Appendix E: Analysis of Incomplete and Unavailable Information

In accordance with Section 1502.21 of the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA), when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an Environmental Impact Statement (EIS) and when information is incomplete or unavailable, the agency shall make clear that such information is lacking. When incomplete or unavailable information was identified, the Bureau of Ocean Energy Management (BOEM) considered whether the information was relevant to the assessment of impacts and essential to its analysis of alternatives based upon the resource analyzed. If essential to a reasoned choice among the alternatives, BOEM considered whether it was possible to obtain the information and if the cost of obtaining it was exorbitant. If it could not be obtained or if the cost of obtaining it was exorbitant, BOEM applied acceptable scientific methodologies to inform the analysis in light of this incomplete or unavailable information. For example, conclusive information on many impacts of the offshore wind industry may not be available for years, and certainly not within the contemplated timeframe of this NEPA process. However, if this information is essential for a reasoned decision, subject matter experts have used the scientifically credible information available and generally accepted scientific methodologies to evaluate impacts on the resources while this information is unavailable. The following sections present an analysis by resource topic of incomplete or unavailable information in the EIS for the SouthCoast Wind Project (Project) proposed by SouthCoast Wind Energy LLC (SouthCoast Wind) in its Construction and Operations Plan (COP) (SouthCoast Wind 2024) within Lease Area OCS-A 0521 (Lease Area).

E.1 Incomplete or Unavailable Information Analysis for Resource Areas

E.1.1 Physical Resources

E.1.1.1 Air Quality

Although a quantitative emissions inventory analysis of the region, or regional modeling of pollutant concentrations, over the next 35 years would more accurately assess the overall impacts of the changes in emissions from the Project, any action alternative would lead to reduced emissions regionally and can only lead to a net improvement in regional air quality. The differences among action alternatives with respect to direct emissions due to construction, operations and maintenance (O&M), and decommissioning of the Project are expected to be small. As such, the analysis provided in this EIS is sufficient to support sound scientific judgments and informed decision-making related to the use of the offshore portions of the Wind Farm Area and offshore export cable route corridors. Therefore, BOEM does not believe that there is incomplete or unavailable information on air quality that is essential to a reasoned choice among alternatives.

E.1.1.2 Water Quality

No incomplete or unavailable information related to the analysis of impacts on water quality was identified.

E.1.2 Biological Resources

E.1.2.1 Bats

There will always be some level of incomplete information on the distribution and habitat use of bats in the offshore portions of the Lease Area, as habitat use and distribution varies among seasons and species. Additionally, surveying bat activity offshore provides challenges as limited methods have been developed and tested for surveying within this environment. No BOEM issued guidance for bat surveys currently exist for renewable energy development on the outer continental shelf (OCS). Although SouthCoast Wind did not complete Project-specific surveys within the Project area, the evaluation of several studies was examined to provide a baseline understanding of the presence, abundance, and seasonality of bats which may occur within the Project area (including the OCS, State Waters, and coastal lands of Massachusetts and Rhode Island) and the northeast, and an examination of the terrestrial natural communities within the Onshore Project area. Additionally, because U.S. offshore wind development is in its infancy, with only two offshore wind projects having been constructed at the time of this analysis, there is some level of uncertainty regarding the potential collision risk to individual bats that may be present within the offshore portions of the Wind Farm Area. However, sufficient information on collision risk to bats observed at land-based U.S. wind projects exists and was used to analyze and corroborate the potential for this impact as a result of the proposed Project. In addition, the likelihood of a bat encountering an operating wind turbine generator (WTG) during migration is very low and, therefore, the differences among action alternatives with respect to bats for the Project are expected to be small. As such, the analysis provided in this EIS is sufficient to support sound scientific judgments and informed decision-making related to bat use of the Wind Farm Area and the potential for collision risk of bats. Therefore, BOEM does not believe that there is incomplete or unavailable information on bat resources that is essential to a reasoned choice among alternatives.

E.1.2.2 Benthic Resources

Although there is uncertainty regarding the spatial and temporal distribution of benthic (faunal) resources and periods during which they might be especially vulnerable to disturbance, SouthCoast Wind's surveys of benthic resources and other broad-scale studies (SouthCoast Wind 2024; Guida et al. 2017) provided this suitable basis for generally predicting the species, abundances, and distributions of benthic resources within the geographic analysis area. Surveys have not been completed for any of the alternative offshore export cable routes (Alternatives C-1 and C-2) where they diverge from the Proposed Action cable corridors. BOEM is relying on general information and the surveys of the Proposed Action cable corridors, which are in close proximity to the alternative cable routes to characterize benthic habitat impacts. Uncertainty also exists regarding the impact of some impact-producing factors (IPFs) on benthic resources. For example, specific stimulus-response related to

acoustics and electromagnetic fields (EMF) is not well studied, although there is some emerging information from benthic monitoring at European wind facilities and the Block Island Wind Farm in the United States that allows for a broad understanding of the impacts. Similarly, specific secondary impacts, such as changes in diets throughout the food chain resulting from habitat modification and synergistic behavioral impacts from multiple IPFs, are not fully known. Again, results of benthic monitoring at European wind facilities and the Block Island Wind Farm in the United States provide general knowledge of the overall impacts of these IPFs combined, if not individually. Therefore, the analysis provided in this EIS is sufficient to support sound scientific judgments and informed decision-making related to the overall impacts. For these reasons, BOEM does not believe that there is incomplete or unavailable information on benthic resources that is essential to a reasoned choice among alternatives.

E.1.2.3 Birds

Habitat use and distribution of marine birds varies between seasons, species, and years and, as a result, there will always be some level of incomplete information on the distribution and habitat use of marine birds in the offshore portions of the geographic analysis area. However, in accordance with BOEM guidance (BOEM 2020 a-b), an Avian Exposure Risk Assessment was completed for SouthCoast Wind (COP Appendix I1; SouthCoast Wind 2024) to use the best-available marine avian species information with potential to occur in the OCS Lease Area with consideration of several quantitative, qualitative, and spatially explicit resources available for select species occurrences at multiple scales. The Avian Exposure Risk Assessment incorporated baseline regional information, and site-specific data collected during SouthCoast Wind-sponsored high-definition aerial surveys and opportunistic ship-based surveys in order to evaluate the marine bird occurrences in the Lease Area with a specific focus on federally or state listed species and potentially sensitive species that are believed to be susceptible to displacement or collision. These findings were used to inform the predictive models and analyze the potential adverse impacts on bird resources in the EIS.

Because U.S. offshore wind development is in its infancy, there will always be some level of uncertainty regarding the potential for collision risk and avoidance behaviors for some of the bird species that may be present within the offshore portions of the geographic analysis area. In place of this information, subject matter experts used the data and assumptions described below and in the EIS to create models to evaluate impacts, where it was determined that the information was essential for reasoned decision-making. Bird mortality data are available for onshore wind facilities and, based on a number of assumptions regarding their applicability to offshore environments, were used to inform the analysis of bird mortality associated with the offshore WTGs analyzed in the EIS. However, uncertainties exist regarding the use of the onshore bird mortality rate to estimate the offshore bird mortality rate due to differences in species groups present and life history and behavior of species as well as differences in the offshore marine environment compared to onshore habitats. Modeling is commonly used to predict the potential mortality rates for marine bird species in Europe and the United States (BOEM 2015, 2021). Due to inherent data limitations, these models often represent only a subset of species potentially present. However, the datasets used by both SouthCoast Wind and BOEM to assess the

potential for exposure of marine birds to the Wind Farm Area represent the best available data and provide context at both local and regional scales. Furthermore, sufficient information on collision risk and avoidance behaviors observed in related species at European offshore wind projects is available and was used to analyze and corroborate the potential for these impacts as a result of the proposed Project (e.g., Skov et al. 2018). As such, the analysis provided in the EIS is sufficient to support sound scientific judgments and informed decision-making related to distribution and use of the offshore portions of the geographic analysis area as well as to the potential for collision risk and avoidance behaviors in bird resources. Furthermore, the similarity between the layouts analyzed for the different action alternatives does not render any of this incomplete and unavailable information essential to a reasoned choice among alternatives. Therefore, BOEM does not believe that there is incomplete or unavailable information on avian resources that is essential to a reasoned choice among alternatives.

E.1.2.4 Coastal Habitat and Fauna

Although the preferred habitats of terrestrial and coastal fauna are generally known, specific data on abundances and distributions within the geographic analysis area of various fauna within these habitats are likely to remain unknown without site-specific surveys. However, the species inventories and other general information about the area provide an adequate basis for evaluating the fauna likely to inhabit the onshore geographic analysis area. Additionally, the onshore activities proposed involve only common, industry-standard activities for which impacts are generally understood. Therefore, BOEM believes that the analysis provided in this EIS is sufficient to make a reasoned choice among the alternatives.

E.1.2.5 Finfish, Invertebrates, and Essential Fish Habitat

Although there is some uncertainty regarding the spatial and temporal distribution of finfish and invertebrate resources and periods during which they might be especially vulnerable to disturbance, SouthCoast Wind's site assessment surveys and other broad-scale studies (e.g., Guida et al. 2017) provided a suitable basis for general predictions of finfish and invertebrate resources with respect to species, densities, and distributions within the geographic analysis area. Additional information related to species listed under the Endangered Species Act (ESA) and essential fish habitat (EFH) are addressed in the biological assessment (BA) and EFH Assessment. While impacts on these specific finfish and invertebrate species are not anticipated to vary from the general impacts provided in the EIS, specific impact discussion for ESA-listed species and EFH will be provided in the BA and EFH Assessment. Site assessment surveys have not been completed for any of the alternative offshore export cable routes (Alternatives C-1 and C-2) where they diverge from the Proposed Action cable corridors. BOEM is relying on general information and the assessment surveys of the Proposed Action cable corridors, which are in close proximity to the alternative cable routes to characterize habitat impacts for finfish, invertebrates, and EFH.

Uncertainty also exists regarding the impact of some IPFs on invertebrate resources, such as the effects of EMFs and underwater noise (e.g., generated from pile driving). The available information on invertebrate sensitivity to EMF is equivocal (Hutchinson et al. 2020), and sensitivity to sound pressure

and particle motion effects is not well understood for many species, nor are synergistic or antagonistic impacts from multiple IPFs. Similarly, specific secondary impacts such as changes in diets throughout the food chain resulting from habitat modification are not well known for finfish and invertebrates. Lastly, the nature, extent, and significance of potential spillover effects on broader ecosystem functions, such as larval dispersal, are not fully understood (van Berkel et al. 2020). Where applicable, the assessment drew upon information in the available literature and an increasing number of monitoring and research studies related to wind development, other undersea development, or artificial reefs in Europe and the United States, several of which were recently drafted or published. These monitoring studies help provide a broad understanding of the overall impacts of these IPFs combined, if not individually.

For these reasons, the information provided in this EIS is sufficient to support sound scientific judgments and informed decision-making related to the overall impacts. Therefore, BOEM does not believe that there is incomplete or unavailable information on finfish, invertebrate, and EFH resources that is essential to a reasoned choice among alternatives.

E.1.2.6 Marine Mammals

The National Marine Fisheries Service (NMFS) has summarized the most current information about marine mammal population status, occurrence, and use of the region in its 2020 stock status report for the Atlantic OCS and Gulf of Mexico (Hayes et al. 2020, 2021). These studies provided a suitable basis for predicting the species, abundances, and distributions of marine mammals in the geographic analysis area. However, population trend data from NMFS are unavailable for 24 species, and annual human-caused mortality is unknown for 16 species (Appendix B, *Supplemental Information and Additional Figures and Tables*). The majority of species lacking population trend data are offshore species, such as blue whale, fin whale, and non-porpoise odontocetes (e.g., beaked whales and dolphins). As a result, there is uncertainty regarding how Project activities and cumulative effects may affect these populations. In addition to species distribution information, effects of some IPFs on marine mammals are also uncertain or ambiguous, as described below.

Potential effects of EMF have not been scaled to consider impacts on marine mammal populations or their prey in the geographic analysis area (Taormina et al. 2018). The widespread ranges of marine mammals and difficulty obtaining permits make experimental studies challenging. As a result, no scientific studies have been conducted that examine the effects of altered EMF on marine mammals. However, although scientific studies summarized by Normandeau et al. (2011) demonstrate that marine mammals are sensitive to, and can detect, small changes in magnetic fields (Section 3.5.6, *Marine Mammals*), potential impacts would likely only occur within a few feet of cable segments. The current literature does not support a conclusion that EMF could lead to changes in behavior that would cause significant adverse effects on marine mammal populations.

The behavioral effects of anthropogenic noises on marine mammals are increasingly being studied; however, behavioral responses vary depending on a variety of factors such as life stage, previous experience, and current behavior (e.g., feeding, nursing) and are, therefore, difficult to predict. In addition, the current NMFS disturbance criteria apply a single threshold for all marine mammals for

impulsive noise sources and do not consider the overall duration, exposure, or frequency distribution of the sound to account for species-dependent hearing acuity. While elevated underwater sound could startle or displace animals, behavioral responses are not necessarily predictable from source levels alone (Southall et al. 2007).

In addition, research regarding the potential behavioral effects of pile-driving noise has generally focused on harbor porpoises and seals; studies that examine the behavioral responses of baleen whales to pile driving are absent from the literature. Of the available research, most studies conclude that, although pile-driving activities could cause avoidance behaviors or disruption of feeding activities, individuals would likely return to normal behaviors once the activity had stopped. However, uncertainty remains regarding the long-term cumulative acoustic impacts associated with multiple pile-driving projects that may occur over a number of years. This also applies to other project activities such as vessel movements, high-resolution geophysical (HRG) surveys, geotechnical drilling, and dredging activities that may elicit behavioral reactions in marine mammals. As a result, it is not possible to predict with certainty the potential long-term behavioral effects on marine mammals from Project-related pile driving or other activities, as well as ongoing concurrent and cumulative pile driving and other activities.

Offshore WTGs produce continuous, non-impulsive underwater noise during operation, mostly in lower-frequency bands below 1,500 Hz. SPLs measured from WTGs within the size range likely to be utilized by this Project do not currently exist in the literature, and modeling scenarios are limited to two studies with a high degree of uncertainty. It is likely that source levels and frequencies emitted from the larger WTGs to be used for the Project would fall somewhere between those recorded for smaller-gear driven WTGs (e.g., 109 to 128 dB re 1 µPa SPL_{RMS} [at varying distances]) (Lindeboom et al. 2011; Pangerc et al. 2016; Tougaard et al. 2009) and those modeled in Stöber and Thomsen (2021) (e.g., 170 to 177 dB re 1 µPa SPL_{RMS}). Using the least-squares fits from Tougaard et al. (2020), SPLs from 11.5-MW turbines (in 20-meter-per-second, gale-force wind) would be expected to fall below the 120 dB re 1 µPa behavioral threshold within about 800 feet (245 meters). In lighter, 10-meter-per-second winds (approximately 20 knots), the predicted range to threshold would be only about 460 feet (140 meters). Effects related to the large WTGs to be used for the Project would include behavioral and masking effects. Masking of the low-frequency calls emitted from LFC and phocid pinnipeds in water would be more likely to occur. However, without further information regarding these larger WTGs, the extent of these effects is unknown.

To address this uncertainty, the assessment used the best available information when considering behavioral effects related to underwater noise. To better characterize these impacts, all potential types of behavioral responses, as well as the context within which these responses may occur, were considered following guidance from applicable studies (Southall et al. 2021) and used in conjunction with the NMFS disturbance threshold, as described in Chapter 3, Section 3.5.6, *Marine Mammals*. For the assessment of large baleen whales, studies on other impulsive noises (e.g., seismic sources) were used to inform the potential behavioral reactions to pile-driving noise. Monitoring studies would provide insight into species-specific behavioral reactions to Project-generated underwater noise. Long-term monitoring of concurrent and multiple projects could inform the understanding of long-term effects and subsequent consequences from cumulative underwater noise activities on marine mammal populations.

There is a lack of research regarding the responses of large whale species to extensive networks of new structures due to the novelty of this type of development on the Atlantic OCS. Although new structures are anticipated from multiple offshore wind projects under the planned activities scenario, it is expected that spacing will allow large whales to access areas within and between wind facilities. No physical obstruction of marine mammal migration routes or habitat areas are anticipated, but whether avoidance of offshore wind lease areas will occur due to new structures is unknown. Additionally, while there is some uncertainty regarding how hydrodynamic changes around foundations may affect prey availability, these changes are expected to have limited impacts on the local conditions around WTG foundations. The potential consequences of these impacts on marine mammals are unknown. Monitoring studies would provide insight into species-specific avoidance behaviors and other potential behavioral reactions to Project structures.

At present, this EIS has no basis to conclude that these IPFs would result in significant adverse impacts on marine mammal populations.

BOEM determined that the overall costs of obtaining the missing information for or addressing these uncertainties are exorbitant, or the means to obtain it are not known. Therefore, to address these gaps as described above, BOEM extrapolated or drew assumptions from known information for similar species and studies using acceptable scientific methodologies to inform the analysis in light of this incomplete or unavailable information, as presented in Chapter 3, Section 3.5.6, *Marine Mammals*, and in the BA submitted to NMFS (BOEM 2022). The information and methods used to predict potential impacts on marine mammals represent the best available information, and the information provided in this EIS is sufficient to support sound scientific judgments and informed decision-making. Therefore, BOEM does not believe that there is incomplete or unavailable information on marine mammal resources that is essential to a reasoned choice among alternatives.

E.1.2.7 Sea Turtles

The NMFS BA (BOEM 2022) provides a thorough overview of the available information about potential species occurrence and exposure to Project-related IPFs. The studies summarized therein provide a suitable basis for predicting potential species occurrence, relative abundance, and probable distribution of sea turtles in the geographic analysis area. There are Protected Species Observer sightings and modeled densities of sea turtle species expected to occur within the Project Area outlined in the most recent COP submission (SouthCoast Wind 2024). However, without specific sea turtle surveys or monitoring guidelines, data to investigate impacts on sea turtles is lacking.

Some uncertainty exists about the effects of certain IPFs on sea turtles and their habitats. The effects of EMF on sea turtles are not completely understood. However, the available relevant information is summarized in the BOEM-sponsored report by Normandeau et al. (2011). Although the thresholds for EMF disturbing various sea turtle behaviors are not known, the evidence suggests that impacts may only occur on hatchlings over short distances, and no adverse effects on sea turtles have been documented to occur from the numerous submarine power cables around the world.

There is also uncertainty about sea turtle responses to proposed Project construction activities, and data are not available to evaluate potential changes to movements of juvenile and adult sea turtles due to elevated suspended sediments. However, although some exposure may occur, total suspended solid impacts would be limited in magnitude and duration and would occur within the range of exposures periodically experienced by these species. On this basis, any resulting impact on sea turtle behavior due to sediment plumes would likely be too small to be biologically meaningful, and no adverse impacts would be expected (NOAA 2020). Some potential exists for sea turtle displacement, but it is unclear if this would result in adverse impacts (e.g., because of lost foraging opportunities or increased exposure to potentially fatal vessel interactions). Additionally, it is currently unclear whether concurrent construction of multiple projects, increasing the extent and intensity of impacts over a shorter duration, or spreading out project construction with lower-intensity impacts over multiple years would result in the least potential harm to sea turtles.

Information on sea turtle hearing is limited, and there are some discrepancies between hearing range determinations. Cumulative acoustic impacts associated with pile-driving activities are unknown, including whether sea turtles affected by construction activities would resume normal feeding, migrating, or breeding behaviors once daily pile-driving activities cease, or if secondary impacts would continue. Under the planned activities scenario, individual sea turtles may be exposed to acoustic impacts from multiple projects in a single day or from one or more projects over the course of multiple days. Although the consequences of these exposure scenarios have been analyzed with the best available information, some level of uncertainty remains due to the lack of observational data on species' responses to pile driving.

Since U.S. offshore wind development is in its infancy, there is some level of uncertainty regarding the potential collision risk to sea turtles that may be present within the offshore portions of the Wind Farm Area. The potential for sea turtle responses to Federal Aviation Administration hazard lights and navigation lighting is unknown. SouthCoast Wind would limit lighting on WTGs and offshore substation platforms to minimum levels required by regulation for worker safety, navigation, and aviation. Although sea turtles' sensitivity to these minimal light levels is unknown, sea turtles do not appear to be adversely affected by oil and gas platform operations, which produce far more artificial light than offshore wind structures. The placement of new structures would be far from nesting beaches, so no impacts on nesting female or hatchling sea turtles are anticipated.

Considerable uncertainty exists about how sea turtles would interact with the long-term changes in biological productivity and community structure resulting from the reef effect of offshore wind farms across the geographic analysis area. Artificial reef and hydrodynamic impacts could influence predator-prey interactions and foraging opportunities in ways that influence sea turtle behavior and distribution. Also, the extent of sea turtle entanglement on artificial reefs and shipwrecks is not captured in sea turtle stranding records and the significance and potential scale of sea turtle entanglement in lost fishing gear are not quantified. These impacts are expected to interact with the ongoing influence of climate change on sea turtle distribution and behavior over broad spatial scales, but the nature and significance of these interactions are not predictable. BOEM anticipates that ongoing monitoring of offshore energy structures will provide some useful insights into these synergistic effects.

BOEM considered the level of effort required to address the uncertainties described above for sea turtles and determined that the methods necessary to do so are lacking or the associated costs would be exorbitant. Therefore, where appropriate, BOEM inferred conclusions about the likelihood of potential biologically significant impacts from available information for similar species and situations to inform the analysis in light of this incomplete or unavailable information. These methods are described in greater detail in Section 3.5.7, *Sea Turtles*, and in the BA submitted to NMFS (BOEM 2022). Therefore, the analysis provided is sufficient to support sound scientific judgments and informed decision-making about the proposed Project with respect to its impacts on sea turtles. For these reasons, BOEM does not believe that there is incomplete or unavailable information on turtles that is essential to a reasoned choice among alternatives.

E.1.2.8 Wetlands

The analysis of impacts on wetlands presented in Section 3.5.8, *Wetlands*, is based on publicly available data sets, including National Wetland Inventory, Massachusetts Bureau of Geographic Information wetlands dataset, and the University of Rhode Island Environmental Data Center and Rhode Island Geographic Information System Wetlands dataset. SouthCoast Wind delineated wetlands during field surveys conducted within the onshore substation sites in Falmouth; however, the field delineation report for the onshore substation sites under consideration in Falmouth is private data and, therefore, has not been provided (COP Volume 2, Section 6.4.1.1; SouthCoast Wind 2024). Additional field delineations will be completed as part of the federal (Clean Water Act Section 404) and state permitting processes as necessary. While delineated wetland data provides more accurate and site-specific impact information, use of the national and state wetland data provides adequate detail to characterize impacts on wetlands and any differences among the alternatives. Based on the foregoing, BOEM does not believe that there is incomplete or unavailable information on wetlands that is essential to a reasoned choice among alternatives.

E.1.3 Socioeconomic Conditions and Cultural Resources

E.1.3.1 Commercial Fisheries and For-Hire Recreational Fishing

Fisheries are managed in the context of an incomplete understanding of fish stock dynamics and effects of environmental factors on fish populations. The commercial fisheries information used in this assessment has limitations. For example, vessel trip report data are only an approximation because this information is self-reported and may not account for all trips. The vessel trip report data also do not include all commercial fishing operations that may be affected by the Proposed Action and only represent vessel logbook data for species managed by the Greater Atlantic Regional Fisheries Office. Additionally, available historical data lack consistency, making comparisons challenging.

Vessel Monitoring System (VMS) data are also limited, with a number of factors contributing to their limitations.

- VMS coverage is not universal for all fisheries, with some fisheries (summer flounder, scup, black sea bass, bluefish, American lobster, spiny dogfish, skate, whiting, and tilefish) not covered at all by VMS.
- There is limited historical coverage for most fisheries (e.g., monkfish is optional and elective on a yearly basis, 2005 or earlier for herring, 2006 for groundfish and scallops, 2008 for surfclams/ocean quahogs, 2014 for mackerel, and 2016 for longfin squid/butterfish).
- Trip declaration does not necessarily correspond to actual operation.
- Hourly position pings limit area resolution based on speed.
- Fishing time/location can be mis-estimated by operational assumptions (speed and direction) that are affected by externalities (weather, sea state, mechanical issues).
- Catch data are limited because there is no information on catch rates, retained catch composition is limited to target species and some bycatch species, and the data are not universal.
- Catch information is for the full trip, not sub-trips.
- Not all information is collected from all fisheries (gear type).

However, these data represent the best available data, and sufficient information exists to support the findings presented in this EIS.

A second limitation is that recent annual exposure of revenue for for-hire recreational fishing specific to the Lease Area is not available. The economic analysis conducted by BOEM of recreational for-hire boats, as well as for-hire and private-boat angler trips that might be affected by the overall Massachusetts Wind Energy Area (WEA), including the Lease Area, was conducted for 2007–2012 (Kirkpatrick et al. 2017), and the Massachusetts WEA is treated as one entity with no site-specific data for the individual offshore wind lease areas that compose the Massachusetts WEA. Currently, there are an insufficient number of trips available for NMFS to generate a description of selected fishery landings and estimates of recreational party and charter vessel revenue from within the Project area (NMFS 2021). Due to the low effort in the area, BOEM does not believe that there is incomplete or unavailable information on commercial fisheries and for-hire recreational fishing resources that is essential to a reasoned choice among alternatives.

E.1.3.2 Cultural Resources

BOEM requires detailed information regarding the nature and location of historic properties that may be affected by an applicant's proposed activity in order to conduct review of the COP under Section 106 of National Historic Preservation Act (54 United States Code 306108). The assessment of effects from the proposed Project on historic properties is reliant on the identification and analysis of cultural resources in the geographic area in which these activities are proposed to take place (referred to as the Area of Potential Effects [APE]). BOEM has determined that there is sufficient information on cultural resources

in the APE for the proposed Project that allows for the assessment of impacts, analysis and comparison of alternatives, and Finding of Adverse Effect on historic properties.

For the Terrestrial Archaeological Resource Assessment (TARA), BOEM requires a complete inventory of terrestrial archaeological resources in the terrestrial APE to assess Project impacts and complete the analysis of alternatives based on specific historic properties. SouthCoast Wind will be using a process of phased identification and evaluation of historic properties as defined in 36 Code of Federal Regulations (CFR) 800.4(b)(2) to provide BOEM with the full completion of historic property identification in the terrestrial APE. This includes completion of Phase IB terrestrial archaeological survey in presently unsurveyed areas. Any thus-far known terrestrial archaeological resources identified as being located in the APE are provided in the TARA; however, additional terrestrial archaeological surveys completed for the proposed Project may lead to the identification of additional terrestrial archaeological resources. This process of phased identification and evaluation of historic properties will be stipulated in the MOA, as developed through BOEM's NHPA Section consultations with federally recognized Tribes and consulting parties (Appendix I, Attachment A) and will be completed following the execution of the MOA.

In conclusion, BOEM has determined there is sufficient information on cultural resources in the geographic analysis area and APE for the analysis in this Final EIS to support a reasoned choice among alternatives.

E.1.3.3 Demographics, Employment, and Economics

SouthCoast Wind's economic analysis estimated the employment and outputs for the Proposed Action. This provided sufficient information for the evaluation of demographics, employment, and economics to support a reasoned choice among alternatives. There is some inherent uncertainty in forecasting how economic variables in various areas will evolve over time. However, the differences among action alternatives with respect to demographics, employment, and economics are not expected to be significant. Therefore, BOEM does not believe that there is specific incomplete or unavailable information on demographics, employment, and economics that is essential to a reasoned choice among alternatives.

E.1.3.4 Environmental Justice

Evaluations of impacts on environmental justice communities rely on the assessment of impacts on other resources. As a result, incomplete or unavailable information related to other resources, as described in this document, also affect the completeness of the analysis of impacts on environmental justice communities.

As discussed in other sections, BOEM has determined that incomplete and unavailable resource information for environmental justice or for other resources on which environmental justice communities rely was either not relevant to assess reasonably foreseeable significant adverse impacts, was not essential to a reasoned choice among alternatives, alternative data or methods could be used to predict potential impacts and provided the best available information, or the overall costs of obtaining

the information were exorbitant or the means to do so were unknown. Therefore, the information provided in the EIS is sufficient to support sound scientific judgments and informed decision-making related to the proposed uses of the onshore and offshore portions of the geographic analysis area. Furthermore, the differences among action alternatives with respect to environmental justice are not expected to be significant.

E.1.3.5 Land Use and Coastal Infrastructure

There is no incomplete or unavailable information related to the analysis of impacts on land use and coastal infrastructure.

E.1.3.6 Navigation and Vessel Traffic

SouthCoast Wind's Navigation Safety Risk Assessment (COP Appendix X; SouthCoast Wind 2024), of which the navigation and vessel traffic impact analysis in the EIS is largely based, relies on 1 year's (January 1–December 31, 2021) Automatic Identification System (AIS) data from vessels required to carry AIS (i.e., those 65 feet [19.8 meters] or greater in length). To account for some gaps in the data due to limitations of the AIS carriage requirements, additional vessel transits were added to the Navigation Safety Risk Assessment risk modeling to account for both current and future traffic not represented in the data (COP Appendix X; SouthCoast Wind 2024). The AIS data and additional vessel trips added to the modeling described above represents the best available vessel traffic data and is sufficient to enable BOEM to make a reasoned choice among alternatives.

As stated in Section 3.6.6, *Navigation and Vessel Traffic*, WTGs could potentially interfere with marine radars. Marine radars have varied capabilities and the ability of radar equipment to properly detect objects is dependent on radar type, equipment placement, and operator proficiency; however, trained radar operators, properly installed and adjusted vessel equipment, marked wind turbines, and the use of AIS all would enable safe navigation with minimal loss of radar detection. Based on the foregoing, BOEM does not believe that there is incomplete or unavailable information on navigation and vessel traffic that is essential to a reasoned choice among alternatives.

E.1.3.7 Other Uses (Marine Minerals, Military Use, Aviation, Scientific Research, and Surveys)

There is no incomplete or unavailable information related to the analysis of impacts on other uses.

E.1.3.8 Recreation and Tourism

Evaluations of impacts on recreation and tourism rely on the assessment of impacts on other resources. As a result, incomplete or unavailable information related to other resources, as described in this document, also affect the completeness of the analysis of impacts on recreational tourism. BOEM has determined that incomplete and unavailable resource information for recreation and tourism or for other resources on which the analysis of recreation and tourism impacts rely was either not relevant to reasonably foreseeable significant adverse impacts, was not essential to a reasoned choice among

alternatives, alternative data or methods could be used to predict potential impacts and provided the best available information, or the overall costs of obtaining the information were exorbitant or the means to do so were unknown. Therefore, the information provided in the EIS is sufficient to support sound scientific judgments and informed decision-making related to the proposed uses of the onshore and offshore portions of the geographic analysis area.

E.1.3.9 Visual Resources

No incomplete or unavailable information related to the analysis of impacts on scenic and visual resources was identified.

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