New England Wind

AVANGRID RENEWABLES

Draft Construction and Operations Plan

Lease Area OCS-A 0534

Volume III Appendices

December 2021

Submitted by
Park City Wind LLC

Submitted to
Bureau of Ocean Energy Management
45600 Woodland Rd
Sterling, VA 20166

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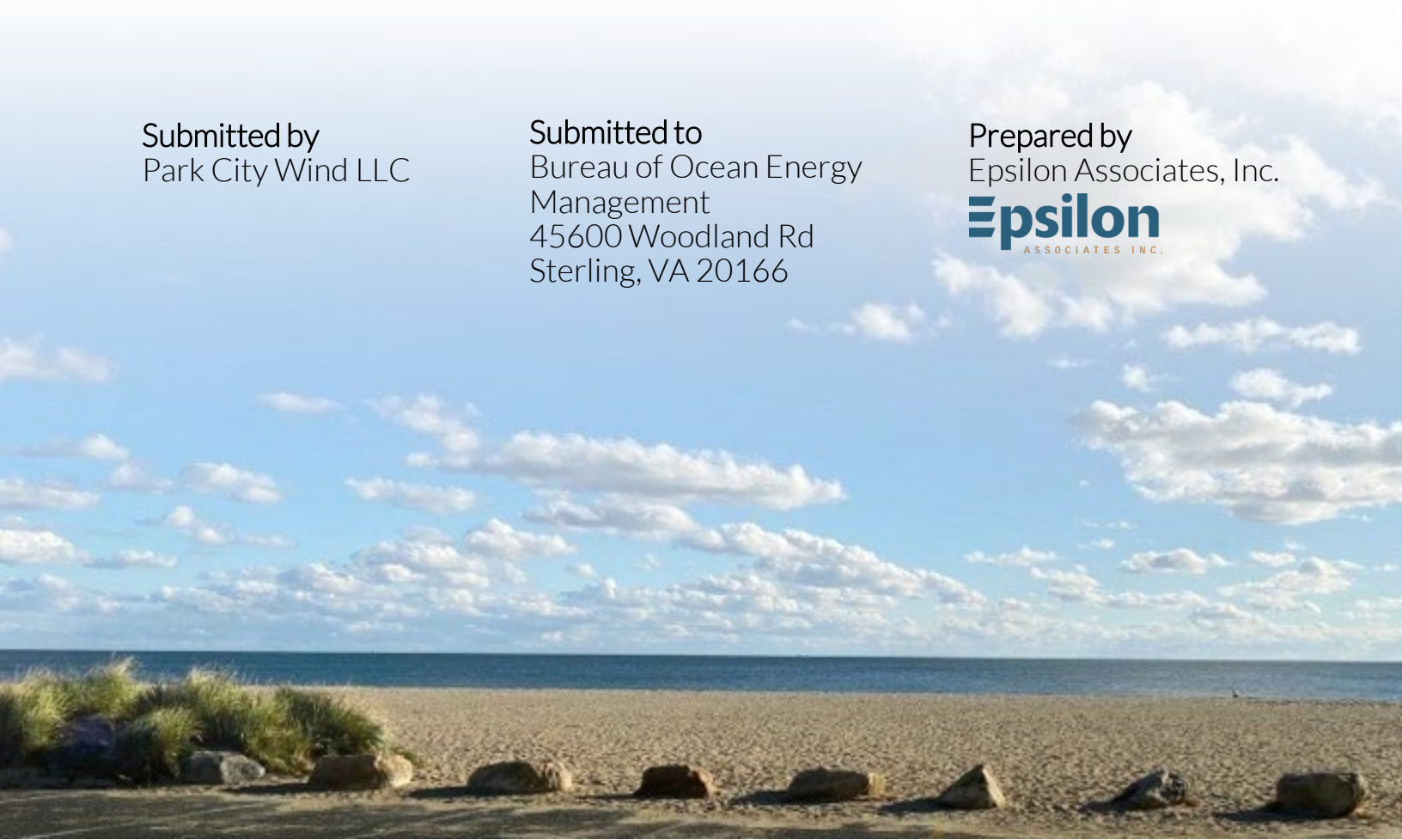

New England Wind
Rhode Island Coastal Zone Management Act Consistency Certification

Submitted to:

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RHODE ISLAND COASTAL RESOURCES MANAGEMENT COUNCIL
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1.0 INTRODUCTION

New England Wind is the proposal to develop offshore renewable wind energy facilities in Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0534 along with associated offshore and onshore cabling, onshore substations, and onshore O&M facilities. Park City Wind LLC, a wholly owned subsidiary of Avangrid Renewables, LLC, is the Proponent and will be responsible for the construction, operation, and decommissioning of New England Wind. Figure 1.0-1 provides and overview of New England Wind. The Proponent has prepared this Consistency Certification to demonstrate that New England Wind will comply with and will be conducted in a manner consistent with the enforceable policies of the Rhode Island Coastal Resources Management Program (RICRMP).

The Proponent filed its draft New England Wind Construction and Operations Plan (COP) with BOEM on July 2, 2020. New England Wind's offshore wind facilities within all of Lease Area OCS-A 0534 and the southwest portion of Lease Area OCS-A 0501, referred to as the Southern Wind Development Area (SWDA), and just under a third of the length of the underwater offshore export cables[1] are located within Rhode Island's 2018 Geographic Location Description (GLD) (see Figure 1.0-1).

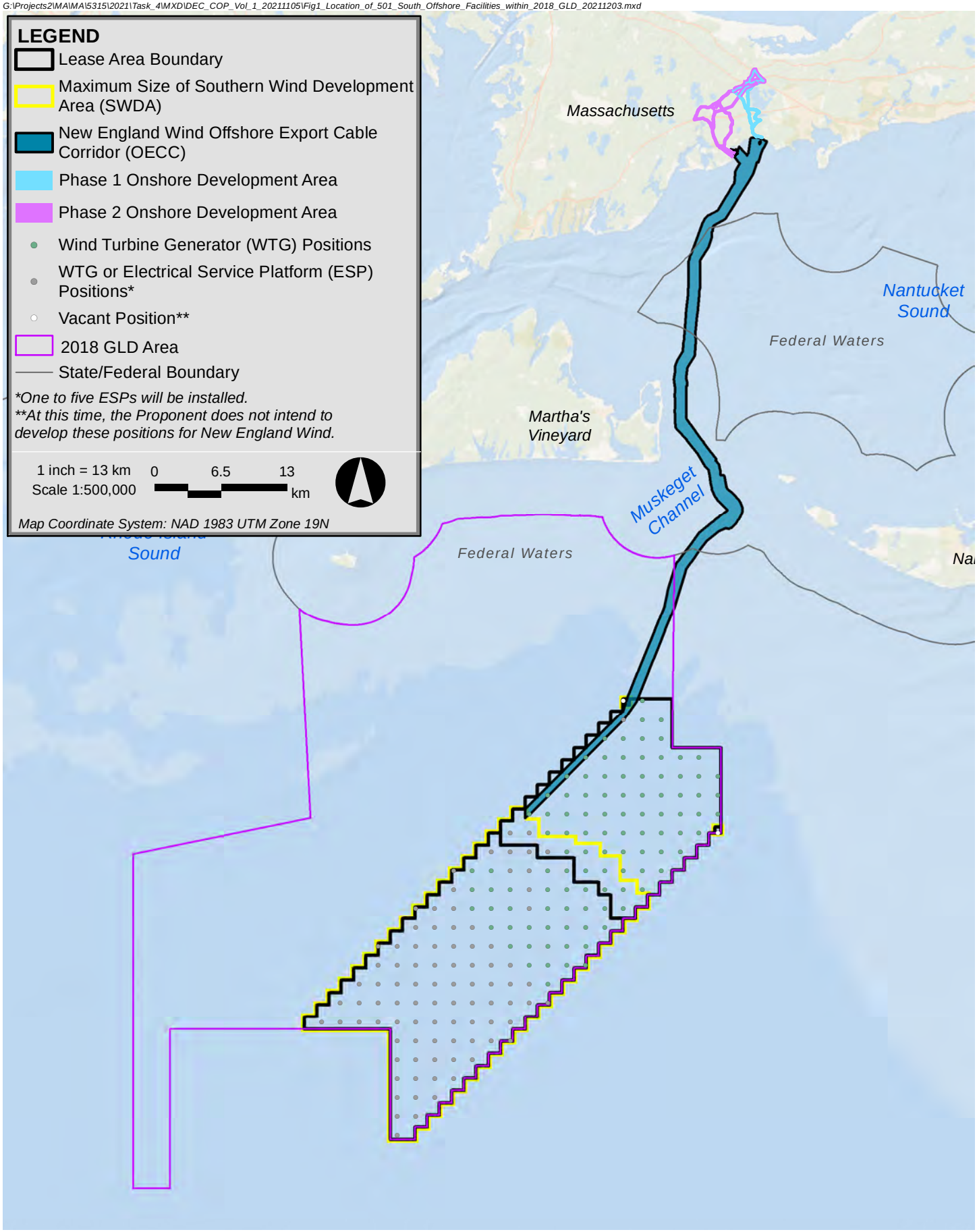
Thus, the Proponent certifies to the Rhode Island Coastal Resources Management Council (CRMC) that:

> *The proposed activities described in detail in the New England Wind COP comply with Rhode Island's approved Coastal Resource Management Program and will be conducted in a manner consistent with such Program*.

This certification is made in accordance with the requirements of the Coastal Zone Management Act (16 U.S.C. 1451 et seq.) and implementing regulations at 15 CFR Part 930, Subpart E.

A summary of New England Wind's facilities and activities is provided in Section 2. Section 3 demonstrates how New England Wind, as described in Section 2 and more completely in the New England Wind COP, complies with each of the RICRMP's applicable enforceable policies.

[1] Approximately 32% of the Offshore Export Cable Corridor (OECC) is located within the 2018 GLD, about half of which is located in the Vineyard Wind 1 Wind Development Area.



New England Wind

Figure 1.0-1

Location of New England Wind's Offshore Facilities within the 2018 GLD

2.0 SUMMARY OF NEW ENGLAND WIND FACILITIES AND ACTIVITIES

2.1 Overview

New England Wind is the proposal to develop offshore renewable wind energy facilities in Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0534 along with associated offshore and onshore cabling, onshore substations, and onshore O&M facilities. Lease area OCS-A 0534 is within the Massachusetts Wind Energy Area (MA WEA) identified by BOEM, following a public process and environmental review, as suitable for wind energy development. Park City Wind LLC, a wholly owned subsidiary of Avangrid Renewables, LLC, is the Proponent of this Construction and Operations Plan (COP) and will be responsible for the construction, operation, and decommissioning of New England Wind.

New England Wind's offshore renewable wind energy facilities are located immediately southwest of Vineyard Wind 1, which is located in Lease Area OCS-A 0501. New England Wind will occupy all of Lease Area OCS-A 0534 and potentially a portion of Lease Area OCS-A 0501 in the event that Vineyard Wind 1 does not develop "spare" or extra positions included in Lease Area OCS-A 0501 and Vineyard Wind 1 assigns those positions to Lease Area OCS-A 0534. For the purposes of the COP, the Southern Wind Development Area (SWDA) is defined as all of Lease Area OCS-A 0534 and the southwest portion of Lease Area OCS-A 0501, as shown in Figure 1.0-1.

New England Wind will be developed in two Phases with a maximum of 130 wind turbine generator (WTG) and electrical service platform (ESP) positions. Phase 1, also known as the 804 megawatt (MW) Park City Wind project, will be developed immediately southwest of Vineyard Wind 1. Phase 2, also known as Commonwealth Wind, will deliver 1,200 to 1,500 MW of power and, when constructed, will be located southwest of Phase 1, and occupy the remainder of the SWDA. Each Phase of New England Wind will be developed and permitted using a Project Design Envelope (the "Envelope"). This allows the Proponent to properly define and bracket the characteristics of each Phase for the purposes of environmental review while maintaining a reasonable degree of flexibility with respect to the selection of key components (e.g. WTGs, foundations, submarine cables, and ESPs). To assess potential impacts and benefits to various resources, a "maximum design scenario," or the design scenario with the maximum impacts anticipated for that resource, is established (see Section 3 of COP Volume III).

The SWDA may be 411–453 square kilometers (km^2) (101,590–111,939 acres) in size depending upon the final footprint of the Vineyard Wind 1 project. At this time, the Proponent does not intend to develop the two positions in the separate aliquots located along the northeastern boundary of Lease Area OCS-A 0501 as part of New England Wind. The SWDA (excluding the two separate aliquots that are closer to shore) is just over 32 kilometers (km) (20 miles [mi]) from the southwest corner of Martha's Vineyard and approximately 38 km (24 mi) from Nantucket.[2] In

[2] Within the SWDA, the closest WTG is approximately 34 km (21 mi) from Martha's Vineyard and 40 km (25 mi) from Nantucket.

accordance with US Coast Guard (USCG) recommendations, the WTGs and ESP(s) in the SWDA will be oriented in fixed east-to-west rows and north-to-south columns with one nautical mile (1.85 km) spacing between positions. This uniform grid layout provides 1 NM wide corridors in the east-west and north-south directions as well as 0.7 NM (1.3 km) wide corridors in the northwest-southeast and northeast-southwest directions.

Four or five offshore export cables—two cables for Phase 1 and two or three cables for Phase 2—will transmit electricity from the SWDA to shore. Unless technical, logistical, grid interconnection, or other unforeseen issues arise, all New England Wind offshore export cables will be installed within a shared Offshore Export Cable Corridor (OECC) that will travel from the northwestern corner of the SWDA along the northwestern edge of Lease Area OCS-A 0501 (through Vineyard Wind 1) and then head northward along the eastern side of Muskeget Channel toward landfall sites in the Town of Barnstable (see Figure 2.3-1 of COP Volume I).[3] The OECC for New England Wind is largely the same OECC proposed in the approved Vineyard Wind 1 COP, but it has been widened to the west along the entire corridor and to the east in portions of Muskeget Channel. The two Vineyard Wind 1 offshore export cables will also be installed within the New England Wind OECC. To avoid cable crossings, the Phase 1 cables are expected to be located to the west of the Vineyard Wind 1 cables and, subsequently, the Phase 2 cables are expected to be installed to the west of the Phase 1 cables.

Each Phase of New England Wind will have a separate onshore transmission system located in the Town of Barnstable.[4] The Phase 1 onshore facilities will ultimately include one of two potential landfall sites, one of two potential Onshore Export Cable Routes, one new onshore substation, and one of two potential Grid Interconnection Routes, which are identified in Figure 2.4-1 of COP Volume I. Phase 2 will include one or two landfall sites, one or two Onshore Export Cable Routes, one or two onshore substation sites, and one or two Grid Interconnection Routes. The potential landfall sites, Onshore Export Cable Routes, and Grid Interconnection Routes are illustrated on Figure 2.4-1 of COP Volume I. The Phase 2 onshore substation site(s) will be located generally along the Phase 2 onshore routes identified in Figure 2.4-1 of COP Volume I.

New England Wind has significant environmental benefits. The electricity generated by the WTGs, which do not emit air pollutants, will displace electricity generated by fossil fuel power plants and significantly reduce emissions from the ISO New England (ISO-NE) electric grid over the lifespan of New England Wind. New England Wind is expected to reduce carbon dioxide equivalent (CO_2e)

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[3] As described further in Section 4.1.3 of COP Volume I, the Proponent has identified two variations of the Phase 2 OECC in the event that technical, logistical, grid interconnection, or other unforeseen issues arise during the COP review and engineering processes that preclude one or more Phase 2 offshore export cables from being installed within all or a portion of the OECC.

[4] One or more Phase 2 offshore export cables may deliver power to a second grid interconnection point if technical, logistical, grid interconnection, or other unforeseen issues arise. Under this scenario, Phase 2 could include one onshore transmission system in Barnstable and/or an onshore transmission system(s) in proximity to the second grid interconnection point (see Section 4.1.4 of COP Volume I).

emissions from the ISO-NE electric grid by approximately 3.93 million tons per year (tpy), or the equivalent of taking 775,000 cars off the road.[5] New England Wind will significantly decrease the region's reliance on fossil fuels and enhance the reliability and diversity of regional energy supply. In addition to these important environmental and energy reliability benefits, New England Wind is expected to result in significant long-term economic benefits and high-quality jobs.

2.2 Organization of the COP

The New England Wind COP describes all planned activities and facilities associated with the construction and operation of each Phase of New England Wind. The COP is comprised of three volumes:

- Volume I provides a detailed description of New England Wind's location, offshore and onshore facilities, and construction, O&M, and decommissioning activities. Phase 1 is described in Section 3 of COP Volume I and Phase 2 is described separately in Section 4.
- Volume II provides a comprehensive analysis of the data collected during geophysical and geotechnical surveys conducted for New England Wind.
- Volume III details the benefits and potential impacts of both Phases to physical, atmospheric, biological, economic, cultural, and historic resources based on the "maximum design scenario" for each resource.

The remainder of this section summarizes the facilities and activities for each Phase as described in COP Volume I. Potential environmental impacts and avoidance, minimization, and mitigation measures are summarized in Section 4 of COP Volume III.

2.3 Phase 1 of New England Wind

Phase 1 of New England Wind, also known as the Park City Wind project, will deliver 804 MW of power to the ISO-NE electric grid to meet the Proponent's obligations under long-term contracts between the Proponent and Connecticut electric distribution companies. Assuming the necessary permits are issued and financial close is achieved, construction of Phase 1 would likely begin in 2023 onshore and late 2024 offshore. The Envelope for Phase 1 is summarized in Table 2.3-1 below.

[5] The avoided emissions analysis assumes a minimum total capacity for both Phases of New England Wind of 2,004 MW and is based on Northeast Power Coordinating Council (NPCC) New England 2018 emission rates. from EPA's Emissions & Generation Resource Integrated Database eGRID2018(v2) released in March 2020. See Section 5.1.2.2 of COP Volume III for additional details.

2.3.1 Phase 1 Construction and Installation

2.3.1.1 Wind Turbine Generators

Phase 1 will consist of 50–62 WTGs oriented in a 1 x 1 NM layout. The potential footprint of Phase 1 within the SWDA includes a portion of Lease Area OCS-A 0501 (see Figure 3.1-4 of COP Volume I), in the event that Vineyard Wind 1 does not develop some or all of its 10 spare positions and Vineyard Wind 1 assigns those positions to Lease Area OCS-A 0534. Similarly, the potential footprint of Phase 1 overlaps with the potential footprint of Phase 2 to account for the range in the number of WTGs that may be developed for Phase 1 (see Figure 3.1-4 of COP Volume I).

The WTG parameters for Phase 1 are provided in Table 2.3-1 and shown on Figure 3.2-1 of COP Volume I. The WTGs will be no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey in color; the Proponent anticipates that the WTGs will be painted off-white/light grey to reduce their visibility against the horizon. The WTGs will include one or two levels of red flashing aviation obstruction lights in accordance with Federal Aviation Administration (FAA) and/or BOEM requirements. The Proponent expects to use an Aircraft Detection Lighting System (ADLS) that automatically activates all aviation obstruction lights when aircraft approach the Phase 1 WTGs, subject to BOEM approval. Each WTG will be maintained as a Private Aid to Navigation (PATON) and will contain marine navigation lighting and marking in accordance with the USCG's PATON marking guidance for offshore wind facilities in First District-area waters.

The WTGs will be installed using jack-up vessels, anchored vessels, or dynamic positioning (DP) vessels along with necessary support vessels and supply vessels. The tower will first be erected followed by the nacelle and finally the hub, inclusive of the blades. Alternatively, the nacelle and hub could be installed in a single operation followed by installation of individual blades.

Table 2.3-1 Phase 1 of New England Wind Design Envelope Summary

Layout and Size of Phase 1	WTGs	WTG Foundations
• 50–62 wind turbine generators (WTGs) installed • One or two electrical service platforms (ESPs) installed • Windfarm layout in E-W & N-S grid pattern with 1 NM (1.85 km) spacing between WTG/ESP positions • Area of Phase 1 SWDA: 182–231 km^2 (44,973–57,081 acres)	• 50–62 WTGs • 13–16 MW WTGs • Maximum rotor diameter of 255 m (837 ft) • Maximum tip height of 319 m (1,047 ft) • Minimum tip clearance of 27 m (89 ft) • Installation with a jack-up vessel, anchored vessel, or dynamic positioning (DP) vessel and components likely supplied by feeder vessels	• Each WTG installed on a monopile or piled jacket foundation • Scour protection may be used around all foundations • Maximum pile driving energy of 6,000 kJ for monopiles and 3,500 kJ for jackets • Installation with a jack-up vessel, anchored vessel, or DP vessel and components potentially supplied by feeder vessels
ESPs (Topside and Foundation)	**Inter-Array & Inter-Link Cables**	**Offshore Export Cables**
• One or two ESPs • Each ESP installed on a monopile or jacket foundation (ESPs installed on monopiles may be co-located) • Maximum pile driving energy of 6,000 kJ for monopiles and 3,500 kJ for jackets • Scour protection may be installed around the foundations • Installation with a jack-up vessel, anchored vessel, or DP vessel	• 66–132 kV inter-array cables buried beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft) • Maximum total inter-array cable length of ~225 km (~121 NM) • Up to one 66–275 kV inter-link cable buried at a target depth of 1.5–2.5 m (5–8 ft) • Maximum total inter-link cable length of ~20 km (~11 NM) • Example layout identified, not finalized • Pre-lay grapnel run and pre-lay survey • Typical installation techniques include jetting (e.g. jet plow or jet trenching) and mechanical plow • Use of cable protection (rock, gabion rock bags, concrete mattresses, half-shell pipes [or similar]) on areas of minimal cable burial	• Two 220–275 kV offshore export cables buried beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft) • Maximum total offshore export cable length of ~202 km (~109 NM) • Cables installed in one Offshore Export Cable Corridor • Pre-lay grapnel run, pre-lay survey, and possibly boulder clearance • Typical installation techniques include jetting (e.g. jet plow or jet trenching) and mechanical plow, possibly with dredging in some locations to achieve burial depth • Use of cable protection (rock, gabion rock bags, concrete mattresses, half-shell pipes [or similar]) on areas of minimal cable burial

Note: Elevations are relative to Mean Lower Low Water (MLLW).

2.3.1.2 Wind Turbine Generator Foundations

At this time, the Proponent expects to use all monopiles for the Phase 1 WTG foundations. However, a combination of monopiles and/or piled jackets may be used, pending the outcome of a foundation feasibility analysis. The monopiles will have a maximum diameter of 12 m (39 ft) and will be driven into the seabed to a maximum penetration depth of 55 m (180 ft). The Envelope of dimensions for each Phase 1 WTG foundation type are shown on Figures 3.2-2 and 3.2-3 of COP Volume I. Scour protection consisting of rock material will be used for the larger diameter monopiles but may or may not be needed for the smaller diameter piles used for jacket foundations.

The foundations are expected to be installed by one or two DP, anchored, or jack-up vessels, along with necessary support vessels and supply vessels. Pile driving would begin with a "soft-start" (i.e., the hammer energy level will be gradually increased) to ensure the pile remains vertical and allow any motile marine life to leave the area before pile driving intensity is increased. It is anticipated that a maximum of two monopiles or one complete piled jacket (3–4 piles) can be driven into the seabed per day.

2.3.1.3 Electrical Service Platforms

One or two ESPs will serve as the common interconnection point(s) for the Phase 1 WTGs. The ESP(s) will be supported by either a monopile or piled jacket foundation (with 3–12 piles) that may be surrounded by scour protection, if needed. If two ESPs are used, they may be located at two separate positions or co-located at one of the potential ESP positions shown on Figure 3.1-4 of COP Volume I (co-located ESPs would be smaller structures installed on monopile foundations). The approximate size and design of the ESP topside and foundation are depicted in Figures 3.2-6 and 3.2-7 of COP Volume I. If necessary, the ESP(s) will include an aviation obstruction lighting system in compliance with FAA and/or BOEM requirements, which would be activated by ADLS, subject to BOEM approval. The ESP(s) will include marine navigation lighting and marking similar to the lighting and marking described for the WTGs. ESP foundation and topside installation may be performed by a DP, anchored, or jack-up vessel. ESP foundation installation is similar to WTG foundation installation described above. Following topside installation, the ESP(s) will be commissioned.

2.3.1.4 Offshore Export Cables

Phase 1 includes two offshore export cables, which will transmit electricity from the Phase 1 ESP(s) to the selected landfall site. Each offshore export cable is expected to be comprised of a three-core 220–275 kV high voltage alternating current (HVAC) cable and one or more fiber optic cables. Between the Phase 1 ESP(s) and the northwestern corner of the SWDA, the offshore export cables may be installed in any area of the SWDA. From the northwestern corner of the SWDA, the Phase 1 offshore export cables will be installed within the OECC to reach either the Craigville Public Beach Landfall Site or the Covell's Beach Landfall Site (see Figure 3.1-6 of COP Volume I). The maximum length of offshore export cables (assuming two cables) is ~202 km (~109 NM).

Prior to cable laying, a pre-lay grapnel run and pre-lay survey will be performed to clear obstructions and inspect the route. Large boulders along the route may need to be relocated and some dredging of the upper portions of sand waves may be required prior to cable laying to achieve sufficient burial depth below the stable sea bottom. Each offshore export cable will be installed beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft). Offshore export cable laying is expected to be performed primarily via simultaneous lay and bury using jetting techniques or mechanical plow. However, other specialty techniques may be used in certain areas to ensure sufficient burial depth (see Section 3.3.1.3.6 of COP Volume I). To facilitate cable installation, anchored vessels may be used along the entire length of the offshore export cables. While the Proponent intends to avoid or minimize the need for cable protection to the greatest extent feasible, the Proponent conservatively estimates that approximately 6% of the offshore export cables within the OECC for both Phases could require cable protection (or up to 7% of the offshore export cables within the OECC for both Phases if the Western Muskeget Variant is used for one or two Phase 2 export cables).

2.3.1.5 Inter-Array and Inter-Link Cables

Strings of multiple WTGs will be connected to the Phase 1 ESP(s) via 66–132 kV inter-array cables. The maximum anticipated length of the Phase 1 inter-array cables is approximately 225 km (121 NM). In addition, if two ESPs are used, the ESPs may be connected together by an up to ~20 km (~11 NM) long 66–275 kV inter-link cable. The Phase 1 inter-array and inter-link cable layout will be designed and optimized during the final design of Phase 1.

The inter-array and inter-link cables will be buried beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft), likely using jetting techniques. However, in some cases, a mechanical plow may be better suited to certain site-specific conditions and other specialty techniques may be used more rarely. The Proponent conservatively estimates that up to 2% of the total length of the inter-array and inter-link cables could require cable protection.

2.3.1.6 Landfall Site and Onshore Export Cables

The offshore export cables will make landfall within paved parking areas at either the Craigville Public Beach Landfall Site or the Covell's Beach Landfall Site in the Town of Barnstable. The ocean to land transition at either landfall sites will be made using horizontal directional drilling (HDD), which will avoid or minimize impacts to the beach, intertidal zone, and nearshore areas and achieve a burial significantly deeper than any expected erosion. From the landfall site, the onshore export cables would follow one of two approximately 6.5-10.5 km (4.0-6.5 mi) potential Onshore Export Cable Routes (with variants) in the Town of Barnstable to the new onshore substation (see Figure 3.2-11 of COP Volume I).

The onshore export cables will be primarily installed in an underground duct bank (i.e. an array of plastic conduits encased in concrete) along the selected Onshore Export Cable Route; the duct bank will typically be within public roadway layouts although portions of the duct bank may be within existing utility rights-of-way (ROWs).

2.3.1.7 Onshore Substation and Grid Interconnection

Phase 1 will require the construction of a new onshore substation on a 0.027 km^2 (6.7 acre) privately-owned parcel located at 8 Shootflying Hill Road. From the onshore substation, grid interconnection cables will be installed within an underground duct bank along one of two potential Grid Interconnection Routes (with variants) to the grid interconnection point at Eversource's existing West Barnstable Substation. The Proponent may construct an access road to the onshore substation site on 6 Shootflying Hill Road, which is adjacent the onshore substation site. The Proponent may also use an approximately 0.011 km^2 (2.8 acre) parcel of land, assessor map parcel #214-001 ("Parcel #214-001"), located immediately southeast of the West Barnstable Substation for a segment of the grid interconnection cables and/or to house some onshore substation equipment (see Figure 3.1-2 of COP Volume I).

2.3.1.8 Port Facilities

The Proponent has identified several port facilities in Massachusetts, Rhode Island, Connecticut, New York, and New Jersey that may be used for frequent crew transfer, offloading/loading shipments of components, storage, preparing components for installation, and potentially some component fabrication and assembly. In addition, some components, materials, and vessels could come from Canadian and European ports. See Section 3.2.2.5 of COP Volume I for a complete list of possible ports that may be used for major construction staging. It is not expected that all the ports identified would be used; it is more likely that only some ports would be used during construction depending upon final construction logistics planning.

2.3.2 Phase 1 Operations and Maintenance

The Phase 1 WTGs will be designed to operate without attendance by any operators. Continuous monitoring will be conducted remotely using a supervisory control and data acquisition (SCADA) system. Routine preventive maintenance and proactive inspections (e.g. multi-beam echosounder inspections, side scan sonar inspections, magnetometer inspections, depth of burial inspections, etc.) will be performed for all offshore facilities.

To execute daily O&M activities offshore, the Proponent expects to use a service operation vessel (SOV) to provide offshore accommodations and workspace for O&M workers. Daughter craft and/or crew transfer vessels (CTVs) would be used to transfer crew to and from shore. Although less likely, if an SOV is not used, several CTVs and helicopters would be used to frequently transport crew to and from the offshore facilities. In addition to the SOV, CTVs, and/or daughter craft, other larger support vessels (e.g. jack-up vessels) may be used infrequently to perform some routine maintenance and repairs (if needed).

The Proponent expects to use one or more facilities in support of Phase 1 O&M activities. For Phase 1, the Proponent will likely establish a long-term SOV O&M base in Bridgeport, Connecticut. Current plans anticipate that CTVs and/or the SOV's daughter craft would operate out of Vineyard

Haven and/or New Bedford Harbor. Although the Proponent plans to locate the Phase 1 O&M facilities in Bridgeport, New Bedford Harbor, and/or Vineyard Haven, the Proponent may use other ports listed in Table 3.2-8 of COP Volume I to support O&M activities.

2.3.3 Phase 1 Decommissioning

As currently envisioned, the decommissioning process for Phase 1 is essentially the reverse of the installation process. Decommissioning of the offshore facilities is broken down into several steps:

- Retirement in place (if authorized by BOEM) or removal of the offshore cable system (i.e. inter-array, inter-link, and offshore export cables) and any associated cable protection.
- Dismantling and removal of WTGs. Prior to dismantling the WTGs, they would be properly drained of all lubricating fluids and chemicals, which would be brought to port for proper disposal and/or recycling.
- Cutting and removal of foundations and removal of scour protection. In accordance with BOEM's removal standards (30 CFR § 585.910(a)), the foundations would likely be cut at least 4.5 m (15 ft) below the mudline; the portion below the cut will likely remain in place.
- Removal of ESP(s). The ESP(s) and their foundations will be disassembled in a similar manner as the WTGs. Before removing the ESP(s), the offshore export cables, inter-array cables, and inter-link cables would be disconnected.

The onshore facilities could be retired in place or retained for future use. The extent of onshore decommissioning is subject to discussions with the Town of Barnstable on the approach that best meets the Town's needs and has the fewest environmental impacts.

2.4 Phase 2 of New England Wind

Phase 2 of New England Wind, also known as Commonwealth Wind, will deliver 1,200 to 1,500 MW of power to one or more Northeastern states and/or to other offtake users. Phase 2 may be developed as one or more projects. The timing of Phase 2 development is uncertain and largely dependent on market conditions. It is possible that Phase 2 construction could begin immediately following Phase 1[6] or could follow completion of Phase 1 construction by a number of years. The Envelope for Phase 2 of New England Wind is summarized in Table 2.4-1.

[6] In this scenario, each major construction activity would be sequential for the two Phases (e.g. Phase 2 foundation installation would immediately follow Phase 1 foundation installation). However, there could be some overlap of different offshore activities between Phase 1 and Phase 2 (e.g. Phase 2 foundation installation could occur at the same time as Phase 1 WTG installation). There will be no concurrent/simultaneous pile driving of foundations.

2.4.1 Phase 2 Construction and Installation

2.4.1.1 Wind Turbine Generators

Phase 2 will occupy the remainder of the SWDA that is not developed for Phase 1. As described in Section 2.3.1.1, the potential footprint of Phase 2 within the SWDA overlaps with the potential footprint of Phase 1 to account for the range in the number of WTGs that may be developed for Phase 1 (see Figure 4.1-4 of COP Volume I). Depending on the final footprint of Phase 1, the total number of WTG/ESP positions expected to be available for Phase 2 ranges from 64 to 79. Up to 79 of those positions may be used for WTGs. The Phase 2 WTGs will be oriented in a 1 x 1 NM layout. The WTG parameters for Phase 2 are provided in Table 2.4-1 and shown on Figure 4.2-1 of COP Volume I.

Table 2.4-1 Phase 2 of New England Wind Design Envelope Summary

Layout and Size of Phase 2	WTGs	WTG Foundations

• 64–79 total wind turbine generator (WTG) and electrical service platform (ESP) positions expected to be available
  ○ Up to 79 WTGs installed
  ○ Up to 3 ESPs installed
• Windfarm layout in E-W & N-S grid pattern with 1 NM (1.85 km) spacing between positions
• Area of Phase 2 SWDA: 222–271 km^2 (54,857–66,965 acres)
	• Up to 79 WTGs
	• 13–19 MW WTGs
	• Maximum rotor diameter of 285 m (935 ft)
	• Maximum tip height of 357 m (1,171 ft)
	• Minimum tip clearance of 27 m (89 ft)
	• Installation likely with a jack-up vessel, anchored vessel, or dynamic positioning (DP) vessel and components potentially supplied by feeder vessels
		• Each WTG installed on a monopile, jacket, or bottom-frame foundation
		• Scour protection may be used around all foundations
		• Maximum pile driving energy of 6,000 kJ for monopiles and 3,500 kJ for jackets and bottom-frames
		• Installation likely with a jack-up vessel, anchored vessel, or DP vessel and components potentially supplied by feeder vessels

ESP(s) (Topside and Foundation)	**Inter-Array & Inter-Link Cables**	**Offshore Export Cables**
• Up to 3 ESPs • Each ESP installed on a monopile or jacket foundation (ESPs installed on monopiles may be co-located) • Maximum pile driving energy of 6,000 kJ for monopiles and 3,500 kJ for jackets • Scour protection may be installed around the foundations • Installation likely with a jack-up vessel, anchored vessel, or DP vessel	• 66–132 kV inter-array cables buried beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft) • Maximum total inter-array cable length of ~325 km (~175 NM) • 66–345 kV inter-link cables buried at a target depth of 1.5–2.5 m (5–8 ft) • Maximum total inter-link cable length of ~60 km (~32 NM) • Example layout identified, not finalized • Pre-lay grapnel run and pre-lay survey • Typical installation techniques include jetting (e.g. jet plow or jet trenching) and mechanical plow • Use of cable protection (rock, gabion rock bags, concrete mattresses, half-shell pipes [or similar]) on areas of minimal cable burial	• Two or three 220–345 kV high voltage alternating current (HVAC) cables buried beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft) • Cables installed in an Offshore Export Cable Corridor (OECC) with potential variations • Maximum total offshore export cable length of ~356 km (~192 NM) • Pre-lay grapnel run, pre-lay survey, and possibly boulder clearance • Typical installation techniques include jetting (e.g. jet plow or jet trenching) and mechanical plow, possibly with dredging in some locations to achieve burial depth • Use of cable protection (rock, gabion rock bags, concrete mattresses, half-shell pipes [or similar]) on areas of minimal cable burial

Note: Elevations are relative to Mean Lower Low Water (MLLW).

Unless BOEM and FAA guidance is modified before Phase 2 proceeds, the WTGs will be no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey in color; the Proponent anticipates that the WTGs will be painted off-white/light grey to reduce their visibility against the horizon. Unless current guidance is modified by the FAA and BOEM, the WTGs will include one or two levels of red flashing aviation obstruction lights. The Proponent would expect to use the same or similar approaches used for Vineyard Wind 1 and/or Phase 1, including the use of an ADLS that is activated automatically by approaching aircraft. Each WTG will be maintained as a PATON and will contain marine navigation lighting and marking in accordance with the USCG's PATON marking guidance for offshore wind facilities in First District-area waters.

The WTGs are expected to be installed using jack-up vessels, anchored vessels, or DP vessels along with necessary support vessels and supply vessels. The tower will first be erected followed by the nacelle and finally the hub, inclusive of the blades. Alternatively, the nacelle and hub could be installed in a single operation followed by installation of individual blades.

2.4.1.2 Wind Turbine Generator Foundations

Commercial and technical considerations at the time Phase 2 is ready to proceed will determine the types of WTG foundations used for Phase 2. Monopiles, jackets (with piles or suction buckets), bottom-frame foundations (with piles or suction buckets), or a combination of those foundation types may be used for Phase 2 pending the outcome of a foundation feasibility analysis.

If used, monopiles would have a maximum diameter of 13 m (43 ft) and would be driven into the seabed to a maximum depth of 55 m (180 ft). The dimensions for each Phase 2 WTG foundation type are shown on Figures 4.2-2 through 4.2-6 of COP Volume I. Scour protection consisting of rock material may be placed around the foundations; it is anticipated that scour protection will be needed for the larger diameter monopiles and suction buckets but may or may not be needed for the smaller diameter piles used for jacket and bottom-frame foundations.

The foundations are expected to be installed by one or two DP, anchored, or jack-up vessels, along with necessary support vessels and supply vessels. Pile driving will begin with a "soft-start" to ensure the pile remains vertical and allow any motile marine life to leave the area before pile driving intensity is increased. It is anticipated that a maximum of two monopiles, one complete piled jacket (3–4 piles), or one complete piled bottom-frame (3 piles) can be driven into the seabed per day. If suction buckets are used, pumps attached to the top of each bucket would pump water and air out of the space between the suction buckets and seafloor, pushing the buckets down into the seafloor.

2.4.1.3 Electrical Service Platforms

Up to three ESP(s) will serve as the common interconnection point(s) for the Phase 2 WTGs. The ESP(s) would be supported by a monopile, piled jacket (with 3–12 piles), or suction bucket jacket foundation, which may be surrounded by scour protection, if needed. If two or three ESPs are used, they may be located at separate positions or two of the ESPs may be co-located at one of

the potential ESP positions shown on Figure 4.1-4 of COP Volume I (co-located ESPs would be smaller structures installed on monopile foundations). The approximate size and design of the ESP(s) are depicted in Figures 4.2-10 through 4.2-12 of COP Volume I. The ESP(s) will include an aviation obstruction lighting system in compliance with FAA and/or BOEM requirements in effect at the time Phase 2 proceeds, if necessary. The aviation obstruction lights would be activated by ADLS (or similar), subject to BOEM approval. Marine navigation lighting and marking on each ESP will follow USCG and BOEM regulations and guidance in effect at the time Phase 2 proceeds.

ESP foundation and topside installation may be performed by a DP, anchored, or jack-up vessel. ESP foundation installation is similar to WTG foundation installation described above. Following topside installation, the ESP(s) will be commissioned. As an alternative to installing separate ESP(s) situated on their own foundation(s), the ESP(s) could potentially be integrated onto a WTG foundation, which entails placing ESP equipment on one or more expanded WTG foundation platforms (see Figure 4.2-9 of COP Volume I).

2.4.1.4 Offshore Export Cables

Two or three 220-345 kV HVAC offshore export cable(s) will transmit electricity from the Phase 2 ESP(s) to the selected landfall site(s).

Between the Phase 2 ESP(s) and the northwestern corner of the SWDA, the offshore export cables may be installed in any area of the SWDA. The Proponent intends to install all Phase 2 offshore export cables within the OECC that travels from the northwestern corner of the SWDA to the Dowses Beach Landfall Site and/or Wianno Avenue Landfall Site in the Town of Barnstable (see Figure 4.1-6 of COP Volume I). Under this scenario, the maximum length of Phase 2 offshore export cables (assuming three cables) is ~356 km (~192 NM). However, as described further in Section 4.1.3 of COP Volume I, the Proponent has also identified two variations of the Phase 2 OECC in the event that technical, logistical, grid interconnection, or other unforeseen issues arise during the COP review and engineering processes that preclude one or more Phase 2 offshore export cables from being installed within all or a portion of the OECC. As described in Section 4.1.3 of COP Volume I, these variants include the Western Muskeget Variant (located along the western side of Muskeget Channel) and the South Coast Variant (which travels west-northwest from Lease Area OCS-A 0501 to the Massachusetts state waters boundary near Buzzards Bay). The Proponent is reserving the option to install one or two Phase 2 export cables within the Western Muskeget Variant[7] and one or more Phase 2 export cables within the South Coast Variant (see Figure 2.4-1 and Section 4.1.3 of COP Volume I). The Proponent intends to provide additional information on the South Coast Variant in its February 2022 COP Addendum.

[7] The Western Muskeget Variant is the same exact corridor as the western Muskeget option included in the Vineyard Wind 1 COP and has already been thoroughly reviewed and approved by BOEM as part of that COP.

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Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division

REHOBOTH
DIGHTON
BERKLEY
LAKEVILLE
MIDDLEBOROUGH
CARVER
PLYMOUTH
Massachusetts
WAREHAM
SWANSEA
FREETOWN
ROCHESTER
SOMERSET
FALL RIVER
ACUSHNET
MARION
BOURNE
SANDWICH
BARNSTABLE
NEW BEDFORD
MATTAPOISETT
FAIRHAVEN
WESTPORT
DARTMOUTH
Rhode Island
FALMOUTH
MASHPEE
GOSNOLD
TISBURY
OAK BLUFFS
WEST TISBURY
Martha's Vineyard
EDGARTOWN
CHILMARK
AQUINNAH
NANTUCKET
Federal Waters

Covell's Beach
Landfall Site (Phase 1)

Craigville Public Beach
Landfall Site (Phase 1)

Dowses Beach
Landfall Site (Phase 2)

Wianno Ave
Landfall Site (Phase 2)

OCS-A 0501

OCS-A 0534

LEGEND

- Phase 2 South Coast Variant Offshore Routing Envelope
- Phase 2 South Coast Variant Onshore Routing Envelope
- New England Wind Offshore Export Cable Corridor (OECC)
- Phase 2 OECC South Coast Variant
- Phase 2 OECC Western Muskeget Variant
- Maximum Size of Southern Wind Development Area
- Lease Area Boundary
- 2011 GLD
- 2018 GLD
- State/Federal Boundary
- Town Boundary

Scale 1:400,000
1 inch = 6 miles
0 3 6 Miles

This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes.

Figure 2.4-1
Phase 2 Offshore Export Cable Corridor Variants

Prior to cable laying, a pre-lay grapnel run, and pre-lay survey are expected to be performed to clear obstructions and inspect the route. Large boulders along the route may need to be relocated and some dredging of the upper portions of sand waves may be required prior to cable laying to achieve sufficient burial depth below the stable sea bottom. Each offshore export cable will be installed beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft). Offshore export cable laying is expected to be performed primarily via simultaneous lay and bury using jetting techniques (e.g. jet plow or jet trenching) or mechanical plow. However, other specialty techniques may be used in certain areas to ensure sufficient burial depth (see Section 4.3.1.3.6 of COP Volume I). To facilitate cable installation, anchored vessels may be used along the entire length of the offshore export cables. While the Proponent intends to avoid or minimize the need for cable protection to the greatest extent feasible, the Proponent conservatively estimates that approximately 6% of the offshore export cables within the OECC could require cable protection (or up to 7% of the offshore export cables within the OECC for both Phases if the Western Muskeget Variant is used for one or two Phase 2 export cables).

2.4.1.5 Inter-Array and Inter-Link Cables

Strings of multiple WTGs will be connected to the Phase 2 ESP(s) via 66–132 kV inter-array cables. The maximum anticipated length of the Phase 2 inter-array cables is approximately 325 km (175 NM). In addition, the Phase 2 ESPs may be connected to each other (if two or three ESPs are used) or to a Phase 1 ESP by up to two 66–345 kV inter-link cables. The maximum total length of inter-link cables for Phase 2 is ~60 km (~32 NM). The Phase 2 inter-array and inter-link cable layout is highly dependent upon the final number of Phase 2 WTGs and the location and number of ESPs. The design and optimization of the inter-array and inter-link cable system will occur during the final design of Phase 2.

The inter-array and inter-link cables will be buried beneath the seafloor at a target depth of 1.5–2.5 m (5–8 ft). Based on currently available technologies, the inter-array and inter-link cables will likely be installed using jetting techniques. However, in some cases, a mechanical plow may be better suited to certain site-specific conditions and other specialty techniques may be used more rarely. The Proponent conservatively estimates that up to 2% of the total length of the inter-array and inter-link cables could require cable protection.

2.4.1.6 Landfall Site(s), Onshore Cable Route(s), Onshore Substation(s), and Grid Interconnection

The Phase 2 offshore export cables will come ashore within paved parking areas at the Dowses Beach Landfall Site and/or Wianno Avenue Landfall Site in Barnstable, unless unforeseen technical, logistical, or grid interconnection issues arise that preclude the Proponent from installing one or more Phase 2 offshore export cables within the OECC and a second grid interconnection point is needed (see Section 4.1.3.3 of COP Volume I). The ocean to land transition at the Dowses Beach Landfall Site will be made using HDD, which will avoid or minimize

impacts to the beach, intertidal zone, and nearshore areas and achieve a burial significantly deeper than any expected erosion. HDD or open trenching may be used at the Wianno Avenue Landfall Site.

Upon making landfall, the onshore export cables would follow one or two Onshore Export Cable Routes to one or two new onshore substations. Grid interconnection cables installed along one or two Grid Interconnection Routes would connect the Phase 2 onshore substations to the grid interconnection point at Eversource's existing 345 kV West Barnstable Substation. The onshore export and grid interconnection cables are expected to be installed underground within public roadway layouts and utility ROWs. From each landfall site to the grid interconnection point, the maximum combined length of the Phase 2 Onshore Export Cable Route and Grid Interconnection Route is up to 17 km (10.6 mi). The properties needed for the Phase 2 onshore substation site(s) have not yet been secured, but the site(s) will be located generally along the potential onshore routes illustrated on Figure 4.1-2 of COP Volume I.

In the event that one or more Phase 2 HVAC offshore export cables deliver power to a second grid interconnection point, Phase 2 could include one onshore transmission system in Barnstable (using either the Dowses Beach Landfall Site or Wianno Avenue Landfall Site) and/or an onshore transmission system(s) in proximity to the alternative grid interconnection point. See Section 4.1.1 of COP Volume I for additional details.

2.4.1.7 Port Facilities

The Proponent has identified several port facilities in Massachusetts, Rhode Island, Connecticut, New York, and New Jersey that may be used for frequent crew transfer, offloading/loading shipments of components, storage, preparing components for installation, and potentially some component fabrication and assembly. In addition, some components, materials, and vessels could come from Canadian and European ports. See Section 4.2.2.5 of COP Volume I for a complete list of possible ports that may be used for major Phase 2 construction staging activities. It is not expected that all the ports identified would be used; it is more likely that only some ports would be used during construction depending upon final construction logistics planning.

2.4.2 Phase 2 Operations and Maintenance

The Phase 2 WTGs will be designed to operate without attendance by any operators. Continuous monitoring is typically conducted remotely using a SCADA system. Routine preventive maintenance and proactive inspections (e.g. multi-beam echosounder inspections, side scan sonar inspections, magnetometer inspections, depth of burial inspections, etc.) will be performed for all offshore facilities.

Once Phase 2 becomes operational, the Proponent expects to use a SOV to provide offshore accommodations and workspace for O&M workers. Under this scenario, daughter craft and/or CTVs would be used to transfer crew to and from shore. If an SOV or similar accommodation vessel is not used, several CTVs and helicopters could be used to frequently transport crew to and

from the offshore facilities. In addition to the SOV, CTVs, and/or daughter craft, other larger support vessels (e.g. jack-up vessels) may be used infrequently to perform some routine maintenance and repairs (if needed).

In support of O&M activities for Phase 2, the Proponent will likely use O&M facilities in Bridgeport, Vineyard Haven, and/or New Bedford Harbor. The O&M facilities may include management and administrative team offices, a control room, office and training space for technicians and engineers, warehouse space for parts and tools, and/or pier space for vessels used during O&M. The Proponent may use any of the ports listed in Table 4.2-8 of COP Volume I to support O&M activities.

2.4.3 Phase 2 Decommissioning

As currently envisioned, the decommissioning process for Phase 2 is essentially the reverse of the installation process. Decommissioning of the offshore facilities is broken down into several steps:

- Retirement in place (if authorized by BOEM) or removal of the offshore cable system (i.e. inter-array, inter-link, and offshore export cables) and any associated cable protection.

- Dismantling and removal of WTGs. Prior to dismantling the WTGs, they would be properly drained of all lubricating fluids and chemicals, which would be brought to port for proper disposal and/or recycling.

- Cutting and removal of foundations and removal of scour protection. In accordance with BOEM's removal standards (30 CFR § 585.910(a)), the foundations would likely be cut at least 4.5 m (15 ft) below the mudline; the portion below the cut will likely remain in place. Suction buckets (if used) are anticipated to be removed by injecting water into the space between the suction bucket and seafloor to reduce the suction pressure that holds the foundation in place.

- Removal of ESP(s). The ESP(s), and their foundations, are expected to be disassembled in a similar manner as the WTGs. Before removing the ESP(s), the offshore export cables, inter-array cables, and inter-link cables would be disconnected.

The onshore facilities could be retired in place or retained for future use. The extent of onshore decommissioning is subject to discussions with the Town of Barnstable on the approach that best meets the Town's needs and has the fewest environmental impacts.

3.0 NEW ENGLAND WIND CONSISTENCY WITH RHODE ISLAND ENFORCEABLE POLICIES

3.1 Jurisdiction for Federal Consistency Certification

Section 307(c)(3)(B) of the Coastal Zone Management Act (CZMA), as amended, requires any applicant who submits an Outer Continental Shelf (OCS) plan[8] to the Department of the Interior to also provide a certification that each activity described in the OCS plan affecting any land or water use or natural resource of a state's coastal zone complies with the enforceable policies of that state's approved coastal management program and will be carried out in a manner consistent with such program (see 16 U.S.C. § 1456(c)(3)(B)). On July 2, 2020, the Proponent submitted an OCS plan— the draft New England Wind COP— to the Department of Interior's Bureau of Ocean Energy Management for approval. The proposed offshore wind facilities and portions of the underwater offshore export cables as described in the New England Wind COP are located within CRMC's 2018 GLD and are therefore subject to federal consistency review by CRMC under 15 CFR Part 930, Subpart E (see Figure 1.0-1).

The following sections demonstrate New England Wind's compliance with the applicable enforceable policies of the RICRMP contained in Chapter 11 of CRMC's Ocean Special Area Management Plan (Ocean SAMP) (650-RICR-20-05-11.10). The sections below rely on detailed information provided in the New England Wind COP. The draft New England Wind COP is being provided to CRMC following BOEM's completeness and sufficiency review and is incorporated by reference.

3.2 Overall Regulatory Standards (§ 11.10.1)

§ 11.10.1(A)

All offshore developments regardless of size, including energy projects, which are proposed for or located within state waters of the Ocean SAMP area, are subject to the policies and standards outlined in §§ 11.9 and 11.10 of this Part. The Council shall not use § 11.9 of this Part for CRMC concurrences or objections for CZMA federal consistency reviews.

[8] *OCS plan* means "any plan for the exploration or development of, or production from, any area which has been leased under the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.), and the regulations under that Act, which is submitted to the Secretary of the Interior or designee following management program approval and which describes in detail federal license or permit activities." The New England Wind Construction and Operations Plan submitted to BOEM is an OCS plan.

As described in Section 3.1, New England Wind is subject to CZMA federal consistency review by CRMC; therefore, the enforceable policies of the RICRMP contained in Chapter 11 of CRMC's Ocean SAMP (650-RICR-20-05-11.10) are reviewed. New England Wind meets the definition of a "large-scale offshore development" pursuant to RICR-20-05-11.3(H)(1) and RICR-20-05-11.10.1(A)(1).

§ 11.10.1(B)

In assessing the natural resources and existing human uses present in state waters of the Ocean SAMP area, the Council finds that the most suitable area for offshore renewable energy development in the state waters of the Ocean SAMP area is the renewable energy zone depicted in Figure 1 in § 11.10.1(O) of this Part, below. The Council designates this area as Type 4E waters. In the Rhode Island Coastal Resources Management Program (Subchapter 00 Part 1 of this Chapter) these waters were previously designated as Type 4 (multipurpose) but are hereby modified to show that this is the preferred site for large scale renewable energy projects in state waters. The Council may approve offshore renewable energy development elsewhere in the Ocean SAMP area, within state waters, where it is determined to have no significant adverse impact on the natural resources or human uses of the Ocean SAMP area. Large-scale offshore developments shall avoid areas designated as Areas of Particular Concern consistent with § 11.10.2 of this Part. No large-scale offshore renewable energy development shall be allowed in Areas Designated for Preservation consistent with § 11.10.3 of this Part.

The SWDA is located in federal waters within BOEM's designated MA WEA. The OECC is in federal waters and Massachusetts waters. Thus, New England Wind is not located in state waters of the Ocean SAMP area, including Areas of Particular Concern (APCs) and Areas Designated for Preservation in state waters. Therefore, this policy does not apply. See Sections 3.3 and 3.4 for further discussion of APCs and Areas Designated for Preservation.

§ 11.10.1(C)

Offshore developments shall not have a significant adverse impact on the natural resources or existing human uses of the Rhode Island coastal zone, as described in the Ocean SAMP. In making the evaluation of the effect on human uses, the Council will determine, for example, if there is an overall net benefit to the Rhode Island marine economic sector from the development of the project or if there is an overall net loss. Where the Council determines that impacts on the natural resources or human uses of the Rhode Island coastal zone through the pre-construction, construction, operation, or decommissioning phases of a project constitute significant adverse effects not previously evaluated, the Council shall, through its permitting and enforcement authorities in state waters and through any subsequent CZMA federal consistency reviews, require that the applicant modify the proposal to avoid and/or mitigate the impacts or the Council shall deny the proposal.

We understand from CRMC that the principal coastal effect of concern associated with the New England Wind development within the 2018 GLD is to Rhode Island-based commercial fishing interests (a coastal use). The sections of the New England Wind COP most relevant to these issues are located in Volume III and include Section 6.5 (Benthic Resources), Section 6.6 (Finfish and Invertebrates), Section 7.5 (Recreation and Tourism [Including Recreational Fishing]), Section 7.6 (Commercial Fisheries and For-Hire Recreational Fishing), Section 7.8 (Navigation and Vessel Traffic), Section 7.9 (Other Uses), Appendix III-E (Fisheries Communication Plan), Appendix III-F (Essential Fish Habitat), Appendix III-I (Navigation Safety Risk Assessment), and Appendix III-N (Economic Exposure of Commercial Fisheries).

As summarized in Section 4 and detailed in Sections 5 through 8 of COP Volume III, the Proponent is already implementing measures to avoid and minimize impacts to commercial fishing interests, including adopting the east-west 1 x 1 NM layout strongly recommended by CRMC, minimizing the potential need for cable protection in the SWDA, and conducting fisheries studies to obtain baseline data against which to measure potential short and long-term fisheries impacts. In addition, Appendix III-N of the COP contains a draft analysis of the value of commercial fishing harvest from New England Wind based on the most recent available data. Each of these measures is discussed in more detail below. Accordingly, it is anticipated that New England Wind will not have a significant adverse impact on the natural resources or existing human uses of the Rhode Island coastal zone.

WTG and ESP Siting

The SWDA is within the MA WEA. The original siting of the MA WEA by BOEM included a significant public engagement process. Through this process, and in response to stakeholder concerns, the MA WEA was extensively modified. BOEM excluded areas of high fisheries value from the MA WEA to reduce potential conflict with commercial and recreational fishing activities. This careful siting of MA WEA, which includes the SWDA, avoids many impacts to commercial fisheries.

WTG and ESP Layout

In direct response to input from commercial fishermen and comments from CRMC during review of the adjacent Vineyard Wind 1 project, the WTGs and ESPs in the SWDA will be oriented in fixed east-to-west rows and north-to-south columns with one nautical mile (1.85 km) spacing between positions. This uniform grid layout provides 1 NM wide corridors in the east-west and north-south directions as well as 0.7 NM (1.3 km) wide corridors in the northwest-southeast and northeast-southwest directions. As stated in CRMC's consistency concurrence for Vineyard Wind 1, a "layout of east-west orientation with minimum 1 nm spacing between turbines is a compromise by Rhode Island-based commercial fishermen that will require modification to their gear and operations, but would allow continued fishing for most commercial fishing operations within the New England Wind lease area and result in both the commercial fishing and offshore wind energy industries to coexist." Thus, the east-west 1 x 1 NM layout has been adopted in direct response to recommendations from CRMC.

It is important to note that offshore renewable wind energy facilities are typically designed to maximize the amount of energy that can be generated within a given area. In general, the most optimal WTG layout for wind energy production is a non-grid WTG layout with closer turbine spacing and a higher density of WTGs around the edges of the wind farm; such a design maximizes the number of WTGs per area while minimizing wake effects that impact the efficiency of downwind turbines. Thus, as required by the enforceable policy, the Proponent has modified the WTG/ESP layout from a more typical, optimized non-grid design to minimize adverse impacts to commercial fishing operations.

In addition to minimizing adverse impacts to commercial fisheries, the 1 x 1 NM WTG/ESP layout of New England Wind minimizes potential impacts to navigation within the SWDA. The 1 x 1 NM layout of New England Wind is consistent with the USCG's recommendations contained in the Massachusetts Rhode Island Port Access Route Study (MARIPARS) published in the Federal Register on May 27, 2020 (USCG-2019-0131). The final MARIPARS found that, "After considering all options and the vessel traffic patterns within the MA/RI WEA, a standard and uniform grid pattern with at least three lines of orientation throughout the MA/RI WEA would allow for safe navigation and continuity of USCG missions through seven adjacent wind farm lease areas over more than 1400 square miles of ocean." More specifically, USCG recommended:

- "Lanes for vessel transit should be oriented in a northwest to southeast direction, 0.6 NM to 0.8 NM wide. This width will allow vessels the ability to maneuver in accordance with the COLREGS while transiting through the MA/RI WEA.

- Lanes for commercial fishing vessels actively engaged in fishing should be oriented in an east to west direction, 1 NM wide.

- Lanes for USCG SAR 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 SAR operations."

The USCG specifically recognized traditional commercial fishing patterns when making their recommendations on WTG layouts within the MA WEA and Rhode Island/Massachusetts Wind Energy Area (RI/MA WEA) (together the "WEAs"). As stated in MARIPARS:

> "Based on fishing vessel tracks, specifically squid, mackerel, and butterfish vessels, there is significant east to west fishing activity in the WEA, particularly in August and September, following the north to south migration of the fish. Based on comments received on this report, there is a 'gentlemen's agreement' between the fixed gear fishermen and the mobile gear fishermen to prevent gear entanglement. The fixed gear fishermen set their gear along traditional LORAN-C lines that are generally in an east to west direction. The mobile gear fishermen fish in functional lanes between the set fixed gear, in a general east to west direction."

Based on these findings and recommendations from the USCG, the proposed layout is expected to accommodate traditional fishing patterns, including the "gentlemen's agreement" regarding the placement of mobile and fixed gear within the WEAs. As noted previously, the 1 x 1 NM WTG/ESP layout is also consistent with the findings contained in CRMC's consistency concurrence for Vineyard Wind 1. The consistency concurrence emphasized that "Row orientation in an east-west direction with a minimum 1 nm spacing is critical to minimize impacts and to allow the continued operation, with adjustments and modifications to gear, of Rhode Island-based commercial fishing vessels within the WDA."

As described in Section 7.8.1 of COP Volume III and the Navigation Safety Risk Assessment, analyses of automatic identification system (AIS) data from 2016 to 2019 have indicated that historical vessel traffic levels within the SWDA are relatively low. From 2016 to 2019, the average number of annual AIS-equipped fishing vessel transits through the SWDA was 422 (see Appendix III-I). AIS data indicate that most of the vessels transiting the Offshore Development Region[9] currently choose to navigate outside of the WEAs even when no WTGs or ESPs are present (see Section 7.8.1.1 of COP Volume III; Baird 2019). Of those vessels transiting the WEAs, many travel just inside the edge of the WEAs. Overall, based on this historical low level of traffic in the SWDA, the risk of collision between vessels is relatively low (see Section 8.1 of COP Volume III and Appendix III-I).

Scour Protection and Cable Protection

Scour protection consisting of rock material may be placed around the base of each WTG and ESP foundation. It is anticipated that scour protection will be needed for the larger diameter monopiles and suction buckets, but may or may not be needed for the smaller diameter piles used for jacket and bottom-frame foundations. Scour protection will have a maximum height of 3 m (9.8 ft). Depending on the foundation type(s) selected, the maximum area of scour protection around each foundation ranges from 4,072–9,754 m^2 (1.0–2.4 acres) for the WTG foundations and 4,072–21,316 m^2 (1.0–5.3 acres) for up to five ESP foundations. Details of the specific area of scour protection for each foundation type are found in Sections 3.2.1.4 and 4.2.1.4 of COP Volume I. For WTG monopile foundations, which are expected to be used for Phase 1 () and may also be used for Phase 2, the maximum expected radius of scour protection is 36–39 m (118–128 ft) compared to the 1,852 m (1 NM) spacing between foundations. The total maximum area of scour protection for both Phases is 1.04 km^2 (258 acres), which is approximately 0.23% of the maximum size of the SWDA. Thus, scour protection will cover an extremely limited portion of the SWDA.

[9] With respect to navigation and vessel traffic, the Offshore Development Region is the broader offshore geographic region surrounding the SWDA, the OECC, and ports that could be affected by New England Wind-related activities. This includes Nantucket Sound, areas south of Martha's Vineyard and Nantucket, the MA WEA, the RI/MA WEA, and waters surrounding potential vessel routes to the ports identified for use by New England Wind.

The installation of submarine cables within the SWDA and along the OECC is not anticipated to adversely impact commercial fishing activities. The target burial depth for all inter-array, inter-link, and offshore export cables is 1.5–2.5 m (5–8 ft) below the seafloor, which New England Wind engineers have determined is more than twice the burial depth that is required to protect the cables from potential fishing activities and also provides a maximum of 1 in 100,000 year probability of anchor strike, which is considered a negligible risk. Except for limited areas where the sufficient cable burial is not achieved and placement of cable protection on the seafloor is required, the inter-array, export, and offshore cables are not anticipated to interfere with any typical fishing practices.

If sufficient burial depths cannot be achieved, the cables need to cross other infrastructure (e.g. existing cables, pipes, etc.), or a cable joint requires protection, cable protection may be necessary. Based on initial survey data for the SWDA, is the Proponent conservatively estimates that up to 2% of the total length of the inter-array and inter-link cables (~11 km [6 NM]) for both Phases may potentially require cable protection, with the majority of any needed cable protection likely located immediately adjacent to the foundation's scour protection. The offshore export cables are principally located outside of the 2018 GLD. The Proponent conservatively estimates that approximately 6% of the offshore export cables within the OECC for both Phases (or up to 7% of the offshore export cables within the OECC for both Phases if the Western Muskeget Variant is used for one or two Phase 2 export cables) and approximately 2% of the offshore export cables within the SWDA (~27 km [15 NM] total) could require cable protection, the majority of which, if any, would be within Massachusetts waters outside the 2018 GLD. The Proponent intends to avoid or minimize the need for cable protection to the greatest extent feasible through careful site assessment and thoughtful selection of the most appropriate cable installation tool to achieve sufficient burial; therefore, the estimates of cable protection are expected to be conservative. Given that little bottom trawling or dredging occurs along the OECC, the risk of bottom fishing gear snagging on cable protection in the OECC is low. The use of pots and traps, predominantly deployed along the OECC within Nantucket Sound in Massachusetts waters, is not expected to be impacted by New England Wind.

Fishermen have expressed concerns about fishing gear becoming entangled on scour protection and cable protection. Should cable protection be required in the SWDA and OECC, it will be designed to minimize impacts to fishing gear to the extent feasible, and fishermen will be informed of the areas where cable protection is used. Upon decommissioning, scour protection would be removed. Furthermore, the Proponent is developing and implementing procedures for handling compensation to fishermen for potential gear loss. See the Fisheries Communication Plan, which is included as Appendix III-E of the COPs for additional discussion of gear loss compensation.

The addition of foundations and scour protection, as well as cable protection in some areas, which may act as an artificial reef and provide rocky habitat previously absent from the area, could result in modest, positive impacts to recreational fisheries. In the event WTGs aggregate recreationally-targeted species, based on the intensity of recreational fishing within the SWDA and its geographic scale, neither congestion effects nor gear conflicts are expected.

Access to the SWDA and OECC

For each Phase of New England Wind, construction and installation activities will occur within very limited and well-defined areas of the SWDA and along the OECC. During construction, fishing vessels will not be precluded from operating in or transiting through the SWDA or the OECC other than where temporary safety buffer zones may be established in the immediate vicinity around construction and installation vessels. Accordingly, the majority of the SWDA and OECC will remain accessible to commercial fishing vessels throughout the construction of New England Wind.

During O&M, the SWDA will be open to marine traffic, and no permanent vessel restrictions are proposed within the SWDA or along the OECC. If in-water maintenance activities are required, there could be temporary safety buffer zones established around work areas in limited areas of the SWDA or along the OECC. However, it is expected that most maintenance activities will not require in-water work but will instead be based on the WTGs and ESP structures themselves.

Economic Exposure and Impacts to Rhode Island Commercial Fisheries

While the Proponent is implementing several key measures to minimize impacts to commercial fisheries (such as the adoption of a 1 x 1 NM WTG/ESP layout and efforts to minimize cable protection), New England Wind may lead to potential changes in commercial fishing practices in the SWDA and OECC. The economic exposure and potential economic impacts to commercial fisheries, including Rhode Island-based commercial fisheries, are analyzed in detail in Appendix III-N. This draft analysis considers the potential direct impacts to commercial fisheries, as well as fisheries-related indirect and induced shoreside economic impacts, which are characterized as either upstream (related to businesses that supply inputs used in fishing) or downstream (related to businesses that buy fish for processing or distribution). The analysis is based on the most current available revenue data, including the National Oceanic and Atmospheric Administration Fisheries' (NOAA Fisheries) "Socioeconomic Impacts of Atlantic Offshore Wind Development," which indicates that the SWDA does not include high-value commercial fishing grounds. It also shows that approximately 44.2% of the landings revenue from the SWDA is from Rhode Island.

Fishing congestion impacts could occur when a high concentration of vessels operating in a fishing area causes fishing vessels and gear to interfere with one another resulting in increases in fleetwide or vessel-specific fishing costs or reductions in fishing revenues, or both. As described in Appendix III-N, any modification of fishing in the SWDA and OECC or shifts in fishing effort from those areas to other areas would not be sufficient to cause fishing congestion impacts.

Commercial fishing activity in the SWDA and OECC is low to modest, and fishing trips that transect the SWDA and OECC already spend most of their time and generate most of their revenues in nearby fishing areas outside the SWDA and OECC.

Fisheries Studies

The Proponent is committed to fisheries science and research as it relates to offshore wind energy development. Working with the Massachusetts School for Marine Science and Technology (SMAST), the Proponent is developing and implementing fisheries studies. Specific to New England Wind, the Proponent is already collecting pre-construction fisheries data within the SWDA. The surveys are being conducted by SMAST scientists onboard commercial fishing vessels.

Pre-construction surveys began in spring 2019. The primary goal of the pre-construction surveys is to provide data on seasonal fish abundance, distribution, population structure and community composition for a future environmental assessment using a beyond Before-After-Control-Impact (BACI) framework as recommended by BOEM (BOEM 2013). The pre-construction surveys in the SWDA[10] include trawl surveys and drop camera surveys.

- Trawl surveys are planned to occur each season (spring, summer, winter, fall) within the SWDA until the start of New England Wind construction. A demersal otter trawl, further referred to as a trawl, is a net that is towed behind a vessel along the seafloor expanded horizontally by a pair of otter boards or trawl doors. Trawls tend to be relatively indiscriminate in the fish and invertebrates they collect; hence trawls are a general tool for assessing the biological communities along the seafloor and are widely used by institutions worldwide for ecological monitoring. The methodology for the trawl survey was adapted from the Atlantic States Marine Fisheries Commission's (ASMFC) Northeast Area Monitoring and Assessment Program (NEAMAP) nearshore trawl survey. Tow locations within the SWDA were selected using a systematic random sampling design. The study area (369 km^2) was sub-divided into 10 sub-areas (each ~36.9 km^2), and one trawl tow was made in each of the 10 sub-areas to ensure adequate spatial coverage throughout the survey area. As of August 2021, a total of eight trawl surveys have been conducted: spring 2019, summer 2019, fall 2019, winter 2020, summer 2020, fall 2020, winter 2021, and spring 2021.[11]

  Drop camera surveys are planned to occur twice per year in the SWDA until the start of New England Wind construction. The minimally invasive, image-based drop camera surveys allow for practical data collection of the epibenthic community without causing a disturbance to the seafloor. The SMAST drop camera surveys can be used to better

[10] The geographic area studied for the New England Wind pre-construction fisheries studies is currently referred to as the "501 South Study Area."

[11] The spring 2020 trawl survey did not occur due to concerns regarding risk of exposure to COVID-19 onboard the planned vessel.

understand benthic macrofaunal community characteristics, substrate, and the spatial and temporal scales of potential impacts on these communities and habitats. Samples are taken at 13 stations placed 5.6 km apart following a grid design. As of August 2021, five drop camera surveys have been completed (in July 2019, October 2019, July 2020, October 2020, and May 2021).

In partnership with Vineyard Wind 1, the New England Aquarium's Anderson Cabot Center for Ocean Life studied highly migratory species presence across the Massachusetts Wind Energy Area (MA WEA) and Rhode Island/Massachusetts Wind Energy Area (RI/MA WEA) based on a desktop review and input from the pelagic recreational fleet. The study determined that recreational effort for highly migratory species is widespread throughout southern New England, with the highest levels of recreational fishing activity occurring to the west of the MA WEA and RI/MA WEA in the waters south and east of Montauk Point and Block Island (Kneebone and Capizzano 2020). The results of this effort are included in Sections 7.5 and 7.6 of Volume III of the COP. This study resulted in an additional funding proposal from INSPIRE Environmental in partnership with the New England Aquarium to the Massachusetts Clean Energy Center (MassCEC) to support a two-year acoustic tagging and tracking study of highly migratory species at recreational fishing hotspots in the MA WEA and RI/MA WEA that were identified in the initial study. The Proponent, in conjunction with other offshore wind developers, plans to further support this study effort by deploying additional receivers in their lease areas. For more information on the highly migratory species surveys and New England Wind fisheries surveys (as well as several seasons of survey reports), see https://www.parkcitywind.com/fisheries.

The Proponent also plans to develop a framework for fisheries studies within the SWDA during and post-construction. In recognition of the regional nature of fisheries science, the Proponent expects that such during- and post-construction studies will involve coordination with other offshore wind energy developers in the MA WEA and RI/MA WEA, especially since there may be some offshore wind energy construction occurring concurrently in multiple lease areas. The Proponent is already engaging in collaboration with other developers, fishing industry representatives, and state and federal agencies through its participation in the Responsible Offshore Science Alliance (ROSA) and the Regional Wildlife Science Entity (RWSE).

The Proponent also expects the development of the fisheries studies will be undertaken in coordination with BOEM, federal and state agencies such as NOAA Fisheries, the Rhode Island Division of Marine Fisheries, and the Massachusetts Division of Marine Fisheries, fisheries stakeholders, academic institutions, and other stakeholders. The Proponent has collaborated and will continue to collaborate with federal and state agencies to design surveys that align with established survey methods so that the data generated can be compared to previous data and ongoing regional studies to support a regional, longer-term study program to monitor the regional impacts of offshore wind development.

In addition, the Proponent is committed to developing an appropriate benthic monitoring framework for New England Wind, should it be necessary, in consultation with BOEM and other agencies as appropriate (See Appendix III-U for the draft framework). The framework for New

England Wind will consider the draft Benthic Habitat Monitoring Plan for Vineyard Wind 1 in Lease Area OCS-A 0501. Due to the similarities in habitat across Lease Areas OCS-A 0501 and OCS-A 0534, the monitoring data collected during the Vineyard Wind 1 monitoring effort may also inform expected impacts to and recovery of benthic communities within the SWDA.

The survey and monitoring work conducted by the Proponent will generate a substantial body of environmental, fisheries, and other data, which will be available in the public domain in a manner consistent with other academic research. Much of the data is publicly available through the federal and state permitting process, as well as reports or academic publications that may come out of the survey or monitoring work. The Proponent also plans to make all fisheries monitoring data generated publicly available on its website. For other environmental and fisheries data, the Proponent will explore cost-effective and appropriate ways to store and make data publicly available and easy to access. Through ROSA and an RWSE, the Proponent will work with fishermen, regulators, stakeholders, and neighboring developers to find ways to streamline and standardize available data across all offshore efforts.

Avoidance, Minimization, and Mitigation Measures

As noted above, vessel restrictions are not generally proposed other than temporary safety buffer zones that are used to improve safety in the immediate vicinity of construction and installation vessels. Accordingly, the majority of the SWDA and OECC will remain accessible to commercial fishing vessels throughout the construction and O&M.

New England Wind's 1 x 1 NM WTG/ESP layout is the result of input from numerous stakeholders, including the USCG and fishermen who use or transit the SWDA, and is expected to accommodate traditional fishing patterns. To aid mariners navigating the SWDA, each WTG and ESP will be maintained as a PATON in accordance with USCG's PATON marking guidance for offshore wind facilities in First District-area waters. The Proponent will implement a uniform system of marine navigation lighting and marking for New England Wind's offshore facilities, which is currently expected to include yellow flashing lights on every WTG foundation and ESP unique alphanumeric identifiers on the WTGs, ESPs, and/or their foundations, and high-visibility yellow paint on each foundation. The lights and alphanumeric identifiers would be visible from all directions. Mariner Radio Activated Sound Signals (MRASS) and AIS transponders are included in the offshore facilities' design to enhance marine navigation safety.

To minimize hazards to navigation, all New England Wind vessels and equipment will display the required navigation lighting and day shapes. The Proponent will issue Offshore Wind Mariner Update Bulletins and coordinate with the USCG to provide Notices to Mariners (NTMs) to notify recreational and commercial vessels of their intended operations within the Offshore Development Area (i.e. where New England Wind's offshore facilities are physically located, which includes the SWDA and the OECC).

To further minimize impacts, the Proponent has developed a Fisheries Communication Plan (FCP) (included as Appendix III-E of the COP). The purpose of the FCP is to define outreach and engagement to potentially affected fishing interests during design, development, construction, operation, and final decommissioning of offshore wind projects. Fisheries communication is conducted through several roles, including Fisheries Liaisons (FLs) and Fisheries Representatives. FLs are employed by the Proponent and are responsible for the implementation of the FCP whereas FRs represent the interests of different fisheries and fishing communities to the Proponent. The Proponent also employs a Marine Operations Liaison Officer, who is responsible for safe marine operations by the Proponent. In addition, in an effort to provide fishermen with the most accurate and precise information on work within the SWDA and along the OECC, the Proponent is currently providing and will continue to provide portable digital media with electronic charts depicting locations of New England Wind-related activities. Each WTG and ESP will also be clearly identified on NOAA charts. Finally, as stated above, the Proponent is developing and implementing procedures for handling compensation to fishermen for potential gear loss. Additional information is provided in Appendix III-E.

As described above, the Proponent is committed to fisheries science and research as it relates to offshore wind energy development. The Proponent is already collecting pre-construction fisheries data (via trawl and drop camera surveys) within the SWDA.

In summary, the Proponent is already implementing multiple measures to avoid and minimize impacts to commercial fisheries, most notably the adoption of an east-west 1 x 1 NM layout.

§ 11.10.1(D)

Any large-scale offshore development, as defined in § 11.3(H) of this Part, shall require a meeting between the Fisherman's Advisory Board (FAB), the applicant, and the Council staff to discuss potential fishery-related impacts, such as, but not limited to, project location, wind turbine configuration and spacing, construction schedules, alternative locations, project minimization and identification of high fishing activity or habitat edges. For any state permit process for a large-scale offshore development this meeting shall occur prior to submission of the state permit application. The Council cannot require a pre-application meeting for federal permit applications, but the Council strongly encourages applicants for any large-scale offshore development, as defined in § 11.3(H) of this Part, in federal waters to meet with the FAB and the Council staff prior to the submission of a federal application, lease, license, or authorization. These pre-application meetings, however, do not constitute a formal meeting to satisfy the necessary data and information required for federal consistency reviews, unless mutually agreed to between the CRMC and the applicant. However, for federal permit applicants, a meeting with the FAB as described within this section shall be necessary data and information required for federal consistency reviews for purposes of starting the CZMA 6-month review period for federal license or permit activities under 15 C.F.R. Part 930, Subpart D, and OCS Plans under 15 C.F.R. Part 930, Subpart E, pursuant to 15 C.F.R. § 930.58(a)(2).

The Proponent met with CRMC staff on July 13, 2020 to provide an introductory overview of New England Wind. The Proponent will meet with the Fisherman's Advisory Board (FAB) and CRMC staff in accordance with § 11.10.1(D) to satisfy the necessary data and information requirement on a date and time provided by CRMC.

§ 11.10.1(E)

The Council shall prohibit any other uses or activities that would result in significant long-term negative impacts to Rhode Island's commercial or recreational fisheries. Long-term impacts are defined as those that affect more than one or two seasons.

New England Wind will not result in significant long-term negative impacts to Rhode Island's commercial or recreational fisheries. Please see the discussion under § 11.10.1(C) above in addition to Section 7.5 (Recreation and Tourism [Including Recreational Fishing]) and Section 7.6 (Commercial Fisheries and For-Hire Recreational Fishing) of COP Volume III.

As summarized under § 11.10.1(F) below and described in more detail in Section 6.5, Section 6.6, and Appendix III-F of COP Volume III, New England Wind is not expected to result in significant long-term adverse impacts to benthic, finfish, and invertebrate species of commercial and recreational importance. Overall, localized impacts from the alteration of habitat in the SWDA and along the OECC are expected to be minimal and recovery of natural assemblages likely.

§ 11.10.1(F)

The Council shall require that the potential adverse impacts of offshore developments and other uses on commercial or recreational fisheries be evaluated, considered and mitigated as described in § 11.10.1(G) of this Part.

The Proponent has fully analyzed the potential impacts of New England Wind on commercial and recreational fisheries and has considered, avoided, minimized, and mitigated those potential impacts. The resource areas related to commercial and recreational fisheries are discussed below.

Potential Impacts to Benthic Resources and Mitigation Measures

Potential Impacts

Section 6.5 (Benthic Resources) of COP Volume III and Appendix III-F (Essential Fish Habitat) provide a thorough analysis of New England Wind's potential impacts to benthic habitat, including commercially important species, as well as measures to mitigate those impacts. Impact producing factors considered include habitat alteration (including impacts from foundation installation, anchoring, jacking-up, cable protection, and scour protection), suspended sediments, sediment deposition, water withdrawals, electromagnetic fields (EMF), cable installation/maintenance, and underwater noise (including pile driving noise and operational noise of WTGs).

Within the SWDA, deployment of anchors (if/where used) and jack-up vessel legs would disturb the substrate and leave a temporary irregularity in the seafloor resulting in localized mortality of infauna. In addition, portions of the seafloor would be swept by an anchor cable/chain as the installation equipment moves along the cable route. If used, anchors will avoid sensitive seafloor habitats to the greatest extent practicable. It is estimated that up to 4.08 km^2 (1,008 acres) within the SWDA may be temporarily disturbed for both Phases 1 and 2, which is approximately 0.9% of the maximum size of the SWDA (see Appendix III-T). As discussed under § 11.10.1(C), seafloor disturbance within the SWDA may also occur from placement of scour protection and cable protection (if required). Cable protection and scour protection may disturb up to 1.17 km^2 (289 acres) within the SWDA for both Phases 1 and 2, which is 0.26% of the maximum size of the SWDA.

As described in Sections 3.3.1.3 and 4.3.1.3 of COP Volume I, activities within the OECC are expected to include cable installation, anchoring, the potential dredging of the tops of sand waves in certain locations, the potential use of cable protection (if required), and the limited use of jack-up vessels for cable splicing. The amount of habitat disturbance from cable installation, anchoring, the potential dredging of the tops of sand waves in certain locations, and the limited use of jack-up vessels for cable splicing would be approximately 2.48 km^2 (612 acres). Cable protection may disturb up to 0.22 km^2 (54 acres) in the OECC. However, only a fraction of this disturbance would occur within the portion of the OECC that is located within the 2018 GLD.

Overall, construction period impacts from the alteration of habitat in the SWDA and along the OECC are expected to be minimal and recovery of natural assemblages likely. Impacts to benthic resources due to introduction of structured habitat (WTG/ESP foundations, scour protection, and cable protection [if required]) will be direct, long-term (over the operational lifetime of New England Wind), and localized. It is possible that the foundations will support more taxa than the surrounding primarily homogenous sand habitats.

Since most of the SWDA is comprised of homogeneous fine sand and silt-sized sediments, the addition of the stone/rock scour protection (and any required cable protection) will alter the nature of the seabed thereby contributing to higher complexity in a three-dimensional (3-D) scale. Scour and/or cable protection has the potential to turn exposed, biodiversity-poor soft bottoms into species-rich ecosystems (Langhamer 2012). BOEM's Draft Environmental Impact Statement (DEIS) (2018) for Vineyard Wind 1 determined that effects from added scour and cable protection would possibly have long-term moderate benefit.

Impacts to most sessile and/or infaunal species from sound exposure related to proposed New England Wind construction actions are expected to be insignificant. Impacts to benthic resources from EMFs are expected to be unlikely and mitigated by cable burial.

Avoidance, Minimization, and Mitigation Measures

The SWDA is located in the MA WEA, which has been sited to avoid the most sensitive areas for benthic and other resources. The WTGs and ESPs are widely-spaced so that their foundations (and associated scour protection), along with cable protection for inter-array and inter-link cables, only occupy a minimal portion of the SWDA, leaving a huge portion of the SWDA undisturbed. The portion of the SWDA that will be disturbed is only 1.1% of the maximum size of the SWDA.

For each Phase, prior to the start of construction, contractors will be provided with a map of sensitive habitats to allow them to plan their mooring positions accordingly. Vessel anchors and legs will be required to avoid known eelgrass beds and will also be required to avoid other sensitive seafloor habitats (hard/complex bottom) as long as such avoidance does not compromise the vessel's safety or the cable's installation. Where it is considered impossible or impracticable to avoid a sensitive seafloor habitat when anchoring, use of mid-line anchor buoys will be considered, where feasible and considered safe, as a potential measure to reduce and minimize potential impacts from anchor line sweep. Such sensitive habitats are largely absent from the SWDA and are primarily located within portions of the OECC that are outside the 2018 GLD.

The Proponent is also committed to developing an appropriate benthic monitoring framework for New England Wind, should it be necessary, in consultation with BOEM and other agencies as appropriate (See Appendix III-U for the draft framework). The framework for New England Wind will consider the draft Benthic Habitat Monitoring Plan for Vineyard Wind 1 in the Lease Area OCS-A 0501. Due to the similarities in habitat across Lease Areas OCS-A 0501 and OCS-A 0534, the monitoring data collected during the Vineyard Wind 1 monitoring effort may also inform expected impacts to and recovery of benthic communities within the SWDA.

Potential Impacts to Finfish and Invertebrates and Mitigation Measures

Potential Impacts

Section 6.6 of COP Volume III (Finfish and Invertebrates) provides an in-depth analysis of New England Wind's potential impacts to fish species, including commercially important species, as well as measures to mitigate those impacts. Impact producing factors considered include habitat alteration (including impacts from anchoring, jacking-up, cable protection, and scour protection), suspended sediments, sediment deposition, water withdrawals, EMF, cable installation/maintenance, and underwater noise (including pile driving noise and operational noise of WTGs).

Overall, impacts to finfish and invertebrate species are expected to be short-term and localized during the construction and installation of New England Wind stemming from impacts from direct construction mortality, noise, sediment suspension and deposition, and water withdrawals. The high species richness in the SWDA may enhance recovery following any construction and installation related disturbances (MacArthur 1955). The MA WEA was selected by BOEM to

exclude most sensitive fishes and invertebrate habitat and the Offshore Development Area is primarily composed of uniform sandy bottom habitat, which will likely begin recovering quickly after construction is completed relative to other habitat types. Previous research indicated that dynamic, sandy physical habitat begins to recover substantially within a few months of disturbance and can fully recover by measure of abundance within two years and recover by measure of biomass and diversity in two to four years (Dernie et al. 2003; Van Dalfsen and Essink 2001). Some alteration from unconsolidated fine habitat to structured habitat in the SWDA may change species assemblages in the SWDA and attract more structure-oriented species. Cable protection may also be used along the OECC and create hard-bottom habitat.

Construction of New England Wind would introduce underwater noise and may result in increased sound exposure of finfish and invertebrates. Underwater sounds would include repetitive, high-intensity (impulsive) sounds produced by pile driving, and continuous (non-impulsive), lower-frequency sounds produced by vessel propulsion and cable installation. The Proponent conducted acoustic modeling (see Appendix III-M) to estimate the noise propagation of pile driving assuming broadband noise attenuation levels of 6, 10, and 12 decibels (dB) in relation to thresholds of mortality and recoverable injury for fishes with different hearing structures (based on thresholds in Popper et al. 2014). Although the Proponent expects to implement noise attenuation mitigation technology to reduce sound levels by a target of approximately 12 dB or greater, impacts to marine species were conservatively assessed based on 10 dB of noise attenuation. In summary, with 10 dB attenuation, injury to fish from pile driving could extend out to a few kilometers (a few miles) with behavioral impacts up to 14 km (8 NM). However, impairment from pile driving noise is less likely to occur during construction because a soft-start technique will be employed, and mobile fishes and invertebrates will be able to leave the area before full strength pile driving occurs. Behavioral reaction in fish without a swim bladder and those with a swim bladder not involved in hearing may occur within the immediate proximity of other sound-producing construction activities such as vessels and cable installation. However, as stated in the BOEM Environmental Assessment and the Alternative Energy Programmatic Environmental Impact Statement that were prepared for the assessment and designation of wind energy areas by BOEM, regular vessel traffic occurs throughout this area; thus, implying that biological resources in the area are presumably habituated to this noise (BOEM 2007; BOEM 2014).

Mobile species will be able to avoid construction areas and are not expected to be substantially impacted by construction and installation. Impacts to mobile pelagic fishes and invertebrate species include localized and short-term avoidance behavior. These impacts can be minimized or offset through mitigation consisting of a “soft-start” pile driving regime, sound reduction technologies, and efficient construction practices.

Direct mortality may occur to immobile benthic organisms that are in the direct path of construction processes. Mortality of drifting pelagic egg and larval life stages in the Offshore Development Area may occur from water withdrawals by construction vessels. Although eggs and larvae may be entrained and will not survive, loss of many equivalent adults and population-scale impacts are not expected because most of these species produce millions of eggs each year and

already have low adult survival rates. In addition, mortality of pelagic eggs due to increased suspended sediments is expected to be limited because sediment plumes are predicted to have low-concentrations and resettlement will occur quickly (less than six hours in the water column). Burial and mortality of some demersal eggs and sessile organisms are also expected during cable installation in the Offshore Development Area, at locations where sediment deposition is greater than 1 mm (0.04 in) (for the most sensitive demersal eggs) or 20 mm (0.8 in) (for shellfish). However, lethal deposition levels are only expected in small, localized areas adjacent to the cable routes and sediment discharge areas. Burrowing mollusks in the area, such as quahogs, will likely be able to avoid most lethal burial depths and are only expected to be slightly impacted and exhibit short-term avoidance/feeding behavior. Overall, demersal sessile (i.e. less mobile) benthic organisms will incur the brunt of construction impacts, but since the impacted area is only a small portion of the available habitat in the region, significant population-scale impacts are highly unlikely.

In summary, impacts to finfish and invertebrates during O&M of New England Wind are expected to be localized and population-scale impacts are unlikely. Little to no direct mortality would occur, other than potentially during cable repair, which is expected to be rare and localized. The addition of hard structure habitat will add complexity to the area that did not exist before and will likely attract species that prefer structured habitat. The foundations, scour protection, and potential cable protection (if required) may serve as fish aggregating structures and may also alter local food web dynamics and species distribution. Overall, current literature indicates noise generated from the operation of wind farms is minimal and only localized avoidance behaviors are expected; acclimation to the noise over time may occur. The addition of EMFs from submarine cables will likely not have an impact on elasmobranchs or other electro-sensitive fish species because cables will be buried in the substrate or covered with cable protection.

Avoidance, Minimization, and Mitigation Measures

To mitigate the potential impacts of injury to fish from pile driving, New England Wind will apply a soft-start procedure to the pile driving process, which delivers initial pile drives at a lower intensity, allowing fish to move out of the activity area before the full-power pile driving begins. In addition, the Proponent expects to implement noise attenuation mitigation technology to reduce sound levels by a target of approximately 12 dB or greater and adhere to an anticipated time of year restriction on pile driving between January 1 and April 30 to protect North Atlantic right whales (see Section 6.7.4), which may also confer protection to fish that occur within the SWDA during that timeframe. In particular, while there have been no recorded catches of Atlantic sturgeon within the SWDA, this species is known to move offshore into water depths of 20-50 m (66–164 ft) during the winter and early spring (December to March); therefore, the anticipated time of year restriction may also benefit Atlantic sturgeon in the unlikely event that any are present within the SWDA during the winter and early spring months. The WTGs, and ESPs, will also be widely spaced, leaving a large portion of the SWDA undisturbed by WTG and ESP installation.

Offshore export cable installation will avoid important habitats such as eelgrass beds and hard bottom sediments where feasible. Impacts may be minimized using mid-line buoys that are designed to minimize seabed impacts from cable sweep, if feasible and safe, and installation equipment that further minimizes installation impacts on the seabed. In nearshore areas where sensitive resources are located near the potential landfall sites, HDD may be used to minimize disturbance of coastal habitats by drilling underneath them instead of through them.

As discussed under § 11.10.1(C), the Proponent is already working with SMAST to collect pre-construction fisheries data (via trawl and drop camera surveys) within the SWDA. These ongoing surveys have already covered all four calendar seasons of the year prior to any offshore construction activity taking within the SWDA. The Proponent also plans to develop a framework for fisheries studies within the SWDA during and post-construction. In recognition of the regional nature of fisheries science, the Proponent expects that such during- and post-construction studies will involve coordination with other offshore wind energy developers in the MA WEA and RI/MA WEA as well as BOEM, federal and state agencies, fisheries stakeholders, academic institutions, and other stakeholders. The Proponent is already engaging in collaboration with other developers, fishing industry representatives, and state and federal agencies through its participation in ROSA and an RWSE. See the discussion under § 11.10.1(C) for additional details.

Potential Impacts to Recreational Fishing and Mitigation Measures

Potential Impacts

Section 7.5 (Recreation and Tourism [Including Recreational Fishing]) and Section 7.6 (Commercial Fisheries and For-Hire Recreational Fishing) of COP Volume III provide a thorough analysis of New England Wind's potential impact to recreational fisheries, including for-hire reactional fishing, and measures to mitigate those impacts. Impact producing factors evaluated include habitat alteration, vessel traffic, cable installation/maintenance (including impacts from cable protection), navigation hazard, and fish aggregation.

During construction of New England Wind, the construction vessels operating in the SWDA and along the OECC may temporarily preclude recreational boating and fishing activities in the immediate vicinity of construction vessels or cause recreational fishermen to slightly alter their navigation routes (see the discussion under § 11.10.1(C)). As described above, construction activities may affect recreational fishing activities by impacting recreationally-important species.

While the SWDA is targeted by recreational fishermen, other areas within and outside the MA WEA and RI/MA WEA have higher concentrations of recreational fishing activity (Kneebone and Capizzano 2020). The proximity of the SWDA and OECC to numerous productive recreational fishing areas suggests that the highly localized impacts of construction and installation activities will result in only minimal impacts to recreational species.

During O&M, recreational fisheries may be impacted by fish aggregation and potential navigation hazards due to the presence of structures in the Offshore Development Area. As noted under §11.10.1(C), the 1 x 1 NM WTG/ESP layout will facilitate safe navigation through the SWDA. Given the typically smaller size of recreational vessels, navigation impacts through the SWDA are not anticipated.

In fact, New England Wind could result in modest, positive impacts to recreational fisheries. The addition of foundations and scour protection, as well as cable protection in some areas, may act as an artificial reef and provide rocky habitat previously absent from the area. Increases in biodiversity and abundance of fish have been observed around WTG foundations due to attraction of fish species to new structured habitat (Riefolo et al. 2016; Raoux et al. 2017). In the event WTGs aggregate recreationally targeted species, based on the intensity of recreational fishing within the SWDA and its geographic scale, neither congestion effects nor gear conflicts are expected. Anglers' interest in visiting the SWDA may also lead to an increased number of fishing trips out of nearby ports which could support an increase in angler expenditures at local bait shops, gas stations, and other shoreside dependents (Kirkpatrick et al. 2017).

Avoidance, Minimization, and Mitigation Measures

As discussed under § 11.10.1(C), the Proponent will implement measures to avoid, minimize, and mitigate potential impacts to recreational fisheries, including:

- Adopting a 1 x 1 NM WTG/ESP layout to facilitate vessel navigation through the SWDA.
- Maintaining all WTGs/ESPs as PATONs in accordance with USCG guidance.
- Equipping all New England Wind-related vessels and equipment with the required marine navigation lighting and day shapes.
- Using temporary safety buffer zones to improve safety in the vicinity of active work areas.
- Issuing Offshore Wind Mariner Update Bulletins and coordinating with the USCG to provide NTMs.
- Implementing an FCP to facilitate regular and productive communication with fishermen, including recreational fishermen (see Appendix III-E).

Potential Impacts to Commercial Fishing and Mitigation Measures

Potential Impacts

Section 7.6 of COP Volume III (Commercial Fisheries and For-Hire Recreational Fishing) provides a thorough analysis of New England Wind's potential impacts to commercial fisheries and measures to mitigate those impacts. Impact producing factors evaluated include habitat alteration, vessel traffic, cable installation/maintenance (including impacts from cable protection), navigation

hazard, and fish aggregation. Appendix III-I presents the Navigation Safety Risk Assessment, which analyzes existing fishing vessel use within the Offshore Development Area and presents measures to mitigate impacts to navigation within the Offshore Development Area during construction and operations. Appendix III-N provides draft estimates of economic exposure to commercial fisheries resulting from New England Wind.

As described above, impacts to finfish and invertebrates within the SWDA and along the OECC from construction of each Phase of New England Wind, including those species targeted by commercial fishermen, are expected to be short-term and localized. Only a small portion of available habitat in the area will be impacted by construction activities within the SWDA and along the OECC and recovery is expected. While there may be temporary impacts to some commercially important species, availability of these species in nearby waters outside the SWDA suggest that increased fishing effort outside the SWDA could offset any such impacts inside the SWDA.

Additional potential impacts related to Rhode Island-based commercial fisheries are discussed under the response to § 11.10.1(C) above. As described under § 11.10.1(C), a number of factors suggest that any economic impact from New England Wind will be only a small percentage of the estimated economic exposure (i.e. a measure of fishing that occurs within the SWDA). Commercial fishing vessels will continue to have access to the SWDA and OECC as currently permitted by regulation and the east-west 1 x 1 NM layout is expected to accommodate traditional fishing patterns, including the "gentlemen's agreement" regarding the placement of mobile and fixed gear within the WEA. In addition, alternative fishing grounds with a demonstrated higher fishery revenue density are available nearby and may be fished at little to no additional cost. Appendix III-N provides a detailed description of potential economic exposure, potential fishing congestion impacts, and shoreside impacts.

Potential impacts from decommissioning activities would be similar to those associated with construction. Removal of the scour protection and any cable protection from the SWDA may result in a shift in the local finfish and invertebrate species assemblages to pre-construction, non-structure communities. Additionally, once offshore components are removed, there will be no more WTGs, ESPs, foundations, or scour protection within the SWDA and commercial fishing may occur in any orientation, though the WTGs and ESPs will no longer serve as aids to navigation.

Avoidance, Minimization, and Mitigation Measures

The measures that the Proponent will implement to avoid, minimize, and mitigate potential impacts to commercial fisheries are described in detail under § 11.10.1(C). Most notably, the Proponent is proposing an east-west 1 x 1 NM WTG/ESP layout to facilitate ongoing transit and fishing activities by commercial fishermen and to accommodate traditional fishing patterns.

§ 11.10.1(G)

For the purposes of fisheries policies and standards as summarized in Ocean SAMP Chapter 5, Commercial and Recreational Fisheries, §§ 5.3.1 and 5.3.2 of this Subchapter, mitigation is defined as a process to make whole those fisheries user groups, including related shore-side seafood processing facilities, that are adversely affected by offshore development proposals or projects. Mitigation measures shall be consistent with the purposes of duly adopted fisheries management plans, programs, strategies and regulations of the agencies and regulatory bodies with jurisdiction over commercial and recreational fisheries, including but not limited to those set forth above in § 11.9.4(B) of this Part. Mitigation shall not be designed or implemented in a manner that substantially diminishes the effectiveness of duly adopted fisheries management programs. Mitigation measures may include, but are not limited to, compensation, effort reduction, habitat preservation, restoration and construction, marketing, and infrastructure and commercial fishing fleet improvements. Where there are potential impacts associated with proposed projects, the need for mitigation shall be presumed (see § 11.10.1(F) of this Part). Mitigation shall be negotiated between the Council staff, the FAB, the project developer, and approved by the Council. The final mitigation will be the mitigation required by the CRMC and included in the CRMC's Assent for the project or included within the CRMC's federal consistency decision for a project's federal permit application.

Measures to mitigate impacts to benthic resources and fish species, including measures to mitigate the potential impacts of injury to fish from pile driving, are summarized under § 11.10.1(F) above and described in detail in Sections 6.5.2 and 6.6.2 of COP Volume III as well as Section 5 of Appendix III-F.

Measures to mitigate impacts to commercial and recreational fisheries are described in Sections 7.5.2, 7.6.3, and 7.6.4 of COP Volume III and summarized under § 11.10.1(C) and § 11.10.1(F) above. As stated under § 11.10.1(C), in direct response to recommendations from CRMC, the New England Wind WTGs and ESPs will be oriented in fixed east-to-west rows and north-to-south columns with one nautical mile (1.85 km) spacing between WTG/ESP positions. The Proponent has developed an assessment of the economic exposure of Rhode Island commercial fisheries to New England Wind (see Appendix III-N).

§ 11.10.1(H)

The Council recognizes that moraine edges, as illustrated in Figures 3 and 4 in § 11.10.2 of this Part, are important to commercial and recreational fishermen. In addition to these mapped areas, the FAB may identify other edge areas that are important to fisheries within a proposed project location. The Council shall consider the potential adverse impacts of future activities or projects on these areas to Rhode Island's commercial and recreational fisheries. Where it is determined that there is a significant adverse impact, the Council will modify or deny activities that would impact these areas. In addition, the Council will require assent holders for offshore developments to employ micro-siting techniques in order to minimize the potential impacts of such projects on these edge areas.

COP Volume II provides a comprehensive analysis of the data collected during geophysical and geotechnical surveys conducted for New England Wind. COP Volume II confirms there are no known glacial moraines within the SWDA and portions of the OECC located within the 2018 GLD (see Section 2.1 of COP Volume II-A, particularly Figure 2.1-2). In addition, Section 6.5 of COP Volume III and Appendix III-F contain a detailed description of benthic habitats and Essential Fish Habitat, respectively, within the Offshore Development Area. Popular and other important areas to commercial and recreational fisheries are discussed in Sections 7.5 and 7.6 of COP Volume III.

§ 11.10.1(I)

The finfish, shellfish, and crustacean species that are targeted by commercial and recreational fishermen rely on appropriate habitat at all stages of their life cycles. While all fish habitat is important, spawning and nursery areas are especially important in providing shelter for these species during the most vulnerable stages of their life cycles. The Council shall protect sensitive habitat areas where they have been identified through the Site Assessment Plan or Construction and Operation Plan review processes for offshore developments as described in § 11.10.5(C) of this Part.

Section 6.5 of COP Volume III contains a detailed description of benthic habitats within the Offshore Development Area. Section 6.6 of COP Volume III contains an extensive discussion of fish and invertebrate species within the Offshore Development Area. Essential Fish Habitats are discussed in Appendix III-F. These sections specifically address the life histories of fishes found in the Offshore Development Area, including species targeted by commercial and recreational fishermen, and their habitats. For example, Section 6.6 describes the distribution and temporal persistence of longfin squid (*Doryteuthis pealeii*) egg mops throughout the Offshore Development Area. Essential Fish Habitat for the different life stages of longfin squid is discussed in Section 4 of Appendix III-F.

As described in Section 6.5 of COP Volume III, seafloor conditions within the SWDA are generally homogenous and dominated by sand and silt-sized sediments. No state-managed artificial reefs have been documented within the SWDA. Other types of potentially sensitive or unique benthic habitat types, such as live bottom, are also not present based on the Shallow Hazards Assessment discussed in Section 3 of COP Volume II. Similarly, no observations of living bottom have been made within the SWDA based on data available on the NOAA Deep-Sea Coral Data Portal (NOAA 2019).

The Proponent has conducted surveys of epifauna and infauna along the OECC using underwater video transects and sediment grab samples, respectively. Soft Bottom habitats are the most common along the OECC and make up approximately 59% of the entire corridor. These areas typically contain a sandy surficial layer that is either highly mobile and comprised of migrating bedforms or flat and stable, mostly void of active sediment transport features. Several locations within Massachusetts waters outside the 2018 GLD (i.e. within Muskeget Channel) contained coarse deposits and hard bottom habitats consisting of pebble-cobble habitat with sulfur sponge (*Cliona celata*) communities.

Impacts to finfish, shellfish, and crustacean species (as described in Sections 6.5 and 6.6 of COP Volume III) are summarized above under § 11.10.1(F). Most potential impacts to finfish, shellfish, and crustacean species are expected to be temporary, with some long-term direct habitat alteration from the installation of WTG/ESP foundations, scour protection, and potential cable protection. However, this habitat alteration for both Phases would only impact approximately 1.17 km^2 (289 acres) of the 453 km^2 (111,939 acres) SWDA, which is 0.26% of the SWDA.

§ 11.10.1(J)

Any large-scale offshore development, as defined in this Part, shall require a meeting between the HAB, the applicant, and the Council staff to discuss potential marine resource and habitat-related issues such as, but not limited to, impacts to marine resource and habitats during construction and operation, project location, construction schedules, alternative locations, project minimization, measures to mitigate the potential impacts of proposed projects on habitats and marine resources, and the identification of important marine resource and habitat areas. For any state permit process for a large-scale offshore development, this meeting shall occur prior to submission of the state permit application. The Council cannot require a pre-application meeting for federal permit applications, but the Council strongly encourages applicants for any large-scale offshore development, as defined in this Part, in federal waters to meet with the HAB and the Council staff prior to the submission of a federal application, lease, license, or authorization. However, for federal permit applicants, a meeting with the HAB shall be necessary data and information required for federal consistency reviews for purposes of starting the CZMA six-month review period for federal license or permit activities under 15 C.F.R. Part 930, Subpart D, and OCS Plans under 15 C.F.R. Part 930, Subpart E, pursuant to 15 C.F.R. § 930.58(a)(2).

As noted under § 11.10.1(D), the Proponent met with CRMC staff on July 13, 2020 to provide an introductory overview of New England Wind. The Proponent will meet with the Habitat Advisory Board (HAB) and the CRMC staff to discuss potential marine resource and habitat-related issues associated with New England Wind, including ongoing and planned fisheries studies, on a date and time provided by CRMC.

The COP includes detailed information on the potential impacts to marine resource and habitats during construction and operation, project location, construction schedules, alternative locations, project minimization, measures to mitigate the potential impacts of proposed projects on habitats and marine resources, and the identification of important marine resource and habitat areas. See Section 2 (New England Wind location) and Sections 3.1.1.3, 3.3.1.1, 4.1.1.3, and 4.3.1.1 (construction schedule) of COP Volume I. See also Section 6.5 (benthic resources), Section 6.6 (finfish and invertebrates), Section 6.7 (marine mammals), Section 6.8 (sea turtles), and Appendix III-F (Essential Fish Habitat) of COP Volume III.

§ 11.10.1(K)

The potential impacts of a proposed project on cultural and historic resources will be evaluated in accordance with the National Historic Preservation Act and Antiquities Act, and the Rhode Island Historical Preservation Act and Antiquities Act as applicable. Depending on the project and the lead federal agency, the projects that may impact marine historical or archaeological resources identified through the joint agency review process may require a marine archaeology assessment that documents actual or potential impacts the completed project will have on submerged cultural and historic resources.

As described in Section 7.3 of COP Volume III, the marine archaeological resources assessment report for New England Wind was prepared from the 2020 geophysical and geological field surveys, which were processed and analyzed by a Qualified Marine Archaeologist in accordance with BOEM guidelines (i.e. the lead federal agency responsible for reviewing New England Wind). As listed in Table 1.4-1 of COP Volume I, the complete report is included as COP Volume II-D.

Avoidance, minimization, and mitigation measures for submarine historical and archaeological resources will be determined in consultation with BOEM, Massachusetts Historical Commission (MHC), and other relevant consulting parties through the National Historic Preservation Act (NHPA) Section 106 process (36 CFR § 800.3 – 800.13).

§ 11.10.1(L)

Guidelines for marine archaeology assessment in the Ocean SAMP area can be obtained through the RIHPHC in their document, "Performance Standards and Guidelines for Archaeological Projects: Standards for Archaeological Survey" (RIHPHC 2007), or the lead federal agency responsible for reviewing the proposed development.

As described under § 11.10.1(K), the marine archaeological resources assessment will be prepared in accordance with the requirements of the federal agency responsible for reviewing New England Wind (i.e. BOEM).

§ 11.10.1(M)

The potential non-physical impacts of a proposed project on cultural and historic resources shall be evaluated in accordance with 36 C.F.R. § 800.5, assessment of adverse effects, including the introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features. Depending on the project and the lead federal agency, the Ocean SAMP Interagency Working Group may require that a project undergo a visual impact assessment that evaluates the visual impact a completed project will have on onshore cultural and historic resources.

Rhode Island (including Block Island) falls beyond the maximum theoretical area of expected visibility of New England Wind due to the Earth's curvature.

§ 11.10.1(N)

A visual impact assessment may require the development of detailed visual simulations illustrating the completed project's visual relationship to onshore properties that are designated National Historic Landmarks, listed on the National Register of Historic Places, or determined to be eligible for listing on the National Register of Historic Places. Assessment of impacts to specific views from selected properties of interest may be required by relevant state and federal agencies to properly evaluate the impacts and determination of adverse effect of the project on onshore cultural or historical resources.

There are no areas along the Rhode Island coast from which New England Wind is visible.

§ 11.10.1(O)

A visual impact assessment may require description and images illustrating the potential impacts of the proposed project.

There are no areas along the Rhode Island coast from which New England Wind is visible.

3.3 Areas of Particular Concern § 11.10.2

§ 11.10.2(A)

Areas of Particular Concern (APCs) have been designated in state waters through the Ocean SAMP process with the goal of protecting areas that have high conservation value, cultural and historic value, or human use value from large-scale offshore development. These areas may be limited in their use by a particular regulatory agency (e.g., shipping lanes), or have inherent risk associated with them (e.g., unexploded ordnance locations), or have inherent natural value or value assigned by human interest (e.g., glacial moraines, historic shipwreck sites). Areas of Particular Concern have been designated by reviewing habitat data, cultural and historic features data, and human use data that has been developed and analyzed through the Ocean SAMP process. Currently designated Areas of Particular Concern are based on current knowledge and available datasets; additional Areas of Particular Concern may be identified by the Council in the future as new datasets are made available. Areas of Particular Concern may be elevated to Areas Designated for Preservation in the future if future studies show that Areas of Particular Concern cannot risk even low levels of large-scale offshore development within these areas. Areas of Particular Concern include:

1. *Areas with unique or fragile physical features, or important natural habitats;*
2. *Areas of high natural productivity;*
3. *Areas with features of historical significance or cultural value;*
4. *Areas of substantial recreational value;*
5. *Areas important for navigation, transportation, military, and other human uses; and*
6. *Areas of high fishing activity.*

Please see the response to § 11.10.1(B). No physical structures of New England Wind are located within an APC in Rhode Island state waters designated in the Ocean SAMP. The SWDA is located within federal waters in BOEM's designated MA WEA and the OECC is within federal waters and Massachusetts state waters.

§ 11.10.2(B)

The Council has designated the areas listed below in § 11.10.2(C) of this Part in state waters as Areas of Particular Concern. All large-scale, small-scale, or other offshore development, or any portion of a proposed project, shall be presumptively excluded from APCs. This exclusion is rebuttable if the applicant can demonstrate by clear and convincing evidence that there are no practicable alternatives that are less damaging in areas outside of the APC, or that the proposed project will not result in a significant alteration to the values and resources of the APC. When evaluating a project proposal, the Council shall not consider cost as a factor when determining whether practicable alternatives exist. Applicants which successfully demonstrate that the presumptive exclusion does not apply to a proposed project because there are no practicable alternatives that are less damaging in areas outside of the APC must also demonstrate that all feasible efforts have been made to avoid damage to APC resources and values and that there will be no significant alteration of the APC resources or values. Applicants successfully demonstrating that the presumptive exclusion does not apply because the proposed project will not result in a significant alteration to the values and resources of the APC must also demonstrate that all feasible efforts have been made to avoid damage to the APC resources and values. The Council may require a successful applicant to provide a mitigation plan that protects the ecosystem. The Council will permit underwater cables, only in certain categories of Areas of Particular Concern, as determined by the Council in coordination with the Joint Agency Working Group. The maps listed below in § 11.10.2(C) of this Part depicting Areas of Particular Concern may be superseded by more detailed, site-specific maps created with finer resolution data.

Please see the response to § 11.10.2(A). No physical structures of New England Wind are located within an APC designated in the Ocean SAMP under § 11.10.2(C).

§ 11.10.2(C)

Areas of particular concern that have been identified in the Ocean SAMP area in state waters are described as follows:

1. *Historic shipwrecks, archeological or historical sites and their buffers as described in Ocean SAMP Chapter 4, Cultural and Historic Resources, Sections 440.1.1 through 440.1.4, are Areas of Particular Concern. For the latest list of these sites and their locations please refer to the Rhode Island State Historic Preservation and Heritage Commission.*

2. *Offshore dive sites within the Ocean SAMP area, as shown in Figure 2 in § 11.10.2 of this Part, are designated Areas of Particular Concern. The Council recognizes that offshore dive sites, most of which are shipwrecks, are valuable recreational and cultural ocean assets and are important to sustaining Rhode Island's recreation and tourism economy.*

3. *Glacial moraines are important habitat areas for a diversity of fish and other marine plants and animals because of their relative structural permanence and structural complexity. Glacial moraines create a unique bottom topography that allows for habitat diversity and complexity, which allows for species diversity in these areas and creates environments that exhibit some of the highest biodiversity within the entire Ocean SAMP area. The Council also recognizes that because glacial moraines contain valuable habitats for fish and other marine life, they are also important to commercial and recreational fishermen. Accordingly, the Council shall designate glacial moraines as identified in Figures 3 and 4 in § 11.10.2 of this Part as Areas of Particular Concern.*

4. *Navigation, military, and infrastructure areas including: designated shipping lanes, precautionary areas, recommended vessel routes, ferry routes, dredge disposal sites, military testing areas, unexploded ordnance, pilot boarding areas, anchorages, and a coastal buffer of 1 km as depicted in Figure 5 in § 11.10.2 of this Part are designated as Areas of Particular Concern. The Council recognizes the importance of these areas to marine transportation, navigation and other activities in the Ocean SAMP area.*

5. *Areas of high fishing activity as identified during the pre-application process by the Fishermen's Advisory Board, as defined in § 11.3(E) of this Part, may be designated by the Council as Areas of Particular Concern.*

6. *Several heavily-used recreational boating and sailboat racing areas, as shown in Figure 6 in § 11.10.2 of this Part, are designated as Areas of Particular Concern. The Council recognizes that organized recreational boating and sailboat racing activities are concentrated in these particular areas, which are therefore important to sustaining Rhode Island's recreation and tourism economy.*

7. *Naval fleet submarine transit lanes, as described in Ocean SAMP Chapter 7, Marine Transportation, Navigation, and Infrastructure Section 720.7, are designated as Areas of Particular Concern.*

8. *Other Areas of Particular Concern may be identified during the pre-application review by state and federal agencies as areas of importance.*

No physical structures of New England Wind are located within an APC designated in the Ocean SAMP under § 11.10.2(C).

§ 11.10.2(D)

Developers proposing projects for within the renewable energy zone as described in § 11.10.1(B) of this Part shall adhere to the requirements outlined in § 11.10.2 of this Part regarding Areas of Particular Concern in state waters, including any Areas of Particular Concern that overlap the renewable energy zone (see Figure 7 in § 11.10.2 of this Part).

New England Wind is not proposed within the Renewable Energy Zone or any APCs located within Rhode Island state waters.

3.4 Prohibitions and Areas Designated for Preservation (§ 11.10.3)

§ 11.10.3(A)

Areas Designated for Preservation are designated in the Ocean SAMP area in state waters for the purpose of preserving them for their ecological value. Areas Designated for Preservation were identified by reviewing habitat and other ecological data and findings that have resulted from the Ocean SAMP process. Areas Designated for Preservation are afforded additional protection than Areas of Particular Concern (see § 11.10.2 of this Part) because of scientific evidence indicating that large-scale offshore development in these areas may result in significant habitat loss. The areas described in § 11.10.3 of this Part are designated as Areas Designated for Preservation. The Council shall prohibit any large-scale offshore development, mining and extraction of minerals, or other development that has been found to be in conflict with the intent and purpose of an Area Designated for Preservation. Underwater cables are exempt from this prohibition. Areas Designated for Preservation include:

1. *Ocean SAMP sea duck foraging habitat in water depths less than or equal to 20 meters [65.6 feet] (as shown in Figure 8 in § 11.10.3 of this Part) are designated as Areas Designated for Preservation due to their ecological value and the significant role these foraging habitats play to avian species, and existing evidence suggesting the potential for permanent habitat loss as a result of offshore wind energy development. The current research regarding sea duck foraging areas indicates that this habitat is depth limited and generally contained within the 20 meter depth contour. It is likely there are discreet areas within this region that are prime feeding areas, however at present there is no long-term data set that would allow this determination. Thus, the entire area within the 20 meter contour is being protected as an Area Designated for Preservation until further research allows the Council and other agencies to make a more refined determination.*

2. *The mining and extraction of minerals, including sand and gravel, from tidal waters and salt ponds is prohibited. This prohibition does not apply to dredging for navigation purposes, channel maintenance, habitat restoration, or beach replenishment for public purposes.*

3. *The Council shall prohibit any offshore development in areas identified as Critical Habitat under the Endangered Species Act.*

4. *Dredged material disposal, as defined and regulated in § 1.3.1(I) of this Chapter, is further limited in the Ocean SAMP area by the prohibition of dredged material disposal in the following Areas of Particular Concern as defined in § 11.10.2 of this Part: historic shipwrecks, archaeological, or historic sites; offshore dive sites; navigation, military, and infrastructure areas; and moraines. Beneficial reuse may be allowed in Areas Designated for Preservation, whereas all other dredged material disposal is prohibited in those areas. All disposal of dredged material will be conducted in accordance with the U.S. EPA and U.S. Army Corps of Engineers' manual, Evaluation of Dredged Material Proposed for Ocean Disposal.*

New England Wind is not located within an area designated in the Ocean SAMP as an Area Designated for Preservation in state waters.

3.5 Other Areas (§ 11.10.4)

§ 11.10.4(A)

Large-scale projects or other development which is found to be a hazard to commercial navigation shall avoid areas of high intensity commercial marine traffic in state waters. Avoidance shall be the primary goal of these areas. Areas of high intensity commercial marine traffic are defined as having 50 or more vessel counts within a 1 km by 1 km grid, as shown in Figure 9 in § 11.10.4(B) of this Part.

No physical structures of New England Wind that would pose a hazard to commercial navigation are located within Rhode Island state waters.

Section 7.8 of COP Volume III and the Navigation Safety Risk Assessment provided as Appendix III-I discuss existing levels of commercial marine traffic in the Offshore Development Region, the potential impacts of New England Wind on vessel traffic and navigation, and measures to avoid, minimize, and mitigate those impacts. The findings contained in Section 7.8 and Appendix III-I are summarized below.

Temporary Impacts to Navigation and Vessel Traffic During Construction

Construction of New England Wind will require the use of construction and support vessels that will transit within the SWDA, along the OECC, and along vessel routes between the SWDA, OECC, and one or more ports. The Proponent has identified several port facilities in Massachusetts, Rhode Island, Connecticut, New York, and New Jersey that may be used for major construction staging activities, which may require vessel transits through Rhode Island state waters (see Sections 3.2.2.5 and 4.2.2.5 of COP Volume I).

Specific to Rhode Island, New England Wind may use the Port of Davisville, the Port of Providence (ProvPort), and/or South Quay Terminal for major construction staging activities. The Proponent may use one or more of these ports for frequent crew transfer and to offload/load shipments of components, store components, prepare them for installation, and then load components onto jack-up vessels or other suitable vessels for delivery to the SWDA for installation. Some

component fabrication and assembly may occur at these ports as well. Activities such as refueling, restocking supplies, sourcing parts for repairs, vessel repairs, vessel mobilization/demobilization, some crew transfer, and other construction staging activities may occur out of other Rhode Island ports. These activities would occur at industrial ports suitable for such uses and would be well within the realm of normal port activities.

At the early planning stages of New England Wind, it is challenging to precisely quantify the number of vessels and vessel trips associated with the construction of New England Wind. As indicated in Table 7.8-3 of COP Volume III, it is estimated that, on average, there could be six vessel trips per day to the Port of Davisville and South Quay Terminal and three trips per day to ProvPort. During the peak construction period, there could be as many as 13 trips per day to the Port of Davisville and South Quay Terminal and six trips per day to ProvPort. However, these estimates are highly dependent on the final construction schedule for each Phase, the number of WTGs and ESPs installed, the final design of the offshore facilities, the ports ultimately used, and the logistics solution used to achieve compliance with the Jones Act. For these reasons, the estimate of vessel counts, and vessel trips provided in Section 7.8.2 of COP Volume III are likely conservative and subject to change.

Vessel traffic associated with the construction of each Phase of New England Wind is not anticipated to represent a significant increase over the current levels of vessel traffic throughout the Offshore Development Region. The highest density of vessel traffic in the Offshore Development Region occurs outside the MA WEA and RI/MA WEA and primarily within traffic separation schemes, fairways, precautionary areas, and recommended routes. Thus, New England Wind avoids areas with the highest intensity commercial marine traffic. As described Appendix III-I, because the SWDA is not heavily trafficked, construction and installation activities are not anticipated to significantly affect the limited vessel traffic within the SWDA. The Proponent will continue to work with ferry operators, harbor pilots, and other vessel operators to ensure any impacts to commercial vessel traffic are minimized to the greatest extent practicable.

During Phases 1 and 2, the construction and installation vessels operating in the SWDA or along the OECC may temporarily preclude other vessels from transiting in the immediate vicinity of construction vessels or cause vessels to make adjustments to planned routes or transit times to avoid the construction area. Temporary safety buffer zones may be established around work areas during construction of each Phase (see the response to § 11.10.1(C)). Near ports and adjacent waterways, New England Wind vessels may require other vessels transiting within navigation channels, in close proximity to obstructions, or within other areas of confined navigation to adjust course, where possible, or adjust their departure/arrival times to avoid navigational conflicts. However, navigational conflicts are not anticipated to be a common occurrence.

The Proponent will provide Offshore Wind Mariner Update Bulletins and coordinate with the USCG to issue NTMs advising other vessel operators of construction and installation activities. The Proponent will also coordinate with state and local law enforcement, marine patrol, port

authorities, and commercial operators. With the mitigation measures described in the response to § 11.10.1(C) and Section 7.8.2.1.5 of COP Volume III, the increased vessel traffic is not anticipated to result in significant disruption of vessel traffic in and around the Rhode Island ports.

Impacts to Navigation and Vessel Traffic During Operations

As described Appendix III-I, because the SWDA is not heavily trafficked, vessel activities during O&M are not anticipated to significantly affect the limited vessel traffic occurring within the SWDA. O&M vessels will operate at the OECC infrequently, primarily to conduct inspections of the offshore export cables on a scheduled maintenance timetable (see Sections 3.3.2 and 4.3.2 of COP Volume I). Few impacts to existing vessel traffic, including passenger vessel traffic, are anticipated from O&M activities along the OECC.

Regarding port usage during O&M, New England Wind vessels will primarily travel between the O&M facilities (likely located in Bridgeport, Vineyard Haven, and/or New Bedford Harbor) and the SWDA. While the Proponent does not plan to establish O&M facilities in Rhode Island, the Proponent may use ports in Rhode Island to support O&M activities, as necessary (see Sections 3.2.2.6 and 4.2.2.6 of COP Volume I). Because an average of fewer than two O&M vessels will transit to and/or from the O&M facilities on any given day, vessel activities during O&M are not expected to adversely affect other commercial or recreational vessel traffic.

As described in the response to § 11.10.1(C), the SWDA will be open to marine traffic, and no permanent vessel restrictions are proposed within the SWDA or along the OECC during O&M for either Phase. Increased risks to safe navigation may result from the presence of WTGs and ESPs in the SWDA where only open ocean previously existed. However, New England Wind's 1 x 1 NM WTG/ESP layout described under § 11.10.1(C) is consistent with USCG's recommendations that WTG layouts within the WEAs should be developed along a standard and uniform grid pattern with at least three lines of orientation and standard spacing. In general, the USCG found that a standard grid array with multiple lines of orientation would: 1) improve safe navigation by increasing the number of directional options for vessels to transit through the WEAs; and 2) alleviate concerns about funneling vessel traffic into a navigation safety corridor by providing sufficient spacing and multiple options to transit safely through the WEAs. As stated in the USCG's (2020) MARIPARS, "A standard and uniform grid pattern for offshore structures with multiple straight orientations throughout the MA/RI WEA would maximize safe navigation within the MA/RI WEA." See Section 7.8 of COP Volume III and the Navigation Safety Risk Assessment in Appendix III-I for additional discussion regarding potential impacts to vessel traffic and navigation within the SWDA.

Finally, as described under § 11.10.1(C), the submarine cables within the SWDA and along the OECC are not anticipated to adversely impact vessel activities. The target burial depth for all inter-array, inter-link, and offshore export cables is 1.5 to 2.5 m (5 to 8 ft) below the seafloor, which is more than twice the burial depth that is required to protect the cables from fishing activities (e.g. the use of bottom trawl gear) and also provides a maximum of 1 in 100,000 year probability of anchor strike, which is considered a negligible risk.

3.6 Application Requirements (§ 11.10.5)

§ 11.10.5(A)

For the purposes of this document, the phrase "'necessary data and information'" shall refer to the necessary data and information required for federal consistency reviews for purposes of starting the Coastal Zone Management Act (CZMA) six-month review period for federal license or permit activities under 15 C.F.R. Part 930, Subpart D, and OCS Plans under 15 C.F.R. Part 930, Subpart E, pursuant to 15 C.F.R. § 930.58(a)(2). Any necessary data and information shall be provided before the six-month CZMA review period begins for a proposed project or at the time the applicant provides the consistency certification. It should be noted that other federal and state agencies may require other types of data or information as part of their review processes.

The Proponent will provide any necessary data and information before the six-month CZMA review period for New England Wind begins. The remaining provisions of § 11.10.5 are specific to the application requirements for projects occurring in state waters. The New England Wind COP has been submitted in accordance with BOEM's regulations governing COP submissions. Table 1.4-1 of COP Volume I lists BOEM's COP regulations and where the corresponding information can be found throughout the New England Wind COP.

3.7 Monitoring Requirements (§ 11.10.6)

§ 11.10.6(A)

The Council in coordination with the Joint Agency Working Group, as described in § 11.9.7(I) of this Part, shall determine requirements for monitoring as specified in § 11.9.9 of this Part. For CZMA federal consistency purposes the Council must identify any baseline assessments and construction monitoring activities during its CZMA six-month review of the COP.

New England Wind will be carefully monitored during construction, operation, and decommissioning. The Proponent has already conducted numerous surveys to characterize the Offshore Development Area including, but not limited to, boat-based offshore avian surveys, fisheries surveys, and benthic habitat surveys. The Proponent's pre-, during-, and post-construction surveys and monitoring will generate a substantial body of environmental, fisheries, and other data, further augmenting scientific understanding of the Offshore Development Area. The Proponent has collaborated and will continue to collaborate with federal and state agencies to design surveys that align with established survey methods so that the data generated can be compared to previous data and ongoing regional studies to support a regional, longer-term study program to monitor the regional impacts of offshore wind development.

Resource-specific baseline assessments and construction monitoring plans are discussed throughout Volume III of the COP. Specific examples of such monitoring plans include but are not limited to:

- **Fisheries Studies:** As described in the responses to § 11.10.1(C) and § 11.10.1(F) as well as Sections 4.1, 6.6, and 7.6 of COP Volume III, the Proponent is committed to fisheries science and research as it relates to offshore wind energy development. The Proponent is already working with SMAST to collect pre-construction fisheries data (via trawl and drop camera surveys) within the SWDA. The Proponent plans to develop a framework for fisheries studies within the SWDA during and post-construction. The Proponent expects the development of the fisheries studies will be undertaken in coordination with other offshore wind energy developers, BOEM, federal and state agencies, fisheries stakeholders, academic institutions, and other stakeholders. The Proponent is already engaging in collaboration with other developers, fishing industry representatives, and state and federal agencies through its participation in ROSA and an RWSE. The survey and monitoring work the Proponent will conduct will generate a substantial body of environmental, fisheries, and other data, all of which will be available in the public domain in a manner consistent with other academic research.

- **Benthic Habitat Monitoring**: As described under § 11.10.1(F), the Proponent is committed to developing an appropriate benthic monitoring framework for New England Wind, should it be necessary, in consultation with BOEM and other agencies as appropriate (See Appendix III-U for the draft framework). The framework for New England Wind will consider the draft Benthic Habitat Monitoring Plan for Vineyard Wind 1 in Lease Area OCS-A 0501.

It is expected that New England Wind's monitoring plans will continue to be refined through the federal review and approval process.

4.0 CONCLUSION

The Proponent has demonstrated that the proposed action described herein and in the New England Wind COP complies with the applicable enforceable policies of Rhode Island's approved Coastal Resource Management Program and will be conducted in a manner consistent with such Program.

5.0 REFERENCES AND INCORPORATION BY REFERENCE

[BOEM] Bureau of Ocean Energy Management. 2007. Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf. Final Environmental Impacts Statement. OCS EIS/EA MMS 2007-046. A https://www.boem.gov/Guide-To-EIS/

[BOEM] Bureau of Ocean Energy Management. 2013. Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585.

[BOEM] Bureau of Ocean Energy Management. 2014. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts: Revised Environmental Assessment. OCS EIS/EA BOEM 2014-603. US Department of the Interior, Bureau of Ocean Energy Management, Herndon, VA. 674 pp. http://www.boem.gov/Revised-MA-EA-2014/

[BOEM] Bureau of Ocean Energy Management. 2018. Vineyard Wind offshore energy project Draft Environmental Impact Statement (DEIS). [accessed 2019 July]. https://www.boem.gov/Vineyard-Wind-EIS/

[NOAA] National Oceanic and Atmospheric Administration [Internet]. NOAA Deep-Sea Coral Data Portal. NOAA's Deep Sea Coral Research and Technology Program (DSCRTP). 2019. https://deepseacoraldata.noaa.gov/website/AGSViewers/DeepSeaCorals/mapSites.htm

[NOAA] National Oceanic and Atmospheric Administration. 2021. Socioeconomic impacts of Atlantic offshore wind development. [updated 2021 March 11; accessed 2021 May 10]. https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development

[USCG] United States Coast Guard. 2020. The areas offshore of Massachusetts and Rhode Island Port Access Route Study (MARIPARS). USCG-2019-0131. [accessed 2020 May 27]. https://www.regulations.gov/document?D=USCG-2019-0131-0101

Baird. 2019. Vessel navigation through the Proposed Rhode Island/Massachusetts and Massachusetts Wind Energy Areas. 13057.301.R1.RevD. Letter to USCG Proposed layout from RI-MA Leaseholders. (USCG-2019-0131-0046). https://www.regulations.gov/document?D=USCG-2019-0131-0046

Dernie KM, Kaiser MJ, Warwick RM. 2003. Recovery rates of benthic communities following physical disturbance. J Anim Ecol. 72(6):1043-1056.

Glasby TM, Connell SD, Holloway MG, Hewitt CL. 2007. Nonindigenous biota on artificial structures: could habitat creation facilitate biological invasions? Marine Biology. 151: 887–895.

Hille Ris Lambers R, ter Hofstede R. 2009. Refugium effects of the MEP NSW Windpark on fish: progress report 2007. s.l.: in interim report demersal fish: IMARES Institute for Marine Resources & Ecosystem Studies.

Kirkpatrick AJ, Benjamin S, DePiper G, Murphy T, Steinbeck S, Demarest C. 2017. Socio-Economic impact of outer continental shelf wind energy development on fisheries in the U.S. Atlantic. OCS Study BOEM 2017-012. Prepared under BOEM Interagency Agreement No: M12PG00028 by National Oceanic and Atmospheric Administration National Marine Fisheries Service Northeast https://espis.boem.gov/final%20reports/5580.pdf

Kneebone J, Cappizzano C. 2020. A multifaceted assessment of baseline recreational fishing effort for highly migratory species in southern New England and the associated wind energy areas.

Langhamer O. 2012. Artificial reef effect in relation to offshore renewable energy conversion: state of the art. Sci World J. (2012):8 p. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3541568/pdf/TSWJ2012-386713.pdf.

Linnane A, Ball B, Mercer JP, Van der Meeren G, Bannister C, Mazzoni D, Munday B, Ringvold H. 1999. Understanding the factors that influence European lobster recruitment, a Trans-European study of cobble fauna. J. Shellfish Res. 18(2): 719–720.

Løkkeborg S, Humborstad OB, Jørgensen T, Soldal AV. 2002. Spatio-temporal variations in gillnet catch rates in the vicinity of North Sea oil platforms. ICES Journal of Marine Science. 59: 294-299.

MacArthur R. 1955. Fluctuations of animal populations and a measure of community stability. Ecology. 36: 533–536.

Popper AN, Hawkins AD, Fay RR, Mann DA, Barto lS, Carlson TJ, Coombs S, Ellison WT, Gentry RL, Halvorsen MB et al. Sound exposure guidelines for fishes and sea turtles: A Technical Report prepared by ANSI-Accredited Standards Committee S3/SC1 and registered with ANSI. Cham, Switzerland: Springer International Publishing; 2014.

Raoux A, Tecchio S, Pezy JP, Lassalle G, Degraer S, Wilhelmsson D, Cachera M, Ernande B, Le Guen C, Haraldsson M, Grangeré K. 2017. Benthic and fish aggregation inside an offshore wind farm: Which effects on the trophic web functioning? Ecological Indicators, 72, pp.33-46.

Reubens J, Degraer S, Vincx M. 2013. Offshore wind farms significantly alter fish community structure - Aggregation of Atlantic cod and pouting. Environmental impacts of offshore wind farms in the Belgian part of the North Sea: learning from the past to optimise future monitoring programmes. Royal Belgian Institute of Natural Sciences (RBINS). pp. 115-121.

Riefolo L, Lanfredi C, Azzellino A, Tomasicchio GR, Felice DA, Penchev V, Vicinanza D. Offshore wind turbines: An overview of the effects on the marine environment. Presented at: 26th International Ocean and Polar Engineering Conference 2016. International Society of Offshore and Polar Engineers. 2016 June; Rhodes, Greece.

Stenberg C, Støttrup J, Deurs MV, Berg CW, Dinesen GE, Mosegaard H, Grome T, Leonhard SB. 2015. Long-term effects of an offshore wind farm in the North Sea on fish communities. Mar Ecol Prog Ser. 528: 257-265.

Van Dalfsen JA, Essink K. 2001. Benthic community response to sand dredging and shoreface nourishment in Dutch coastal waters. *Senckenbergiana marit*. 31(2):329-332