Department of Energy
Golden Field Office
15013 Denver West Parkway
Golden, Colorado 80401

DOE/EA-1985

FINDING OF NO SIGNIFICANT IMPACT

Virginia Offshore Wind Technology Advancement Project on the Atlantic Outer Continental Shelf Offshore Virginia

AGENCY: U.S. Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE is proposing to provide federal funding to Virginia Electric and Power Company, a wholly owned subsidiary of Dominion Resources, Inc. (Dominion) to support the development of an offshore wind renewable energy facility, the Virginia Offshore Wind Technology Advancement Project (VOWTAP), off the coast of Virginia (Proposed Project).[1]

The Proposed Project consists of two 6 megawatt (MW) wind turbine generators (WTGs) located in federal waters approximately 24 nautical miles from Virginia Beach, Virginia. Additional project components include a 34.5-kV alternating current (AC) submarine cable interconnecting the WTGs (inter-array cable), a 34.5-kV AC submarine transmission cable (export cable), and a 34.5-kV underground cable (onshore interconnection cable) that would connect the Proposed Project with existing infrastructure located in the City of Virginia Beach, Virginia. Interconnection with the existing onshore infrastructure also would require an onshore switch cabinet, an underground fiber optic cable, and a new interconnection station to be located entirely within the boundaries of the Camp Pendleton State Military Reservation (Camp Pendleton) in the City of Virginia Beach, Virginia.

In compliance with the National Environmental Policy Act (NEPA), the U.S. Department of the Interior Bureau of Ocean Energy Management (BOEM) was the lead federal agency and DOE was a cooperating agency in the development of the environmental assessment (EA) titled *Virginia Offshore Wind Technology Advancement Project on the Atlantic Outer Continental Shelf Offshore Virginia* (OCS EIS/EA BOEM 2014-1000 and DOE/EA-1985).

The EA evaluated the potential environmental impacts of providing federal funding to the Proposed Project (DOE's Proposed Action). The analysis provided in the EA supports DOE's determination that providing federal funding for the Proposed Project will not significantly affect the quality of the human and natural environment. The EA is hereby incorporated into this FONSI by reference.

---

[1] Prior to the issuance of this FONSI, DOE authorized Dominion to use a percentage of the federal funding for preliminary activities, which include preparing the EA and associated FONSI. These activities are associated with the Proposed Project and do not significantly impact the environment nor represent an irreversible or irretrievable commitment by the DOE in advance of this finding for Dominion's Proposed Project.

DOE places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. The EA considers several Standard Operating Conditions (SOCs) to reduce or eliminate the potential environmental impacts of the project. The SOCs were developed through the analysis presented in Section 3 of the EA and through consultations with other federal and state agencies (see Section 4 of the EA). SOCs and other commitments to reduce impacts can be found in the following places in the EA:

- Sections 3.2.1 and 3.2.3 of the EA sets forth SOCs to minimize or eliminate potential impacts to avian species and bats, including the use of red-flashing aviation obstruction lights, the use of anti-perching devices, and annual monitoring and reporting requirements.
- BOEM's April 2015 Finding of No Adverse Effect sets forth conditions for the purposes of meeting both BOEM and DOE's obligations under Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108). These conditions include required avoidance of identified archaeological sites, coordination with the Virginia Army National Guard, clauses to address any post-review discoveries of archaeological sites, and the requirement to avoid impacts to archaeological sites without prior approval by BOEM.
- Appendix A, Sections A-E of the EA sets forth SOCs to minimize or eliminate potential impacts to marine mammals and sea turtles that resulted from Endangered Species Act (ESA) consultation with National Marine Fisheries Service (NMFS) that concluded in July 2015. These conditions include but are not limited to vessel strike avoidance and marine debris awareness measures; protected species observers, exclusion and monitoring zones; sound source verification, ramp up, soft start and shutdown procedures; visibility, seasonal and frequency-dependent restrictions for various activities, as well as multiple reporting requirements.
- Section 3.2.5.2 and Appendix A, Section F of the EA sets forth SOCs to minimize or eliminate potential impacts to fish and essential fish habitat that resulted from consultation with NMFS pursuant to Section 305(b) of the Magnuson-Steven Fishery Conservation and Management Act. SOCs included soft start pile driving measures and minimizing impact area for any necessary cable protection systems. Measures to monitor impacts to essential fish habitat include cable and foundation scour monitoring reports and acoustic monitoring reports.

These SOCs will be incorporated and enforceable through DOE's financial assistance agreement as well as by BOEM through their approval of the Research Activities Plan (RAP).

Context of Potential Impacts

DOE must evaluate the significance of an action in several different contexts, such as society as a whole, the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than globally. Both short- and long-term effects are relevant.

The Proposed Project includes two 6 MW WTGs, located approximately 24 nautical miles (44.5 km) off the coast of Virginia, in Outer Continental Shelf lease block 6111, aliquot H. Each of the WTGs would be installed atop inward battered guide structure (IBGS) foundations. The WTGs would be arranged in a north-south configuration spaced approximately 3,445 ft (1,050 m) apart, and would be connected by means of a 34.5-kV AC submarine inter-array cable. Water depths of the WTG installation locations are approximately 81 ft (24.7 m) at the northern WTG, and 83.3 ft (25.4 m) at the southern WTG. The inter-array cable would connect the two WTGs for the total length of approximately 0.62 nautical miles (1.3

km). A separately bundled 34.5-kV AC submarine transmission and communications cable (export cable) would connect the WTGs to the existing onshore electrical grid in Virginia Beach, Virginia. The export cable would originate at the southern WTG and travel approximately 24 nautical miles (44.5 km) to a proposed switch cabinet at a landfall site located at Camp Pendleton.

The Proposed Project includes construction, operation and maintenance, and decommissioning at the end of the operational life of the project. Construction of the project involves both onshore and offshore construction. Both onshore and offshore construction would take approximately three months. The expected operational life of the Proposed Project is 20 years. The expected direct area impact from cable laying is approximately 106 acres (43 hectares). The total area that would be disturbed in the construction of a wind turbine foundation is 191 acres (77.3 hectares).

Based on the analysis in the EA, impacts of the Proposed Project would not cause any significant adverse effects nationally, regionally, or at the statewide level.

Intensity of Potential Impacts

The following discussion is organized around the ten (10) intensity factors, described in the Council for Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Implementing Regulations, 40 Code of Federal Regulations (CFR) 1508.27, which refer to severity of impact. The intensity of effects considered is in terms of the following:

1) Impacts that may be both beneficial and adverse:

The EA evaluates adverse effects of the Proposed Project separately from beneficial effects, to determine whether such adverse effects would have been significant in their own right, and no such effects were found to be significant. The analysis in the EA did not use beneficial effects to offset the potential significance of any adverse effect.

As discussed in the EA, the beneficial impacts of the Proposed Project would include a potential contribution toward the reduction of regional greenhouse gas emissions, use of underused capacity in the port areas in the project vicinity, and creation of jobs, mostly in the construction trades.

The EA identifies potential adverse impacts to benthic resources, coastal habitats, fish and essential fish habitat, marine mammals, and sea turtles.

The majority of the benthic resource impacts following decommissioning are anticipated to be temporary because both the physical and biological characteristics are anticipated to return to pre-construction function within three years. However, it is anticipated that there will be permanent loss of unconsolidated sand habitat only within the footprint of the two turbine foundations, as well as within the footprint associated with the additional cable protection.

Disturbance of beaches, dunes, or other coastal habitats by the onshore inter-connection cable and fiber optic cable have the potential to result in direct and indirect habitat losses. However, as the Proposed Project activities occur along existing roads and rights-of-way or within previously disturbed areas and, due to regulations stipulated within the Virginia Coastal Zone Management Program as well as a commitment of the project proponent to avoid coastal habitats, onshore facilities would not be located where sensitive coastal resources occur and therefore there would be no direct impacts.

Pile-driving activities produce noise that has the potential to impact marine mammals and sea turtles. This

noise would only occur during the construction phase, and result in moderate, but temporary, impacts. No population-level effects are anticipated and no critical habitat would be affected by the proposed action.

The SOCs presented in the EA, including requirements to provide training to vessel operators and crew members on protected species sighting and reporting, maintain a separation distance of at least 50 meters from any sighted sea turtle, and only conduct pile driving when weather conditions allow for monitoring of the exclusion zones, have been established to minimize or eliminate potential adverse impacts to sensitive resources.

Accordingly, DOE concludes the Proposed Project will not have any significant adverse impacts and that the Proposed Project would have beneficial impacts to the economy and development of renewable energy.

2) The degree to which the proposed action affects public health or safety:

The project activities will comply with all state and federal regulations. Air emissions from the Proposed Action would account for approximately 0.1 percent of the total emissions of the area and would not have a significant impact to onshore or offshore air quality. Construction of the WTGs and installing the submarine inter-array and export cables would increase vessel traffic in the project area for the duration of construction which could increase the potential for vessel collisions. During offshore construction, a work area would be established around each WTG and along a 200-ft wide corridor around the export and inter-array cable to exclude fishing activities to avoid vessel collisions. The WTGs could present a risk of collision; however, the turbines will be equipped with navigational safety equipment in order to facilitate the safe passage of boats and other marine traffic. Therefore no adverse effects to public health or safety are anticipated. As presented in the EA, the Proposed Project will not cause any significant effects on public health and safety.

3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas:

The EA identified unique characteristics in the vicinity of the Proposed Project and evaluated the potential impacts of the Proposed Project on natural and cultural resources.

The Proposed Project area has a complex range of diverse coastal habitats consisting of barrier islands, sand spits, beaches, dunes, tidal and non-tidal wetlands, mudflats, and estuaries. Field identifications delineated four jurisdictional wetland and coastal habitats in the Proposed Project area, including two palustrine wetlands and two lacustrine open water areas. Both occur along the proposed onshore inter-connection cable and fiber optic cable route.

Because the Proposed Project is sited to avoid jurisdictional wetlands and coastal habitats, the only potential impact-producing factor on this area would be indirect disturbance from sedimentation, erosion, or storm water runoff. No direct impacts to coastal habitats are anticipated during project construction and installation, operation and maintenance, and decommissioning.

The Proposed Project area including the inter-array and export cable corridors, the onshore construction footprint, and 35 associated laydown or staging areas where bottom-disturbing activities will occur have the potential to contain pre-contact-period archaeological resources. All areas that could be impacted by the Proposed Project were surveyed for archaeological resources. Three submerged historic-period archaeological resources were identified in the project area. Initially all three were interpreted from their

geophysical signatures to be shipwrecks; however, BOEM subsequently conducted diver investigations on these targets and concluded that one is a large concrete buoy mooring anchor of no significance.

Requirements set forth in BOEM's Finding of No Adverse Effects, including maintaining a buffer of 50 meters around the submerged archaeological resources and clauses to address discoveries of archaeological resources are intended to eliminate the potential for adverse impacts to cultural resources. Based on the analysis provided in the EA, DOE has concluded that the Proposed Project would not cause any adverse effects on unique characteristics of the geographic area.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial:

The effects on the quality of the human environment are not likely to be highly controversial. There is no known credible scientific controversy over the impacts of the Proposed Project. While BOEM received several comment letters from the public and other agencies on the EA which resulted in minor changes to the EA to add clarification, nothing received as part of the public comment period indicated a high level of controversy regarding the Proposed Project.

5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks:

The impact analyses in Section 3 of the EA show effects of the Proposed Project are not uncertain; they do not involve unique or unknown risks. Actions similar to the Proposed Project have been previously permitted (e.g., Block Island Wind Farm, Deepwater ONE, etc.) and land-based turbine projects have been implemented throughout the nation. The proposed turbine foundations would be similar to oil and gas foundations but smaller in scale and all vessels that are proposed for use during construction and maintenance are common. Consequently, impacts of turbines in the region are well studied. The SOCs are intended to ensure effects are within the expected parameters. Accordingly, the effects of the Proposed Project are not highly uncertain, nor do they involve unique or unknown risks.

Although some elements of the Proposed Project involve relatively new technology, testing and scientific peer reviewed research on the technology are sufficient to support the findings and assessment of effects in the EA. The potential impacts to the human environment are fully analyzed and supported by previous projects, studies and publications, as referenced in the EA. There is a low probability of highly uncertain effects or unique or unknown risks resulting from the Proposed Project.

6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:

The Proposed Action supports DOE's goal of installing innovative offshore wind systems in U.S. waters in the most rapid and responsible manner possible to expedite the development and deployment of innovative offshore wind energy systems with a credible potential for lowering the LCOE. However, implementation of the Proposed Project does not establish a precedent for future actions or represent a decision in principle about a future consideration. Public and agency comments for the Proposed Project did not raise any disputes pertaining to the appropriate scope of the Proposed Project, connectedness of other actions, or reasonably foreseeable future actions other than those considered. Accordingly, the Proposed Project would not establish a precedent.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts:

The EA evaluated the Proposed Project in the context of other past, present and reasonably foreseeable actions. When combined with the past, present and reasonably foreseeable future activities, the Proposed Project is projected to cause minor impacts to air quality, water quality, benthic resources, coastal habitats, fish and fish habitat, marine mammals and sea turtles, and historic and archaeological resources Cumulative impacts to the remaining resources evaluated in the EA are expected to be less than minor. Overall, the analysis in the EA indicates that when considering other activities within the area affected, the cumulative impacts of the Proposed Project are anticipated to be minor.

8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources:

BOEM was the lead federal agency for consultation with the Virginia State Historic Preservation Office under Section 106 of the National Historic Preservation Act and also for consultation with tribes. BOEM conducted formal government-to-government consultation with the Narragansett Indian Tribe and the Shinnecock Indian Nation and also consulted with the state-recognized Lenape Indian Tribe of Delaware. DOE did not conduct government-to-government consultation with the federally recognized tribes because BOEM has jurisdiction over the renewable energy leases on the Outer Continental Shelf. DOE communicated this to the tribes and invited a response and/or further discussion. DOE did not receive a response from either tribal organization.

The Proposed Project area has the potential to contain historic resources. All areas that could be impacted by the Proposed Project were surveyed for historic properties. Historic-period archaeological resources situated onshore Virginia are associated primarily within Camp Pendleton, which is listed both on the National Register of Historic Places (NRHP) as a National Historic Landmark District and with the Virginia State Register of Historic Places. Other previously surveyed resources in the vicinity of the project area include the Cape Henry Lighthouse District, Cape Henry Light Station, DeWitt Cottage, and the US Coast Guard Station. Additionally, the Chesapeake Light Station is potentially eligible for listing in the NRHP. Consultation with the Virginia Army National Guard indicated that the proposed general location for an onshore switch cabinet is in the vicinity of three resources that contribute to the National Register of Historic Places-listed Camp Pendleton/State Military Reservation Historic District, the Beachfront Rifle Range, the Beachfront cultural landscape, and the Observation Deck. However, the use of additional vegetative screening and appropriate paint scheme will significantly reduce the visibility of the switch cabinet and avoid any possible adverse effects.

The only potential for adverse impacts to historic properties identified in the analysis were the potential visual impacts within the Camp Pendleton Historic District. The BOEM April 2015 Finding of No Adverse Effect sets forth conditions for the purposes of meeting both BOEM and DOE's obligations under Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108). These conditions include further coordination with the Virginia Army National Guard to avoid any adverse effects. Although effects to historic properties may occur from an unanticipated, post-review discovery during construction, the required implementation of the unanticipated discoveries clause at 30 CFR 585.802 ensures that any discoveries are reported and reviewed under the National Historic

Preservation Act. Accordingly, DOE concludes the Proposed Project would have no adverse effect on districts, sites, highways, structures, or objects listed or eligible for listing in the NRHP.

9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973:

Section 4.3.1 of the EA describes the content and conclusions of consultations under the Endangered Species Act. Section 4.3.2 presents the content and conclusions of consultations under the Magnuson-Stevens Fishery Conservation and Management Act.

Several federally listed threatened and endangered species have been observed within the Proposed Project area. U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) both have jurisdiction over listed species in the Proposed Project area, thus BOEM, as the lead federal agency, conducted consultations with both agencies.

BOEM initiated informal consultation with USFWS. Via a letter dated January 29, 2015 USFWS concluded the consultation concurring with the conclusion that the Proposed Action: 1) was not likely to adversely affect the piping plover, roseate tern, red knot, Bermuda petrel, black-capped petrel, green sea turtle, Kemp's Ridley sea turtle, and logger head turtle; 2) would have no effect on the hawksbill sea turtle and leatherback turtle; and 3) would have no effect on critical habitat.

BOEM initiated formal consultation with NMFS and NMFS issued a biological opinion on July 9, 2015 concluding that the Proposed Project may adversely affect, but is not likely to jeopardize the continued existence of Kemp's ridley, green, leatherback or the Northeast Atlantic DPS of loggerhead sea turtles, North Atlantic right, humpback, or fin whales, or the GOM, NYB, CB, Carolina, or SA DPSs of Atlantic sturgeon. The biological opinion included an incidental take statement for ESA-listed Atlantic sturgeon, sea turtles, an estimate of the number of whales that are likely to be harassed, and required several reasonable and prudent measures (RPMs). The SOCs outlined in the EA have incorporated these RPMs, which will be included as conditions of BOEM's approval of the project and of DOE's financial assistance award.

BOEM initiated consultation with NMFS under the Magnuson-Stevens Fishery Conservation Management Act to determine potential impacts to Essential Fish Habitat (EFH). BOEM's consultation presented their conclusion that the Proposed Action would temporarily adversely affect the quality of EFH offshore Virginia but not substantially affect the quality and quantity of EFH in the inner-shelf zone offshore Virginia over the life of the project. The only permanent impact anticipated to fish and fish habitat would be the loss of existing habitat within the footprint of the two turbine foundations and along the cable route. The EA concludes that there would be no expected impacts at the population level of any fish or fishery. In a letter dated June 15, 2015, NMFS examined impacts from noise, physical disturbance, and water quality to EFH and federally managed species. NMFS provided four conservation recommendations regarding the pile-driving soft start procedure, cable protection, acoustic monitoring, and results of environmental monitoring. The conservation measures were incorporated into the SOCs included in Appendix A of the EA and will be included as conditions of BOEM's approval of the project and of DOE's financial assistance award.

Based on analysis provided in the EA and consultation with USFWS and NMFS, DOE has concluded that the Proposed Project will not significantly adversely affect an endangered or threatened species or any critical habitat.

10) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the human environment:

The Proposed Project does not violate any federal, state, or local law or requirement imposed for the protection of the environment. Dominion's commitment to obtain and comply with all appropriate federal, state, and local authorizations required for the project and to minimize potential impacts through implementation of the SOCs detailed in the EA shall be incorporated and will be enforceable through DOE's financial assistance agreement. The SOCs are consistent with applicable federal, state, and local laws and requirements for the protection of the environment and with agency policy and direction.

Conclusion

Based on the EA and the above considerations, DOE finds that the Proposed Action is not a major federal action that constitutes a significant effect on the human environment. This finding and decision is based on the consideration of DOE's NEPA implementing regulations (10 CFR Part 1021) and the CEQ's criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts analyzed in the EA. Accordingly, the Proposed Action does not require the preparation of an environmental impact statement.

For questions about this FONSI or the Final EA, please contact:

U.S. Department of Energy
Golden Field Office
1013 Denver West Parkway
Golden, Colorado 80401
GONEPA@ee.doe.gov

For information about the DOE NEPA process, please contact:

Office of NEPA Policy and Compliance
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
http://energy.gov/nepa/office-nepa-policy-and-compliance

Issued in Golden, Colorado this 10TH day of September 2015.

Timothy J. Meeks
Acting Manager