extent not previously considered in the consultation. Additional Thorough SFV may also be required by DOI as a result of this meeting.

5.5.6 Long-term PAM. The Lessee must conduct long-term monitoring of ambient noise and baleen whales; and commercially important fish vocalizations in the

Lease Area before, during, and following construction. The Lessee must conduct continuous[15] recording at least 30 days before the start of pile installation, through pile installation, initial operation, and for at least 3 but no more than 10 full calendar years of operations[16] to monitor for potential impacts. The Lessee must meet with BOEM and BSEE at least 60 days prior to conclusion of the third full calendar year of operation monitoring (and at least 60 days prior to the conclusion of each subsequent year until monitoring is concluded) to discuss: 1) monitoring conducted to-date, 2) the need for continued monitoring, and 3) if monitoring is continued, whether adjustments to the monitoring are warranted. The monitoring instrument(s) must be configured to ensure that the specific locations (with confidence intervals) of vocalizing NARW anywhere within the lease area can be identified, assuming a 10 km detection range for their calls. The Lessee may satisfy this condition through either of the options set forth more fully below.

5.5.6.1 Option 1 - Lessee Conducts Long-term Passive Acoustic Monitoring. If the Lessee chooses to comply with Section 5.5.6 using this option, the Lessee-must conduct PAM, including data processing and archiving following the Regional Wildlife Science Collaborative (RWSC) best practices[17] to ensure data comparability and transparency. PAM instrumentation must be deployed to allow for identification of any NARW that vocalize anywhere within the lease area as well as Atlantic cod that may use Priority Area 1 for spawning.

Priority Area 1 is defined in Section 2.1.3 and depicted in Figure 2.1-8 of the Final EIS for the Project.

The sampling rate (minimum 10 kHz) of the recorders must prioritize baleen whale detections but must also have a minimum capability to record noise from vessels, pile-driving, and WTG operation in the lease area. The system must be configured for continuous recording over the entire year. If temporal gaps in recording are expected, the Lessee must ensure that additional recorders can be deployed to fill gaps. The Lessee must use trawl-resistant moorings to ensure that instruments are not lost and must replace any lost instruments as soon as possible. The Lessee must also notify BOEM if this occurs.

The Lessee must follow the best practices outlined in the RWSC best practices document,[18] unless otherwise required through conditions of

[15] Continuous recording in this measure recognizes that PAM devices can be damaged or lost from weather and other ocean uses, mechanical failures, and general maintenance. The Lessee must make every effort to maintain the PAM system as near continuous as possible. If temporal gaps in recording are expected, the lessee must ensure that additional recorders can be deployed to fill gaps.

[16] For the purposes of this condition, operation initiates with the commissioning of the first WTG.

[17] https://rwsc.org/wp-content/uploads/2022/12/RWSC-PAM-Data-Management-Storage-Best-Practices.pdf

[18] https://rwsc.org/wp-content/uploads/2022/12/RWSC-PAM-Data-Management-Storage-Best-Practices.pdf

COP approval. The best practices include engaging with the RWSC, calibrating the instruments, running QA/QC on the raw data, following the templates for reporting species vocalizations, and preparing the data for archiving at National Centers for Ecological Information (NCEI). Although section III of the RWSC best practices document specifies steps for Section 106 compliance, the Lessee must instead follow the conditions outlined in Section 7.13 and the Section 106 Memorandum of Agreement.

The Lessee must document the occurrence of whale vocalizations (calls of North Atlantic right, humpback, sei, fin, and minke whales, as well as odontocete clicks, as available based on sample rate) using automatic or manual detection methods. In addition, data must be processed with either manual or automatic detection software to detect vocalizations of spawning cod. The Lessee must submit a log of these detections as well as the detection methodology to BOEM, BSEE (at protectedspecies@bsee.gov) and NMFS (at nmfs.pacmdata@noaa.gov) within 120 days following each recorder retrieval. All raw data must be sent to the NCEI Passive Acoustic Data archive on an annual basis and the Lessee must follow NCEI guidance for packaging the data and pay the fee.

5.5.6.1.1 Long-term Passive Acoustic Monitoring Plan. The Lessee must prepare and implement a Long-term PAM Plan under this option. No later than 120 days prior to instrument deployment and before any construction begins, the Lessee must submit to BOEM and BSEE (renewable_reporting@boem.gov and OSWsubmittals@bsee.gov) the Long-term PAM Plan that describes all proposed equipment (including number and configuration of instruments), deployment locations, mooring design, detection review methodology, and other procedures and protocols related to the required use of PAM. If there are fewer than 120 days between the commencement of any construction activity and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities. As the Lessee prepares the Long-term PAM Plan, it must coordinate with the RWSC.

BOEM and BSEE will review the Long-term PAM Plan and provide comments, if any, on the plan within 45 days of its submittal. The Lessee may be required to submit a modified Long-term PAM Plan based on feedback from BOEM and BSEE. The Lessee must address all outstanding

comments to BOEM's and BSEE's satisfaction and will need to receive written concurrence from BOEM and BSEE. If BOEM or BSEE do not provide comments on the Long-term PAM Plan within 45 days of its submittal, the Lessee may conclusively presume BOEM's and BSEE's 's concurrence with the Long-term PAM Plan.

5.5.6.2 Option 2 –Financial and Other Contributions to BOEM's Environmental Studies Program.[19] As an alternative to conducting long-term PAM in the Lease Area, the Lessee may opt to make a financial contribution to BOEM's Environmental Studies Partnership for an Offshore Wind Energy Regional Observation Network (POWERON) initiative on an annual basis and cooperate with the POWERON team to allow the team's access to the Lease Area for deployment, regular servicing, and retrieval of instruments. The Lessee's financial contribution must provide for all activities necessary to conduct PAM within and adjacent to the Lease Area, such as vessel and staff time for regular servicing of instruments, QA/QC on data, data processing to obtain vocalizations of sound-producing species and ambient noise metrics, as well as long-term archiving of data at NCEI. At the Lessee's request, BOEM will provide an estimate of the necessary amount of the financial contribution. BOEM will also invite the Lessee to contribute to discussions about the scientific approach of the POWERON initiative via the RWSC. The Lessee may request temporary withholding of the public release (i.e., the placement into the NCEI public data archive) of raw acoustic data collected within the Lease Area for up to 180 days after collection of that data. During this temporary hold, BOEM may elect to provide the Lessee may with a copy of the raw PAM data collected under this option after the DON has cleared the data for national security concerns.

5.5.7 Vessel Strike Avoidance Plan. The Lessee must submit the Vessel Strike Avoidance Plan to BOEM, BSEE, and NMFS GARFO-PRD as soon as possible after issuance of the Project's BiOp but no later than 90 days prior to the planned start of in-water construction activities outside of South Brooklyn Marine Terminal (SBMT), Long Island Sound, and Narragansett Bay (including cable installation). BOEM, BSEE, and NMFS GARFO-PRD will review the plan and provide comments within 45 days of receipt of the plan. The plan must provide details on all relevant mitigation and monitoring measures for listed species, minimum separation distances, vessel speeds, vessel transit protocols from all planned ports, vessel-based observer protocols, communication and reporting plans, proposed alternative monitoring equipment to maintain effective visual monitoring of vessel strike avoidance zones in varying weather

[19] The Lessee may elect Option 2 initially or during any subsequent calendar year of monitoring, subject to agreement with BOEM and BSEE.

conditions, darkness, sea states, and in consideration of the use of artificial lighting. If the Lessee plans to implement PAM in any transit corridor to allow vessel transit above 10 knots, the plan must describe how the Lessee will conduct PAM, in combination with visual observations, to ensure the transit corridor is clear of NARW. Any inclusion of PAM must be consistent with the requirements of Section 5.4.4. The plan must also include any strike avoidance measures for marine mammals, including NARW, included in the ITA. The plan must acknowledge and indicate compliance with applicable vessel speed restrictions per the ITA, other NMFS regulations, or state regulations. The Lessee must submit a summary of all vessel speed requirements applicable to Project activities in the plan. The Lessee must obtain BOEM's and BSEE's concurrence with the plan prior to the commencement of in-water construction activities outside of SBMT, Long Island Sound, and Narragansett Bay (including cable installation).

NMFS GARFO-PRD's comments to BOEM, BSEE, and the Lessee will assess whether the plan is consistent with the requirements outlined in the September 28, 2023, BiOp and its ITS (including Appendix A of the 2023 BiOp); consistent with the requirements of the BiOp's ITS. If BOEM and BSEE inform the Lessee that the plan is inconsistent with these requirements, the Lessee must resubmit a modified plan that addresses the identified issues within 30 days of receipt of the comments and at least 15 days before the start of the associated activity. BOEM, BSEE and NMFS will discuss a timeline for review of the modified plan to meet the Lessee's schedule to the maximum extent practicable. If further revisions are necessary, the Lessee will provide at least three business days for review. The plan must provide details on the vessel-based observer protocols on transiting vessels.

5.5.8 Marine Mammal and Sea Turtle Monitoring Plan for Pile Driving and UXO Detonation. The Lessee must submit a Marine Mammal and Sea Turtle Monitoring Plan for Pile Driving and UXO Detonation to BOEM, BSEE, and NMFS GARFO-PRD at least 180 days before any pile driving or UXO detonation is planned. This may be a single plan or two separate plans. BOEM, BSEE, and NMFS GARFO-PRD will review the plan and provide comments within 45 days of receipt of the plan. The plan may not be implemented, and thus pile driving may not begin, until concurrence is reached by BOEM and BSEE. BOEM and BSEE will inform the Lessee if the plan is inconsistent with those requirements. The Lessee must resubmit a modified plan that addresses the identified issues within 30 days of the receipt of the comments but at least 15 days before the start of the associated activity.

BOEM and BSEE will discuss a timeline for review and approval of the modified plan to meet the Lessee's schedule to the maximum extent practicable. If further revisions are necessary, the Lessee will provide at least three business days for review. The Lessee must obtain BOEM's and BSEE's concurrence with the Marine Mammal and Sea Turtle Monitoring Plan(s) before starting any pile driving for foundation installation or carrying out any UXO detonation. The

plan(s) must include: a description of how all relevant mitigation and monitoring requirements contained in the September 28, 2023, NMFS BiOp's incidental take statement and in any MMPA LOA issued by NMFS will be implemented, a pile driving installation summary and sequence of events, a description of all training protocols for all Project personnel (PSOs, PAM Operators, trained crew lookouts, etc.), a description of all monitoring equipment and evidence (i.e., manufacturer's specifications, reports, testing) that the Lessee can use to effectively monitor and detect marine mammals and sea turtles in the identified clearance and shutdown zones (i.e., field data demonstrating reliable and consistent ability to detect marine mammals and sea turtles at the relevant distances in the conditions planned for use), communications and reporting details, and PSO monitoring and mitigation protocols (including number and location of PSOs) for effective observation and documentation of sea turtles and marine mammals during all pile driving events and UXO/MEC detonations. The plan(s) must demonstrate sufficient PSO and PAM Operator staffing (in accordance with watch shifts), PSO and PAM Operator schedules, and contingency plans for instances if additional PSOs and PAM Operators are required. The plan must detail all plans and procedures for sound attenuation, including procedures for adjusting the noise attenuation system(s) and available contingency noise attenuation measures/systems if distances to modeled isopleths of concern are exceeded during SFV. The plan must also describe how the Lessee will determine the number of sea turtles exposed to noise above the 175 decibel (dB) harassment threshold during impact pile driving of WTG and OCS-DC foundations and how the Lessee will determine the number of marine mammals exposed to noise above the Level B harassment threshold during impact pile driving of WTG and OCS-DC foundations. If any clearance or shutdown zones are expanded, the Lessee must submit a proposed monitoring plan describing the location of all PSOs to NMFS GARFO-PRD, BOEM and BSEE for review. The Lessee must resolve comments to the proposed monitoring plan to BOEM's and BSEE's satisfaction and must conduct activities in accordance with the plan.

5.5.8.1 Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan. The Lessee must submit the Reduced Visibility Monitoring/Nighttime Pile Driving Monitoring Plan (or plans if separate plans are submitted) to BOEM, BSEE, and NMFS GARFO-PRD at least 180 days before impact pile driving is planned to begin unless a longer time period is identified in the MMPA Letter of Authorization. BOEM, BSEE, and NMFS GARFO-PRD will review the Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan and provide comments within 45 days of receipt of the plan. The plan may not be implemented, and thus pile driving may not begin, until concurrence is reached by BOEM and BSEE. BOEM and BSEE will inform the Lessee if the plan is inconsistent with those requirements. The Lessee must resubmit a modified plan that addresses the identified issues within 30 days of the receipt of the

comments and at least 15 days before the start of the associated activity.

5.5.8.2 The plan must contain a description of how the Lessee will monitor pile driving activities during reduced visibility conditions (e.g. rain, fog) and at night, including proof of the efficacy of monitoring devices (e.g., mounted thermal/infrared camera systems, hand-held or wearable night vision devices (NVD), spotlights) in detecting marine mammals and sea turtles over the full extent of the required clearance and shutdown zones, including demonstration that the full extent of the minimum visibility zones (WTG foundations: May - November, 2300 m and December, 4,400 m; OCS-DC foundations: May - November 1,600 m and 2,700 m in December[20]) can be effectively and reliably monitored in reduced visibility conditions (e.g., rain, fog) at night. The plan must identify the efficacy of the technology at detecting marine mammals and sea turtles in the clearance and shutdown zones under all the various conditions anticipated during construction, including varying weather conditions, sea states, after dark, and in consideration of the use of artificial lighting. The plan must include a full description of the proposed technology, monitoring methodology, and data demonstrating that marine mammals and sea turtles can reliably and effectively be detected within the clearance and shutdown zones for monopiles before, during, and after impact pile driving at night. Additionally, this plan must contain a thorough description of how the Lessee will monitor pile driving activities during daytime when unexpected changes to lighting or weather occur during pile driving that prevent visual monitoring of the full extent of the clearance and shutdown zones. Without DOI approval of this plan, no pile driving may be initiated later than 1.5 hours prior to civil sunset or earlier than 1 hour before civil sunrise.

5.6 Pre-Seabed Disturbance Conditions

5.6.1 The Lessee must submit all required documents related to pre-seabed disturbance and specified in Sections 5.6.2 to 5.6.11 to BOEM and BSEE.

5.6.2 Anchoring Plan. The Lessee must prepare and implement an Anchoring Plan(s) for all areas where anchoring or buoy placement occurs and jack-up barges are used during construction and operations/maintenance within 1,640 feet (500 m) of habitats, resources, and submerged infrastructure that are sensitive, including sensitive benthic habitats;[21] boulders greater than or equal to 0.5 m; ancient submerged landform features (ASLFs); known and potential shipwrecks;

[20] These zone sizes may be modified by NMFS upon receipt of SFV reports.

[21] The term ""sensitive benthic habitats" will be used to encompass: complex habitats and benthic features (defined as coarse unconsolidated mineral substrates [i.e. substrates containing 5% or greater gravels], rock substrates [e.g. bedrock], and shell substrates [e.g. mussel reef] consistent with CMECS definitions as well as vegetated habitats [e.g. SAV], bathymetric features (such as lumps, banks, and scarps) and other areas of high habitat heterogeneity (diversity of structural elements including bathymetric features) and complexity)).

potentially significant debris fields; potential hazards; third-party infrastructure, and any related facility installation activities (such as cable, WTG, and OCS-DC installation). Avoidance buffers must be consistent with the following: potential unexploded ordnances will be shown with an exclusion zone consistent with risks identified in the MEC/UXO Desktop Study (Section 2.1); confirmed UXO will be shown with exclusion zone relative to risks of planned activities; avoidance of cultural resources (shipwrecks and ASLFs) will be consistent with Section 7.6. The Lessee must provide to all construction and support vessels the locations where anchoring or buoy placement must be avoided to the extent technically and/or economically practicable or feasible, including sensitive benthic habitats; boulders greater than or equal to 0.5 m; ASLFs; known and potential shipwrecks; potentially significant debris fields; potential hazards; and any related facility installation activities (such as cable, WTG, and OCS-DC installation). Dynamic positioning systems should be used in these areas instead of anchoring, as practicable. If anchoring is necessary at these locations, then all vessels deploying anchors must extend the anchor lines to the extent practicable to minimize the number of times the anchors must be raised and lowered to reduce the amount of habitat disturbance, unless the anchor chain sweep area includes sensitive benthic habitat that may be impacted by the chain sweep. On all vessels deploying anchors, the Lessee must use mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed, unless the Lessee demonstrates, and BOEM and BSEE accept, that (1) the use of mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed is not technically practical or feasible; or (2) a different alternative is as safe and provides the same or greater environmental protection. If placement of jack-up barge spud cans is necessary in sensitive benthic habitats, locations for the spud cans must be selected to avoid or minimize impacts according to the following prioritized list, including complex habitat sub-types (using NMFS complexity categories): complex habitats with high density large boulders; complex habitats with medium density large boulders; complex habitats with low density large boulders; complex with scattered large boulders; complex habitats with no large boulders; as technically feasible and practicable. Benthic habitat (NOAA complexity categories) and benthic feature/habitat type maps in conjunction with backscatter, bathymetry, and boulder layers should be used to inform the anchoring plan. In the case of any misalignment in avoidance buffers described above with any other permits or authorizations please refer to Section 1.4

5.6.2.1 The Lessee must provide the proposed Anchoring Plan to BOEM and BSEE for coordination with NMFS GARFO-HESD for a 60-day review at least 120 days before anchoring activities or construction begins for export and inter-array cables. The Lessee must resolve all comments on the Anchoring Plan to BOEM's and BSEE's satisfaction before conducting any OCS seabed-disturbing activities that require anchoring. If there are less than 120 days between anchoring activities and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities.

The final version of each Anchoring Plan must be provided to BOEM, BSEE, NMFS GARFO-HESD, and USACE.

5.6.3 Micrositing Plan. The Lessee must prepare and implement a Micrositing Plan(s) that describes how wind turbine locations, OCS-DC, inter-array cables and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitat, potential and confirmed MEC/UXO; known and potential shipwrecks and ASLFs will be consistent with Sections 7.4 and 7.5. The plan(s) must specifically describe how inter-array and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitats, including boulders greater than or equal to 0.5 m, as technically and/or economically practicable or feasible. The plan(s) must describe MEC/UXO ALARP Certified areas, which should be consistent with MEC/UXO ALARP Certification (Section 2.2). To the extent practicable, cables should cross sensitive benthic habitat areas perpendicularly at the narrowest points; cables unable to avoid benthic features such as sand waves should be sited along natural benthic contours within troughs/lows, to maximize cable burial while minimizing disturbance to local submarine topography. The Lessee must submit detailed supporting data and analysis as part of the FDR or FIR, including relevant geophysical and geospatial data. The submission of the data may be incorporated by reference or submitted as an attachment to the FDR or FIR. The Micrositing Plan must be consistent with MEC/UXO ALARP Certification (Section 2.2), Cable Routings (Section 2.9), and Boulder Identification and Relocation (Section 5.6.6). The Micrositing Plan must include a figure for each microsited WTG or cable segment, including benthic habitat delineations showing sensitive benthic habitat and locations of boulders greater than or equal to 0.5 m. The plan must include a figure encompassing the lease area, depicting large boulder locations, benthic habitat delineations, and the proposed microsited locations for cables and WTGs. Benthic habitat (NOAA complexity categories) and benthic feature/habitat type maps in conjunction with backscatter, bathymetry, and boulder layers should be used to inform the Micrositing Plan.

5.6.3.1 For cables that cannot be microsited to avoid impacts to sensitive benthic habitat or boulders greater than or equal to 0.5 m, the micrositing plan must identify technically and economically practicable or feasible impact minimization measures and use the following prioritized list, including complex habitat sub-types (using NMFS complexity categories), to avoid during micrositing: complex habitats with high density large boulders; complex habitats with medium density large boulders; complex habitats with low density large boulders; complex habitats with scattered large boulders; complex habitats with no large boulders.

5.6.3.2 The Micrositing Plan must be submitted to BOEM and BSEE for coordination with NMFS GARFO-HESD for a 60-day review, 120 days prior to site preparation activities for cables, WTGs and OCS-DC

within the scope of the plan. The Lessee must resolve all comments on the Micrositing Plan(s) to BOEM's and BSEE's satisfaction prior to implementation of each plan. If there are less than 120 days between site preparation activities and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities. The final version of the Micrositing Plan(s) must be provided to BOEM, BSEE, NMFS GARFO-HESD, and USACE.

5.6.4 Cod Spawning Monitoring Plan. Prior to OCS sea-bed prep, inter-array cable installation, foundation site preparation, and other construction-related bottom disturbing activities (e.g., boulder relocation, cable lay and burial, scour protection installation), the Lessee must prepare and implement a Cod Spawning Monitoring Plan to monitor for Atlantic cod aggregations in the lease area between November 1 and March 31 of each year during which construction activities are planned.

5.6.4.1 The Lessee must carry out monitoring in a manner consistent with/comparable to existing cod monitoring studies conducted in the lease area (e.g., Atlantic cod passive acoustic and telemetry study, Movement Patterns of Fish in Southern New England AT-19-08) and use both Passive Acoustic Monitoring (PAM) and acoustic telemetry technology.

5.6.4.2 The Lessee must submit the plan to BOEM and BSEE for coordination with NMFS GARFO-HESD for a 60-day review at least 120 days before the commencement of in-water construction on the OCS. The Lessee must resolve all comments on the plan to BOEM's and BSEE's satisfaction prior to implementation of the Plan. If there are less than 120 days between commencement of in-water construction on the OCS and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities.

5.6.4.3 The Lessee must submit an annual Cod Spawning Monitoring Report within 90 days of the completion of each survey season to BOEM and BSEE for coordination with NMFS GARFO-HESD. The report must include documentation of any cod detections and contain information on all survey activities that took place during the season, including location of equipment and location, time, and date of detections. The report on survey activities must be comprehensive of all activities, regardless of whether cod were detected. Following the completion of each monitoring campaign, the Lessee must make all data collected from PAM and acoustic telemetry publicly available. Detection data will be shared through the Atlantic Coast Telemetry Network and the Mid-Atlantic Telemetry Observing System (MATOS). Specifically, sensor and biological data should be publicly disseminated by packaging the data according to MATOS data standards.

5.6.5 Sequencing Plan. The Lessee must prepare and implement a Sequencing Plan that describes how construction activities will be sequenced to avoid or minimize impacts to Atlantic cod spawning. The plan must specifically describe how construction-related bottom disturbing activities (e.g., sea-bed prep, inter-array cable installation and burial, scour protection installation, boulder relocation, foundation site preparation, WTG or OCS-DC installation including pile driving, and other construction-related bottom disturbing activities) will occur such that construction-related bottom disturbing activities are avoided and/or minimized as listed below The Sequencing Plan must be consistent with MEC/UXO ALARP Certification (Section 2.2), Cable Routings (Section 2.9), Boulder Identification and Relocation Plan (Section 5.6.6), and NARW seasonal restrictions on pile driving.

5.6.5.1 The Sequencing Plan must describe, to BSEE's and BOEM's satisfaction, how the construction schedule for pile driving is designed, to the extent technically or economically feasible and practicable, to avoid and/or minimize any pile driving in the lease area between November 1 and December 31. If pile driving is necessary during this time period, the Lessee must describe in detail the specific measures taken to minimize acoustic exposure ranges for fish and how pile driving is limited to WTG positions in the southernmost and easternmost portions of the lease area, to the extent technically or economically feasible and practicable.

5.6.5.2 The Sequencing Plan must describe, to BSEE's and BOEM's satisfaction, how the schedule for construction-related bottom disturbing activities other than pile driving is designed, to the extent technically or economically feasible and practicable, to avoid and/or minimize any construction-related bottom disturbing activities between November 1 and March 31. If construction-related bottom disturbing activities are necessary during this time period, the Lessee must describe in detail how these activities are limited to the southernmost and easternmost portions of the lease area, to the extent technically or economically feasible and practicable.

5.6.5.3 The Sequencing Plan must provide a detailed construction schedule that includes installation timeframes and locations for all construction-related bottom disturbing activities inclusive of seabed preparation and installation activities.

5.6.5.4 The Lessee must submit the Sequencing Plan to BOEM and BSEE for coordination with NMFS GARFO-HESD for a 60-day review, 120 days prior to site preparation activities for inter-array cables and WTGs. The Lessee must resolve all comments on the Sequencing Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. If there are less than 120 days between site preparation activities

and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities.

5.6.5.5 The Lessee must provide a summary describing the implementation of the Sequencing Plan in the Annual Certification under 30 C.F.R. § 285.633.

5.6.6 Boulder Identification and Relocation Plan. The Lessee must submit a Boulder Identification and Relocation Plan(s) to BSEE for review and concurrence. The plan(s) must be submitted to BOEM and BSEE for coordination with NMFS for a 60-day review, 120 days prior to boulder relocation activities within the scope of the plan. The Lessee must resolve all comments on the Boulder Identification and Relocation Plan(s) to BOEM's and BSEE's satisfaction prior to implementation of each plan. If BOEM or BSEE do not provide comments on a plan within 60 days of its submittal, then the Lessee may presume concurrence with the plan. A copy of the final plan(s) must be provided prior to construction to BOEM, BSEE, USACE and NMFS.

5.6.6.1 The plan must detail how the Lessee will avoid or minimize impacts to sensitive benthic habitats[22] and relocate boulders as close as practicable to the original location, in areas of soft bottom but immediately adjacent to similar habitat. The plan(s) should use benthic habitat (NOAA complexity categories) and benthic feature/habitat type maps in conjunction with backscatter and boulder layers to inform the siting of boulders. The plan(s) must include sufficient scope to mitigate boulders for facility installation and operation risks. The plan(s) must be consistent with and meet the conditions of the SMS in Section 2.6. The plan(s) must include the following for boulders that are proposed to be relocated:

5.6.6.2 A summary and detailed description of surface boulders greater than 0.5 m in diameter, locations of areas with subsurface boulders and locations along the cable routes and WTG areas where such boulders have been found;

5.6.6.2.1 A detailed summary of methodologies used in boulder identification, including geological and geophysical survey results;

5.6.6.2.2 Figures of the locations of boulder relocation activities specified by activity type (e.g., pick or plow, removal, or

[22] Sensitive benthic habitats include complex habitat, benthic features, and bathymetric features, Complex habitat is defined as coarse unconsolidated mineral substrates (i.e., substrates containing 5% or greater gravels), rock substrates (e.g., bedrock), and shell substrates (e.g., mussel reef) consistent with CMECS definitions, as well as vegetated habitats (e.g., SAV). Benthic features are defined as sand waves, megaripples, and ripples. Bathymetric features are defined as topographic features of the seafloor such as lumps, scarps, ledges, and banks.

placement) and overlaid on multibeam bathymetry and backscatter data;

5.6.6.2.3 A description of boulder removal and/or relocation methods for each type of boulder relocation activity and technical feasibility constraints, including capacity of crane used in grab systems, vessel specifications and metocean limits on operation, etc.;

5.6.6.2.4 The environmental footprint of disturbance activities by habitat type and measures taken to avoid further adverse impacts to archaeological resources, sensitive benthic habitats and fishing operations;

5.6.6.2.5 A comprehensive list and shapefile of locations of boulders that would be relocated (latitude, longitude), boulder dimensions (m), buffer radius (m), areas of active (within last 5 years) bottom trawl fishing (latitude, longitude), areas where boulders greater than 2 ms in diameter are anticipated to occur (latitude, longitude), and identification of approximate areas to which boulders would be relocated (latitude, longitude);

5.6.6.2.6 The measures taken to minimize the quantity of seafloor obstructions from relocated boulders in areas of active bottom trawl fishing;

5.6.6.2.7 A description of safety distances or zones to limit boulder relocation near third-party assets;

5.6.6.2.8 A description of MEC/UXO ALARP Certified areas, which should be consistent with MEC/UXO ALARP Certification (Section 2.2);

5.6.6.2.9 A summary of any consultation and outreach conducted with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners);

5.6.6.2.10 A statement of consistency with the Micrositing Plan (Section 5.6.3).

5.6.6.3 The Lessee must provide USCG, NOAA, and the local harbormaster with a comprehensive list and shapefile of positions and areas to which boulders would be relocated (latitude, longitude) at least 60 days prior to boulder relocation activities.

5.6.6.4 Boulder Relocation. The Lessee must implement methods identified in the approved COP and described in the Boulder Identification and Relocation Plan (above) for boulder relocation activities. The Lessee

must consider the spatial extent of boulder relocation in the micrositing of WTGs and OCS-DC foundations and inter-array and export cables for this Project and must relocate boulders as close as practicable to areas immediately adjacent to existing similar habitat. The relocation of boulders must be consistent with the Project easement.

5.6.6.5 Boulder Relocation Report. The Lessee must provide to BSEE and BOEM and make available to the approved CVA a Boulder Relocation Report. The report must include a post-relocation summary of the Boulder Relocation activities and information to certify boulder risks related to the installation and operation of the facility have been properly mitigated. The report must also identify boulders that could not be relocated with documentation of technical feasibility concerns, including information on how, if at all, the final boulder placement differs from the Boulder Relocation Plan and why such changes were necessary. The report must be submitted within 60 days of completion of the boulder relocation activities and prior to or with the relevant FIR. The Lessee must also provide BOEM and BSEE a comprehensive list and shapefile of boulder locations to which boulders were relocated (latitude, longitude), boulder dimensions (m), any safety distances or zones to limit boulder relocation near third-party assets (m), and areas of active (within last 5 years) bottom trawl fishing (i.e., as a raster file for use in ArcGIS).

5.6.7 Scour and Cable Protection Plan. The Lessee must prepare and implement a Scour and Cable Protection Plan(s) that includes descriptions and specifications for all scour and cable protection materials. The plan(s) must include depictions of the location and extent of scour and cable protection, the habitat delineations for the areas of cable protection measures, and detailed information on the proposed scour or cable protection materials for each area and habitat type. The Scour and Cable Protection Plan(s) must demonstrate consistency with the Micrositing Plan(s) and Sequencing Plan(s), as appropriate.

5.6.7.1 The Lessee must avoid the use of engineered stone or concrete mattresses in complex habitat, as practicable and feasible. The Lessee must ensure that all materials used for scour and cable protection measures consist of natural or engineered stone that does not inhibit epibenthic growth and provides three-dimensional complexity in height and in interstitial spaces, as practicable and feasible. If concrete mattresses are necessary, bioactive concrete (i.e., with bio-enhancing admixtures) must be used as practicable as the primary scour protection (e.g., concrete mattresses) or veneer to support biotic growth.

5.6.7.2 Cable protection measures must have tapered or sloped edges to reduce hangs for mobile fishing gear. The Lessee must avoid the use

of plastics/recycled polyesters/net material (i.e., rock-filled mesh bags, fronded mattresses) for scour protection.

5.6.7.3 The Scour and Cable Protection Plan(s) must be submitted to BOEM and BSEE for coordination with NMFS GARFO-HESD for a 60-day review, at least 120 days prior to placement of scour and cable protection within the area covered by the scope of the Plan(s). The Scour and Cable Protection Plan(s) must be concurred with by BOEM and BSEE prior to BSEE issuing a no-objection to the relevant FDR.

5.6.7.4 The Lessee must resolve all comments on each Plan to BOEM's and BSEE's satisfaction before placement of the scour and cable protection materials. The final version of the Scour and Cable Protection Plan(s) must be provided to BOEM, BSEE, NMFS GARFO-HESD and USACE.

5.6.8 WTG Position Prioritization. If, prior to BSEE's review of the applicable FDR or FIR, the Lessee determines that fewer than 84 WTGs will be constructed for the Sunrise Wind project, the Lessee must prioritize removal from the following positions in order: WTGs 92, 93, 94, 91, 95, 122, and 123, and then any other WTG positions in Priority Area 1. Priority Area 1 includes WTGs 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 120, 121, 122, 123, 124, 150, 151, and OCS-DC. If applicable, the Lessee must describe how it prioritizes the removal of the listed WTG positions in the FDR/FIR.

5.6.9 Avoid Zinc Anodes. To the extent it is technically and/or economically practicable or feasible, the Lessee must avoid using Zinc sacrificial anodes on external components of WTG and OCS-DC foundations to reduce the release of metal contaminants in the water column.

5.6.10 Micrositing Report. The Lessee must provide a post-installation Micrositing Report to BOEM and BSEE for coordination with NMFS GARFO-HESD. The report must include a summary of the micrositing activities for WTGs, inter-array cables, and the export cable and demonstrate (i.e., figures of as-built locations overlaid on multibeam echosounder backscatter survey data) how impacts to complex habitats and benthic features were avoided and/or minimized within the lease area and export cable corridors. The report must also identify and depict (i.e., figures) areas in which WTGs or cables could not be microsited to avoid complex habitats with a description of the complex habitat sub-types impacted (see prioritized list of complex habitat sub-types listed under the Micrositing Plan Section 5.5.3) and include documentation of technical feasibility issues encountered. The report must be submitted within 60 days of completion of all WTG and cable installations. The Lessee must also provide BOEM, BSEE, and NMFS GARFO-HESD a shapefile of as-built WTGs, inter-array cables, and the export cables, as well as best-available multibeam echosounder backscatter survey data (i.e., as a raster file for use in ArcGIS).

5.6.11 Berm Survey and Report. Where plows, jets, grapnel runs, or other similar methods are used, post-construction surveys capable of detecting bathymetry changes of 1.5 foot or less must be completed to determine the height and width of any created berms. The Lessee must capture bathymetry changes greater than 3 feet during the first and second post-installation surveys along the cable routes (as described in Section 2.9). If there are bathymetric changes in berm height greater than 3 feet above grade after the second survey, the Lessee must develop and implement a Berm Remediation Plan to restore created berms to match adjacent natural bathymetric contours (isobaths). The Lessee must submit the Berm Remediation Plan to BOEM and BSEE for coordination with NMFS for a 60-day review within 90 days of completion of the Year 1 MBES bathymetry survey. The Lessee must resolve all comments on the Berm Remediation Plan to BOEM's and BSEE's satisfaction prior to initiating restoration activities. The final version of the Berm Remediation Plan must be provided to BOEM, BSEE, NMFS and USACE.

5.7 Endangered and Threatened Species Conditions for Fishery Monitoring

5.7.1 The Lessee must submit all required documents related to endangered and threatened species conditions for fishery monitoring in Sections 5.7.2 through 5.7.7 (e.g., marine debris, visual and protected species observers (PSOs), incidental take, and annual reporting) to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov or marinedebris@bsee.gov (if related to marine debris/lost gear), and NMFS GARFO-PRD.

5.7.1.1 The Lessee must ensure that any lost survey gear is reported and recovered according to the Marine Debris Awareness and Elimination conditions in 5.1.2. All lost gear must also be reported to NMFS GARFO-PRD and BSEE within 24 hours (or as required in the MMPA Incidental Take Authorization (ITA) 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.

5.7.1.2 Marine mammal monitoring must occur prior to, during, and after haul-back of gear used for fisheries monitoring surveys. If a marine mammal is determined by survey staff to be at risk of interaction with the deployed gear, all gear must be immediately removed.

5.7.1.3 If marine mammals are sighted in the area within 15 minutes before deploying gear and are considered by survey staff to be at risk of interaction with the research gear, then the sampling station must be either moved or canceled, or the activity must be suspended, until there are no marine mammal sightings within 1 nautical mile (1,852 m) of sampling location for 15 minutes. If this occurs, this information must be included in PSO reporting.

5.7.1.4 The Lessee must ensure all vessels deploying fixed gear 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 and the procedures described in "Careful Release Protocols for Sea Turtle Release with Minimal Injury."

5.7.2 Conditions for Trawl Surveys

5.7.2.1 The Lessee must ensure all vessels have at least one survey team member onboard each trawl survey who has completed Northeast Fisheries Observer Program (NEFOP) observer training, or equivalent training (i.e., 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 applies to any trips where gear is set or hauled. The Lessee must provide documentation of training to NMFS and BSEE at least 7 days prior to the start of the trawl surveys and at any later time that a different observer is deployed on the survey. If the Lessee will deploy non-NEFOP trained observers, the Lessee must submit a training plan to BSEE, BOEM and NMFS GARFO-PRD describing the training that will be provided to the survey observers. The Lessee must submit the PSO Training Plan for Trawl Surveys no later than 7 days prior to the start of trawl surveys. This plan must include a description of the elements of the training (i.e., curriculum, virtual or hands on, etc.) and identify who will carry out the training and their qualifications. Once the training is complete, confirmation of the training and a list of trained survey staff must be submitted to NMFS; this list must be updated if additional staff are trained for future surveys. The Lessee must submit a list of trained survey staff to NMFS GARFO-PRD at least one business day prior to the beginning of the survey. The Lessee must obtain NMFS GARFO-PRD's concurrence with this plan before starting any trawl surveys.

5.7.2.1.1 The Lessee must ensure that any sea turtles or Atlantic sturgeon incidentally caught and/or collected in any fisheries survey gear are identified to species or species group and reported to BOEM, BSEE, and NMFS GARFO-PRD. Each ESA-listed species incidentally caught and/or collected must then be properly documented using appropriate equipment and the NMFS data collection form.[23] Biological data, samples, and tagging must occur as

[23] https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null

outlined below. The Lessee must follow the Sturgeon and Sea Turtle Take Standard Operating Procedures.[24]

5.7.2.1.2 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 must be used to scan any captured sea turtles and sturgeon for tags. Any recorded tags must be recorded on the take reporting form[25] and reported to BOEM, BSEE, and NMFS GARFO-PRD.

5.7.2.1.3 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 consistent with the Procedures for Obtaining Sturgeon Fin Clips.[26]

5.7.2.1.4 The Lessee must send fin clips to a NMFS GARFO-PRD-approved laboratory capable of performing genetic analysis and assignment to DPS of origin. The Lessee must submit the results of genetic analysis, including assigned DPS of origin, to BOEM, BSEE, and NMFS GARFO-PRD within 6 months of the sample collection.

5.7.2.1.5 The Lessee must hold and submit subsamples of all fin clips and accompanying metadata form to the Atlantic Coast Sturgeon Tissue Research Repository on a quarterly basis using the Sturgeon Genetic Sample Submission Form.[27]

5.7.2.2 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 incidentally caught and retrieved in gear used in any fisheries survey must 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

[24] https://media.fisheries.noaa.gov/dam-migration/sturgeon_&_sea_turtle_take_sops_external.pdf
[25] https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null
[26] https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic, under the "Sturgeon Genetics Sampling" heading
[27] https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic

whenever at-sea conditions are safe for those handling and resuscitating the animal(s).

5.7.2.2.1 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 must be minimized (i.e., kept to 15 minutes or less) to limit the amount of stress placed on the animals.

5.7.2.2.2 All survey vessels must be equipped with copies of the sea turtle handling and resuscitation requirements found at 50 C.F.R. § 223.206(d)(1) prior to the commencement of any on-water activity.[28] These handling and resuscitation procedures (the latter, when necessary) must be executed any time a sea turtle is incidentally captured and brought onboard a survey vessel.

5.7.2.2.3 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 survey staff are unable to contact the hotline (e.g., due to distance from shore or lack of ability to communicate via phone), then survey staff must contact the USCG 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 conditions during holding are authorized by the NMFS GARFO-PRD-PRD 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.

5.7.2.2.4 The Lessee must make attempts to resuscitate any Atlantic sturgeon that are unresponsive or comatose by providing a

[28] https://media.fisheries.noaa.gov/dam-migration/sea_turtle_handling_and_resuscitation_measures.pdf

running source of water over the gills as described in the Sturgeon Resuscitation Guidelines.[29]

5.7.2.2.5 Carcasses of incidentally caught sea turtles and sturgeon must 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 GARFO-PRD, which may include transfer to an appropriately permitted partner or facility on shore. Following reporting of an incidental capture, NMFS may authorize that incidentally captured 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.

5.7.2.3 The captain and/or a member of the scientific crew must conduct marine mammal monitoring before, during, and after haul back.

5.7.2.3.1 The Lessee must commence trawl operations as soon as possible once the vessel arrives on station; the target tow time must be limited to 20 minutes.

5.7.2.3.2 The Lessee must initiate marine mammal watches (visual observation) within 1 nm (1852 m) of the site 15 minutes prior to sampling.

5.7.2.3.3 If a marine mammal is sighted within 1 nautical mile (1,852 m) of the planned sampling station in the 15 minutes before gear deployment, the Lessee must delay setting the trawl until marine mammals have not been sighted for 15 minutes, or the Lessee may move the vessel away from the marine mammal to a different section of the sampling area. If, after moving on, marine mammals are still visible from the vessel, the Lessee may decide to move again or to skip the sampling station.

5.7.2.3.4 The Lessee must maintain visual monitoring effort during the entire period of time that trawl gear is in the water (i.e., throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, (i.e., prior to haul back) the vessel must slow its speed and steer away from the sighted animal in order to minimize potential interactions.

[29] https://media.fisheries.noaa.gov/dam-migration-miss/Resuscitation-Cards-120513.pdf. Lessee must comply with the version effective at the time of COP approval.

5.7.2.3.5 The Lessee must open the codend of the net close to the deck/sorting area to avoid damage to animals that may be caught in gear.

5.7.2.3.6 The Lessee must empty gear as close as possible to the deck/sorting area and as quickly as possible after retrieval.

5.7.2.3.7 The Lessee must fully clean and repair trawl nets (if damaged) before setting again.

5.7.2.3.8 In the case of a marine mammal interaction, the Lessee must contact the Marine Mammal Stranding Network immediately and report the incident to NMFS-OPR, and, for ESA-listed marine mammals, NMFS GARFO-PRD.

5.7.3 Notification Report. The Lessee must notify BOEM, BSEE, and NMFS GARFO-OPR via email within 24 hours of any interaction with a sea turtle or sturgeon and include the NMFS take reporting form.[30] 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 (7) 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), the Lessee must submit reports as soon as possible and must submit late reports with an explanation for the delay.

5.7.4 Annual Report. The Lessee must submit an annual report within 90 days of the completion of each survey season to BOEM, BSEE, and NMFS GARFO-OPR. The report must include all information on any observations of and interactions with ESA-listed species and 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.

5.8 Protected Species Training and Coordination. Before beginning any in-water activities involving vessel use, pile driving, UXO/MEC detonation, and HRG surveys, and when new personnel join the work, the Lessee must conduct briefings for construction supervisors and crews, PSO and PAM teams, vessel operators, and all staff in order to explain responsibilities, communication procedures, and protected species mitigation, monitoring, and reporting requirements. This must occur prior to the start of all pile driving, UXO/MEC detonation, HRG survey activity, and fisheries resources surveys.

[30] https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null

5.8.1 The Lessee must submit all required documents and reports related to protected species training and coordination conditions in Sections 5.8.2. and 5.8.3 to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, NMFS-OPR, and NMFS GARFO-PRD.mailto:nmfs

5.8.2 Vessel Crew and Protected Species Observer Training Requirements. The Lessee must provide Project-specific training to all vessel crew members, PSOs, and Trained Lookouts on the identification of sea turtles and marine mammals, vessel strike avoidance and reporting protocols, how and when to communicate with the vessel operator, the authority of the PSOs, and the associated regulations for avoiding vessel collisions with protected species prior to the start of in-water construction or detonation activities. The Lessee must make available aboard all Project vessels reference materials for identifying sea turtles and marine mammals, copies of the Marine Mammal and Sea Turtle Monitoring Plan (see 5.5.6) and Vessel Strike Avoidance Plan (see 5.5.5). 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 BOEM and BSEE 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 to all crew members its expectation that the crew report sightings of 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.

5.8.3 PSO Requirements. The Lessee must use independent, dedicated, qualified PSOs provided by a third party. The PSOs sole Project-related duty must be 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.[31] The Lessee must use NMFS-approved PSOs and PAM operators. The Lessee must provide training certificates for individual PSOs to BOEM or BSEE upon request. PSOs and PAM operators must be approved by NMFS before the start of construction activities. Application requirements to become a NMFS-approved PSO for construction activities can be found on the NOAA website[32] or for geological and geophysical surveys by sending an inquiry to nmfs.psoreview@noaa.gov. PSOs and PAM operators must be on watch for no more than a maximum of 4 consecutive hours, followed by a break of at least 2 hours between watches.

[31] https://repository.library.noaa.gov/view/noaa/15851
[32] http://www.fisheries.noaa.gov/new-england-mid-atlantic/careers-and-opportunities/protected-species-observers

5.9 Vessel Strike Avoidance Conditions

5.9.1 The Lessee must submit any required documents related to vessel strike avoidance as a result of the September 28, 2023, NMFS BiOp to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, and NMFS GARFO-PRD.

5.9.2 Protected Species Observer Requirements. 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.

5.9.2.1 All vessels must have a visual observer on board who is responsible for monitoring the vessel strike avoidance zone for marine mammals and sea turtles. Visual observers may be PSO or crew members, but crew members responsible for these duties must be provided sufficient training by the Lessee to distinguish marine mammals and sea turtles from other phenomena and must be able to identify a marine mammal as a NARW, other whale (defined in this context as sperm whales or baleen whales other than NARW), or other marine mammal, as well as identify sea turtles. Crew members serving as visual observers must not have other duties while observing for marine mammals while the vessel is operating over 10 knots.

5.9.3 Vessel Communication of Threatened and Endangered Species Sightings. The Lessee must ensure that whenever multiple Project vessels are operating, any detections of ESA-listed species (marine mammals and sea turtles) are communicated in near real time to these personnel on the other Project vessels: PSOs, vessel operators, or both.

5.9.3.1 Year-round, all vessel operators must monitor the Project's Situational Awareness System, WhaleAlert, USCG VHF Channel 16, and the Right Whale Sighting Advisory System (RWSAS) for the presence of NARWs once every 4-hour shift during Project-related activities. The PSO and PAM operator monitoring teams for all activities must also monitor these systems no less frequently than every 12 hours. If a vessel operator is alerted to a NARW detection within the Project area, the operator must immediately convey this information to the PSO and PAM teams. For any UXO/MEC detonation, vessel operators must monitor these systems for 24 hours prior to detonating any UXO/MEC.

5.9.3.2 Any observations of any large whale by any of the Lessee's staff or contractor, including vessel crew, must be communicated immediately to PSOs and all vessel operators to increase situational awareness.

5.9.4 Vessel Strike Avoidance of Sea Turtles.

5.9.4.1 On vessels operating north of the Virginia/North Carolina border between June 1 and November 30, the Lessee must post a trained lookout on all vessel transits during all phases of the Project to observe for sea turtles. The trained lookout must communicate any sightings, in real time, to the vessel operator so that the requirements below can be implemented.

5.9.4.2 On vessels operating south of the Virginia/North Carolina border, the Lessee must post a trained lookout on all vessel transits during all phases of the Project to observe for sea turtles. The trained lookout must communicate any sightings, in real time, to the vessel operator so that the requirements below can be implemented.

5.9.4.3 If a vessel is carrying a PSO or trained lookout for the purposes of maintaining watch for NARWs, an additional lookout is not required and this PSO or trained lookout must also maintain watch for sea turtles.

5.9.4.4 The trained lookout must monitor https://seaturtlesightings.org/ prior to each trip and report any observations of sea turtles in the vicinity of the planned trip to all vessel operators and lookouts on duty that day.

5.9.4.5 The trained lookout must maintain a vigilant watch and monitor a Vessel Strike Avoidance Zone (500 m) at all times to maintain minimum separation distances from ESA-listed species. Alternative monitoring technology (e.g., night vision, thermal cameras, etc.) must be available to ensure effective watch at night and in any other low visibility conditions. If the trained lookout is a vessel crew member, monitoring must be their designated role and primary responsibility while the vessel is transiting. Any designated crew lookouts must receive training on protected species identification, vessel strike minimization procedures, how and when to communicate with the vessel operator, and reporting requirements.

5.9.4.6 If a sea turtle is sighted within 100 m or less of the operating vessel's forward path, the vessel operator must slow down to 4 knots (unless it is operationally unsafe) and 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 operationally safe to do so and then proceed away from the turtle at a speed of 4 knots when the sea turtle is no longer in the forward path of the vessel. The vessel may resume normal operations after it has passed 100 m from the turtle.

5.9.4.7 Vessel operators must avoid transiting through areas of visible jellyfish aggregations or floating sargassum lines or mats. If operational safety prevents avoidance of such areas, vessels must slow to 4 knots while transiting through such areas.

5.9.4.8 All vessel crew members must be briefed in the identification of sea turtles and in regulations and best practices for avoiding vessel collisions. Reference materials must be available aboard all Project vessels for identification of sea turtles. The requirement 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 a clear requirement for reporting to the designated vessel contact (such as the lookout or the vessel operator), as well as a communication channel and process for crew members to do so.

5.9.4.9 The only exception to the requirements regarding vessel speed and avoiding jellyfish, sargassum, and/or sea turtles is when the safety of the vessel or crew during an emergency necessitates deviation from these requirements. If any such incidents occur, they must be reported to BSEE and NMFS GARFO-PRD within 24 hours.

5.9.4.10 Vessel transits to and from the Project area that require PSOs must maintain a speed commensurate with weather conditions and effectively detecting sea turtles prior to reaching the 100 m separation distance mentioned above, at which point the vessel must reduce speed and avoid sea turtles.

5.10 WTG and OCS-DC Foundation Installation Conditions. Monopiles must be no larger than 11 m in diameter. For all monopiles, the minimum amount of hammer energy necessary to effectively and safely install and maintain the integrity of the piles must be used. Hammer energies must not exceed 4,000 kilojoules.

5.10.1 The Lessee must submit all required documents related to WTG and OCS-DC foundation installation conditions in Sections 5.10.2 through 5.10.5 to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, and NMFS GARFO-PRD.

5.10.2 Seasonal and Daily Restrictions. No foundation impact pile driving activities are allowed to occur January 1 through April 30. No more than two foundation monopiles are allowed to be installed per day. The Lessee must not conduct pile driving operations at any time when lighting or weather conditions (e.g., darkness, rain, fog, sea state) prevent visual monitoring of the full extent of the clearance and shutdown zones. 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 visual clearance zone is visible in all directions or must implement the Reduced Visibility Monitoring

Plan/Nighttime Pile Driving Monitoring Plan (as required by the terms of the September 28, 2023, NMFS BiOp; see Section 5.4.8.1). Under the terms of the NMFS BiOp, the Lessee is not allowed to conduct night-time pile driving (i.e., initiation of pile driving more than 1 hour prior to civil sunrise or 1.5 hours before civil sunset), unless the Lessee has received concurrence from BOEM, BSEE, and NMFS GARFO-PRD on the Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan (see Section 5.5.1) as part of the Pile-Driving and Marine Mammal Monitoring Plan that reliably demonstrates the efficacy of protected species detection.

5.10.3 Noise Abatement Systems. The Lessee must employ noise abatement systems, also known as noise mitigation systems (NMS) or noise attenuation systems (NAS), during all impact pile driving and prior to every UXO/MEC detonation event, consistent with the Protected Species Mitigation and Monitoring Plan (see Section 5.5) to reduce the sound pressure levels that are transmitted through the water in an effort to reduce ranges to acoustic thresholds and minimize any acoustic impacts resulting from pile driving. The Lessee must deploy a double big bubble curtain or a combination of two or more noise mitigation systems (a single bubble curtain must not be used unless paired with another noise attenuation device) during these activities; the method used must be capable of achieving, at a minimum, 10 dB of sound attenuation from modeled data, during all impact pile driving of foundation piles. The Lessee must also adjust operational protocols to minimize noise levels. The Lessee must inspect and carry out appropriate maintenance on the noise attenuation system prior to every pile driving event and prepare and submit a NAS inspection/performance report (see Section 5.10.3.6).

5.10.3.1 The bubble curtains must distribute air bubbles using an airflow rate of at least 0.5 m^3/(min*m). The bubble curtains must surround 100 percent of the piling perimeter throughout the full depth of the water column. In the unforeseen event of a single compressor malfunction, the offshore personnel operating the bubble curtains must make appropriate adjustments to the air supply and operating pressure such that the maximum possible sound attenuation performance of the bubble curtains is achieved.

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

5.10.3.3 No parts of the ring or other objects may prevent full seabed contact.

5.10.3.4 The Lessee must inspect and carry out appropriate maintenance on the noise attenuation system prior to every UXO/MEC detonation and pile driving event and prepare and submit a NAS inspection/performance report.

5.10.3.5 The Lessee must use qualified and experienced staff to train personnel in the proper balancing of airflow to the ring. The Lessee must ensure that construction contractors submit inspection/test (pre-installation) and performance (during installation) reports. The inspection/test must occur prior to each pile and reported as described below. Corrections to the bubble ring(s) to meet the performance standards must occur prior to impact pile driving of monopiles and additional testing must be conducted to ensure corrections have met performance standards prior to impact pile driving commencing. Bubble curtain performance must be monitored throughout each pile installation and reported as described below. If the Lessee uses a noise mitigation device in addition to the big bubble curtain, the Lessee must maintain similar quality control measures as described here. The inspection and performance reports for piles for which SFV interim reports are required must be submitted for approval by the Lessee within 48 hours following the performance test to NMFS GARFO-PRD, NMFS-OPR, BOEM, and BSEE. Reports must include: BBC hose length, bubble ring deployment plots, number of compressors in-use, wind speed, current speed and direction, water depth, wave height, date and time hose(s) deployed, compressor flow meter readings at 30-minute intervals for the duration of the test or pile installation, and photographs of flow meters at 30-minute interval readings.

5.10.3.6 The Lessee must submit NAS performance reports for all piles. Reports must include: BBC hose length, bubble ring deployment plots, bubble curtain radius (distance from pile), diameter of holes and hole spacing, air supply hose length, compressor type (including rated Cubic Feet per Minute (CFM) and model number), number of operational compressors, performance data from each compressor (including Revolutions Per Minute (RPM), pressure, start times, and stop times), free air delivery (m^3/min), total hose air volume (m^3/(min m)), schematic of GPS waypoints during hose laying, maintenance procedures performed (pressure tests, inspections, flushing, re-drilling, and any other hose or 483 system maintenance) before and after installation and timing of those tests, and the length of time the bubble curtain was on the seafloor prior to foundation installation, wind speed and direction, current speed and direction, water depth, wave height, date and time hose(s) deployed/retrieved, compressor flow meter readings at 30-minute intervals for the duration of the test or pile installation, and photographs of flow meters at 30-minute interval readings. Additionally, the report must include any important observations regarding performance (before, during, and after pile installation), such as any observed weak areas of low pressure. The report may also include any relevant video and/or photographs of the bubble curtain(s) operating during all pile driving. Reports must be submitted following the same submission schedule and recipient list as the weekly reports specified in condition 5.14.5.

5.10.4 Use of PSOs and PAM Operators for Pile Driving. The Lessee must use NMFS-approved PSOs and PAM operators to monitor the identified clearance and shutdown zones before, during, and after all foundation installation activities. At minimum, four visual PSOs must be actively observing for marine mammals and sea turtles before, during, and after pile driving. At least two visual PSOs must be stationed on the pile driving vessel and at least two visual PSOs must be stationed on a secondary, PSO-dedicated vessel. The dedicated PSO vessel must be positioned at the outer edge of the large whale clearance zone (2.3 km in the summer; 4.4 km in the winter). The lessee must adjust this distance as required based upon SFV results. At least one active PSO on each platform must have a minimum of 90 days at-sea experience working in those roles in offshore environments, with no more than 18 months elapsed since the conclusion of the at-sea experience. These PSOs must maintain watch at all times when impact pile driving of monopiles is underway. Concurrently, at least one PAM operator must actively monitor for vocalizing marine mammals before, during and after pile driving. Furthermore, all crew and personnel working on the Project are required to maintain situational awareness of marine mammal presence (discussed further above) and are required to report any sightings to the PSOs.

5.10.4.1 The Lessee must ensure that PSO coverage is sufficient to reliably detect marine mammals and sea turtles at the surface in the identified clearance and shutdown zones (Section 5.10.5) to execute any pile driving delays or shutdown requirements. If, at any point prior to or during construction, the PSO coverage is determined not to be sufficient to reliably detect marine mammals and sea turtles within the clearance and shutdown zones, additional PSOs and/or platforms must be deployed. Determinations prior to construction must be based on review of the Marine Mammal and Sea Turtle Monitoring Plan for Pile Driving and UXO Detonations (Section 5.5). Determinations during construction must be based on review of the weekly reports and other information, as appropriate.

5.10.4.2 The Lessee must ensure that, if the clearance and/or shutdown zones are expanded due to the verification of sound fields from Project activities, PSO coverage is sufficient to reliably monitor the expanded clearance and/or shutdown zones. Additional observers must be deployed on additional platforms for every 1,500 m that a clearance or shutdown zone is expanded beyond the initial clearance and shutdown zones (Table 5.10.5; Section 5.10.5). In the event that the clearance or shutdown zone for sea turtles needs to be expanded, the Lessee must submit a proposed monitoring plan for the expanded zones to BOEM and BSEE, who will coordinate with NMFS GARFO-PRD prior to granting approval. Expansion of the zones will be reconsidered after additional sound attenuation measures are in place that reduce distances to at or below those modeled assuming 10 dB, as verified by SFV.

5.10.5 Clearance and Shutdown Zones. The Lessee must use visual PSOs and PAM operators to monitor the area around each foundation pile before, during and after pile driving. The clearance and shutdown zones for May to November are defined in the table below (numbers in parentheses are distances for December). The clearance procedures for WTG foundation pile driving cannot begin until the lead PSO has determined that there is minimum visibility of at least 2,300 m from May to November and 4,400 m in December; for OCS-DC foundations, the minimum visibility requirements are 1,600 m May to November and 2,700 m in December. These zones may be modified upon receipt of SFV data.

Table 5.10.5. Clearance and Shutdown Zones

Species	Clearance Zone (m)	Shutdown Zone (m)
Impact Pile Driving for Foundation Installation		
North Atlantic right whale – visual PSO	Monopile, Sequential/Consecutive*: Minimum visibility zone (2,700 m May-November; 3,000 m December) plus any additional distance observable by the visual PSOs Monopile, Concurrent*: Minimum visibility zone (3,500 m May-November; 4,000 m December) plus any additional distance observable by the visual PSOs Jacket: Minimum visibility zone (3,700 m May-November; 4,100 m December) plus any additional distance observable by the visual PSOs	Monopile, Sequential: Minimum visibility zone (2,700 m May-November; 3,000 m December) plus any additional distance observable by the visual PSOs Monopile, Concurrent: Minimum visibility zone (3,500 m May-November; 4,000 m December) plus any additional distance observable by the visual PSOs Jacket: Minimum visibility zone (3,700 m May-November; 4,100 m December) plus any additional distance observable by the visual PSOs
North Atlantic right whale – PAM WTG and OCS-DC foundations (10,000 m monitoring zone)	At any distance within the 10,000 m monitoring zone	At any distance within the 10,000 m monitoring zone
Blue, Fin, Sei, and Sperm whale – WTG foundation (visual and PAM monitoring)	Monopile, Sequential: 4,000 m May-November; 4,300 m December Monopile, Concurrent: 5,300 m May-November; 6,300 m December	Monopile, Sequential: 4,000 m May-November; 4,300 m December Monopile, Concurrent: 5,300 m May-November; 6,300 m December

Blue, Fin, Sei, and Sperm whale – OCS-DC foundation (visual and PAM monitoring)	5,600 May-November (6,500 December)	5,600 May - November (6,500 December)
Sea Turtles	500 m	500 m
Pile Driving for Cable Landfall Activities – Visual PSOs		
Right, Blue, Fin, Sei, and Sperm whale – sheet pile (vibratory)	200 m	50 m
Right, Blue, Fin, and Sei whale – casing pipe (impact)	500 m	500 m
Sperm whale – casing pipe (impact)	100 m	100 m
Sea turtles	500 m	500 m
UXO/MEC Detonations		
NARW, Blue, Fin, and Sei whale	10,000 m	NA

Note: These are the clearance and shutdown zones incorporated into the proposed action; the zones for marine mammals reflect the proposed conditions of the MMPA ITA, as modified during the consultation period, and the zones for sea turtles reflect the zone sizes identified in BOEM's BA as modified for UXOs by this ITS. Further modification may be included in the final MMPA ITA.

NA=not applicable; *On any day that concurrent pile driving is planned, we expect the "concurrent" zone sizes will be in effect.

5.10.6 Clearance or Shutdown Zone Adjustment After Sound Field Verification. The Lessee must conduct SFV consistent with an approved SFV Plan (see 5.4.5). If any of the SFV measurements indicate that the distances to level A thresholds for marine mammals or PTS peak or cumulative thresholds for sea turtles are larger than the modeled distances (assuming 10 dB attenuation, per thresholds in the September 28, 2023, BiOp for the Project in Tables 7.1.8, 7.1.9, 7.1.23, 7.1.24, 7.1.31. 7.1.32), the clearance and shutdown zones for subsequent piles must be increased so that they are at least the size of the distances to those thresholds as indicated by SFV (e.g., if threshold distances are exceeded on pile 1 then the clearance and shutdown zones for pile 2 must be expanded). For every 1,500 m that a marine mammal clearance or shutdown zone is expanded, additional PSOs must be deployed from additional platforms to ensure adequate

and complete monitoring of the expanded shutdown and/or clearance zone; the Lessee must submit a proposed monitoring plan describing the location of all PSOs for review by NMFS GARFO-PRD and NMFS-OPR. In the event that the clearance or shutdown zone for sea turtles needs to be expanded, the Lessee must submit a proposed monitoring plan for the expanded zones to NMFS GARFO-PRD and NMFS-OPR for review. BOEM and BSEE, after consultation with NMFS-OPR and NMFS GARFO-PRD, may approve the Lessee's request for reductions in the shutdown zones based upon SFV of a minimum of three piles; however, the shutdown zone must not be reduced to less than 1,000 m for large whales, or 500 m for sea turtles. No reductions in the clearance or shutdown zones for NARWs will be considered regardless of the results of SFV.

5.10.6.1 If any SFV interim report submitted for any of the first 3 monopiles indicate the sound fields exceed the modeled distances to protected species injury and behavioral harassment thresholds (assuming 10 dB attenuation), then the Lessee must implement both the required additional sound attenuation measures and adjustments to clearance and shutdown zones as described in 5.10.3 and in 5.10.5(a), respectively.

5.10.7 Pile Driving Clearance Zones for Marine Mammals and Sea Turtles. The Lessee must establish and implement clearance (all distances to the perimeter are the radii from the center of the pile being driven) as described above for all WTG and OCS-DC foundation installation. The Lessee must use visual PSOs and PAM operators to monitor the area around each foundation pile before, during, and after pile driving. PSOs must visually monitor clearance zones for marine mammals and sea turtles for a minimum of 60 minutes prior to commencing pile driving. Acoustic PSOs (at least one PAM operator) must review data from at least 24 hours prior to pile driving and actively monitor hydrophones for 60 minutes prior to pile driving. Prior to initiating soft-start procedures, the entire minimum visibility zone must be visible (i.e., not obscured by dark, rain, fog, etc.), and all clearance zones must be confirmed to be free of marine mammals and sea turtles for 30 minutes immediately prior to starting a soft-start of pile driving. If a marine mammal or sea turtle is observed entering or within the relevant clearance zone prior to the initiation of impact pile driving activities, pile driving must be delayed and must not begin until either the marine mammal(s) or sea turtle(s) has voluntarily left the specific clearance zones and has been visually or acoustically confirmed beyond that clearance zone, or, when specific time periods have elapsed with no further sightings or acoustic detections have occurred (i.e., 15 minutes for small odontocetes and 30 minutes for all other marine mammal species and sea turtles). The clearance zone may only be declared clear if no confirmed NARW acoustic or visual detections have occurred during the 60-minute monitoring period. Any large whale sighting by a PSO or detected by a PAM operator that cannot be identified as a non-NARW must be treated as if it were a NARW.

5.10.8 Pile Driving Shutdown for Marine Mammals and Sea Turtles. If a marine mammal or sea turtle is observed entering or within the respective shutdown zone (as defined above) and impact pile driving has begun, the PSO must call for a temporary cessation of impact pile driving. The Lessee must immediately cease pile driving upon orders of the PSO unless shutdown is not practicable due to imminent risk of injury or loss of life to an individual, pile refusal, or pile instability. In this situation, reduced hammer energy must be implemented instead, as practicable.

5.10.8.1 Pile Driving Restart Procedures for Marine Mammal or Sea Turtle Detections. Pile driving must not restart until either the marine mammal(s) or sea turtle(s) has voluntarily left the specific clearance zones and has been visually or acoustically confirmed beyond that clearance zone, or, when specific time periods have elapsed during which no further sightings or acoustic detections have occurred. The specific time periods are 15 minutes for small odontocetes and 30 minutes for all other marine mammal species and sea turtles. In cases where these criteria are not met, pile driving may restart only if necessary to maintain pile stability at which time the lowest hammer energy must be used to maintain stability. If impact pile driving has been shut down due to the presence of a NARW, pile driving may not restart until the NARW is no longer observed or 30 minutes has elapsed since the last detection. Upon re-starting pile driving, soft start protocols must be followed.

5.10.8.2 Soft Start for Pile Driving. The Lessee must use a soft start protocol for impact pile driving of monopiles by performing 4–6 strikes per minute at 10 to 20 percent of the maximum hammer energy, for a minimum of 20 minutes. Soft start must be used at the beginning of each day's monopile installation, and at any time following a cessation of impact pile driving of 30 minutes or longer. If a marine mammal or sea turtle is detected within or about to enter the applicable clearance zones, prior to the beginning of soft-start procedures, impact pile driving must be delayed until the animal has been visually observed exiting the clearance zone or until a specific time period has elapsed with no further sightings (i.e., 15 minutes for small odontocetes and 30 minutes for all other marine mammal species and sea turtles).

5.11 UXO Detonation Activity Conditions. The Lessee may detonate a maximum of 3 UXO/MECs of varying sizes. Upon encountering a UXO/MEC, the Lessee may only resort to high-order removal (i.e., detonation) after all other means by which to remove the UXO/MEC have been exhausted. The Lessee must not detonate a UXO/MEC if another means of removal is practicable.

5.11.1 The Lessee must submit all required documents related to UXO/MEC activity conditions in Sections 5.12.2 through 5.12.11 to BOEM, BSEE via TIMSWeb

with a notification email sent to protectedspecies@bsee.gov, and NMFS GARFO-PRD.

5.11.2 Seasonal and Daily Restrictions. UXO detonation is prohibited from December 1 to April 30 to reduce impacts to NARWs during peak migratory periods in the offshore wind area. UXO/MEC detonation must be limited to daylight hours only (i.e., an hour after sunrise and an hour before sunset).

5.11.3 Noise Abatement Systems. The Lessee must use a dual noise abatement system during all UXO/MEC detonation events (see Section 5.10.3) and operate that system in a manner that achieves maximum noise attenuation levels practicable, but, at minimum, results in noise levels equal or less than those modeled assuming 10 dB attenuation.

5.11.4 Use of PAM and PSO Operators. The Lessee must monitor the entire (100 percent) clearance and shutdown zones identified below using at least two visual PSOs on each observing platform (i.e., vessels, plane) and at least one acoustic PSO to monitor for marine mammals in the clearance zones prior to detonation. Enough vessels would be deployed to provide 100 percent temporal and spatial coverage of the clearance and shutdown zones and, if necessary, aerial surveys would be used to provide coverage. All PSOs must begin monitoring 60 minutes prior to UXO detonation and for 30 minutes after detonation. The Lessee may not detonate UXO/MEC(s) unless the clearance zone is fully visible for at least 60 minutes prior to planned detonation and all marine mammal(s) are visually confirmed to be outside of the clearance zone for at least 30 minutes prior to detonation. PAM must be conducted for at least 60 minutes prior to detonation and for 30 minutes after detonation, and the zone must be acoustically clear of marine mammals during this entire duration. The PAM operator must monitor in and past the clearance zone for large whales.

5.11.5 Clearance Zones. Prior to any detonation activities, the Lessee must clear the clearance zones identified by NMFS in the ITA for marine mammals and in the September 28, 2023, NMFS BiOp for sea turtles.

5.11.5.1 For marine mammals, clearance zone sizes are identified in the ITA and in the September 28, 2023, NMFS BiOp, and may be further adjusted based on the SFV and confirmation of UXO/donor charge sizes. Any changes to clearance zones must be made in coordination with NMFS GARFO-PRD and NMFS-OPR and only after receiving approval of these adjusted zones from NMFS-OPR under the terms of the ITA. If a marine mammal is observed entering or within the clearance zone prior to denotation, the UXO/MEC activity must be delayed. The Lessee may continue with detonation only when the marine mammals have been confirmed to have voluntarily left the clearance zones and visually confirmed to be beyond the clearance zone, or when 60 minutes have elapsed without any redetections for

whales (including the NARW) or 15 minutes have elapsed without any redetections of delphinids, harbor porpoises, or seals.

5.11.5.2 For sea turtles, the Lessee must establish a clearance zone extending 500 m around any planned UXO/MEC detonation. The Lessee must maintain the clearance zone for at least 60 minutes prior to any UXO detonation. The Lessee must ensure that there is sufficient PSO coverage to reliably document sea turtle presence within the clearance zone. In the event that a PSO detects a sea turtle inside the 500 m clearance zone, the Lessee must delay detonation until the sea turtle has not been observed for 30 minutes.

5.11.6 Sound Field Verification for UXO/MEC Detonation. During each UXO/MEC detonation, the Lessee must implement Thorough SFV to empirically determine source levels (peak and cumulative sound exposure level), the ranges to the isopleths corresponding to the Level A harassment and Level B harassment thresholds for marine mammals and the injury or behavioral thresholds for listed species of sea turtles and Atlantic sturgeon. SFV must be carried out in a manner consistent with Term and Condition 4 of the September 28, 2023, NMFS BiOp the approved SFV plan.

5.11.6.1 If SFV measurements of any of the detonations indicate that the ranges to the isopleths corresponding to the Level A harassment and Level B harassment thresholds (for marine mammals), and distances to injury, temporary threshold shift or behavioral disturbance thresholds for sea turtles and Atlantic sturgeon, are larger than those modeled (assuming 10-decibel attenuation), the Lessee must follow the protocols to adaptively refine the mitigation, monitoring, and reporting measures before the next pile is installed, according to Term and Condition 4 of the September 28, 2023, NMFS BiOp. The Lessee must submit a revised monitoring plan for the expanded zones to NMFS GARFO-PRD for review and BOEM and BSEE approval.

5.11.7 Notification. The Lessee must provide BSEE and NMFS GARFO-PRD with notification of planned UXO/MEC detonation as soon as possible, but at least 48 hours prior to the planned detonation, unless that notification window would risk of human life or safety. This notification must include the coordinates of the planned detonation, the estimated charge size, and any other information available on the characteristics of the UXO/MEC. NMFS GARFO-PRD will provide alerts to NMFS sea turtle and marine mammal stranding network partners consistent with best practices. The Lessee must provide notification to NMFS GARFO-PRD via email to nmfs.gar.incidental-take@noaa.gov, NMFS GARFO-PRD by phone (978-281-9328), and BSEE via TIMSWeb with email notification to protectedspecies@bsee.gov. See Section 5.14.3.1 for requirements associated with reporting of UXO detonations.

5.12 Project Design Criteria and Best Management Practices for Protected Species. The Lessee must comply with all the Project Design Criteria and Best Management Practices for Protected Species at https://www.boem.gov/sites/default/files/documents//PDCs%20and%20BMPs%20for%20Atlantic%20Data%20 Collection%2011222021.pdf that implement the integrated requirements for threatened and endangered species in the June 29, 2021, programmatic consultation under the ESA, revised November 22, 2021. Survey Plans must be submitted to BOEM and BSEE (via TIMSWeb with a notification email at protectedspecies@bsee.gov) for review and concurrence at least 90 days prior to the planned start of geophysical and geotechnical surveys. If HRG surveys are necessary during periods of low visibility (e.g., darkness, rain, fog, etc.), an Alternative Monitoring Plan must be submitted to BOEM and BSEE detailing the monitoring methodology that will be used during nighttime and low-visibility conditions and an explanation of how it will be effective at ensuring that the shutdown zone(s) can be maintained during nighttime and low-visibility survey operations. The plan must be submitted 60 days before low visibility survey operations are set to begin.

5.13 Reporting.

5.13.1 Reporting of All NARW Detections.

5.13.1.1 If a NARW is observed at any time by PSOs or Project personnel on or in the vicinity of any project vessel, or during vessel transit, the Lessee must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System (866) 755-6622, through the WhaleAlert app (https://www.whalealert.org/), and to the USCG via channel 16, as soon as feasible but no later than 24 hours after the sighting. The sighting report must include the time in UTC (HH:MM), date (YYYY-MM-DD), and location (latitude/longitude in decimal degrees; coordinate system used) of the sighting, number of whales, animal description/certainty of sighting (provide photos/video if taken), Lease Area/Project Name, PSO/personnel name, PSO provider company (if applicable), and reporter's contact info.

5.13.1.1.1 If in the Greater Atlantic Region (ME to VA/NC border) call (866-755-6622).

5.13.1.1.2 If in the Southeast Region (NC to FL) call (877-WHALE-HELP or 877-942-5343).

5.13.1.1.3 If calling the hotline is not possible, reports can also be made to the U.S. Coast Guard via channel 16 or through the WhaleAlert app (http://www.whalealert.org/).

5.13.1.2 If a North Atlantic right whale is detected via PAM, the date, time, location (*i.e.*, latitude and longitude of recorder) of the detection as well as the recording platform that had the detection must be reported to nmfs.pacmdata@noaa.gov as soon as feasible, but no longer than 24

hours after the detection. Full detection data and metadata must be submitted monthly on the 15th of every month for the previous month via the webform on the NMFS North Atlantic Right Whale Passive Acoustic Reporting System website at https://www.fisheries.noaa.gov/resource/document/passive-acoustic-reporting-system-templates.

5.13.1.3 The Lessee must send a summary report within 24 hours to NMFS GARFO-PRD and NMFS-OPR with the information submitted to the hotline/template and confirmation the sighting/detection was reported to the respective hotline, the vessel/platform from which the sighting/detection was made, activity the vessel/platform was engaged in at time of sighting/detection, Project construction and/or survey activity ongoing at time of sighting/detection (e.g., pile driving, cable installation, HRG survey), distance from vessel/platform to animal at time of initial sighting/detection, closest point of approach of whale to vessel/platform, vessel speed, and any mitigation actions taken in response to the sighting.

5.13.2 Reporting of ESA-Listed Species within Shutdown Zone During Active Pile Driving. In the event that any ESA-listed species is observed within the identified shutdown zone during active pile driving, the Lessee must file a report with BOEM, BSEE, and NMFS GARFO-PRD within 48 hours of the incident and include the following: duration of pile driving prior to the detection of the animal, location of PSOs and any factors that impaired visibility or detection ability, time of first and last detection of the animal, distance of animal at first detection, closest point of approach of animal to pile, behavioral observations of the animal(s), time the PSO called for shutdown, hammer log (number of strikes, hammer energy), time the pile driving began and was stopped, and any measures implemented (e.g., reduced hammer energy) prior to shutdown. The Lessee must include in its report the time that the animal was last detected and any PSO reports on the behavior of the animal. If shutdown was determined not to be feasible, the Lessee report must include an explanation for that determination and the measures that were implemented (e.g., reduced hammer energy).

5.13.3 Detected or Impacted Protected Species Reporting. The Lessee must report within 48 hours all observations or collections of injured or dead whales, sea turtles, or sturgeon to BSEE and NMFS GARFO-PRD, including observations and interactions during the fisheries surveys. The Lessee must ensure its reports reference the Project and include the Take Report Form available on NMFS webpage (https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null). The Lessee must ensure reports of Atlantic sturgeon take include a statement as to whether a fin clip sample for genetic sampling was taken. Fin clip samples are required in all cases with the only exception being when additional handling of the sturgeon may result in an imminent risk of injury to the fish or the PSO. Incidents falling

within the exception are expected to be limited to capture and handling of sturgeon in extreme weather. Instructions for fin clips and associated metadata are available at https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic under the "Sturgeon Genetics Sampling" heading.

The Lessee must report any suspected or confirmed vessel strike of a sea turtle or sturgeon by any Project vessel in any location, including observation of any injured sea turtle or sturgeon, or sea turtle or sturgeon parts, to BOEM, BSEE, NMFS GARFO-PRD, and to appropriate NOAA stranding hotline (for marine mammals between Maine-Virginia, report to 866-755-6622, and from North Carolina-Florida to 877-942-5343 and for sea turtles from Maine-Virginia, report to 866-755-6622, and from North Caroline-Florida to 844-732-8785) as soon as feasible. The Lessee must include in the report the following information: (1) time, date, and location (latitude/longitude in decimal degrees) of the incident; (2) species identification (if known) or description of the animal(s) involved; (3) vessel's speed during and leading up to the incident; (4) vessel's course and heading, and what operations were being conducted (if applicable); (5) status of all sound sources in use; (6) description of avoidance measures and requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike; (7) environmental conditions (e.g., wind speed and direction, Beaufort scale, cloud cover, visibility) immediately preceding the strike; (8) estimated size and length of animal that was struck; (9) description of the behavior of the animal immediately preceding and following the strike; (10) estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and (11) photographs or video footage of the animal(s), to the extent practicable.

In the event that an injured or dead marine mammal or sea turtle is sighted, the Lessee must report the incident to BOEM, BSEE, NMFS GARFO-PRD, and the appropriate hotline (options above), as soon as feasible, but no later than 24 hours from the sighting. The Lessee must include in the report the following information: (1) time, date, and location (latitude/longitude in decimal degrees) of the first discovery (and updated location information if known and applicable); (2) species identification (if known) or description of the animal(s) involved; (3) condition of the animal(s) (including carcass condition if the animal is dead); (4) observed behaviors of the animal(s), if alive; (5) photographs or video footage of the animal(s), if available; and (6) general circumstances under which the animal was discovered. The Lessee must follow any instructions provided by staff responding to the hotline call for handling or disposing of any injured or dead animals, which may include coordination of transport to shore, particularly for injured sea turtles.

5.13.3.1 UXO Detonation Reports. Lessee must compile and submit reports following any UXO/MEC detonation that provide details on the UXO/MEC that was detonated (e.g., charge size), location of the

detonation, the start and stop of associated observation periods by the PSOs and PAM operators, details on the deployment of PSOs at PAM operators, and a record of all observations of marine mammals and sea turtles including time (UTC) of sighting/detection, species ID, behavior, distance (m) from vessel to animal at time of sighting/detection, vessel activity, platform/vessel name, and mitigation measures taken (if any). These reports must include any observations of dead or injured fish or other marine life in the post detonation monitoring period. The Lessee must ensure that the PSO providers submit these reports directly to NMFS GARFO-PRD, BSEE, and BOEM within one week of the detonation. The reports may consist of raw data that has undergone initial QA/QC review or be made available upon request. The Lessee must also ensure that the PSO providers submit all reports of dead or injured ESA listed species directly to NMFS GARFO-PRD, BSEE, and BOEM immediately, but no later than 24 hours following the observation.

5.13.3.2 Detected or Impacted Dead Non-ESA-Listed Fish. The Lessee must report any occurrence of at least 10 dead non-ESA-listed fish within established shutdown or monitoring zones to BOEM and to BSEE (via email to protectedspecies@bsee.gov) as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting. BOEM or BSEE will notify NMFS GARFO-HESD. The Lessee must confirm the relevant point of contact prior to reporting and confirm the reporting was received.

5.13.4 SFV Reporting. The Lessee must submit all SFV reports to BOEM; BSEE via TIMSWeb with a notification email sent to BSEE at protectedspecies@bsee.gov; NMFS GARFO-PRD and NMFS-OPR.

5.13.4.1 SFV Interim Reports for Pile Driving. The Lessee must provide, as soon as they are available but no later than 48 hours after the installation of each of the first three monopiles, the initial results of the SFV measurements after installation of each of the first three monopiles in an interim report. If technical or other issues prevent submission within 48 hours, the Lessee must notify NMFS GARFO within that 48-hour period with the reasons for delay and provide an anticipated schedule for submission of the report. This report is required for each of the first three monopiles installed and any additional piles for which SFV is required. The interim report must include data from hydrophones identified for interim reporting in the SFV Plan and include a summary of pile installation activities (pile diameter, pile weight, pile length, water depth, sediment type, hammer type, total strikes, total installation time [start time, end time], duration of pile driving, max single strike energy, NAS deployments), pile location, recorder locations, modeled and measured distances to thresholds, received levels (rms, peak, and SEL) results from

Conductivity, Temperature, and Depth (CTD) casts/sound velocity profiles, signal and kurtosis rise times, pile driving plots, activity logs, and weather conditions. If additional SFV is required after the first 3 monopiles are installed (see Section 5.4.5) the Lessee must submit additional SFV interim reports to BOEM, BSEE, and NMFS GARFO for the next 3 monopiles. If the measured sound fields continue to exceed the modeled results, additional SFV interim reports must be submitted.

5.13.4.2 SFV Interim Reports for UXO/MEC Detonation. The Lessee must provide, as soon as they are available but no later than 48 hours after each detonation of a UXO/MEC, the initial results of the SFV measurements in an interim report. If technical or other issues prevent submission within 48 hours, the Lessee must notify BOEM, BSEE, and NMFS within that 48-hour period with the reasons for delay and provide an anticipated schedule for submission of the report. The interim report must include data from all hydrophones identified for interim reporting in the SFV Plan and include a summary of the UXO/MEC detonation activity (location, water depth, sediment type, charge size, detonation time, etc.), description of the noise attenuation system and its effectiveness (including photos and/or videos of the bubble curtain), UXO/MEC location, recorder locations, modeled and measured distances to thresholds, received levels (rms, peak, and SEL) results from Conductivity, Temperature, and Depth (CTD) casts/sound velocity profiles, and weather conditions.

5.13.4.3 SFV Final Reports. The final results of SFV for monopile installations must be submitted as soon as possible, but no later than within 90 days following completion of pile driving of the three or more monopiles for which SFV was carried out. The final results of SFV for UXO/MEC detonations must be submitted as soon as possible, but no later than within 90 days following detonation of each device. The final results of SFV monitoring for pile driving and UXO/MEC detonation must include results for all hydrophones.

5.13.5 Weekly Reports. The Lessee must compile and submit weekly reports during construction that document pile driving, HRG survey, and detonation activities, including associated PSO, SFV, and noise abatement activities. These weekly reports must be submitted to NMFS GARFO-PRD, BOEM, and BSEE (protectedspecies@bsee.gov) directly from the PSO providers and may consist of raw data. Weekly reports must be submitted no later than Wednesday for the previous week (Sunday – Saturday). Weekly reports must include:

5.13.5.1 Summaries of pile driving activities and piles installed, including pile ID, pile diameter, start and stop times of each pile driving event, pile locations, hammer log (number of strikes, max hammer energy, duration of piling) per pile, any changes to noise attenuation systems

and/or hammer schedule, details on the deployment of PSOs and PAM operators, including the start and stop time of associated observation periods by the PSOs and PAM Operators and a record of all observations/detections of marine mammals and sea turtles as detailed in (g) below;

5.13.5.2 A summary of SFV and NAS implemented during pile driving;

5.13.5.3 Any UXO/MEC detonation activities;

5.13.5.4 Which turbines become operational and when (a map must be provided);

5.13.5.5 Summaries of HRG survey activities;

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

5.13.5.7 All protected species detections. This includes: species identification, number of animals, time at initial detection, time at final detection, distance to pile/vessel at initial detection, closest point of approach to pile/vessel, animal direction of travel relative to pile/vessel; description of animal behavior, features used to identify species, and for moving vessels: speed (knots), distance and bearing to animal at initial detection, closest point of approach and bearing to animal, distance and bearing to animal at final detection, and animal direction of travel relative to vessel). Sightings/detections during pile driving activities (clearance, active pile driving, post-pile driving) and all other (transit, opportunistic, etc.) sightings/detection must be reported and identified as such; and,

5.13.5.8 Vessel strike avoidance measures taken.

5.13.6 Monthly Reports. Starting the first month that in-water activities occur (e.g., cable installation, fisheries surveys) on the OCS, the Lessee must compile and submit monthly reports that include a summary of all Project activities carried out in the previous month, including dates and locations of any fisheries surveys carried out, vessel transits (number of transits, name and type of vessel, vessel activity, ports used, and route (origin and destination, which includes transits from all ports, foreign and domestic)), cable installation activities (including sea to shore transition), piles installed (number and ID), HRG surveys conducted, and UXO/MEC detonations, and all observations of ESA-listed whales, sea turtles, and sturgeon inclusive of any mitigation measures taken as a result of those observations. Sightings/detections must include species ID, time, date, initial detection distance, vessel/platform name, vessel activity, vessel speed, bearing to animal, Project activity, and if any, mitigation measures taken. These reports must be submitted to BOEM, BSEE, and NMFS GARFO no later than the 15th of the month for the previous month.

5.13.6.1 Reporting Instructions for Monthly PSO Pile Driving Monitoring Reports. PSOs must collect data consistent with standard reporting forms, software tools, or electronic data forms authorized by BOEM for the particular activity. PSOs must fill out report forms for each vessel with PSOs aboard. Unfilled cells must be left empty and must not contain "NA." The reports must be submitted in Microsoft Word and Excel formats (not as a PDF). Enter all dates as YYYY-MM-DD. Enter all times in 24 Hour Coordinated Universal Time (UTC) as HH:MM.

5.13.6.2 Create a new entry on the Effort form each time a pile segment changes, or weather conditions change, and at least once an hour as a minimum. Review and revise all forms for completeness and resolve incomplete data fields before submittal. The file name must follow this format: Lease#_ ProjectName_PSOData_YearMonthDay toYearMonthDay.xls. Data fields must be reported in Excel format. Data categories must include Project, Operations, Monitoring Effort, and Detection, as further specified below. All PSO data must be generated through software applications or otherwise recorded electronically by PSOs and provided to BOEM and BSEE in electronic format (CSV files or similar format) and be checked for quality assurance and quality control. Applications developed to record PSO data are encouraged if 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 (YYYY-MM-DD)
- Visual monitoring equipment used (e.g., bionics, magnification, IR cameras)
- 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
- Total number of strikes used to install each pile
- Total hammer energy used to install each pile
- Pile locations (latitude and longitude)
- Number of vessel transits
- Types of vessels 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 or ramp-up began
- Time equipment full power was reached
- Duration of power-up or ramp-up
- Time pile driving began (hammer on)
- Time pile driving activity ended (hammer off)
- Duration of activity
- Duration of visual detection
- Wind speed (kts), from direction
- Swell height (m)
- Water depth (m)
- 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 must 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 (m)
- Water depth (m)
- 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
- Percent certainty of identification
- Number of adults
- Number of juveniles
- Total number of animals
- Bearing to animals when first detected (ship heading + clock face)
- Bearing to animals at closest approach (ship heading+ clock face)
- Bearing to animal at final detection (ship heading+ clock face)
- Range from vessel and pile (reticle distance in m)
- 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 activity and distance from service vessel)
- Direction of animal travel in first approach relative to vessel and pile

- 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 (UTC HH:MM)
- Initial heading of animals (degrees)
- Final heading of animals (degrees)
- Shutdown zone size during detection (m)
- Was the animal inside the shutdown zone?
- Closest distance to vessel and pile (reticle distance in m)
- Time at closest approach to vessel and pile (UTC HH:MM)
- Time animal entered shutdown zone (UTC HH:MM)
- Time animal left shutdown zone (UTC HH:MM)
- If observed or detected during ramp-up or power-up: first distance (reticle distance in m), closest distance (reticle distance in m), last distance (reticle distance in m), behavior at final detection
- Did a shutdown/power-down occur?
- Time shutdown was called for (UTC HH:MM)
- Time equipment was shut down (UTC HH:MM)
- Detections with PAM

5.13.7 Annual Reports. Beginning one calendar year after the completion of commissioning activities, the Lessee must compile and submit annual reports that include a summary of all Project activities carried out in the previous year, including vessel transits (number, type of vessel, ports used, and route), repair and maintenance activities, survey activity, and all observations of ESA-listed species. The annual reports must be submitted to BOEM, BSEE, and NMFS GARFO. The Lessee must submit these reports by April 1 of each year for the previous calendar year (i.e., the 2026 report is due by April 1, 2027). Upon mutual agreement of NMFS GARFO, BOEM, and BSEE, the frequency of reports can be changed.

5.14 Other Protected Species Conditions. On September 28, 2023, NMFS issued a BiOp, including an ITS for the Project. The ITS includes reasonable and prudent measures and terms and conditions that NMFS determined were necessary and appropriate to minimize and monitor the amount or extent of incidental take of species listed as endangered or threatened under the ESA and under NMFS jurisdiction. In order for the ESA exemption from prohibited take provided by the NMFS September 28, 2023, BiOp to be valid, the Lessee must carry out the proposed action in compliance with all avoidance and minimization measures incorporated into the proposed action considered in that consultation and comply with all reasonable and prudent measures and implementing terms and conditions included in the BiOp's ITS that are incorporated by reference in this document.

6 CONDITIONS RELATED TO COMMERCIAL FISHERIES, FOR-HIRE AND RECREATIONAL FISHING

6.1 Fisheries Compensation and Mitigation Funds. No later than 1 year after the approval of the COP, unless a different schedule is agreed to as a component of a separate agreement between the Lessee and Rhode Island or Massachusetts, the Lessee must establish and implement a direct compensation program to provide monetary compensation to commercial and for-hire fishermen impacted by the Project funded in accordance with Sections 6.1.1 and Section 6.1.2 below. Calculation steps are shown in Section 6.1.3 below.

6.1.1 Direct Compensation Program. The Lessee must ensure that the Direct Compensation Fund includes an amount sufficient to be used to pay claims brought by both commercial and for-hire fishermen and must be based, at a minimum, on the annual average commercial fisheries landings values as stated in Final EIS Table 3.14-10 (page 3-313) and the average of the fourteen year for-hire recreational fishing revenue based off table 3.14-15 (page 3-328, amounting to $111,285.71) of the Project Final EIS. The fund amount must be determined by the formula set out below or any agreements with state programs, whichever is greater (see Section 6.1.1.3 below).

6.1.1.1 The Lessee must have available, at a minimum, 100 percent of annual revenue exposure during the post-COP approval pre-construction and construction period and (pending BSEE's approval of Lessee's decommissioning application) projected decommissioning period, 100 percent of annual revenue exposure for the first year after construction, 80 percent of revenue exposure 2 years after construction, 70 percent of revenue exposure 3 years after construction, 60 percent after 4 years, and 50 percent for the 5th year post-construction. BSEE will evaluate the need for additional compensatory mitigation consistent with the Annual Certification under 30 C.F.R. § 285.633(a).

6.1.1.2 Except for the calculation of fund amounts for commercial and for-hire fishermen in Rhode Island and Massachusetts, where final mitigation agreements have been approved by the respective states, the compensation calculations described above must be normalized using the gross domestic product (GDP) Implicit Price Deflator (U.S. Bureau of Economic Analysis, 33 "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product") once the construction year and 5-year post-construction date are known.

---

33 https://apps.bea.gov/iTable/?reqid=19&step=3&isuri=1&1921=survey&1903=11#eyJhcHBpZCI6MTksInN0ZXBzIjpbMSwyLDMsM10sImRhdGEiOltbIk5JUEFfVGFibGVfTGlzdCIsIjEzIl0sWyJDYXRlZ29yaWVzIiwiU3VydmV5Il0sWyJGaXJzdF9ZZWFyIiwiMjAyMCJdLFsiTGFzdF9ZZWFyIiwiMjAyMyJdLFsiU2NhbGUiLCIwIl0sWyJTZXJpZXMiLCJBIl1dfQ==

6.1.1.3 In recognition of agreements between the Lessee and Rhode Island and Massachusetts, the Lessee must establish the following compensation/mitigation funds for compensation of income losses by commercial or for-hire fishermen directly related to the Project. However, if the requirements in an agreement between the Lessee and a state for compensation/mitigation listed in this section exceed the revenue for certain commercial fishermen in a state as described in Table 3.14-10 in the Project Final EIS, the Lease Area Average Annual Revenue listed in Table 3.14-10 for a state may be omitted from the calculation described in Section 6.1.3.

6.1.1.3.1 Rhode Island – The State of Rhode Island plan includes $15,980,000 as compensatory mitigation for Rhode Island commercial fishermen, $958,000 in direct compensation for Rhode Island charter/for-hire fishermen, $300,000 Rhode Island Coastal Community Fund, up to $333,333 for the Rhode Island Navigational Enhancement and Training Program, and up to $50,000 towards a study to evaluate the level and type of recreational fishing within the Project area.

6.1.1.3.2 Massachusetts – The Commonwealth of Massachusetts plan includes a $9,788,000 Fisheries Direct Compensation Program, $1,000,000 Coastal Community Fund, and up to $500,000 for the Navigational Enhancement and Training Fund.

6.1.2 Shoreside Support Services. At least 90 days prior to establishment of the Direct Compensation Program described in Section 6.1.1, the Lessee must submit to BOEM a Shoreside Support Services report for a 60-day review and approval. If a state agreement for compensatory mitigation includes shoreside services, such as through a community fund, the amount allocated to shoreside services in the state agreement(s) may be deducted from this analysis if such amount is greater than BOEM's requirements, as described in 6.1.1.3. The report must include a description of the structure of the Direct Compensation Fund and an analysis of the impacts of the Project to shoreside support services (such as seafood processing and vessel repair services) within communities near the following ports:

- New Bedford, MA
- Point Judith, RI
- Little Compton, RI
- Newport, RI
- Westport, MA
- Montauk, NJ
- Triverton, RI
- Stonington, CT

- Fairhaven, MA
- Hampton, VA
- Menemsha, MA
- Woods Hole, MA
- Newport News, VA
- New London, CT
- Chatham, MA
- Chilmark, MA
- Beaufort, NC
- Point Pleasant Beach, NJ
- Gloucester, MA
- Fall River, MA
- Boston, MA
- Wanchese, NC
- Davisville, RI
- Harwichport, MA
- Cape May, NJ
- New Shorham, RI
- Shinnecock, NY
- Chincoteague, VA
- Belford, NJ
- Barnstable, MA
- Hampton Bay, NY

6.1.3 Compensation Calculations. Once the values at Sections 6.1.1 and 6.1.2 are determined, the Lessee must use Table 6.1.3-1 and Table 6.1.3-2 to calculate the total fund required by Section 6.1. The amounts of the fund require must be normalized to current real prices from a base year as described in Section 6.1.1.2. The Lessee may use the most recent complete year's GDP Implicit Price Deflator to estimate Direct Compensation Fund requirements after COP approval if the current year is unavailable (n_i).

As described in 6.1.1.1, the Lessee must ensure the reserve amount allows for, at a minimum, 100 percent of annual revenue exposure during the projected construction years and, pending BSEE approval of decommissioning plan, decommissioning years. The Lessee must use the GDP Implicit Price Deflator to adjust the annual average commercial fisheries landings values and for-hire fishing revenue stated in Final EIS Tables 3.14-10 (page 3-313) and the average of the fourteen year for-hire recreational fishing revenue based off table 3.14-15 (page 3-328, amounting to $111,285.71), respectively, of the Project Final EIS.

Before rolling forward any unclaimed funds, the total fund reserve requirements for Construction, Decommissioning, and Operating Years 1–5[34] (as shown in Table 6.1.3-2) is calculated using the following formula:

[34] Rolling forward unclaimed funds from prior years may lower this total value.

$$\boldsymbol{k}\left(\$1{,}980{,}131\ \times\frac{\boldsymbol{n_i}}{105.381}+\ \$111{,}285.71\ \times\frac{\boldsymbol{n_i}}{104.008}\right)(\mathbf{1}+\mathbf{M})+\boldsymbol{j}\left(\$1{,}980{,}131\ \times\frac{\boldsymbol{n_i}}{105.381}+\ \$111{,}285.71\ \times\frac{\boldsymbol{n_i}}{104.008}\right)(\mathbf{1}+\mathbf{M})+\left(\$7{,}128{,}471.60\ \times\frac{\boldsymbol{n_i}}{105.381}+\ \$400{,}628.57\ \times\frac{\boldsymbol{n_i}}{104.008}\right)(\mathbf{1}+\mathbf{M}).$$

Table 6.1.3-1. Calculation Subcomponents for Construction and Decommissioning

Project Status	Base Annual Average Fishing Revenue Exposed to the Wind Farm Area[1]	Shoreside Support Services Multiplier[2]	Exposure Ratio	Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area	Reserve Requirements
Construction	$\left(\$1{,}980{,}131 \times \frac{\boldsymbol{n_i}}{105.381} + \$111{,}285.71 \times \frac{\boldsymbol{n_i}}{104.008}\right)$	M	1	$\left(\$1{,}980{,}131 \times \frac{\boldsymbol{n_i}}{105.381} + \$111{,}285.71 \times \frac{\boldsymbol{n_i}}{104.008}\right)$	$\left(\$1{,}980{,}131 \times \frac{\boldsymbol{n_i}}{105.381} + \$111{,}285.71 \times \frac{\boldsymbol{n_i}}{104.008}\right)(1 + \mathrm{M})$
Decommissioning[3]	$\left(\$1{,}980{,}131 \times \frac{\boldsymbol{n_i}}{105.381} + \$111{,}285.71 \times \frac{\boldsymbol{n_i}}{104.008}\right)$	M	1	$\left(\$1{,}980{,}131 \times \frac{\boldsymbol{n_i}}{105.381} + \$111{,}285.71 \times \frac{\boldsymbol{n_i}}{104.008}\right)$	$\left(\$1{,}980{,}131 \times \frac{\boldsymbol{n_i}}{105.381} + \$111{,}285.71 \times \frac{\boldsymbol{n_i}}{104.008}\right)(1 + \mathrm{M})$

Notes:

[1] Inflation-adjusted revenues from Final EIS Tables 3.14-10 (page 3-313) and the average of the fourteen year for-hire recreational fishing revenue based off table 3.14-15 (page 3-328, amounting to $111,285.71). The inflation-adjusted base equation is:

$$\boldsymbol{Average\ Annual\ Commercial\ Fishing\ Revenue} \times \frac{\boldsymbol{n_i}}{105.381} + \boldsymbol{Average\ Annual\ Recreational\ Fishing\ Revenue} \times \frac{\boldsymbol{n_i}}{104.008}$$

[2] The Lessee's calculations of the Impacts to Shoreside Businesses Multiplier may use BOEM's draft *Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 C.F.R. Part 585* or future versions, but BOEM must, in all events, review the calculations.

[3] Decommissioning funds may be required pending BSEE's approval of Lessee's decommissioning application. If Construction is expected to last *k* years and Decommissioning *j* years, the Lessee must calculate the reserve requirements as follows:

$$\boldsymbol{k}\left(\$\mathbf{1{,}980{,}131} \times \frac{\boldsymbol{n_i}}{\mathbf{105.381}} + \$\mathbf{111{,}285.71} \times \frac{\boldsymbol{n_i}}{\mathbf{104.008}}\right)(\mathbf{1} + \boldsymbol{M}) + \boldsymbol{j}\left(\$\mathbf{1{,}980{,}131} \times \frac{\boldsymbol{n_i}}{\mathbf{105.381}} + \$\mathbf{111{,}285.71} \times \frac{\boldsymbol{n_i}}{\mathbf{104.008}}\right)(\mathbf{1} + \boldsymbol{M})$$

Table 6.1.3-2. Calculation Subcomponents by Operating Year

Project Status	Base Annual Average Fishing Revenue Exposed to the Wind Farm Area[1]	Exposure Ratio	Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area	Shoreside Support Services Multiplier[2]	Reserve Requirements
Operating Year 1	$\left(\$1{,}980{,}131 \times \frac{n_i}{105.381} + \$111{,}285.71 \times \frac{n_i}{104.008}\right)$	1	$\left(\$1{,}980{,}131 \times \frac{n_i}{105.381} + \$111{,}285.71 \times \frac{n_i}{104.008}\right)$	M	$\left(\$1{,}980{,}131 \times \frac{n_i}{105.381} + \$111{,}285.71 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 2	$\left(\$1{,}980{,}131 \times \frac{n_i}{105.381} + \$89{,}028.57 \times \frac{n_i}{104.008}\right)$	0.8	$\left(\$1{,}548{,}104.80 \times \frac{n_i}{105.381} + \$89{,}028.57 \times \frac{n_i}{104.008}\right)$	M	$\left(\$1{,}548{,}104.80 \times \frac{n_i}{105.381} + \$89{,}028.57 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 3	$\left(\$1{,}980{,}131 \times \frac{n_i}{105.381} + \$77{,}900.00 \times \frac{n_i}{104.008}\right)$	0.7	$\left(\$1{,}386{,}091.70 \times \frac{n_i}{105.381} + \$77{,}900.00 \times \frac{n_i}{104.008}\right)$	M	$\left(\$1{,}386{,}091.70 \times \frac{n_i}{105.381} + \$77{,}900.00 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 4	$\left(\$1{,}980{,}131 \times \frac{n_i}{105.381} + \$66{,}771.43 \times \frac{n_i}{104.008}\right)$	0.6	$\left(\$1{,}188{,}078.60 \times \frac{n_i}{105.381} + \$66{,}771.43 \times \frac{n_i}{104.008}\right)$	M	$\left(\$1{,}188{,}078.60 \times \frac{n_i}{105.381} + \$66{,}771.43 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 5	$\left(\$1{,}980{,}131 \times \frac{n_i}{105.381} + \$55{,}642.86 \times \frac{n_i}{104.008}\right)$	0.5	$\left(\$990{,}065.50 \times \frac{n_i}{105.381} + \$55{,}642.86 \times \frac{n_i}{104.008}\right)$	M	$\left(\$990{,}065.50 \times \frac{n_i}{105.381} + \$55{,}642.86 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Total[3]	-	-	$\left(\$7{,}128{,}471.60 \times \frac{n_i}{105.381} + \$400{,}628.57 \times \frac{n_i}{104.008}\right)$	-	$\left(\$7{,}128{,}471.60 \times \frac{n_i}{105.381} + \$400{,}628.57 \times \frac{n_i}{104.008}\right)(1 + M)$

Notes:

[1] Inflation-adjusted revenues from Final EIS Tables 3.14-10 (page 3-313) and the average of the fourteen year for-hire recreational fishing revenue based off table 3.14-15 (page 3-328, amounting to $111,285.71). The inflation-adjusted base equation is:

$$\left(\boldsymbol{Average\ Annual\ Commercial\ Fishing\ Revenue} \times \frac{n_i}{105.381} + \boldsymbol{Average\ Annual\ Recreational\ Fishing\ Revenue} \times \frac{n_i}{104.008}\right)$$

[2] The Lessee's calculations of the Impacts to Shoreside Businesses Multiplier may use BOEM's draft *Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 C.F.R. Part 585* or future versions, but BOEM must, in all events, review the calculations.

[3] Rolling forward unclaimed funds from prior years may lower this total value.

6.1.4 Reporting. By January 31 of each year, the Lessee must submit to BOEM and BSEE an annual report demonstrating implementation of the Direct Compensation Program. The report must include the following: the Fund charter, including the governance structure, audit and public reporting procedures; documentation regarding the funding account, including the dollar amount, establishment date, financial institution, and owner of the account; and standards for paying compensatory mitigation for direct impacts to commercial and for-hire fishers and related shoreside businesses resulting from all phases of the Project development on the Lease Area (post-ROD pre-construction, construction, operation, and decommissioning); and the number of claims processed, approved and denied. The Lessee must publicly report an annual audit. Where there is a compensation agreement between a state and the Lessee, the Lessee must submit to BOEM and BSEE verification that any agreed-upon compensatory fisheries mitigation fund is established and funded.

6.1.5 Notification. The Lessee must notify BOEM and BSEE of any compensation and mitigation fund agreements into which the state and the lessee have entered. Specifically, the Lessee has entered into Agreements Regarding the Establishment and Funding of the Direct Compensation Program, Coastal Community Fund, and Navigational Enhancement and Training Program with the States of Massachusetts and Rhode Island to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized Project. The Lessee must request that the Administrator(s) of the direct compensation program(s) notify BOEM when the direct compensation program(s) has been established and is processing claims. Notification can be accomplished by the Administrator(s) transmitting to BOEM an annual financial statement of the direct compensation program(s). The Administrator(s) must submit the required notification by January 31 of each year, beginning on the second anniversary of the Project's Commercial Operations Date as defined by Addendum "B" of the Lease. The notification must be signed by the Administrator(s).

6.2 Fisheries Gear Loss Compensation. The Lessee must maintain throughout the life of the Project, a fisheries gear loss claims procedure to implement the financial compensation policy proposed by the Lessee in Appendix B of the COP, Fisheries Communication Plan. The fisheries gear loss claims procedure must be available to all fishermen impacted by Project activities or infrastructure, regardless of homeport.

6.3 Federal Survey Mitigation Program. There are 14 NMFS scientific surveys that overlap with wind energy development in the northeast region. Ten of these surveys overlap with the Project. Consistent with NMFS and BOEM survey mitigation strategy actions 1.3.1, 1.3.2, 2.1.1, and 2.1.2 in the NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region,[35] within 120 days of COP

[35] Hare, J.A., Blythe, B.J., Ford, K.H., Godfrey-McKee, S., Hooker, B.R., Jensen, B.M., Lipsky, A., Nachman, C., Pfeiffer, L., Rasser, M. and Renshaw, K., 2022. NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region. NOAA Technical Memorandum 292. Woods Hole, MA. 33 pp.

approval, the Lessee must submit to BOEM a survey mitigation agreement between NMFS and the Lessee. The survey mitigation agreement must describe how the Lessee will mitigate the Project impacts on the ten NMFS surveys. The Lessee must conduct activities in accordance with such agreement.

If the Lessee and NMFS fail to reach a survey mitigation agreement, then the Lessee must submit a Survey Mitigation Plan to BOEM and NMFS that is consistent with the mitigation activities, actions, and procedures described in Sections 6.3.1 and 6.3.2 below, within 180 days of COP approval. BOEM will review the survey mitigation plan in consultation with NMFS Northeast Fisheries Science Center (NEFSC). The Lessee must resolve comments to BOEM's satisfaction and must conduct activities in accordance with the plan.

6.3.1 As soon as reasonably practicable, but no later than 30 days after the issuance of the Project's COP approval, the Lessee must initiate coordination with NMFS NEFSC at nefsc.survey.mitig@noaa.gov to develop the survey mitigation agreement described above. Mitigation activities specified under the agreement must be designed to mitigate the Project impacts on the following NMFS NEFSC surveys: (a) Spring Multi-species Bottom Trawl survey; (b) Autumn Multi-species Bottom Trawl survey; (c) Ecosystem Monitoring survey; (d) Aerial marine mammal and sea turtle survey; (e) Shipboard marine mammal and sea turtle survey; (f) Atlantic surfclam and ocean quahog survey; (g) Atlantic sea scallop survey; and (h) Seal survey; (i) NARW survey; (j) Sea Turtle Ecology survey. At a minimum, the survey mitigation agreement must describe actions and the means to address impacts on the affected surveys due to the preclusion of sampling platforms and impacts on statistical designs. NMFS has determined that the project area is a discrete stratum for surveys that use a random stratified design. This agreement may also consider other anticipated Project impacts on NMFS surveys, such as changes in habitat and increased operational costs due to loss of sampling efficiencies.

6.3.2 The survey mitigation agreement must identify activities that will result in the generation of data equivalent to data generated by NMFS's affected surveys for the duration of the Project. The survey mitigation agreement must describe the implementation procedures by which the Lessee will work with NEFSC to generate, share, and manage the data required by NEFSC for each of the surveys impacted by the Project, as mutually agreed upon between the Lessee and NMFS NEFSC. The survey mitigation agreement must also describe the Lessee's participation in the NMFS NEFSC Northeast Survey Mitigation Program to support activities that address regional-level impacts for the surveys listed above. The agreement must include provisions that provide criteria for changing mitigation activities over time, or timeframes for review and reconsideration of the agreement based on updated information, or both.

6.4 Environmental Data Sharing with Federally Recognized Tribal Nations. No later than 90 days after COP approval, the Lessee must make a request to the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at tribalengagement@bsee.gov

to coordinate with federally recognized Tribal Nations with geographic, cultural, or ancestral ties to the project area (hereinafter "interested Tribal Nation"), including, but not limited to the: Delaware Nation, Delaware Tribe of Indians, Mashantucket Pequot Indian Tribe (Western), Mashpee Wampanoag Tribe, Mohegan Tribe of Indians of Connecticut, Narragansett Indian Tribe, Shinnecock Indian Nation, and Wampanoag Tribe of Gay Head (Aquinnah). The purpose of this coordination is to: (1) solicit Tribal Nation interest in participating as an environmental liaison on board a small passenger vessel dedicated to environmental monitoring during construction and/or maintenance activities so the environmental liaison(s) can safely monitor, and participate in postmortem examinations of mortality events as a result of these activities; and (2) provide open access to the following: reports generated as a result of the Fisheries Research and Monitoring Plan; reports of NARW sightings; injured or dead protected species reporting (sea turtles, NARW, sturgeon); NARW PAM monitoring; PSO reports (e.g., pile driving reports); pile driving schedules and schedule changes; and any interim and final SFV reports, and its associated data. If an interested Tribal Nation expresses a desire to participate as an environmental liaison, the Lessee must provide the interested Tribal Nation information regarding training(s), certification(s), and safety measures, required for participation. The Lessee must provide to the interested Tribal Nation, in a manner suitable to the interested Tribal Nation, access to all ESA reports, Post Review Discovery Plans, and other documents listed in this paragraph no later than 30 days after the information becomes available. The Lessee may redact or withhold documents listed in this paragraph when it is information that the Lessee would not generally make publicly available and considers that the disclosure may result contrary to the Lessee's commercial interests. The Lessee must submit a justification for the redaction/withholding in writing to the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at tribalengagement@bsee.gov.

7 VISUAL AND CULTURAL RESOURCES CONDITIONS

7.1 No Impact Without Approval. The Lessee may not knowingly impact a potential archaeological resource without BOEM's and BSEE's prior concurrence. If a possible impact to a potential archaeological resource occurs, the Lessee must immediately halt operations; report the incident within 24 hours to BOEM and BSEE; and provide a written report within 72 hours to BOEM and BSEE.

7.2 Reporting. The Lessee must submit all monitoring, reporting (annual, immediate, or post-discovery), and survey requirements related to cultural resources to BOEM and to BSEE (via TIMSWeb with a notification email sent to env-compliance-arc@bsee.gov).

7.3 Avoidance of Known and Potential Shipwrecks, Debris Fields, and Ancient Submerged Landform Features (ASLFs). The Lessee must avoid known and potential shipwrecks, potentially significant debris fields, and ASLFs as described below. The Lessee must identify avoidance requirements on proposed anchoring plots, as-placed plats, and drawings associated with seabed disturbances (e.g., relevant FDR/FIR documents for export cables, inter-array cables, WTG, etc.). If the Lessee determines that avoidance is not possible, the Lessee must notify BOEM and BSEE prior to disturbing the seabed in the excluded area. In such instances, BOEM will notify the Lessee of any additional requirements, which may include additional measures to resolve adverse effects. If any vessel conducting work on behalf of the Lessee or any other activity associated with the planning, construction, operation or decommissioning disturbs the seabed within the avoidance areas noted below, the Lessee must submit an incident report to BOEM and BSEE within 24 hours.

7.4 Avoidance of Known Shipwrecks or Sunken Craft Sites and Potentially Significant Debris Fields. The Lessee must avoid eight potential submerged cultural resources and potentially significant debris fields identified during marine archaeological surveys. Targets ECR01, ECR02, ECR03, ECR04, ECR05, ERC06, WEA01, and WEA02 must be avoided by a minimum 50 m (164 ft) radius buffer from the extent of the site or magnetic field. The Lessee must identify avoidance stipulations and requirements on proposed anchoring plots, as-placed plats, and drawings associated with seafloor disturbances (e.g., relevant FDR/FIR documents for export cables, inter-array cables, WTGs, etc.). If the Lessee determines that avoidance is not possible, the Lessee must notify BOEM and BSEE prior to disturbing the seabed in the excluded area. In such instances, BOEM will notify the Lessee of any additional requirements, which may include additional measures to resolve adverse effects. If any vessel conducting work on behalf of the Lessee disturbs the seabed within the avoidance areas noted below, the Lessee must submit an incident report to BOEM and BSEE within 24 hours.

7.5 Avoidance of Ancient Submerged Landform Features. The Lessee will avoid all 43 ASLFs (ECR_P2, ECR_P3-A, ECR_P3-B, ECR_P4-A, ECR_P4-B, ECR_P4-C, ECR_P5-A, ECR_P5-B, ECR_P5-C, ECR_P5-D, ECR_P1, ECR_P6, ECR_P7, WEA_P-01-A, WEA_P-01-B, WEA_P-01-C, WEA_P-01-D, WEA_P-02-A, WEA_P-02-B, WEA_P-02-C, WEA_P-02-D, WEA_P-03-A, WEA_P-03-B, WEA_P-04, WEA_P-05, WEA_P-06, WEA_P-07, WEA_P-08, WEA_P-09, WEA_P-10, WEA_P-

11, WEA_P-12, WEA_P-13-A, WEA_P-13-B, WEA_P-14, WEA_P-15, WEA_P-16, WEA_P-17, WEA_P-18, WEA_P-19, WEA_P-20, WEA_P-21, AND WEA_P-22) by 50 m (164 ft) from the horizontal extent of all 43 ASLFs identified in the MARA. The Lessee must also avoid all impacts to the vertical extent of each of the ASLFs. The Lessee must identify avoidance stipulations and requirements on proposed anchoring plots, as-placed plats, and drawings associated with seafloor disturbances (e.g., relevant FDR and FIR documents for export cables, inter-array cables, WTG, etc.).

7.6 Submission of As-Built or As-Laid Position Plats. Per the mitigations outlined above, and as part of 30 C.F.R. § 285.714(a)(1), if the Lessee chooses to avoid archaeological sites and historic properties (Ancient Submerged Landforms, known shipwrecks, and potential shipwrecks as well as the applied avoidance buffer criteria) identified in the Area of Potential Effects (APE), the submission of as-built or as-laid position plats is required, at a scale of 1 in. = 1,000 ft. with DGPS accuracy demonstrating that these features have been avoided.

7.6.1 For anchoring activities, these plats must depict the "as-placed" location of all anchors, anchor chains, cables, and wire ropes on the seafloor (including sweep) and demonstrate that the feature was not physically impacted by the pre-construction, construction, maintenance and operations activities, nor will be impacted by the eventual decommissioning activities. If the Lessee chooses to avoid the feature and no anchoring activities were conducted during the construction/decommissioning, provide a statement to BOEM stating that in lieu of the required anchor position plats. These documents and maps should be submitted to BOEM no later than 90 days after completion of the activity.

7.6.2 For cable placement (inter-array and export cable corridors), submit the final "as-laid" location of the cable(s) at a scale of 1 in. = 1,000 ft. with DGPS accuracy demonstrating that the archaeological sites and historic properties (including all buffers applied as part of the avoidance criteria) identified in the APE have been avoided. If you use anchors during the construction and installation of the cables, supply the "as-placed" location of all anchors, anchor chains, cables, and wire ropes on the seafloor (including sweep). If the Lessee chooses to avoid the feature and no anchoring activities were conducted during the construction/decommissioning, provide a statement to that effect in lieu of the required anchor position plats. These documents and maps should be submitted no later than 90 days after completion of the activity.

7.6.3 For all other seafloor disturbing activities associated with the construction, maintenance and operations, and decommissioning of the project (i.e., spudding, jack-up vessels) in the vicinity of any archaeological sites or historic properties, submit plat maps at a scale of 1 in. = 1,000 ft with DGPS accuracy demonstrating the location where these seafloor impacts occurred in relation to the avoidance criteria applied to the archaeological sites or historic properties (including all buffers applied as part of the avoidance criteria). These documents and maps should be submitted no later than 90 days after completion of the activity.

7.7 Implementation of Mitigation Measures to Resolve Adverse Effects to ASLFs. The Lessee must execute all aspects of this condition, consistent with the Section 106 MOA (Stipulation I.A; Attachment 5, Historic Property Monitoring Plan for Ancient Submerged Landforms and Features). This monitoring program will implement a Post-construction Survey and Assessment to determine if construction activities impacted selected ASLFs within the export cable corridor. This effort will focus on areas of cable installation as this activity is more likely to disturb and redistribute shallow portions of previously identified ASLFs. The Lessee will construct a 3D model defining the spatial relationship of project components and installation methodology (e.g., cable installation via trenching or jetting) relative to the ASLFs. The Lessee will work with BOEM and Tribal Nations on the ROV inspection methodology used to conduct the post-construction seafloor investigation. Post-construction inspection will focus on areas of disturbance adjacent to or above ASLFs. This monitoring measure must be completed no later than 60 calendar days post-final cable burial. If unanticipated issues arise during the course of offshore construction that prevent this measure from being completed within calendar 60 calendar days post-final cable burial, the Lessee must notify BOEM and BSEE, propose an alternate completion timeframe, and reach agreement with BOEM on the timeframe.

7.8 Minimization Measures within the Terrestrial Area of Potential Effects. The Lessee must execute all aspects of this condition of COP approval consistent with the Section 106 MOA (Stipulation I.C). The Lessee must implement an archaeological monitoring during ground disturbing activities at the Carmans River crossing HDD entry and exit pit workspaces, the cable duct bank installation in the Smith Point/Mastic Beach Area – which includes Project locations from the Landfall at Smith Point County Park to the Project's intersection with William Floyd Parkway and Surrey Circle and the HDD entry and exit pit workspaces for the ICW crossing as a condition of approval for the COP. If archaeological resources or human remains are identified during Project construction, operations, or decommissioning, the onsite construction supervisor would stop work immediately and follow the protocols outlined in the Lessee's Monitoring and Post Review Discoveries Plan (Attachment 6 of the 106 MOA). Any monitoring activities by Tribal Nations will be reimbursed by the Lessee for their participation and any monitoring activities including per diem and travel to and from the site(s).

7.9 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 WTGs. The Lessee must color the WTGs an off white/grey color (no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey) prior to installation. The Lessee must confirm the planned paint color as part of the FDR and confirm the WTG was painted consistent with this condition as part of the final FIR.

7.10 Additional Minimization Measures. The Lessee will use uniform WTG design, speed, height, and rotor diameter to reduce visual contrast and decrease visual clutter. Uniform WTG spacing of 1 nmi will be used to decrease visual clutter. The Lessee must equip all WTGs and electrical service platforms (ESPs) with ADLS to reduce the duration of nighttime lighting. The WTGs and ESPs will be lit and marked in accordance with FAA and USCG lighting standards, consistent with BOEM's *Guidelines for Lighting*

and Marking of Structures Supporting Renewable Energy Development (April 28, 2021) to reduce light intrusion.

7.11 Mitigation Measures to Resolve Adverse Effects to 49 Historic Properties. The Lessee must fund mitigation measures to resolve the adverse effects to the following 49 historic properties:

- The Vineyard Sound & Moshup's Bridge Traditional Cultural Property
- The Chappaquiddick Island Traditional Cultural Property
- The Town of Aquinnah
    - Gay Head Light
    - Aquinnah Town Center Historic District
    - Gay Head-Aquinnah Shops Area
    - Edwin DeVries Vanderhoop Homestead
    - Leonard Vanderhoop House
    - Tom Cooper House
    - Theodore Haskins House
    - Gay Head – Aquinnah Coast Guard Station Barracks
    - 71 Moshup Trail
    - 3 Windy Hill Drive
- The Town of New Shoreham
    - The Block Island Southeast Lighthouse National Historic Landmark (NHL)
    - The Spring House Hotel Cottage
    - The Spring House Hotel
    - Old Harbor Historic District
    - New Shoreham Historic District
    - Block Island North Light
    - Corn Neck Road Historic District
    - Hippocampus/Boy's Camp/Beane Family
    - Mitchell Farm Historic District
    - Champlin Farm Historic District
    - Indian Head Neck Road Historic District
    - Island Cemetery/Old Burial Ground
    - Beach Avenue Historic District
    - Beacon Hill Historic District
    - Capt. Welcome Dodge Sr. House
    - Spring Street Historic District
    - Caleb W. Dodge Jr. House
    - WWII Lookout Tower – Spring Street
    - Pilot Hill Road and Seaweed Lane Historic District
    - WWII Lookout Tower at Sands Pond
    - Lewis-Dickens Farm Historic District
    - Miss Abby E. Vaill/1 of 2 Vaill Cottages
    - Hon. Julius Deming Perkins/Bayberry Lodge
    - Mohegan Cottage/Everett D. Barlow
    - Capt. Mark L. Potter House

- The City of New Port
    - Bellevue Avenue Historic District NHL
    - Ocean Drive Historic District NHL
    - The Breakers NHL

  The Lessee must execute all aspects of this condition of COP approval consistent with the Section 106 MOA (Stipulation III.A and Attachment 4 Treatment Plans for Above-Ground Historic Properties Subject to adverse effects).

7.12 Annual Monitoring and Reporting on the Section 106 MOA. By January 31 of each year, the Lessee must submit for BOEM's review a summary report detailing work undertaken pursuant to the Section 106 MOA during the preceding year. The Lessee must address any BOEM comments, and, after BOEM's review and agreement, the Lessee must share the summary report with all participating consulting parties identified in Attachment 2 of the Section 106 MOA. The report must include a description of how the stipulations relating to avoidance and minimization measures (Section 106 MOA Stipulations I and II) were implemented; any scheduling changes proposed; any problems encountered; and any disputes and objections received in the Lessee's efforts to carry out the terms of the Section 106 MOA. The Lessee may satisfy this reporting requirement by providing the relevant portions of the Annual Certification required under 30 C.F.R. § 285.633.

7.13 Implementation of Post-Review Discovery Plans. If properties are discovered that may be historically significant or unanticipated effects on historic properties are found, the Lessee must implement the Post-Review Discovery Plans found in Section 106 MOA Attachment 7 (Post-Review Discovery Plan for Marine Archaeology) and Attachment 6 (Post-Review Discovery Plan for Terrestrial Archaeology).

7.14 All Post-Review Discoveries. In the event of a post-review discovery of a property or unanticipated effects to a historic property prior to or during construction, operation, maintenance, or decommissioning of the Project, the Lessee must implement the following actions:

7.14.1 Immediately halt seabed-disturbing activities within the area of discovery.

7.14.2 As soon as practicable and no later than 72 hours after the discovery, the Lessee must notify BOEM and BSEE with a 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 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 BOEM's or BSEE's understanding of the potential resource. The Lessee must provide the notification to BOEM and BSEE within 72 hours of its discovery. BOEM and/or BSEE may request additional information and/or request revisions to the report.

7.14.3 Keep the location of the discovery confidential and take no action that may adversely affect the archaeological resource until BOEM has made an evaluation and instructs the Lessee on how to proceed.

7.14.4 Conduct any additional investigations and submit documentation as directed by BOEM to determine if the resource is eligible for listing in the National Register of Historic Places (NRHP) (30 C.F.R. § 585.702(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, BOEM will instruct the Lessee on avoidance, minimization, or mitigation of adverse effects.

7.14.5 If there is any evidence that the discovery is from a federally recognized Tribal Nation or appears to be a preserved burial site, the Lessee must notify the federally recognized Tribal Nation as identified in the notification lists included in the Post-Review Discovery Plan within 72 hours of the discovery with details of what is known about the discovery and consult with the federally recognized Tribal Nation pursuant to the post review discovery plan.

7.14.6 If BOEM or BSEE incurs costs in addressing the discovery, under Section 110(g) of the NHPA, BOEM or BSEE may charge the Lessee reasonable costs for carrying out preservation responsibilities under OCSLA (30 C.F.R. § 585.702(c)-(d)).

7.15 Emergency Situations and Section 106 Consultation. In the event of an emergency or disaster that is declared by the President or the Governors of Connecticut, Massachusetts, New York, and Rhode Island, which represents an imminent threat to public health or safety, or creates a hazardous condition due to impacts from the Project's infrastructure damaged during the emergency and affecting historic properties in the APEs, BOEM and/or BSEE, with the assistance of the Lessee, will notify the consulting federally recognized Tribal Nations, SHPOs, and the Advisory Council on Historic Preservation (ACHP) of the condition that has initiated the situation and the measures taken to respond to the emergency or hazardous condition consistent with the Section 106 MOA. BOEM and/or BSEE will make this notification as soon as reasonably possible, but no later than 48 hours from when it becomes aware of the emergency or disaster. Should the consulting Federally recognized Tribal Nations, SHPOs, or the ACHP desire to provide technical assistance to BOEM and/or BSEE, they will submit comments within seven days from notification if the nature of the emergency or hazardous condition allows for such coordination.

7.16 PAM Placement Review. 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 BOEM under Stipulation

4.3.6 of Addendum C of the Lease and Section 7.9 above, the PAM placement activities must avoid potential archaeological resources by a minimum of 100 m (328 ft), and the avoidance distance must be calculated from the maximum discernible extent of the archaeological resource. As-placed PAM system plats must be submitted to BSEE via TIMSWeb within 90 days of placement.

7.16.1 If PAM placement activities impact potential historic properties, the Lessee must take the actions described in All Post-Review Discoveries.

7.16.2 If PAM placement activities impact potential historic properties identified in the archaeological surveys without BOEM's prior authorization, the Lessee and the Qualified Marine Archaeologist who prepared the archaeological resources report must provide a statement documenting the extent of these impacts. This statement must be made to BOEM and BSEE consistent with Stipulation 4.3.7 of Addendum C of the Lease and Section 7.7, above. BOEM may require the Lessee to implement additional mitigation measures as appropriate based on a review of the results and supporting information.

8 AIR QUALITY CONDITIONS

8.1 Reporting. The Lessee must submit all monitoring, reporting, and survey requirements related to air quality to BOEM, to BSEE via TIMSWeb with a notification email sent to oswsubmittals@bsee.gov, and the EPA. The Lessee must confirm the relevant point of contact prior to reporting and confirmation of reporting receipt.

8.2 Sulfur Hexafluoride (SF_6) Leak Rate Monitoring and Detection. The Lessee must follow the International Electrotechnical Commission (IEC) and requirements in EPA's OCS air permits for SF_6 leak detection and monitoring requirements. The Lessee must also follow manufacturer recommendations for service and repair of the affected breakers and switches and conduct visual inspections of the switchgear and monitoring equipment according to manufacturer recommendations.

8.2.1 The Lessee must use enclosed-pressure SF_6 circuit breakers (or switches) and create alarms based on the pressure readings in the breakers and switches, so leaks can be detected when substantial sulfur hexafluoride leakage occurs. Upon a detectable pressure drop that is greater than ten percent of the original pressure (accounting for ambient air conditions), the Lessee must implement a plan of action within 30 days of the leakage event detailing the corrective measures required to fix the compliance deficiency if completion of repairs within 30 days or within EPA permit requirements (whichever is earlier) is not possible. If an event requires the removal of SF_6, the affected major component(s) must be replaced with new component(s).

8.2.2 The Lessee must report to BOEM and BSEE any detectible pressure drop that is greater than ten percent as soon as practicable and no later than 72 hours after the discovery and provide an estimated timeframe for maintenance or replacement.

8.2.3 The Lessee must provide a summary in the Lessee's Annual Certification under 30 C.F.R. § 285.633 of observed SF_6 leak rates in the past year and a summary of any leaks greater than 0.1 percent by weight (for the 13.8 kV switches) and 0.5 percent by weight (for all other switches) and the associated maintenance or repair actions taken and their timeframe from detection to completion.

8.2.4 National Ambient Air Quality Standards and PSD Class I and Class II Air Quality Increments. The Lessee is required under the CAA to obtain a permit for OCS sources and as a consequence must demonstrate that the air quality impacts from emissions of both the construction, and operation and maintenance phases, must be within the National Ambient Air Quality Standards and Prevention of Significant Deterioration (PSD) of Air Quality Increments. This demonstration must be submitted and approved by EPA prior to the issuance of the draft OCS Air Quality Permit. If any requirement in section 8 of these conditions is inconsistent with the terms of EPA's permit, the language in EPA's permit will prevail.

ATTACHMENT 1: LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
ADLS	Aircraft Detection Lighting System
ALARP	as low as reasonably practical
ANSI	American National Standards Institute
APE	Area of Potential Effects
API	American Petroleum Institute
ASLF	Ancient Submerged Landform Features
ASR	Airport Surveillance Radar
BiOp	Biological Opinion
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CBRA	Cable Burial Risk Assessment
CHIRP	compressed high-intensity radiated pulse
CMR	Collision minimization report
COP	Construction and Operations Plan
CVA	Certified Verification Agent
dB	decibel
DGPS	Differential Global Positioning System
DOD	Department of Defense
DOFS	distributed optical fiber sensing
DOI	Department of the Interior
DON	Department of the Navy
DPS	distinct population segment
DTS	desktop study
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FDR	Facility Design Report
FIR	Fabrication and Installation Report
GARFO	Greater Atlantic Regional Fisheries Office
GDP	gross domestic product
GPS	Global Positioning System
HESD	Habitat and Ecosystem Services Division
HF	high frequency
HRG	high resolution geophysical
IEC	International Electrotechnical Commission
IC	Incident Commander
IFC	issued for construction
IHA	Incidental Harassment Authorization
IMT	Incident Management Team

IOOS	Integrated Ocean Observing System
IR	infrared
ISO	International Organization for Standardization
ITA	Incidental Take Authorization
ITS	Incidental Take Statement
LERA	least expensive radar
LOI	Letter of Intent
NMS	Noise mitigation systems
LNM	Local Notice to Mariners
MARA	Marine Archaeological Resources Assessment
MEC	munitions and explosives of concern
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
NARW	North Atlantic right whale
NEFOP	Northeast Fisheries Observer Program
NEFSC	Northeast Fisheries Science Center
NHL	National Historic Landmark
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NORAD	North American Aerospace Defense Command
NRHP	National Register of Historic Places
OCS	Outer Continental Shelf
OCS-DC	Offshore Converter Station
OCSLA	Outer Continental Shelf Lands Act
OEM	Original Equipment Manufacturer
OPR	Office of Protected Resources within NMFS
OSPD	Oil Spill Preparedness Division
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
PDM	Pile Driving Monitoring
PIT	passive integrated transponder
POWERON	Partnership for an Offshore Wind Energy Regional Observation Network
PSO	Protected Species Observer
QI	Qualified Individual
RAL	Reichs-Ausschuß für Lieferbedingungen und Gütesicherung
RAM	Radar Adverse Impact Management
ROD	Record of Decision
RPM	Reasonable and Prudent Measure
SDS	Safety Data Sheets
SF_6	sulfur hexafluoride

SFV	sound field verification
SHPO	State Historic Preservation Office
SMS	Safety Management System
SROT	Spill Response Operating Team
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
UTC	Coordinated Universal Time
UXO	unexploded ordnance
VHF	very high frequency
WCD	worst-case discharge
WTG	wind turbine generator

Appendix B. OCSLA Compliance Review of the Construction and Operations Plan for the Sunrise Wind Commercial Project

United States Department of the Interior
BUREAU OF OCEAN ENERGY MANAGEMENT
WASHINGTON, DC 20240-0001

Information Memorandum

To: Elizabeth Klein
Director, Bureau of Ocean Energy Management

From: Karen Baker
Digitally signed by KAREN BAKER
Date: 2024.03.25 14:23:59 -04'00'
Chief, Office of Renewable Energy Programs

Subject: Compliance Review of the Construction and Operations Plan for the Sunrise Wind Farm and Sunrise Wind Export Cable Project for Commercial Lease OCS-A 0487

1.0 SUMMARY

Subsection 8(p)(4) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. §§ 1337(p)(4), requires the Secretary of the Interior ("Secretary") to approve activities in a manner that provides for 12 enumerated factors under subsection 8(p) of OCSLA. This memorandum documents the Bureau of Ocean Energy Management's (BOEM) compliance review of the Construction and Operations Plan (COP)[1] for the Sunrise Wind Farm Project (hereinafter "Project")[2] on Commercial Lease OCS-A 0487, and BOEM's consideration of the 12 factors enumerated in subsection 8(p)(4) of OCSLA (hereinafter "8(p)(4) factors").[3]

BOEM has determined that the Project will comply with the Bureau's regulations and that the proposed activities will be carried in a manner that provides for safety, protection of the environment, prevention of waste, and the other factors listed in subsection 8(p)(4) of OCSLA.

[1] Sunrise Wind Construction and Operations Plan (December 20, 2023), https://www.boem.gov/renewable-energy/state-activities/sunrise-wind-construction-and-operation-plan.
[2] This memo considers the Project as modified by the Preferred Alternative C-3b in the Final Environmental Impact Statement (EIS). Bureau of Ocean Energy Mgmt., BOEM 2023-0056, Final Environmental Impact Statement for the Sunrise Wind Project, (2023) [hereinafter Final EIS], https://www.boem.gov/renewable-energy/state-activities/sunrise-wind-final-environmental-impact-statement-volume-1.
[3] *See* 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," which provides that 8(p)(4) of OCSLA "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." Solicitors' M-Opinions are legal interpretations that are binding on DOI as a whole. Department of the Interior, Departmental Manual, 209 DM 3.1, 3.2A(11) (2020).

2.0 BACKGROUND AND PROJECT OVERVIEW

The Department of the Interior's (DOI) efforts to consider whether to lease areas offshore Massachusetts and Rhode Island and to assess the feasibility of allowing wind energy activities therein began in 2009, approximately 14 years ago.[4] Subsection 8(p)(7) of OCSLA, as amended by the Energy Policy Act of 2005 (EPAct), directs DOI, through BOEM, to provide for coordination and consultation with the Governor of any state or the executive of any local government that may be affected by a lease, easement, or right-of-way authorizing renewable energy activities on the Outer Continental Shelf (OCS). BOEM formed the BOEM Rhode Island and Massachusetts Intergovernmental Renewable Energy Task Forces for coordination among affected federal agencies and state, and local governments throughout the leasing process. The first Rhode Island Task Force meeting was held on November 17, 2009, with a subsequent meeting held March 2012. The first Massachusetts Task Force meeting was held on November 19, 2009, with six subsequent meetings held between January 2010 and September 2017.

2.1 Planning, Analysis, and Leasing

On August 18, 2011, BOEM published a Call for Information and Nominations (Call) for commercial leasing offshore Rhode Island and Massachusetts in the *Federal Register*.[5] The Call Area was located off the coasts of Rhode Island and Massachusetts beginning approximately 10 nautical miles (nm) south of Newport, Rhode Island, and extending 20 nm seaward. It was approximately 246 square nm and contained 31 whole OCS lease blocks and 10 partial OCS lease blocks. The Call Area was identified by BOEM in consultation with the State of Rhode Island and the Commonwealth of Massachusetts, and further delineated through consultation with Rhode Island and Massachusetts Intergovernmental Renewable Energy Task Forces. The area under consideration for the Call was located on the OCS off the coast of Rhode Island and Massachusetts within the Area of Mutual Interest, as described by a Memorandum of Understanding between the Governors of Rhode Island and Massachusetts. The Call Area was divided into two areas separated by an existing Traffic Separation Scheme, which was excluded from leasing consideration. Additionally, BOEM excluded partial OCS blocks 6867, 6917, and 6918 from leasing consideration in the Call because of unexploded ordnances in the area.

On August 18, 2011, BOEM also published a Notice of Intent (NOI) in the *Federal Register*[6] to prepare an Environmental Assessment (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

[4] For a more detailed explanation of the steps taken before issuance of the lease, *see* Final EIS Ch. 1, § 1.1.
[5] Commercial Leasing for Wind Power on the Outer Continental Shelf (OCS) Offshore Rhode Island and Massachusetts—Call for Information and Nominations (Call), 76 Fed. Reg. 51,383 (Aug. 18, 2011).
[6] Commercial Wind Lease Issuance and Site Characterization Activities on the Atlantic Outer Continental Shelf (OCS) Offshore Rhode Island and Massachusetts, 76 Fed. Reg. 51,391 (Aug. 18, 2011).

minimize impacts to environmental resources; and socioeconomic conditions that could result from site characterization and site assessment in and around the lease area.

BOEM 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 schemes, and commercial and recreational fishing areas of interest.

On February 24, 2012, BOEM publicly announced the resulting Wind Energy Area (WEA).[7] BOEM considered other OCS uses to minimize or eliminate interference to develop the WEA offshore Rhode Island and Massachusetts. BOEM excluded from leasing consideration partial OCS blocks with targeted fishing grounds important for commercial fishing in blocks 6914, 6915, 6916, 6964, 6966, 6970, 6971, 7014–7021, 7065–7068, 7070, and 7071. Other key issues identified during the Task Force meetings and the Call and Notice of Intent (NOI) comment period, including North Atlantic right whales, visual and cultural resources, telecommunication cables, and vessel traffic, were analyzed in the EA.

As a result of these efforts, BOEM held a competitive lease sale in July 2013, pursuant to 30 CFR § 585.211, for certain lease areas within the Rhode Island/Massachusetts WEA.

2.2 Lease Sale

The lease sale for this area was held on July 31, 2013.[8] The auction lasted 11 rounds and Deepwater Wind New England, LLC (Deepwater Wind) won with a combined bid of $3,838,288 for Leases OCS-A 0486 and OCS-A 0487. Lease OCS-A 0487[9] was issued to Deepwater Wind effective October 1, 2013. On August 3, 202, Deepwater Wind assigned Lease OCS-A 0487 to Sunrise Wind LLC (Sunrise Wind).[10] On September 3, 2020, Bay State Wind, LLC assigned 100 percent of its record title interest in a portion of lease OCS-A 0500, which BOEM designated OCS-A 0530, to Sunrise Wind. On March 15, 2021, BOEM completed the consolidation of lease OCS-A 0530 into Lease

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

[8] This discussion focuses on the 2013 lease sale, in which the vast majority of the area that currently makes up Lease OCS A-0487 was issued. The small portion of the current area in 0487 was originally issued in a lease sale on January 29, 2015, and was later consolidated with 0487. While this area was leased in a separate lease sale, BOEM used an analogous procedure for that lease sale. Additional details about that lease sale can be found on BOEM's website at https://www.boem.gov/renewable-energy/state-activities/massachusetts-activities.

[9] https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/RI/Executed-Lease-OCS-A-0487.pdf

[10] https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/OCS-A-0487-Assignment-Form-Executed.pdf

OCS-A 0487 through an amendment to Lease OCS-A 0487 for Sunrise Wind.[11] The resulting lease area is 109,952 acres.

Lease OCS-A 0487 does not, by itself, authorize any activity, such as construction, by Sunrise Wind within the leased area. Under Lease OCS-A 0487[12] and 30 C.F.R. § 585.600, Sunrise Wind must submit and receive approval of a Construction Operation Plan (COP) before any construction activities may take place on the OCS.[13] Submittal and processing of the COP is governed by the provisions set forth in 30 C.F.R. §§ 585.620 through 585.629.

2.3 Site Assessment

The five-year site assessment term for lease OCS-A 0487 began on July 1, 2014. Later that month, Deepwater Wind informed BOEM that it would not conduct site assessment activities for the lease. However, a Site Assessment Plan had been approved by BOEM for the lease OCS-A 0500 on June 29, 2017, which was subsequently consolidated into the OCS-A 0487 lease. BOEM approved Deepwater Wind's request to extend the site assessment term for three and a half years on October 24, 2018, to allow a reasonable amount of time to produce a COP. Lease OCS-A 0487 was subsequently assigned to Sunrise Wind and Sunrise Wind submitted a COP.

2.4 Construction and Operations

Sunrise Wind submitted a COP to BOEM for review and approval on September 1, 2020, with subsequent revisions, including the most recent submitted on December 20, 2023. The COP proposes the development of an offshore wind energy project limited to an area within Lease OCS-A 0487, as shown in Figure 1 below. The Project Area consists of approximately 109,952 acres (445 km^2)[14] about 18.9 miles south of Martha's Vineyard, Massachusetts, approximately 30.5 miles east of Montauk, New York, and approximately 16.7 miles from Block Island, Rhode Island.[15]

Sunrise Wind 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 Project (Preferred Alternative in the Final EIS) consists of up to 84 wind turbine generators (WTGs) at 87 potential locations, each of which would have an up to 11 MW generation capacity; one direct current offshore converter station (OCS-DC); and up to 135

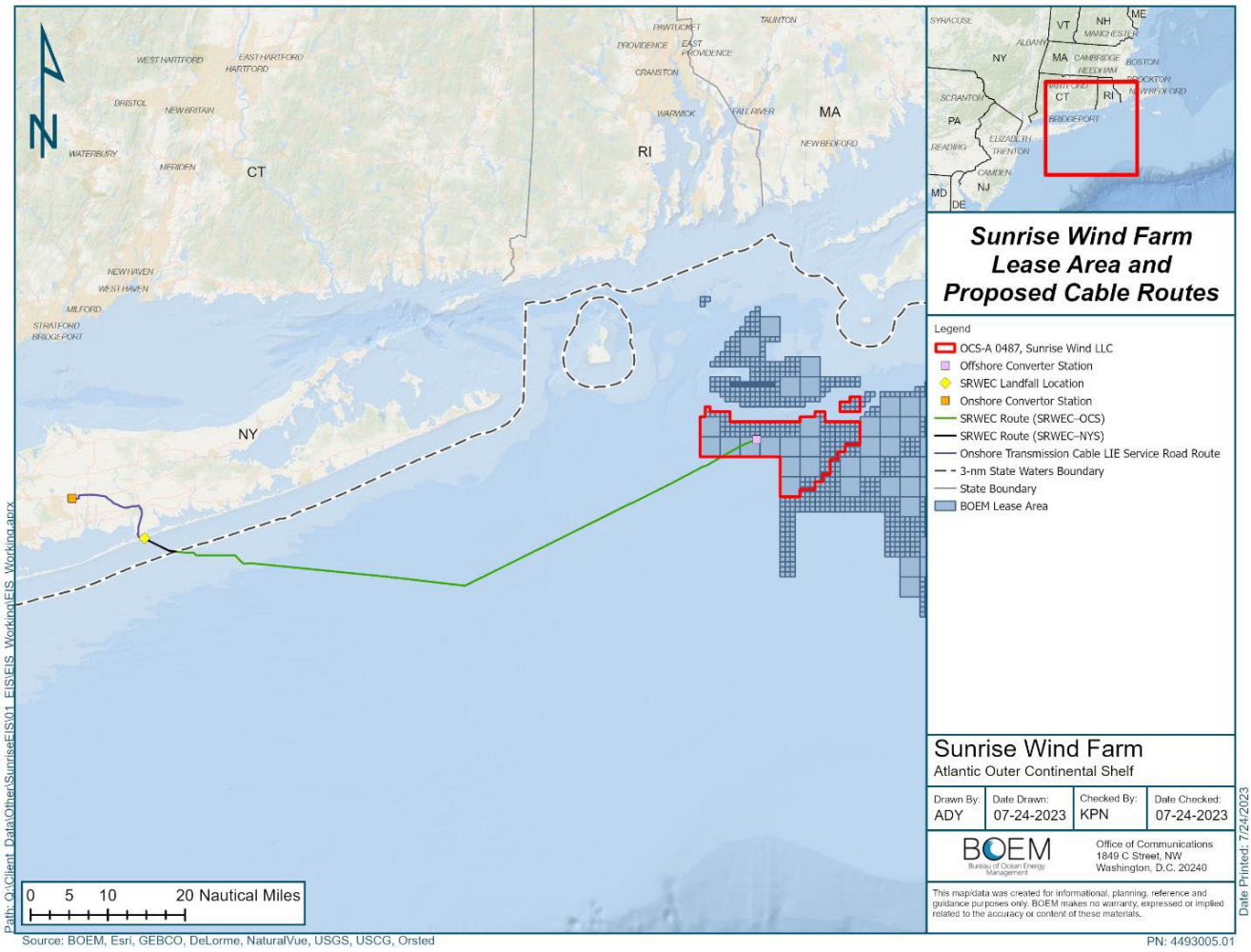
[11] https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/OCS-A-0487-Lease-Amended.pdf
[12] https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/2013-10-01-OCS-A-0487-Lease.pdf
[13] *See* 30 C.F.R. § 585.600(b).
[14] 30 C.F.R. § 585.113 defines "Project Area" as "the geographic surface leased, or granted, for the purpose of a specific project. If OCS acreage is granted for a project under some form of agreement other than a lease (i.e., a Right-of-Way or Right-of-Use and Easement), the federal acreage granted would be considered the Project Area. To avoid distortions in the calculation of the geometric center of the Project Area, project easements issued under this part are not considered part of the qualified Project Area." Note that the Project Area covers the entirety of the Lease Area OCS-A 0487, which consists of approximately 109,952 acres (445 km^2).
[15] https://www.boem.gov/renewable-energy/state-activities/sunrise-wind-construction-and-operation-plan

miles of inter-array cables linking the individual WTGs to the OCS-DC. The WTGs and OCS-DC would be placed in a grid-like array (with WTGs oriented east-west by north-south) within the Lease Area, with a 1 by 1-nm grid pattern between WTGs. One direct current (DC) export cable would make landfall at Smith Point County Park in the Town of Brookhaven, New York.[16]

The regulations at 30 C.F.R. § 585.200(b) state that a lease confers a right on 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), Sunrise Wind requested a project easement as part of its COP on September 1, 2023. The project easement would pass through approximately 87.06 statute miles along the U.S. Outer Continental Shelf. Sunrise Wind requested a project easement with a maximum width of 1,902 feet (580 meters) in width along its entire route for safe construction and maintenance of its proposed export cable unless safety and environmental factors during construction and maintenance of the associated facilities require a greater width. This width of the project easement is variable and is dependent upon the water depths at any given location. The width is based on the larger of 4.5 times the water depth, or 328 feet (100 meters). These widths would accommodate a safe installation corridor of rigid repair joints and a minimum of 328 feet (100 meters) from the cable route being required after vessel deck length is taken into consideration while working in shallower waters. The proposed easement is fully contained within the offshore export cable route corridor that has been surveyed for cultural and biological resources as well as geologic hazards and was assessed in the Final EIS prepared by BOEM under the National Environmental Policy Act of 1969 (NEPA).

[16] https://www.boem.gov/renewable-energy/state-activities/sunrise-wind-final-environmental-impact-statement-feis-commercial

Figure 1 – Project Area



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 Sunrise Wind COP.

3.1 Completeness and Sufficiency Review

Regarding the regulations pertaining to COPs, 30 C.F.R. § 585.620 provides the general requirements of what must be described in a COP,[17] while 30 C.F.R. § 585.621 sets forth what a COP must demonstrate. The regulation at 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 NEPA[18] and other relevant laws.

On September 1, 2020, Sunrise Wind requested a regulatory departure from the requirements at 30 CFR § 585.626(a)(4)(ii)–(iii) to provide detailed in situ geotechnical data at each proposed foundation location and a minimum of one deep boring (with soil sampling and testing) at each edge of the Project Area at the time of COP submittal. Instead of submitting all of the in situ geotechnical data with the COP, Sunrise Wind proposed to provide sufficient data to develop an adequate ground model for the COP and submit the deep boring data at every foundation location for final design no later than with its submittal of the Facility Design Report (FDR). OREP's Projects and Coordination Branch (PCB) evaluated the departure request and coordinated BOEM's review. On April 26, 2021, BOEM approved the departure request after determining that the geotechnical information submitted by Sunrise Wind at that point was sufficient to allow for review of the COP. Therefore, BOEM approved the departure request, allowing Sunrise 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 September 1, 2020, Sunrise Wind submitted a COP to BOEM for review and approval. On January 4, 2021, PCB, in coordination with OREP's Engineering and Technical Review Branch (ETRB) and Environment Branch for Renewable Energy (EBRE), 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. Throughout the review process, BOEM evaluated the information provided in response to its requests for additional information, as well as the updated COPs Sunrise Wind submitted, and determined that the information provided was sufficient in accordance with the regulations.

BOEM has determined that the COP includes all the information required in 30 C.F.R. §§ 585.626 and 585.627, except the information described in 30 CFR § 585.626(a)(4)(ii)-(iii), for which BOEM

[17] 30 C.F.R. § 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).

[18] 42 U.S.C. §§ 4321 *et seq.*

approved a regulatory departure. Following COP approval Sunrise Wind must submit the following information no later than when it submits its FDR:

- Updated information required in 30 CFR §§ 585.626(a)(4) geotechnical survey results of the sediment testing program including (1) the results of adequate in situ testing, boring, and sampling at each foundation location, and (2) the results of deep borings within the Project Area, as needed.

3.2 Technical Review

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), Certified Verification Agent Nomination Package and Oil Spill Response Plan];
- National Oceanic and Atmospheric Administration (NOAA), for radar interference;
- Federal Aviation Administration (FAA), for aviation and radar interference; and
- U.S. Coast Guard (USCG), for vessel navigation and marine vessel radar interference.

Furthermore, ETRB and BSEE reviewed the statement of work and qualification submitted in the COP for the CVA nomination. On December 14, 2021, BOEM approved the nomination of DNV GL Denmark A/S (now DNV) to be the CVA for the Project.[19] 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 Sunrise Wind after COP approval.

As a result of these reviews, ETRB has determined both the technical information and supporting data provided with the COP meet the requirements of 30 C.F.R. § 585.626 and 30 C.F.R § 585.627, where appropriate, and are sufficient to allow the safe installation of the Project on the OCS. ETRB provided a memorandum (ETRB Review Memo; Appendix B.1 to the Record of Decision [ROD]), which recommends the approval of the COP subject to ETRB's proposed conditions (Anticipated Terms and Conditions of COP Approval; Appendix A to the ROD).

3.3 Environmental Review

OREP's EBRE conducted an environmental review of the COP. On August 31, 2021, BOEM published the NOI to prepare an environmental impact statement (EIS)[20] for Sunrise Wind's COP, which started BOEM's formal scoping process pursuant to NEPA. The Notice of Availability (NOA) of the Draft EIS for the Project was published on December 16, 2022.[21] BSEE; U.S. Environmental Protection Agency (EPA); NOAA; U.S. Army Corps of Engineers (USACE); USCG; National Park

[19] *See* Letter from James Bennett, OREP, BOEM to Peter Allen, Manager of Sunrise Wind LLC (December 14, 2021).
[20] Notice of Intent to Prepare an EIS, 86 Fed. Reg. 48,763 (August 31, 2021).
[21] Notice of Availability of a Draft EIS, 87 Fed. Reg. 77,135 (Dec. 16, 2022).

Service (NPS); and U.S. Fish and Wildlife Service (USFWS) were identified as cooperating federal agencies during the development, review, and finalization of the Final EIS. Cooperating state agencies include the New York Department of State; Massachusetts Office of Coastal Zone Management; Rhode Island Coastal Resources Management Council; and the Rhode Island Department of Environmental Management.[22] BOEM invited the Delaware Nation, Delaware Tribe of Indians (Delaware Tribe), Mashpee Wampanoag Tribe (Mashpee), Shinnecock Indian Nation (Shinnecock), Mashantucket (Western) Pequot Tribal Nation (Mashantucket), Wampanoag Tribe of Gay Head – Aquinnah (Aquinnah), Mohegan Tribe of Connecticut, and Narragansett Indian Tribe (Narragansett) to participate in government-to-government meetings with BOEM after public scoping and after publication of the Draft EIS. A government-to-government meeting was held with the Mashantucket, Mashpee, Delaware Nation, Shinnecock, and the Aquinnah October 15, 2021. BOEM leaders also met the Houlton Band of Maliseet Indians; Mashantucket; Mashpee; Narragansett; Passamaquoddy Tribe, Indian Township; Passamaquoddy Tribe, Pleasant Point; Penobscot Indian Nation; Shinnecock; and Aquinnah at the Tribal Leaders Summit on April 10, 2023. Additionally, a government-to-government meeting was held with the Aquinnah on January 17, 2024.

On December 15, 2023, BOEM published the NOA of the Final EIS in the *Federal Register*.[23] The Final EIS identified Sub-Alternative C-3b, as the Preferred Alternative and included BOEM's responses to comments on the Draft EIS in Appendix O. The Final EIS found that the Preferred Alternative would have negligible to moderate adverse impacts on most resources and only the potential for major adverse impacts on (i) cultural resources; (ii) commercial fishing; (iii) scientific research and surveys; (iv) marine mammals (for North Atlantic right whale with baseline ongoing activities); and (v) scenic and visual resources. The Final EIS also found that the Project could have beneficial impacts on aspects of the following resources: (i) air quality; (ii) benthic resources; (iii) birds; (iv) for-hire recreational fishing; (v) demographics, employment, and economics; (vi) land use and coastal infrastructure; (vii) marine mammals (odontocetes and pinnipeds); (viii) recreation and tourism; (ix) environmental justice; and (x) sea turtles. On March 20, 2024, BOEM published errata on its website providing corrections to the Final EIS.[24] None of these corrections are substantive or affect the analysis or conclusions in the Final EIS.

Concerning impacts from future planned actions, including the Project, the Final EIS 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; (ii) scientific research and surveys; (iii) USCG search and rescue operations; (iv) scenic and visual resources; (v) cultural resources; and (vi) marine mammals (for North Atlantic right whale with baseline ongoing activities). The Final EIS also found that future planned actions could have beneficial impacts on the following resources: (i) air quality; (ii) benthic resources; (iii) birds; (iv) marine mammals (odontocetes and pinnipeds); (v) sea turtles; (vi) cultural resources (vii)

[22] For more details, see Final EIS, appendix A.
[23] Notice of Availability of a Final EIS, 88 Fed. Reg. 86,927 (Dec. 15, 2023).
[24] https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Sunrise%20FEIS%20Errata.pdf

demographics, employment, and economics; (viii) environmental justice; (ii) recreation and tourism; and (iii) land use and coastal infrastructure. The 30-day waiting period for the Final EIS closed on January 16, 2024.

Several consultations were conducted as part of the environmental review process. On September 28, 2023, NMFS issued a Biological Opinion (BiOp) for the Project under Section 7 of the Endangered Species Act (ESA).[25] The BiOp concluded that the proposed activity is not likely to jeopardize the continued existence of any ESA-listed species under NMFS' jurisdiction. To be exempt from the prohibitions of Section 9 of the ESA, BOEM, BSEE, USACE, and NMFS Office of Protected Resources, and Sunrise Wind, must comply with the Reasonable and Prudent Measures and implementing Terms and Conditions issued as part of the BiOp.

On June 29, 2023, USFWS transmitted a BiOp for the Project and concluded consultation and conference for the Project pursuant to Section 7 of the ESA.[26] The BiOp concluded the Project is not likely to jeopardize the continued existence of the Federally listed Atlantic Coast piping plover or the rufa red knot. To be exempt from the prohibitions of Section 9 of the ESA, BOEM and the Lessee must comply with the Reasonable and Prudent Measures and implementing Terms and Conditions documented in the BiOp.

BOEM also completed an Essential Fish Habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA)[27] and NMFS issued EFH conservation recommendations on September 14, 2023, pursuant to Section 305(b)(4)(A) of the MSA. According to Section 304(b)(4)(B) of the MSA, BOEM is required to provide NMFS a detailed response to each EFH conservation recommendation within 30 days of receipt. On October 6, 2023, BOEM indicated to NMFS that due to the complex nature of the Project, more than 30 days would be needed to respond. BOEM issued a response letter to NMFS on February 16, 2024. The detailed response to the conservation recommendations provided draft conditions of COP approval that adopt or partially adopt NMFS's conservation recommendations, which BOEM has included in Appendix A of the ROD.

BOEM also conducted a National Historic Preservation Act (NHPA) Section 106 review of the Project pursuant to the Section 106 implementing regulations, "Protection of Historic Properties" (36 CFR Part 800). Through the Section 106 consultation, BOEM made an adverse effect finding for the undertaking and determined multiple historic properties including four National Historic Landmarks (NHLs) (47 historic properties total) may be visually adversely affected as a result of COP approval. The Section 106 review and consultation conducted for this project resulted in the development of measures to resolve those adverse effects which are included in the Section 106 Memorandum of Agreement (MOA). BOEM identified four NHLs, the Bellevue Avenue Historic District, the Ocean

[25] https://www.fws.gov/law/endangered-species-act
[26] *See* Letter from Ian Drew, Field Supervisor, Office, Fish and Wildlife Serv., to Paige Marrin, Office of Renewable Energy Programs, Bureau of Ocean Energy Mgmt. (June 29, 2023).
[27] https://www.fisheries.noaa.gov/resource/document/magnuson-stevens-fishery-conservation-and-management-act

Drive Historic District, the Breakers, and the Block Island Southeast Lighthouse Historic Landmark that may be visually adversely affected by the Project. BOEM followed the requirements for compliance with NHPA Section 110(f) (36 C.F.R. § 800.10) regarding assessment of effects to NHLs and consulted with the NPS, Connecticut State Historic Preservation Officer (SHPO), the Massachusetts SHPO, the New York SHPO, the Rhode Island SHPO, the Advisory Council on Historic Preservation (ACHP), and interested consulting parties, including associated preservation organizations managing these NHLs, to assess and undertake planning and actions as may be necessary to minimize harm to NHLs. BOEM addressed this process and finding in Appendix J of the Final EIS.

Consultation under Section 106 of the NHPA concluded with the execution of the MOA, which was signed by the Lessee, BOEM, Connecticut, Massachusetts, New York, and Rhode Island SHPOs, and the ACHP, and fully executed on March 25, 2024.

Sunrise Wind submitted requests for Federal Consistency Certification to the States of Rhode Island, New York, and Massachusetts under the Coastal Zone Management Act (CZMA).[28] Acting under Section 307 of the Federal Coastal Zone Management Act (Pub. L. No. 92-583), as amended, the coastal management programs for the States of Rhode Island, New York, and Massachusetts concurred with Sunrise Wind's consistency certification, finding that the project is consistent to the maximum extent practicable with the enforceable policies of each state's coastal management plan. BOEM received the CZMA concurrence letters issued by Rhode Island on September 7, 2023, New York on August 24, 2023, and Massachusetts on October 6, 2023.

4.0 COMPLIANCE REVIEW[29]

The regulations at 30 C.F.R. Part 585 set forth responsibilities for both BOEM and Sunrise Wind that are similar to those imposed by the 8(p)(4) factors.[30] 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 Sunrise 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 Sunrise 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 Sunrise 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 ensured the selected

[28] 16 U.S.C. §§ 1451 *et seq*.
[29] *See* 43 U.S.C. § 1337(p)(4) (OCSLA Subsection 8(p)(4)); 30 C.F.R. §§ 585.102, 585.621.
[30] *See* 30 C.F.R. §§ 585.102, 585.621.

alternative provides for 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.[31]

4.1 Conforms to all applicable laws, regulations, and lease provisions of Sunrise Wind's commercial lease[32]

Consultations and reviews for the Project under NEPA, ESA, CZMA, MSA, and NHPA Section 106 and Section 110(f) are complete.[33] Further, BOEM's approval of the COP includes a condition prohibiting Sunrise Wind from commencing construction activities before obtaining all applicable permits and authorizations, including permits and permissions requested by Sunrise Wind under Section 10 of the Rivers and Harbors Act of 1899 (RHA), Section 404 of the Clean Water Act (CWA), and Section 14 of the RHA from USACE, Incidental Take Regulations and an associated Letter of Authorization under the Marine Mammal Protection Act from NMFS, CWA Section 402 Permit, National Pollutant Discharge Elimination System (NPDES) from EPA, and a Right-of-Way (ROW) permit and special use permits from NPS. Section 1.4 of the COP (Regulatory Framework) lists all expected Federal, Rhode Island, New York, and Massachusetts State, regional (county), and local-level reviews and permits for the Project.[34]

4.2 Safety, best available and safest technology, best management practices, and properly trained personnel[35]

The Project COP proposed the following major offshore components:

- Up to 94 WTGs at 102 potential locations with a total nameplate capacity of 924-1034 MW;
- Each WTG would be supported by a monopile foundation;
- A network of AC inter-array cable ranging from 66-161 kilovolt (kV) buried to a target depth of 4 to 6 feet (1.2-1.8 meters);
- One offshore substation on a piled jacket foundation; and
- One 320-kV DC export cable with target burial depth of 4 to 6 feet (1.2 to 1.8 meters).

As documented in Appendix B.1, BOEM expects Sunrise Wind to use the most current technology available for commercial production that meets or exceeds current industry standards. In some cases,

[31] On December 18, 2020, Bay State Wind LLC assigned 100 percent of its record title interest in a portion of Lease OCS-A 0500, which BOEM designated OCS-A 0530, to Sunrise Wind LLC. On March 15, 2021, BOEM completed the consolidation of Lease OCS-A 0530 into Lease OCS-A 0487. The discussion herein focuses on the process for lease issuance for Lease OCS-A 0487. All procedures implemented by BOEM for the sale and issuance of Lease OCS-A 0487 were similarly implemented for the sale and issuance of Lease OCS-A 0500. Therefore, BOEM considered and satisfied the enumerated factors in OCSLA Subsection 8(p)(4) and BOEM's implementing regulations at 30 C.F.R. Part 585 for the sale and issuance of both Lease OCS-A 0487 and Lease OCS-A 0500, which includes a small portion later assigned to and consolidated within Lease OCS-A 0487.
[32] *See id.* §§ 585.102(b), 585.621(a).
[33] *See* discussion *supra* sec. 3.3.
[34] *See* also Final EIS, appendix A.
[35] *See* 43 U.S.C. § 1337(p)(4)(A); 30 C.F.R. §§ 585.102(a)(1), 585.621(b), 585.621(e)-(g).

this could include technologies currently in prototyping and/or working toward type certification by a recognized certification body but not yet commercially available. ETRB has determined that the information on the proposed major components provided in the COP is sufficient to determine that the Projects propose to use the best available and safest technology pursuant to 30 C.F.R. § 585.621(e) which will meet or exceed the current international industry standards. The approved CVA will confirm as much by certifying that the facility is designed, fabricated, and installed in accordance with the COP and approved industry standards. BOEM and BSEE will also confirm that the design is in accordance with the COP through review of the FDR and FIR.[36]

The engineering specifications of the WTGs and their ability to sufficiently withstand weather events–which include withstanding hurricane-level events–is independently evaluated by a CVA when reviewing the FDR and FIR according to international standards. One of these standards calls for the structure to be able to withstand a 50-year return interval event. An additional standard also includes withstanding 3-second gusts of a 500-year return interval event. WTGs are designed to withstand the oceanographic and meteorological conditions expected in the lease area, including hurricane force winds.

OREP has consulted with BSEE and the USCG on safety requirements during the COP review process. BSEE's and USCG'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.[37] Additionally, oversight of the review of future submissions (e.g., FDR and FIR activities) will allow BSEE to ensure that the "facilities are designed, fabricated, and installed in conformance with accepted engineering practices."[38]

The COP also provides a description of its proposed SMS,[39] as required by 30 C.F.R. § 585.627(d). The proposed SMS, which will be finalized following any COP approval, includes a description of the processes and procedures listed in 30 C.F.R. § 285.810(a)-(f), and Sunrise Wind's proposed implementation thereof. BOEM determined that Sunrise 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. Sunrise Wind will be responsible for overseeing that contractors comply with these obligations.

As described in a February 14, 2024, memo documenting ETRB's review of the COP, for these reasons, ETRB concluded that the technical information and supporting data provided with the COP is sufficient to allow the safe installation of the proposed project on the OCS, uses best available and

[36] 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)).
[37] *See* infra. Anticipated Terms and Conditions of COP Approval, Appendix A to the ROD.
[38] *See* 30 C.F.R. § 285.705(a)(1).
[39] *See* COP app. E2.

safest technology, best management practices and uses properly trained personnel, pursuant to 30 CFR §585.621(b), (e), (f), and (g).

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[40]

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, 2023) determined that the majority of the potential adverse impacts to the environment and natural resources are negligible to moderate. The Final EIS concluded that the Project would potentially result in major impacts only to cultural resources; commercial fishing; scientific research and surveys; marine mammals (for North Atlantic right whale with baseline ongoing activities); and scenic and visual resources.

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 BOEM issued Lease OCS-A 0487. BOEM published in the Federal Register a Call for Information and Nominations ("Call") to identify locations within the offshore Call Area[41] in which there was industry interest to seek commercial leases for developing wind projects. The previously described Call Area was located off the coasts of Rhode Island and Massachusetts. In the EA discussed below, BOEM evaluated the potential environmental effects of lease issuance and subsequent site assessment and site characterization activities in this Call Area.

On August 18, 2011, BOEM published a NOI in the *Federal Register*[42] 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 site characterization and site assessment in and around the lease area. In July 2012, BOEM published an NOA for the EA, which assessed reasonably foreseeable impacts resulting from 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

[40] *See* 43 U.S.C. § 1337(p)(4)(B); 30 C.F.R. §§ 585.102(a)(2), 585.621(d).
[41] Commercial Leasing for Wind Power on the Outer Continental Shelf (OCS) Offshore Rhode Island and Massachusetts—Call for Information and Nominations (Call), 76 Fed. Reg. 51,383 (Aug. 18, 2011).
[42] Commercial Wind Lease Issuance and Site Characterization Activities on the Atlantic Outer Continental Shelf (OCS) Offshore Rhode Island and Massachusetts, 76 Fed. Reg. 51,391 (Aug. 18, 2011).

and Massachusetts.[43] 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).[44] For a more detailed discussion of the leasing process for Lease OCS-A 0487 and the environmental consultations performed, see Section 1.5 of the Revised EA. The Revised EA explained that BOEM would prepare a separate site-and project-specific NEPA analysis of a proposed project when a lessee submitted a COP.

As described in section 3.3 above, BOEM analyzed in the Final EIS the potential environmental effects of the proposed activities described in the COP. Appendix H of the Final EIS specifically references measures to be taken or mitigation measures 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 Project on September 28, 2023. The BiOp concluded that the Project is likely to adversely affect but is not likely to jeopardize the continued existence of blue, fin, sei, sperm, or NARW, the Northwest Atlantic Distinct Population Segment (DPS) of loggerhead sea turtles, the North Atlantic DPS of green sea turtles, Kemp's ridley or leatherback sea turtles, the shortnose sturgeon, or any of the five DPSs of Atlantic sturgeon.[45] The Project is not likely to adversely affect giant manta rays, hawksbill sea turtles, or oceanic whitetip sharks, or critical habitat designated for the New York Bight DPS of Atlantic sturgeon. The BiOp also concluded that the project will have no effect on the Gulf of Maine DPS of Atlantic salmon, or critical habitat designated for the NARW, or the Northwest Atlantic DPS of loggerhead sea turtles.

In response to BOEM's December 16, 2022, request to USFWS to initiate ESA Section 7 consultation, on June 29, 2023, USFWS transmitted a BiOp and concluded consultation and conference for the Project. The BiOp concluded that the Project is not likely to adversely affect roseate tern, eastern black rail, northern long-eared bat and seabeach amaranth.[46] The BiOp also concluded the Project is not likely to jeopardize the continued existence of the Federally listed Atlantic Coast piping plover or the rufa red knot. To minimize impacts on the piping plover or rufa red knot, the BiOp includes several Conservation Measures.

---

[43] Environmental 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 (July 3, 2012). The EA did not analyze the development and operation of a wind energy facility since Lease OCS-A-0487 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.

[44] 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/documents/renewable-energy/BOEM%20RI_MA_Revised%20EA_22May2013.pdf.

[45] *See* NMFS BiOp at https://www.fisheries.noaa.gov/s3/2023-10/Sunrise-Wind-Biological-Opinion-092823-508-Compliant10172023.pdf.

[46] *See* Letter from Ian Andrew, Field Supervisor, Long Island Field Office, Fish and Wildlife Serv., to Paige Marrin, OREP, BOEM (June 29, 2023).

BOEM also conducted consultation with NMFS in accordance with Section 305(b)(2) of the MSA. BOEM analyzed potential adverse impacts of the Project on EFH in an EFH assessment deemed complete by NMFS on July 6, 2023. NMFS issued a letter on September 14, 2023, in which they provided 31 conservation recommendations to avoid and minimize impacts to EFH for activities under BOEM's jurisdiction within the OCS. BOEM provided a detailed response to NMFS via letter dated February 16, 2024, regarding how each of the conservation recommendations would be applied for the Project. As described in that letter, BOEM did not consider measures that relate solely to activities that do not require any authorization under OCSLA, as they are beyond BOEM's regulatory authority. BOEM fully or partially adopted 24 of the 31 conservation recommendations. BOEM did not fully adopt, or only partially adopted, some measures based on technical or economic feasibility concerns.

BOEM also conducted NHPA Section 106 consultation with 105 consulting parties made up of 11 Federal agencies (including the ACHP), 8 federally-recognized Tribes, 1 non-federally recognized Tribe, 7 State agencies (including the Connecticut, Massachusetts, New York, and Rhode Island SHPOs), 10 local governments, 7 certified local governments, 16 nongovernmental organizations and/or groups with a demonstrated interest in the affected historic properties, 45 private property owners representing 38 private properties, and Sunrise Wind, and held five consulting party meetings. Through that consultation, BOEM determined 47 historic properties including 4 NHLs may be visually adversely affected by activities resulting from COP approval. Through the Section 106 consultation, BOEM developed and finalized measures to resolve these adverse effects. BOEM also identified and determined through the consultation that four NHLs may be visually adversely affected by activities resulting from COP approval and followed the requirements for compliance with NHPA Section 110(f). On March 25, 2024, a Section 106 MOA was executed stipulating how the adverse effects of the Project on historic properties will be resolved.

The COP proposed impact avoidance, minimization, and mitigation measures, which BOEM included as elements of the project in its environmental analysis and consultations. Measures proposed by Sunrise Wind can be found in Section 4 of the COP and include measures to avoid, minimize, and mitigate impacts to resources such as air quality, marine mammals, birds, and bats, among others.[47] As described in the ROD, BOEM will incorporate Sunrise Wind's proposed measures as COP conditions of approval and require Sunrise Wind to comply with all measures and commitments resulting from consultations.

BOEM's Preferred Alternative also includes mitigation and monitoring 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 Final EIS. Appendix H of the Final EIS contains a comprehensive list of

[47] COP Section 4; Sunrise Wind Farm Project COP (December 2023), https://www.boem.gov/renewable-energy/state-activities/sunrise-wind.

mitigation and monitoring measures, which are analyzed in the respective Chapter 3 resource section.

4.4 Prevention of waste and conservation of natural resources[48]

Natural resources are defined in 30 C.F.R. § 585.113 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 the 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 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 Section 4 of the Sunrise Wind COP and the Final EIS, Chapter 3, Affected Environment and Environmental Consequences, both of which consider how BOEM addresses the Project's impacts on the marine environment. For similar reasons, BOEM has determined that the 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 0487 was the result of a comprehensive planning process, as discussed in the Final EIS. 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 0487. The analysis conducted in section 3.20 of the Final EIS concluded that the Project would result in negligible impacts on non-energy marine minerals (primarily sand and gravel) because the Project would avoid mineral leases, sand and gravel leases, and borrow areas. There are no existing oil and gas leases in the Atlantic at this time and there are no Atlantic sales in the 2024-2029 Final Proposed Program that was approved by the Secretary on December 15, 2023.[49] There is no evidence that the project will waste oil, gas, or other mineral resources.

The proposed COP reflects current industry practices (e.g., equipment, design, and orientation) for the Project Area. The mitigation measures to be adopted with the Preferred Alternative's selection strike a rational balance between deconflicting OCS uses and maximizing wind energy harvesting in the proposed Project Area.

[48] *See* 43 U.S.C. §§ 1337(p)(4)(C)-(D); 30 C.F.R. §§ 585.102(a)(3)-(4), 585.105(a).
[49] *See* https://www.doi.gov/pressreleases/interior-department-publishes-final-2024-2029-national-outer-continental-shelf-oil.

4.5 Coordination with relevant Federal agencies[50]

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, and public meetings from the early pre-lease planning stages to the Area Identification process (which resulted in the WEAs before modification at the Proposed Sale Notice stage) can be found in sections 1.1 through 1.5 and Appendix A of the Final EIS. Throughout the environmental and technical review of the COP, BOEM met with various Federal agencies, including BSEE, EPA, NOAA, USACE, USCG, NPS, and USFWS. Through the NOI to prepare the EIS, BOEM invited Federal agencies with jurisdiction and/or special expertise to become Cooperating or Participating Agencies. BSEE, EPA, NOAA, USACE, USCG, NPS, and USFWS supported preparation of the Draft EIS as Cooperating Agencies, and the FAA supported preparation of the Draft EIS as a Participating Agency. BOEM provided Cooperating and Participating Agencies with the preliminary Draft EIS on September 26, 2022, for review and comment. Before publishing the Draft EIS, BOEM considered and addressed agency comments received, and provided a revised preliminary Draft EIS with a request that Cooperating and Participating agencies confirm that their comments were adequately addressed. The Cooperating Agencies also supported preparation of the Final EIS. BOEM provided Cooperating Agencies with the preliminary Final EIS on August 10, 2023, for review and comment. Before publishing the Final EIS, BOEM considered and addressed comments received, and provided a revised preliminary Final EIS with a request that Cooperating agencies confirm that their comments were adequately addressed. During the EIS process, BOEM met with all the Cooperating and Participating agencies three times (August 30, 2021, September 3, 2021, and June 8, 2022), met with agencies individually on a plethora of occasions, and hosted two sets of three public meetings (scoping and Draft EIS).[51] NOAA and NPS indicated intention to adopt the Final EIS and sign a joint ROD with BOEM, and USACE and EPA have indicated intentions to adopt the Final EIS and sign separate RODs concurrent with the issuance of its permit.

4.6 Protection of national security interests of the United States[52]

At each stage of the regulatory process involving Lease OCS-A 0487, BOEM has consulted with the Department of Defense (DoD) for the purposes of assessing national security considerations in its decision-making processes. On August 18, 2011, BOEM published a "Call for Information

[50] Throughout the COP review and approval process, DOI engaged in meaningful, government to government consultation with federally recognized Tribes. For more detail see Final EIS, appendix A. Since the Final EIS was published BOEM has had additional government to government meetings with Tribes. *See also* 43 U.S.C. § 1337(p)(4)(E); 30 C.F.R. § 585.102(a)(5).
[51] *See* Final EIS, App. A (detailing consultation and coordination process with other federal and state agencies).
[52] *See* 43 U.S.C. § 1337(p)(4)(F); 30 C.F.R. §§ 585.102(a)(6), 585.621(c).

and Nominations in the *Federal Register*[53] (under Docket ID: BOEM-2011-0049). The Call Area was identified through consultation with BOEM's Rhode Island and Massachusetts Renewable Energy Task Force (which include Federal, Tribal, and state government partners, including DoD, NMFS, and the states of Rhode Island and Massachusetts) and using information gathered by the State of Rhode Island in its Special Area Management Plan. Furthermore, BOEM consulted with DoD on the EA (described in section 4.3), which examined the potential environmental effects of issuing commercial wind energy leases and approving site assessment activities in the WEA. Section 4.1.3.2 of the EA discusses military activities within the WEA.

Following BOEM's consultation with 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 and buoys on DoD testing training and operations in the WEA. When addressed through coordination with the DoD, impacts would be negligible and avoidable.

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 potential impacts on Department of Navy (DON), United States Army (Army), and the North American Aerospace Defense Command (NORAD) operations. BOEM and the DoD 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 DoD:

- Notify NORAD 30-60 days ahead of project completion and when the project is complete and operational for Radar Adverse Impact Management (RAM) scheduling;
- Contribute funds ($80,000) toward the execution of the RAM for each affected radar;
- Curtail activities for National Security of Defense purposes as described in the leasing agreement;
- Installation of Federal Aviation Administration approved Night Vision Compatible lighting on all construction equipment and structures associated with the Operations and Maintenance (O&M) facility;
- De-conflict with Army operations in the area from the use of Unmanned Aircraft System (UAS) helicopters to be used in the inspection and maintenance of wind turbines being stationed at the O&M facility, the Army requests the developer coordinate UAS helicopter flight activities with the Quonset Point Airpark Traffic Control Manager;

[53] Call for Information and Nominations, 76 Fed. Reg. 51,383 (Aug. 18, 2011).

- Notify the Quonset Point Airpark Traffic Control Manager when construction begins of the O&M facility to de-conflict with operations in the area; and
- Include a provision for distributed fiberoptic sensing technology that could be used as part of the wind energy project or associated transmission cables as terms of COP approval to mitigate potential impacts on the DON's operations in the area.

To protect the security interests of the United States, BOEM has included these measures that are within its jurisdiction as conditions of approval in Appendix A of the ROD.

Section 3c of Lease OCS-A 0487 also includes a provision allowing for BOEM to suspend operations in accordance with the national security and defense provisions of section 12 of OCSLA.[54]

4.7 Protection of the rights of other authorized users of the OCS[55]

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.[56] 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 Preferred 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 potentially subject to 43 U.S.C. § 1337(k)(2) (OCSLA) that would be affected by the activities proposed in the COP. Though there are eight 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 Sunrise 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 Preferred Alternative and would arrange the WTGs in an east-west/north-south orientation and require a minimum spacing of 1 nm between the WTGs. Additionally, a segment of an easement issued by BOEM to a nearby wind energy

[54] Commercial Wind Lease OCS-A 0487, https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/OCS-A-0487-Lease-Amended.pdf.
[55] *See* 43 U.S.C. § 1337(p)(4)(G); 30 C.F.R. § 585.102(a)(7).
[56] 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.

leaseholder intersects with a portion of the OCS-A 0487 lease area. Sunrise Wind indicated that the intersecting easement will not interfere with the activities or operations pursuant to its lease.[57]

4.8 A fair return to the United States[58]

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 offshore wind 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 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 amount 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,[59] 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, or $194,996. Deepwater Wind'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.[60] This monetary return is in addition to the non-monetary factors.

The commercial wind energy lease with Sunrise Wind, previously Deepwater Wind, went into effect October 1, 2013.

Lease payments are enumerated in Lease OCS-A 0487, Addendum "B," which 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 before operations. According to Addendum "B," the amended annual rent is $329,856.00. 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-0487 and

[57] *See* Letter from Peter Allen, Manager of Sunrise Wind LLC, Sunrise Wind LLC, to John Stokely, OREP, BOEM (November 27, 2023).
[58] *See* 43 U.S.C. § 1337(p)(4)(H); 30 C.F.R. § 585.102(a)(8).
[59] *See* Atlantic Wind Lease Sale 2 (ATLW2) Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore Rhode Island and Massachusetts—Final Sale Notice, 78 Fed. Reg. 33,898 (June 5, 2013).
[60] 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, non-monetary credits totaling $748,827 (20% of $3,744,135) were applied.

BOEM's regulations.[61] 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, Sunrise 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) and Addendum D of commercial lease OCS-A 0487.

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[62]

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;[63] and that activities authorized by the Secretary will "not unreasonably interfere with other uses of the OCS."[64]

Throughout the planning and leasing process for Lease OCS-A 0487, 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, 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 July 2013.

Before lease issuance, BOEM selected a lease area to strike 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 maritime users by proactively avoiding established traffic separation schemes and traditional navigation routes.

During the NEPA process for the COP, BOEM assessed alternatives and mitigation measures that could further avoid, minimize, or mitigate impacts to other OCS uses, including sea-lanes 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.

---

[61] 30 C.F.R. § 585.506.
[62] *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).
[63] *See* 43 U.S.C. § 1337(p)(4)(I); 30 CFR § 585.102(a)(9).
[64] *See* 30 CFR § 585.621(c).

- **Navigation and Vessel Traffic**

  The major ports in the vicinity of the Proposed Project include the Port of New London, New Bedford, Paulsboro Marine Terminal, Port of Brooklyn, Port of Providence, Port of Davisville, Port of Newport, and Port of Norfolk. These ports serve the commercial fishing industry, passenger cruise lines, cargo, and other maritime activities. The proposed construction hub for components of the Proposed Project or operations and maintenance includes the Port of Albany of Coeymans, Ports of New London, and Port of Davisville and Quonset Point.[65]

  The primary vessel traffic and commercial shipping lanes to these ports are outside the Project Area. The navigation risk assessment prepared for the Project in Appendix X of the COP shows that it is technically feasible to navigate and maneuver fishing vessels and mobile gear through the Lease Area. 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. In addition, the USCG's Final MARIPARS[66] evaluated vessel traffic through the lease areas and concluded that: "(1) lanes for vessel transit should be oriented in a northwest to 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."

  Any vessels navigating through the Project area would need to navigate with greater caution, however, there are no restrictions on navigation in the Project area. WTGs with lighting and marking[67] will serve as additional aids to navigation. If the COP is approved, BOEM will require Sunrise Wind to (1) obtain USCG approval for private aids to navigation to be installed and (2) coordinate with the USCG District 1 so that, to the extent possible, the FDR is consistent with the recommendations provided in the marking

[65] *See* COP, Section 3.3.10, https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/SRW01_COP_2023.pdf.
[66] MARRI PARS, May 14, 2020, https://www.regulations.gov/document/USCG-2019-0131-0101.
[67] *See* FEIS, Appendix H, Table H-1, GEN-23.

and lighting guidelines published by the USCG District[68] BOEM and in chapter 4, section G of Aids to Navigation Manual (COMDTINST Manual (CIM 16500.7A)).

As described in the Final EIS, Sunrise Wind has committed to developing a mariner communication plan to inform the USCG, harbor masters, commercial and recreational fisheries, among others, of construction and maintenance activities and vessel movement.[69]

- **Aviation and Air Traffic.**

  Several public and private-use airports serve the region surrounding the Project area, including sites in New York, Massachusetts, Rhode Island, and Connecticut. The addition of these structures would increase navigational complexity and could change aircraft navigation patterns in the project vicinity, increasing collision risks for some aircraft during the project's operational timeframe.

  WTGs would be constructed under the listed FAA flight level ceiling designated within the Project area, therefore, would not affect commercial or military flight operations. However, low-level flights would be affected throughout the duration of the wind facilities operation. Furthermore, WTGs and the OSC-DC would be equipped with lighting and marking to meet FAA guidelines to minimize impacts on air traffic.[70]

  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. BOEM recommends consistency with FAA conditions for WTGs beyond FAA jurisdiction, as stated in the *Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development*. After the COP is approved, BOEM would require, to the extent possible, Sunrise Wind's FDR to be consistent with the recommendations in the *Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development*.[71]

- **Commercial Fisheries and For-Hire Recreational Fishing.**

  Federally permitted fishing occurs in the Lease Area. NMFS has issued permits for approximately 4,300 vessels that are currently engaged in various commercial and for-

[68] 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/sites/default/files/pdf/lnms/LNM01392023.pdf.
[69] *See* FEIS, Appendix H, Table H-1, GEN-07.
[70] *See* FEIS volume I, Section 3.20.
[71] 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.

hire recreational fisheries in the Northeast Region (Maine to Virginia). Of these Federally permitted vessels, an average of 345 vessels per year over 14 years (approximately 8 percent of the total number of vessels in the region) have reported fishing in the Lease Area.[72] Of these 345 vessels, NMFS data from 2008 to 2021 show that most permits source less than 0.2 percent of their income from the Lease Area.[73] Although a few outlier vessels derived a higher proportion of their annual revenue from the Lease Area in comparison to other vessels fishing in the Lease Area, the revenue for the majority of these outliers was below 2 percent of their income. The Final EIS found that the alternative selected in the ROD would result in minor to major adverse impacts to commercial fisheries and minor to moderate adverse impacts on for-hire recreational fishing, depending on the fishery or fishing operation. The Final EIS states that impacts from future planned actions, including future offshore wind approvals, could result in minor to major adverse impacts to commercial fisheries and minor to moderate adverse impacts on for-hire recreational fishing, depending on the fishery or fishing operation. The offshore wind-related factors that contributed to these impact determinations were primarily the presence of structures and the resulting navigational hazards and space-use conflicts.

It is important to clarify that approval of the 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 Project area.[74] For example, temporary safety zones may be established in coordination with the USCG around active construction. During this time, all fishing and transit would need to avoid the safety 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 the Project area 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 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 the spacing and be able to fish successfully in the Project area, BOEM has identified ways to reduce the level of interference that the Project would have with commercial fisheries. For instance, the WTGs would be placed in a grid (with WTGs in rows in a uniform east-west/north-south orientation) within the Lease Area, with spacing between WTGs of 1.0 nm by 1.0 nm.

[72] *See* Final EIS, Section 3.14.
[73] *See* Final EIS, Section 3.14.
[74] *See* Final EIS, Section 3.14.

Sunrise Wind has committed to three fisheries mitigation programs, which consist of a gear claim procedure under which requests for reimbursement related to lost and/or damaged gear would be processed, a Direct Compensation Program for reimbursement of lost revenues, and a navigational safety fund for navigation enhancement and training program. BOEM is also including a condition that requires Sunrise Wind's Direct Compensation Program to include losses to shoreside business and requires Sunrise Wind to conduct a shoreside seafood business analysis that would be used to further supplement funds available for settling claims of lost revenue as a result of the Project. The Direct Compensation Fund includes a reserve amount to be used to pay claims brought by both commercial and for-hire fishermen according to BOEM's *Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 C.F.R. Part 585* (BOEM's Mitigation Guidance) and must be based on the annual average commercial fisheries landings values and for-hire fishing revenue stated in the Final EIS (Tables 3.14-10 and 3.14-15). The reserve amount must be determined by the formula specified in the conditions of approval. The reserve amount will be augmented to pay claims in amounts determined through an analysis of impacts of the Project to shoreside support services.

Including all the measures described above would mitigate impacts that 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.**

  As described in section 3.20.1.6 of the Final EIS, the Lease Area overlaps with current fisheries management, protected species, and ecosystem monitoring surveys conducted by or in coordination with NOAA's Northeast Fisheries Science Center. NOAA Fisheries and BOEM have developed the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region* (Hare et al. 2022) to address these adverse impacts. As described in section 3.20.8.5, the Project will have major adverse impacts on NMFS scientific surveys.

  There are 14 NMFS scientific surveys that overlap with wind energy development in the northeast region. Ten of these surveys overlap with the Project. BOEM is including term and condition 6.3 in ROD Appendix A to address this issue. Consistent with NMFS and BOEM Survey Mitigation strategy actions 1.3.1, 1.3.2, 2.1.1, and 2.1.2 in the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region*, the Lessee must submit to BOEM a survey mitigation agreement between NMFS and the Lessee. The survey mitigation agreement must describe how the Lessee will mitigate the Project impacts on the ten NMFS surveys. The Lessee must conduct activities in accordance with such agreement. If the Lessee and NMFS fail to reach a

survey mitigation agreement, then the Lessee must submit a survey mitigation plan to BOEM.

- **National Security and Defense.**

  As explained in section 4.6, BOEM has consulted extensively with the DoD. BOEM will include any mitigation measures within its jurisdiction identified through these consultations in its COP approval.

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[75]

For a discussion on how BOEM selected the Lease Area, see section 2.1. Approval of the COP is not expected to adversely affect the development of adjoining Lease Areas. The Preferred Alternative is consistent with the proposed 1 x 1-nm spacing in an east-west/north-south formation to prevent irregular transit corridors. 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, deepwater ports, navigation, and aviation, see section 4.9.

4.11 Public notice and comment on any proposal submitted for a lease or easement[76]

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 Final EIS. Before preparing the Draft EIS, BOEM held three virtual public scoping meetings (September 16, 20, and 21, 2021) to solicit feedback and to identify issues and potential alternatives for consideration. The topics most referenced in the scoping comments included climate change, NEPA/public involvement process, mitigation and monitoring, commercial fisheries and for-hire recreational fishing, and general support or opposition.[77] The Scoping Summary Report was made available to the public on BOEM's website, and all public scoping submissions received can be viewed online at http://www.regulations.gov under Docket Number BOEM-2021-0052.

On December 16, 2022, BOEM published an NOA for the Draft EIS in the Federal Register consistent with the regulations implementing NEPA to assess the potential impacts of the Proposed Action and alternatives.[78] The Draft EIS was made available to the public on BOEM's website. The NOA commenced the public review and comment period of the Draft EIS. BOEM

[75] *See* 43 U.S.C. § 1337(p)(4)(J); 30 C.F.R. § 585.102(a)(10).
[76] *See* 43 U.S.C. § 1337(p)(4)(K); 30 C.F.R. § 585.102(a)(11).
[77] https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Final%20Sunrise_Wind_Scoping_Report.pdf
[78] Notice of Availability of a Draft EIS, 87 Fed. Reg. 77,135 (Dec. 16, 2022).

held three virtual public hearings (January 18, 19, and 23, 2023) to solicit feedback and identify issues for consideration in preparing the Final EIS. Throughout the public review and comment period, Federal agencies; tribal, state, and local governments; and the general public had the opportunity to provide comments on the Draft EIS. The topics most referenced during the Draft EIS comment period included purpose and need, Atlantic cod fisheries and benthic impacts, historic visual impacts, mitigation and monitoring, proposed action and alternatives, marine mammals, and socioeconomics. All Draft EIS comment submissions received can be viewed online at http://www.regulations.gov under Docket Number BOEM-2022-0071.

On December 15, 2023, BOEM published an NOA for the Final EIS in the Federal Register.[79] The Final EIS was also made available in electronic form at https://www.boem.gov/renewable-energy/state-activities/sunrise-wind. BOEM's 30-day waiting period for the Final EIS closed on January 16, 2024. BOEM's responses to comments on the Draft EIS are included in Appendix O of the Final EIS.

4.12 Oversight, inspection, research, monitoring, and enforcement relating to a lease, easement, or right-of-way[80]

Secretary's Order 3299, which established BOEM and BSEE, assigned safety and environmental oversight for the OCS renewable energy program to BOEM until such time as the Assistant Secretary - Land and Minerals Management (ASLM) determined that an increase in activity justified the transfer of those functions to BSEE. In December 2020, the Principal Deputy Assistant Secretary - Land and Minerals Management, acting with the authority of the ASLM, directed the transfer of safety and environmental oversight for the OCS renewable energy program from BOEM to BSEE due to increased wind energy activity.[81] On September 14, 2022, DOI delegated relevant authorities to BSEE and BOEM in Departmental Manual part 219, chapter 1, and part 218, chapter 1, respectively.

On January 31, 2023, DOI published a final rule in the *Federal Register*[82] that moved portions of the existing OCS renewable energy regulations, consistent with the Secretary's order and the Departmental Manual. Following approval of the COP, BSEE maintains the authority to perform oversight, inspection, research, monitoring, and enforcement relating to Lease OCS-A 0487, as authorized under the lease, OCSLA, and its implementing regulations. BOEM still retains its authority for enforcing compliance, including safety and environmental compliance, with all applicable laws, regulations, leases, grants, and approved plans through notices of noncompliance, cessation orders, civil penalties, and other appropriate means.

[79] Notice of Availability of a Final EIS, 88 Fed. Reg. 86,927 (Dec. 15, 2023).
[80] *See* 43 U.S.C. § 1337(p)(4)(L); 30 C.F.R. § 585.102(a)(12).
[81] "Memorandum from Principal Deputy Assistant Secretary - Land and Minerals Management on the Department of the Interior's Offshore Renewable Energy Program Roles and Responsibilities," December 22, 2020.
[82] *See* 88 Fed. Reg. 6376 (Jan. 31, 2023).

Under this authority BSEE and BOEM will ensure that offshore renewable energy development in Lease OCS-A 0487 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 in Appendix A of the ROD and will be included as COP conditions of approval.

5.0 STATUS OF THE LEASE

Sunrise Wind is currently in compliance with the terms of Lease OCS-A 0487. Sunrise Wind has maintained the lease in full force and effect by virtue of annual rent payments, all of which have been timely paid by Sunrise Wind and received by BOEM.

6.0 FINANCIAL ASSURANCE

As required by 30 C.F.R. § 585.625(b)(19), section 1.9 of the COP contains Sunrise 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. Sunrise Wind has provided and currently maintains Irrevocable Standby Letter of Credit Number SBY59568 in the amount of $433,000 to meet the initial lease-specific and Site Assessment 0487 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. Sunrise Wind must provide supplemental financial assurance 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.[83]

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 many 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, and with other stakeholders and ocean users, to identify areas of interest for wind energy offshore of Rhode Island and Massachusetts as well as areas that were less suitable. OREP then prepared an EA and issued a FONSI, which concluded that reasonably foreseeable

[83] *See* 30 C.F.R. § 585.517.

environmental effects associated with lease issuance, including those resulting from site characterization surveys in the WEA and the deployment of meteorological towers and/or buoys, would not significantly impact the environment.

Sunrise Wind submitted its proposed COP in 2020, and BOEM then conducted a project-specific NEPA analysis, and other environmental consultations required by the ESA, MSA, and NHPA. Throughout its environmental and technical review of the COP, BOEM also coordinated with several Federal agencies, including the BSEE, EPA, NOAA, USACE, USCG, NPS, and USFWS. All of those reviews, consultations, and coordination efforts enabled BOEM to assess whether approval of the Preferred Alternative conforms with the 8(p)(4) factors and implementing regulations.

The Final EIS identified a range of adverse impacts to environmental, socioeconomic, and cultural resources, which are summarized in the ROD. In addition, as the Final EIS concluded, the Preferred Alternative could have beneficial impacts on the following resources: (i) air quality; (ii) benthic resources; (iii) birds; (iv) for-hire recreational fishing; (v) demographics, employment, and economics; (vi) land use and coastal infrastructure; (vii) marine mammals (odontocetes and pinnipeds) (viii) recreation and tourism; (ix) environmental justice; and (x) sea turtles. The numerous consultations performed under various Federal statutes, and the analysis in the Final EIS, indicate that approval of the Preferred Alternative would not result in undue harm to environmental resources or in unreasonable interference with other OCS uses.[84]

Moreover, approval of the Preferred 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."[85]

In conclusion, OREP has evaluated all the information that Sunrise Wind provided in its COP and has assessed it in relation to the enumerated factors in OCSLA Subsection 8(p)(4) and BOEM's implementing regulations at 30 C.F.R. Part 585. It is OREP's view that approval of the COP – as modified by the Preferred Alternative and the proposed terms and conditions included with the ROD – would be in accordance with the regulations at 30 C.F.R. Part 585 and would ensure that all the activities on the OCS are carried out in a manner that provides for the factors in Subsection 8(p)(4) of OCSLA.

[84] *See* Final EIS, Section 3.
[85] https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/

Appendix B.1. ETRB Review Memorandum

United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT
WASHINGTON, DC 20240-0001

Memorandum

To: David MacDuffee
Chief, Projects and Coordination Branch

From: Marilyn Sauls
Chief, Engineering and Technical Review Branch

MARILYN SAULS
Digitally signed by MARILYN SAULS
Date: 2024.02.14 15:57:57 -05'00'

Subject: Review of the Sunrise Wind Offshore Wind Facility Construction and Operations Plan (COP) for Commercial Lease OCS-A 0487

Sunrise Wind, LLC (Sunrise Wind) submitted a COP to the Bureau of Ocean Energy Management (BOEM) on September 1, 2020, for lease OCS-A 0487. The COP for the Sunrise Wind Offshore Wind project proposes the installation of the following major offshore components:

- Up to 94 WTGs at 102 potential positions; with a total nameplate capacity ranging from 924 to 1034 megawatts;
- Each WTG would be supported by a monopile foundation;
- One offshore substation supported by a pile jacket foundation;
- A network of alternating current inter-array cables with an operating voltage ranging from 66 to 161 kV and a target burial depth of 4 to 6 feet (1.2 to 1.8 meters);
- One 320 kV direct current export cable bundle consisting of two cables with a target burial depth of 4 to 6 feet (1.2 to 1.8 meters).

The Engineering and Technical Review Branch (ETRB) subject matter experts (SME) 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 (Safety Management System (SMS), Oil Spill Response Plan (OSRP); Certified Verification Agent (CVA) Nomination Package;
- Federal Aviation Administration (FAA) for aviation and radar interference.
- National Oceanic and Atmospheric Administration (NOAA), for radar interference; and
- The United States Coast Guard (USCG), for vessel navigation and marine vessel radar interference.

On December 14, 2021, BOEM approved the nomination of DNV GL, Denmark A/S (now DNV), to be the CVA for the Sunrise Wind 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 SMEs used their knowledge and experience gained from past project reviews, research funded by BOEM, BSEE, and others, past projects built and operating in Europe, and individual expertise to assess the information provided in the COP. ETRB determined that the technical information and supporting data submitted by Sunrise Wind meets the requirements of 30 CFR §585.626 and 30 CFR §585.627[1]. This review is documented in BOEM's COP Review Matrix located on the Office of Renewable Energy Program's share drive AEAU: S:\State of Massachusetts\Sunrise (OCS-A 0487 & 0500\COP (Confidential).

ETRB expects Sunrise Wind to use the most current technology available for commercial production that meets or exceeds current industry standards. In some cases, this could include technologies currently in prototyping and/or working toward type certification by a recognized industry standards organization but not yet commercially available. ETRB has determined that the technologies proposed within the Project Design Envelope (PDE) of the COP are the same as those currently being commercial utilized or prototyped around the world and constitute the most current and advanced technologies available. ETRB has determined that the information provided in the COP is sufficient to determine that the Project proposes to use the best available and safest technology which will meet or exceed the current international industry standards.

The COP also provides a description of its proposed Safety Management System (SMS),[2] as required by 30 C.F.R. § 585.627(d). The proposed SMS, which will be finalized following any COP approval, includes a description of the processes and procedures listed in 30 C.F.R. § 285.810(a)-(f), and Sunrise Wind's proposed implementation thereof. BOEM determined that Sunrise Wind's proposals are consistent with acceptable industry practices and standards (i.e., best management practices). Specifically, the SMS provides that all contractors will be fully qualified to perform the roles for which they are contracted, including but not limited to, any prescribed safety standards and awareness training.

ETRB has consulted with BSEE and the USCG on safety requirements and best practices during the COP review process. Their recommendations and relevant requirements have been incorporated into the ETRB's recommended conditions of approval for the COP to ensure that the Sunrise Wind project is carried out in a safe manner. Additionally, oversight of the review of future submissions (e.g., FDR and FIR activities) will allow BSEE to ensure that the "facilities are designed, fabricated, and installed in conformance with accepted engineering practices."[3]

As a result of these reviews and consultations, ETRB has determined the technical information and supporting data provided with the COP is sufficient to allow the safe installation of the proposed project on the Outer Continental Shelf (OCS), does not unreasonably interfere with

[1] Where ETRB review is appropriate inclusive of 30 CFR 585.627(a)(1) and portions of 585.627(a)(8), vessel traffic.
[2] See Sunrise Wind, LLC Construction and Operation Plan, Appendix E2.
[3] See 30 C.F.R. § 285.705(a)(1).

other uses of the OCS, uses best available and safest technology, best management practices and uses properly trained personnel, pursuant to 30 CFR §585.621(b), (c), (e), (f), and (g).

ETRB recommends approval of the COP, along with the inclusion of the following terms and conditions (T&C), provided as Appendix A – Anticipated Terms and Conditions of COP Approval 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 H: Mitigation and Monitoring of the Final Environmental Impact Statement. The table below provides a cross-reference.

#	Terms and Conditions	Regulation	Information Requirement
2.1	Munitions and Explosives of Concern/Unexploded Ordnance Process	§585.627(a)(1)	Hazard information – manmade hazards
2.2	MEC/UXO ALARP Certification	§585.627(a)(1)	Hazard information – manmade hazards
2.3	MEC/UXO Discovery Notification	§585.627(a)(1)	Hazard information – manmade hazards
2.4	Munitions Response Plan for Confirmed MEC/UXO	§585.627(a)(1)	Hazard information – manmade hazards
2.5	Munitions Response After Action Report	§585.627(a)(1)	Hazard information – manmade hazards
2.6	Safety Management System	§585.627(d)	Safety Management System
2.7	Emergency Response Procedure	§585.626(b)(12)(ii)	Operating procedures – accidents or emergencies
2.8	Oil Spill Response Plan	§585.627(c)	Oil Spill Response Plan
2.9	Cable Routings	§585.626(b)(7)	Cables
2.10	Cable Burial	§585.626(b)(7)	Cables
2.11	Cable Protection Measures	§585.626(b)(7)	Cables
2.12	Crossing Agreements	§585.626(b)(7)	Cables
2.13	Post-Installation Cable Monitoring	§585.626(b)(7)	Cables
2.14	WTG and OSS Foundation Depths	§585.626(a)(4)	Geotechnical survey
2.15	Structural Integrity Monitoring	§585.626(b)(12) §285.824	Operating procedures, self-inspections
2.16	Foundation Scour Protection Monitoring	§585.626(a)(6)	Overall site investigation – scouring of the seabed
2.17	Post-Storm Event Monitoring Plan	§585.627(a)(1)	Hazard information – meteorology, oceanography

2.18	High Frequency Radar Interference Analysis and Mitigation	§585.626(b)(23); FEIS	Other information as required by BOEM
2.19	Critical Safety Systems	§585.626(b)(20);	CVA nomination and reports
2.20	Engineering Drawings	§585.626(b)(20);	CVA nomination and reports
2.21	Construction Status	§585.626(b)(21);	Construction Schedule
2.22	Maintenance Schedule	§585.626(b)(12);	Operating procedures
2.23	Pre-lay Grapnel Run Plan	§585.626(b)(7); §585.626(b)(15)	Cables; Environmental Impacts
3	Navigational and Aviation Safety Conditions	§585.626(b)(23)	Other information as required by BOEM
5.4.6	Boulder Identification and Relocation Plan	585.627(a)(1); §585.626(b)(15)	Hazard Information-Shallow Geological Hazards; Environmental Impacts
5.4.7	Scour and Cable Protection Plan	585.626(b)(7) 585.626(b)15	Cables Environmental Impacts
5.5.1	Micrositing Report	§585.626(b)(15)	Environmental Impacts
5.5.3	Boulder Relocation	§585.627(a)(1); §585.626(b)(15)	Hazard Information-Shallow Geological Hazards; Environmental Impacts
5.5.4	Boulder Relocation Report	§585.627(a)(1); §585.626(b)(15)	Hazard Information-Shallow Geological Hazards; Environmental Impacts

Appendix C. NPS Terms and Conditions

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Conditions of Construction Permits and Right-of-Way Permit
Lease Number OCS-A 0487
March 25, 2024

The National Park Service's (NPS) approval of Ørsted North America's (Lessee or Sunrise Wind) conduct of activities under the Construction and Operations Plan (COP) for the Sunrise Wind Farm and the Sunrise Wind Export Cable (Project) is subject to the conditions set forth in this document. The NPS reserves the right to amend these conditions or impose additional conditions authorized by law or regulation in the special use and right-of-way permits to be issued and on any future approvals of COP revisions.

The Lessee must maintain a full copy of these terms and conditions, as well as the specific NPS permits to be issued, on every Project-related vessel, vehicles, and facilities involved in land based construction activities, and is responsible for the implementation of, or the failure to implement, each of these terms and conditions by the Lessee's contractors, consultants, operators, or designees.

Section:

GENERAL PROVISIONS

Adherence to the Approved Construction and Operations Plan, Statutes, Regulations, Permits and Authorizations. The Lessee must conduct all activities as proposed in the approved COP for the Project as stated in these terms and conditions and as described in any final plans with which the NPS has concurred. Additionally, the Lessee must comply with all applicable requirements and mitigations in commercial lease OCS-A-0487 (Lease), statues, regulations, consultations, and permits and authorizations issued by NPS for the Project. NPS may issue a notice of noncompliance, pursuant to 36 C.F.R. Part 14, if it is determined that the Lessee failed to comply with any provision of its approved permits.

The Project

As depicted in the COP and modified by selected Alternative C-3b in the Record of Decision, the Sunrise Wind Export Cable (SWREC) extends from mean high tide to approximately 1,000 feet out within the Fire Island National Seashore (Park) managed waters. The SWREC will lie within a thirty-foot-wide corridor under a NPS right-of-way (ROW) Permit that will be granted pursuant to 54 USC § 100902. The conduit will be installed by horizontal directional drill (HDD) boring at a depth of forty-five to sixty (45-60) feet below the ocean bottom. The landfall HDD pipe string bundle will consist of two (2) 16-inch high-density polyethylene (HDPE) conduits for the transmission cables, and one (1) 14-inch HDPE conduit for the fiber optic cable and will be pulled through and connected to onshore infrastructure within Smith Point County Park. If the Permittee utilizes any temporary casing to support the pilot hole drill at the entry, all temporary casing shall be removed from FIIS upon completion of its use. Should there any inadvertent return of drilling fluids in NPS managed waters, NPS shall be notified immediately. The intracoastal waterway (ICW) HDD pipe string bundle will consist of two (2) 10-inch HDPE conduits, two (2) 6-inch HDPE conduits, and two (2) 4-inch HDPE conduits**.** The Lessee may construct, install, operate, and maintain the offshore wind farm power cables contained in three conduits in one bore hole buried in the sand beneath Park waters as described above.

Record of Decision

All mitigation measures selected in the ROD for this Project are incorporated herein by reference and are considered terms and conditions of this COP. If there is any inconsistency between the language used in the ROD and that found in the terms and conditions herein, the language in the latter will prevail.

Consistency with Other Agreements and Authorizations

If these terms and conditions are, or become, inconsistent with the terms and conditions of the construction permits and right-of-way permit to be issued by the NPS, the terms and conditions of those permits will prevail as to work within the National Park System boundaries. As a federal permitting agency, the NPS may revoke or suspend its construction permits for the project, as well as the right-of-way permit, for failure to comply with required terms and conditions of those permits, pursuant to 54 U.S.C 100902.

TECHNICAL CONDITIONS

Installation Schedule

The Lessee shall notify the NPS not less than 60 days prior to any construction and/or maintenance activities that take place within Park boundaries. This includes activities within Smith Point County Park, which is within Park boundaries and serves as the only access point to National Park System lands within the Park during parts of the year. The Lessee must provide written notification to the NPS detailing the scope, nature, and expected duration of activities to ensure coordination and compliance with applicable regulations and to mitigate any potential impacts on Park resources and visitors. The Lessee must provide the NPS with any changes to construction schedules.

Construction and Inspections

The Lessee must notify the NPS within 48 hours of any construction, inspection, maintenance, operations, or repair activities that result in closing access to areas within Park boundaries to visitors. This includes preventing access to Smith Point County Park, which is within Park boundaries and serves as the only access point to National Park System lands within the Park during parts of the year. The Lessee agrees to provide the NPS with findings of inspections and site visit investigations within Park boundaries within 14 days of their completion.

The Permittee must erect and maintain appropriate warning signs in the form of floating buoys or other warning devices during all periods when it is using the Permitted Area, including periods of maintenance or repair. The Permittee shall follow all applicable U.S. Coast Guard regulations, including nighttime safety lighting and notice to mariners.

No shoreline landings of any Permittee vessels shall be allowed. No shoreline landings of any Lessee vessels are allowed under this permit, except in an emergency to human life or safety. Should an emergency landing be required, the Permittee shall immediately contact the U.S. Coast Guard and East District Supervisor Bernardo Felix at 631-291-2984 (cell), the Fire Island National Seashore Dispatch Center at 570-426-2457, and Brendan Newell, Resource Manager at 631-569-2488. The Permittee is responsible for all damages and remediation associated with the unauthorized landing.

Permittee vessels shall be inspected by the Permittee prior to entering Park waters to ensure safe operating conditions with no release of pollutants. The Permittee shall inspect vessels and company and contractor equipment before accessing Park waters to ensure they are free of mud and other materials that could transport noxious weeds and/or exotic and invasive species onto Park lands or into Park waters. Such materials shall be removed and the vessel or equipment in question cleaned prior to accessing Park lands and waters.

All machinery or vessels containing fuels and oils shall have a spill kit available immediately in the event of a spill. Secondary containment shall be created and used for storage of gas, and any

other material or activities that could result in spills while on Park lands or waters. Fueling shall not be done within Park waters.

Cable Installation within FIIS

The Lessee must submit applicable cable drawings to the NPS for any work occurring within Park boundaries. The Lessee shall also provide to the NPS the cable monitoring reports and final, as-built information for cables and conduit located in NPS-administered lands and waters.

Cable Protection Measures

The Lessee shall provide to the NPS the detailed drawings/information where protective measures were used for cables and/or conduit in NPS-administered lands and waters when the as-built cable/conduit information is provided.

Construction Status

The Lessee must provide the NPS with all construction status updates and any changes to the construction schedule or processes for lands and waters within Park boundaries, including for Smith Point County Park (which is within Park boundaries) as updates and changes may affect Park visitor access.

Post Installation Cable Monitoring

The Lessee must provide the NPS with all cable/conduit monitoring reports within 90 days following each inspection for any work occurring within Park boundaries. Authorization for any work within NPS-administered lands or waters must be obtained in advance, as required in the Lessee's right-of-way permit from the NPS.

Engineering Drawings

The Lessee must compile, retain, and make available to the NPS drawings and documents that affect any lands and waters within Park boundaries. Within 90 days after the Lessee completes construction of its infrastructure, the Lessee must provide the NPS with a dated final as-built map in both AutoCAD and pdf format.

Maintenance and Repairs

Maintenance activities or repairs that would involve removal of or access to the Permittee's assets within Park waters will require a Park Special Use Permit prior to engaging in such activities or repairs. Special Use Permit Applications shall be submitted to the Park for review and approval no less than 120 days before the work is to occur.

Emergency Response Procedure

The Lessee must describe the procedures and systems that will be used at Project facilities in the case of emergencies, accidents, or non-routine conditions, regardless of whether they are man-made or natural. The Lessee must include, as a part of the standard operating procedures for non-routine conditions, descriptions of high-consequence and low probability events and methods to address those events, including methods of notifying the NPS of any activities or accidents that

have resulted, or may result, in materials, supplies, or equipment released or lost in NPS-administered waters or washing ashore on NPS-administered lands, including but not limited to the Otis Pike Fire Island High Dunes Wilderness.

In the case of an OSHA-reportable injury, criminal incident, spill, or environmental emergency within the Permitted Area involving the Project, the Permittee or its officers, employees, representatives, agents, contractors, or subcontractors; Park employees; or visitors, the Permittee shall notify the NPS within two (2) hours of the event by contacting the Fire Island National Seashore Dispatch Center at 570-426-2457, Brendan Newell, Resource Manager at 631-569-2488 (cell), East District Supervisor Bernardo Felix, at 631-291-2984 (cell) and the U.S. Coast Guard. The Permittee must also submit to the Superintendent within forty-eight (48) hours a full written report of actions and corrections taken and submit a complete report, including the resolution of the situation, within ninety (90) days.

Oil Spill Response

The Lessee's Oil Spill Response Plan for the Sunrise Wind project (section 1.3 Purpose and Use) shall include specific reference to Fire Island National Seashore, and the National Park Service Coastal Lands/Jurisdictions Annex to the Long Island Sound Area Contingency Plan (Annex). The purpose of the Annex is to provide an operational guide to federal/state/local responders when an oil discharge or release of hazardous substances impacts or threatens to impact resources managed by the NPS. On the New York shoreline, these resources include the Park and all lands, historic structures, cultural resources, estuarine wetlands, coastal habitat, wildlife refuge areas, and the public use areas therein. The Annex is intended to supplement U.S. Coast Guard Area Contingency Plan (ACP) for the Sector Long Island Sound area and the U.S. U.S. Coast Guard-Environmental Protection Agency (EPA) Region II Regional Oil and Hazardous Substances Pollution Contingency Plan (RCP) as a zone-specific Annex. It is not intended to duplicate or supersede anything in the sector ACP or region RCP.

See:
https://homeport.uscg.mil/Lists/Content/DispForm.aspx?ID=65980&Source=/Lists/Content/DispForm.aspx?ID=65980

Shallow Water/Nearshore/Shoreline Procedures and Shoreline Procedures

To ensure consistency with, and implementation of, USCG's LISO ACP, including the Fire Island National Seashore Annex, the Lessee's OSRP procedures for response actions in shallow/nearshore waters and shorelines, including figures/graphics as appropriate, will be developed through coordination with the National Park Service, Fire Island National Seashore. This will include content on, among others, authorities, permits, and procedural requirements concerning response related access and actions on or affecting NPS land and waters for which NPS has jurisdiction (jurisdictional boundaries of Fire Island National Seashore extend 4,000 feet on average into the Great South Bay and Moriches Bay and 1,000 feet into the Atlantic Ocean from the mean high-water mark). See also Standard Operating Procedures, herein.

The Permittee's OSRP shall include a provision whereby the Permittee shall submit a Spill Control Plan to the Park for review and approval before the start of any proposed construction, installation, maintenance, or repair activities. The plan must include a concise list of sensitive resources occurring on NPS-administered lands and/or waters potentially impacted by the activity; maps that identify Environmentally Sensitive areas must note where those lands or waters are administered by the NPS.

In the event of a fuel or oil leak/spill, the work shall cease immediately, spill containment deployed, and NPS Dispatch at 570-426-2457 (office) or 570-369-9331 (cell), and the New York State (NYS) Department of Environmental Conservation (DEC), Division of Environmental Remediation, Bureau of Spill Prevention and Response: (718) 482-4651, and / or Chemical or oil spills hotline: (800) 457-7362 as applicable shall be called; notification to their office via email shall be made to derweb@gw.dec.state.ny.us.

Should a spill result in contamination to onshore soils, the Permittee shall contact Smith Point County Park staff at 631-854-4600, or NPS Dispatch at 570-426-2457 (office) or 570-369-9331 (cell), as applicable.

Historic/Archaeological

The Lessee's OSRP will include a section on the protection of historic properties and archaeological resources on lands and waters subject to NPS jurisdiction, to ensure consistency with the park policy and procedure, the National Historic Preservation Act, the national Programmatic Agreement for Protection of Historic Properties During Emergency Response Under the National Oil and Hazardous Substances Pollution Contingency Plan, and the 2020 Federal Region II Regional Contingency Plan, Appendix 10, Guidance on National Historic Preservation Act Section 106 Compliance During Emergency Response. This section will be developed in coordination with NPS.

Protected Species and Habitat Conditions: Mitigation for Piping Plover and Red Knot

While take is unlikely to occur at the park, NPS manages for these species and could be an appropriate location for any compensatory mitigation activities from wind turbine generator (WTG) use. Should the Lessee consider using NPS lands for compensatory mitigation, NPS should be consulted prior to the start to the formulation of the plan. At least 180 days prior to the start of commissioning of the first wind turbine generator (WTG), the Lessee must distribute a Compensatory Mitigation Plan to the NPS for review and comment. The NPS will review the Compensatory Mitigation Plan and provide any comments on the plan to the Lessee within 60 days of its submittal. The Lessee must resolve all comments on Compensatory Mitigation activities that would occur on park lands to NPS approval before implementing the plan and before commissioning of the first WTG. The Compensatory Mitigation Plan must provide compensatory mitigation actions to offset take of Piping Plover and Red Knot by the fifth year of WTG operation. The Compensatory Mitigation Plan must include (1) detailed description of the mitigation actions; (2) the specific location for each mitigation action; (3) a timeline for completion of the mitigation measures; (4) itemized costs for implementing the

mitigation actions; (5) details of the mitigation mechanisms (e.g., mitigation agreement, applicant-proposed mitigation; (6) monitoring to ensure the effectiveness of the mitigation actions in offsetting take; and (7) whether permits or other authorizations would be required for mitigation actions and the permitting/authorization timeline.