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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF THE DIRECTOR
235 Promenade Street, Room 425
Providence, Rhode Island 02908

February 22, 2021

Program Manager
Office of Renewable Energy
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, Virginia 20166

RE: Docket No. BOEM–2020–0066: Draft Environmental Impact Statement for Deepwater South Fork LLC's Proposed Wind Energy Facility Offshore Rhode Island

Dear Program Manager,

The Rhode Island Department of Environmental Management (RIDEM) supports offshore wind energy development to mitigate the impacts of climate change and reduce greenhouse gas emissions. RIDEM is committed to ensuring that the local and regional environmental and socioeconomic impacts of offshore wind development are minimized. As part of RIDEM's effort to enable offshore wind energy development while mitigating any adverse impacts, the agency has reviewed the Notice of Availability (86-FR-1520; BOEM–2020–0066) and associated Deepwater South Fork LLC Draft Environmental Impact Statement (DEIS) (BOEM 2020-057).

The South Fork Wind Farm (SFWF) is situated within OCS-A-0517 and is slated to comprise 15 wind turbine generators (WTGs), an offshore substation, and submarine inter-array cables. The project will also include the South Fork Export Cable (SFEC), which is an alternating current submarine cable from the project area to East Hampton, NY. The SFWF falls within the Rhode Island Ocean Special Area Management Plan. The RIDEM has reviewed the SFWF DEIS and offers the following comments regarding the project and DEIS:

General

1. Within the discussion of alternatives considered but dismissed (Table 2.1.5-1), the justification for an alternate project location to reduce impacts to Cox Ledge resources is unclear. Concerns relating to impacts to Cox Ledge may not be fully addressed by the

fisheries habitat impact minimization alternative (Habitat alternative) as described. The Habitat alternative allows for micrositing or reducing the number of turbines to avoid habitats, but only to an extent to which the project remains viable; there is no guarantee that sensitive habitats can be fully avoided.

2. The image resolution of certain figures within the DEIS should be increased to improve interpretability. For example, legend text on Figure 2.1.3-1 is barely readable.

Biological Resources - Section 3.4

Bats – 3.4.1

1. The DEIS asserts that the SFWF will have "negligible to minor adverse impacts" to bats and that the cumulative impacts to bats will be minor. However, this statement was not accompanied by evidence to support the claim, despite evidence that suggests adverse impacts to bats could be substantial.
    a. Little is known about the migration and movements of migratory tree-roosting bat species in North America, though observations of migrating bats over the Atlantic Ocean have been reported since at least the 1890's (Hatch et al. 2013). Multiple bat species have demonstrated the ability, if not the tendency, to fly considerable distances offshore during migration (Stantec Consulting 2016). Migratory bat species are disproportionately affected by wind turbines, in part because they appear to be attracted to these structures (U.S. Department of Interior 2014). Why bats are attracted to wind turbines is not yet fully understood. Evidence suggests that bats navigate across large landscapes using vision, and that their eyes are probably most important for orientation during long-distance migration (Griffin et al. 1970). It has been suggested that hoary bats move toward visible landscape features during migration (Cryan et al. 2007).
    b. Large numbers of bats are being killed at utility-scale wind energy facilities, and these facilities raise important concerns about cumulative impacts of proposed wind energy development on bat populations (Arnett et al. 2013). Estimated cumulative bat fatalities in the United States and Canada from 2001-2011 ranged from 840,000 to 1,691,000 bats (Arnett et al. 2013). Other estimates suggest that the number of bats killed at wind turbine facilities in the United States during 2012 alone was approximately 684,000 and 888,000 respectively (Hayes 2013; Smallwood 2013). Given that bats have low reproductive rates, significant cumulative impacts of wind energy development on bat populations are possible (Kunz 2007).
    c. Utility-scale wind turbines have the potential to detrimentally affect bat populations, but few well-developed and integrated methods exist for observing bat occurrence and behavior at turbines at multiple spatial and temporal scales (U.S Department of the Interior 2014). This is particularly true in the offshore environment. Potential risk of turbine-related impacts could be readily managed through turbine feathering programs proven effective at terrestrial sites with such actions necessary during a narrow set of conditions and a brief seasonal period

(Stantec Consulting 2016). Opportunities exist to gain insight and guidance for future development through using modern technology and should be required for any proposed utility-scale facilities, both in the offshore and on-shore environments.

d. Prior to construction, the developer should be required to compile information on the potential bat resources within the project area. The goal of the studies is to determine the potential adverse impacts of the proposed project on bat resources by characterizing the use of the project area by bats under a variety of environmental conditions throughout the year, and estimating the mortality rate of bats due to collisions and other effects associated with the project. Data collected prior to construction can be compared to data collected in a similar manner after construction, to determine what impacts, if any, the project has on migrating bats. It is recommended that the following studies be conducted and should be done so in accordance with the guidelines established by the New York Department of Environmental Conservation's Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects dated 2015.
    i. Pre- and post-construction radar studies, for a minimum of one-year pre-construction, and two years post construction.
    ii. Bat acoustic monitoring, for a minimum of one-year pre-construction, and two years post-construction.

e. Research has shown that higher cut-in speeds, at least up to 5.0 meters per second, are less likely to kill bats than turbines that operate at lower speeds (Arnett et al. 2011). The benefits of curtailment are particularly noticeable for larger bodied species such as hoary, silver-haired, and eastern red bats (Baerwold et al. 2009). We recommend that for the period of August 1 through October 31, the developer increase turbine cut-in speeds to a minimum of 5.0 meters per second, during overnight hours, when nighttime temperatures exceed 9.5°C or implement feathering of turbine blades (pitched parallel to the wind) during low wind conditions when nighttime temperatures exceed 9.5°C during this period when wind speeds are less than 5.0 meters per second.

Benthic Habitat, Essential Fish Habitat, Invertebrates, and Finfish – 3.4.2

1. The OCS-A-0517 lease area abuts Cox Ledge, a known spawning site for Atlantic cod (e.g., Kovach et al. 2010, Zemeckis et al. 2014) and habitat utilized by American lobster (e.g., Fogarty et al. 1980).
    a. These species both benefit from hardbottom, complex habitat on Cox Ledge. Increased benthic rugosity provides structure and refuge to juvenile fish; these areas often attract large numbers of fish.
    b. As a result of the unique habitat on Cox Ledge, over 30 species of fish and invertebrates have EFH designated within the area.
    c. While the ongoing fish movement ecology research project (AT-19-08) is discussed briefly within the DEIS, the implications of potential study findings are not addressed. The BOEM ongoing study description states: "Although there is

some information on the fish utilization and fish movement on Cox Ledge, there is still a lot that is not known" (BOEM 2019). Given that species utilization of the complex habitat at Cox Ledge is not well documented, a determination that adverse impacts to EFH are expected to be minor may be unsubstantiated.

2. NOAA NMFS has identified data gaps with respect to the SFWF Draft Essential Fish Habitat Assessment (refer to December 14, 2020 letter from NOAA NMFS to BOEM).
    a. As of December 2020, NOAA has stated that data provided are insufficient "to comment on the impacts of the proposed project on living marine resources nor recommendations to avoid, minimize and mitigate adverse effects on EFH and other marine resources". As such, NOAA has recommended that additional data collection be conducted to meet the mandatory information requirements pursuant to 50 CFR 600.920e.
    b. Additional supplemental data collection and discussion should include:
        i. Improved habitat delineations within the project area.
            1. Current habitat data do not support accurate delineation between coarse soft sediment substrates (i.e., sand) and small-grained hard bottom (i.e., pebble cobble, boulder). Species' preference and use of coarse soft sediment and small-grained hard bottom can differ and therefore EFH determination depends on sufficient habitat data (e.g., higher resolution acoustic data that can identify complex habitats).
        ii. Assessment of the potential for construction and operation impacts to Atlantic cod EFH.
            1. More detailed discussion on potential project effects (e.g., habitat alteration) to Atlantic cod spawning activity in the area should be included.
                a. Cod communicate using sound (or grunts) during the spawning season. Previous work has suggested that ambient noise can affect or disrupt spawning activity (Rowe and Hutchings 2006; Zemeckis et al. 2019). This should be discussed in added detail with respect to both construction and operational noise.
        iii. Discussion of how cable laying practices will attempt to minimize impacts to habitat areas of particular concern (HAPCs).
    c. While discussion of some of these items is provided within the DEIS, recommendations are still based upon data that NOAA has identified as inadequate for delineating EFH.
    d. NOAA NMFS also highlighted challenges associated with the current benthic habitat monitoring plan (as of September 30, 2020). The current design may not allow for detection of changes and no discussion of statistical power is provided. Without multi-year and seasonal data collection prior to construction, delineation of annual or seasonal variability from changes associated with project construction or operation may not be possible.

e. The DEIS states that "BOEM and the applicant are currently working with NOAA to refine this baseline assessment as part of the EFH consultation. This information and analysis will be detailed in the EFH report and summarized in the FEIS." The RIDEM looks forward to these issues being addressed within the FEIS.

1. The Habitat alternative may provide additional flexibility in project design to avoid areas of complex, hard-bottom substrate.
   a. However, there is a need for more analysis of alternatives to determine whether the habitat impact minimization alternative may reduce impact to complex fish habitat. The DEIS states that "micrositing of WTGs and cable routes would also reduce impacts to EFH," but the extent of potential impact reduction is not provided. Table 2.3.1-1 provides only high-level information on comparison of alternatives.
   b. Such analysis may hinge on additional data collection to better delineate areas of complex habitat.
2. On page 3-23, the DEIS states: "Additionally, although eggs, larvae, sessile species, and less mobile species (i.e., whelks, longfin squid egg mops) are less sensitive than other fish species to pile-driving noise, they are more vulnerable because of their lack of motility." A citation should be provided to support the assertion that eggs and larvae of some species are less sensitive to noise.
   a. Limited studies exist on this topic and additional research is needed to clarify the potential effects of pile driving noise on species of invertebrates that hear by way of particle motion.
   b. Additionally, research on seismic noise has suggested that scallop larvae (New Zealand scallop, *Pecten novaezelandiae*) are more likely to develop body malformations and developmental delays in the presence of seismic airgun sounds. The researchers contend that "if larvae in the wild are subject to intense noise exposure during development, this could reduce recruitment and so have a delayed impact on stocks of mature animals" (Aguilar de Soto et al. 2013). It is important to note that seismic noise differs substantially from pile-driving noise, but the research still highlights the need for additional work to evaluate potential impacts of pile-driving noise on egg and larval life history stages.
3. Section 3.4.2.2.3 (page 3-29) states: "Sturgeon species have been reported to respond to low-frequency AC electric signals, but insufficient information is available to associate exposure with significant behavioral or physiological effects (Gill et al. 2012)" and "Elasmobranchs (e.g., skates, rays, and sharks) are capable of detecting EMF, but it is unclear if they can discern human-made EMF from the earth's natural magnetic field (Hutchison et al. 2018). Studies show that skates react to EMF produced by DC cables by slowing their swimming speed, swimming closer to the seabed, and making wider turns (Hutchison et al. 2018)."
   a. Hutchison et al. 2020 should also be cited in reference to the skate study.
   b. While the studies mentioned suggest that potential impacts may be limited in scope, both reinforce the need for additional research on these species'

interactions with EMF (e.g., directed studies on sturgeon and skates' reactions to AC cables).

Marine Mammals – 3.4.4

1. The North Atlantic Right Whale (NARW) is critically endangered and protected under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) of 1972.
    a. A Ship Speed Rule Seasonal Management Area overlaps directly with the project Wind Development Area (WDA). This management area exists to reduce the likelihood of deaths or injuries to NARWs.
    b. The project does not intersect with NARW critical habitat but is situated in an area between the Northeastern U.S. Foraging Area (Unit 1) and the Southeastern U.S. Calving Area (Unit 2). Seasonal migrations between the two units may pass through the project area.
2. The project area has also been identified as critical habitat for fin whales, sei whales, and sperm whales, all three of which are listed as endangered under the ESA and are protected under the MMPA.
3. RIDEM supports the use of proposed environmental protection measures (EPMs) including soft start procedures, sound mitigation measures, and required protected species observers. These measures should be required of all developers to minimize potential impacts to all marine mammal species.
4. Pages 3-52 and 3-111 use the acronym "EMPs". Is this referencing EPMs? If not, this acronym should be defined within the Abbreviations section.

Sea Turtles – 3.4.6

1. On page H-79, it is stated: "For impulsive noise, BOEM anticipates that projects would employ soft starts during pile driving to allow the small number of turtles in the region to leave the area before underwater noise increase to injurious levels." Does BOEM mandate the use of soft starts? The language on this is slightly unclear.

Socioeconomic and Cultural Resources - Section 3.5

Commercial Fisheries and For-Hire Recreational Fishing – 3.5.1

1. As noted in the DEIS, Rhode Island is home to the port most exposed to Southern New England Wind development. Little Compton, RI is the most exposed port in terms of revenue coming from commercial fishing within the RI/MA wind energy areas (16.6%) as compared to activity in the Mid-Atlantic and New England regions overall. With respect to the SFWF, Little Compton is also the most dependent port on fishing activity within the Lease Area, with 1.3% of total commercial fishing revenue in the Mid-Atlantic and New England regions derived from the area.
2. The footnote on page 3-69 notes that VTRs cover approximately 63% of lobster vessels operating in Statistical Area 537. Have the lobster landings value estimates that follow

been adjusted in any way to reflect the coverage rate or are the estimates only reflective of 63% of the fishery?

3. Has BOEM considered an ensemble approach to calculating potential commercial fishing exposure values? Given the limitations of VTR data, and all other fisheries-dependent datasets (e.g., coverage rates, location accuracy, resolution), an approach that combines results of different model outputs could address some of the shortcomings of an individual approach.
4. Rhode Island is home to most of the for-hire boats fishing near the RI-MA WEAs according to the DEIS, and Cox Ledge represents one of the most important areas for targeting cod. On page 3-88 of the DEIS it states: "However, of the 16,569 average annual for-hire boat trips that left from ports in the four states [RI, NY, CT, and MA] each year during the 2007–2012 period, only 0.9% occurred in or near the RI-MA WEAs (Kirkpatrick et al. 2017)." What proportion of the for-hire fleet had VTR coverage in each year from 2007-2012? Can we assume that the vessels with data are representative of those not submitting VTRs at the time?

The RIDEM is pleased to provide comments regarding the DEIS for the SFWF and the SFEC. Should you have any questions regarding these comments, please feel free to contact Julia Livermore (julia.livermore@dem.ri.gov; 401-423-1937).

Sincerely,

Janet Coit
Director

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