DIVISION OF LAND RESOURCE PROTECTION
BUREAU OF COASTAL PERMITTING
ENVIRONMENTAL REPORT

Federal Consistency Certification
File #0000-21-0008.1, CDT210001

Applicant: Ocean Wind LLC

Project Name: Ocean Wind Offshore Wind Farm Project (OCW01)

Location: BOEM Lease Area OCS-A 0498
Approximately 13 nautical miles (14.96 miles) southeast of Atlantic City, NJ

Waterway: Atlantic Ocean

Administrative History:

BOEM Publishes NOI:	March 30, 2021
Federal Consistency Voluntary Submission to DLRP:	March 30, 2021
Start of the Six (6) Month Review Period:	March 31, 2021
Stay Agreement Executed:	March 31, 2021
Stay Begins:	March 31, 2021
Stay Ends:	April 28, 2022
Start Public Comment Period:	April 7, 2021
End Public Comment Period:	June 5, 2021
Three (3) Month Letter Sent to NOAA:	June 16, 2021
BOEM Publishes DEIS:	June 2022
Start Public Comment Period:	August 17, 2022
End Public Comment Period:	September 15, 2022
Second Stay Agreement Executed:	September 19, 2022
Stay Begins:	September 19, 2022
Stay Ends:	March 19, 2023
Federal Consistency Decision Due:	April 27, 2023

Federal Consistency Certification Request Description:

The Coastal Zone Management Act (CZMA) of 1972 requires that federal actions affecting any coastal use or resource (defined as land or water use, or natural resource of a state's coastal zone), be conducted in a manner that is consistent with the enforceable policies of a state's federally approved Coastal Zone Management Program (CZMP) or Coastal Resource Management Program (CRMP). The Bureau of Ocean Energy Management (BOEM) is not requiring the submittal of a consistency certification under 30 C.F.R. 585.627(a)(9) as the Ocean Wind 1 Offshore Wind Farm (Project) is not within a state's Geographic Location Description. Nonetheless, Ocean Wind LLC prepared a Consistency Certification to demonstrate that the proposed Project within BOEM Lease Area OCS-A 0498 is consistent with the policies

identified as enforceable by the Coastal Zone Management (CZM) Rules of the State of New Jersey (N.J.A.C. 7:7).

As described herein, the proposed activity will be conducted in a manner consistent with this CZM Program and pursuant to 15 CFR part 930, which authorizes states with approved CZM programs to conduct a coastal zone consistency review and concurrence determination of projects within or outside the state coastal zone boundary. Projects that require a federal license or permit, are federally funded, or are a direct activity of a federal agency are to be reviewed to ensure that activities in or affecting the state's coastal zone are consistent with the state's enforceable program policies.

In New Jersey, federal consistency reviews are the responsibility of the New Jersey Department of Environmental Protection (NJDEP), Division of Land Resource Protection (DLRP) as the lead State agency that implements or coordinates the State's federally approved CZMP. Pursuant to the CZMA, New Jersey has defined its coastal zone boundaries and developed policies to be utilized to evaluate projects within the designated Coastal Zone, as set forth in New Jersey's CZM Rules (last amended on October 5, 2021). These rules provide for the issuance of permits under three CZMP areas: Waterfront Development Law (N.J.S.A. 12:5-3), Coastal Wetland Act of 1970 (N.J.S.A. 13:9A), and the Coastal Area Facility Review Act (CAFRA; N.J.S.A. 13:19). The Rules are also used in the review of Federal consistency determinations under Section 307 of the Federal Coastal Zone Management Act, 16 U.S.C. §1456. New Jersey's coastal waters are any tidal waters of the State of New Jersey extending from the mean high water line out to the three-geographical-mile limit of the New Jersey territorial sea, and elsewhere to the interstate boundaries of New York, Delaware, and the Commonwealth of Pennsylvania.

Through Executive Order 14008, President Joseph Biden established the policy of the United States to combat the climate crisis and the deployment of clean energy technologies and infrastructure. The Project would contribute to New Jersey's goal of 11 gigawatts (GW) of offshore wind energy generation by 2040 as outlined in New Jersey's Governor's Executive Order No. 307, issued on September 21, 2022. Further, the Project is intended to fulfill the New Jersey's Board of Public Utilities (BPU) September 20, 2018, solicitation for 1,100 megawatts (MW) of offshore wind that was awarded to Ocean Wind LLC on June 21, 2019 (BPU Docket No. QO18121289).

Through a competitive leasing process under 30 Code of Federal Regulations (CFR) 585.211, Ocean Wind LLC was awarded commercial Renewable Energy Lease OCS-A 0498 covering an area offshore of New Jersey (the Lease Area). Under the terms of the lease, Ocean Wind LLC has the exclusive right to submit a Construction and Operations Plan (COP) for activities within the Lease Area, and it has submitted a COP to BOEM proposing the construction and installation, operations and maintenance (O&M), and conceptual decommissioning of an 1,100-megawatt (MW) offshore wind energy facility in the Lease Area in accordance with BOEM's COP regulations under 30 CFR 585.626, et seq.

BOEM prepared a Draft Environmental Impact Statement (DEIS), (June 2022) to assesses the reasonably foreseeable impacts on physical, biological, socioeconomic, and cultural

resources that could result from the construction and installation, O&M, and conceptual decommissioning of a commercial-scale offshore wind energy facility and transmission cable to shore known as the Ocean Wind 1 Offshore Wind Farm (Project). BOEM has prepared the Draft EIS under the National Environmental Policy Act (NEPA) (42 U.S. Code [USC] 4321–4370f). This DEIS will inform BOEM's decision on whether to approve, approve with modifications, or disapprove the Project's Construction and Operations Plan (COP). Cooperating agencies, which includes the New Jersey Department of Environmental Protection, may rely on the DEIS to support their decision-making.

Although BOEM's authority under the Outer Continental Shelf Lands Act (OCSLA) only extends to the activities on the Outer Continental Shelf ("OCS"), alternatives related to addressing nearshore and onshore elements as well as offshore elements of the Proposed Action are analyzed in the DEIS. BOEM's regulations (30 CFR 585.620) require the COP to describe all planned facilities that the lessee would construct and use for the Project, including onshore and support facilities and all anticipated Project easements. Therefore, to conduct its review of the project's consistency with the State's enforceable policies, DLRP has considered the consistency certification submitted by Ocean Wind LLC to DLRP, information presented by Ocean Wind LLC to BOEM in its Construction and Operations Plan ("COP"), as well as BOEM's DEIS released in June 2022.

Project Description

The Offshore Project components in Federal waters consist of the installation of the 98 WTG's and their foundations, inter-array cables, up to three offshore substations and their foundations, scour protection for foundations and the sections of the three transmission cables (located within two export cable corridors) that are located beyond the three-geographical mile State jurisdictional limit. These activities are associated with the development of a commercial-scale, offshore wind energy facility within Lease Area OCS-0498, located off the coast of New Jersey approximately 13 nautical miles (14.96 miles) southeast of Atlantic City. Specifically, the Wind Farm Area is 68,450-acre in size within which Ocean Wind LLC proposes 98 WTG's extending up to 906 feet above mean lower low water with a spacing of 0.8 nautical miles (0.92 miles) between them.

This Federal Consistency Certification review is limited to the Offshore Project components that are located beyond the three-geographical mile limit of the New Jersey territorial sea. Pursuant to N.JA.C. 7:7-1.2(b), the Offshore component of the Project is not located within New Jersey's coastal zone, which is limited to those coastal waters of the State of New Jersey that extend from the mean high water line out to the three-geographical-mile limit of the New Jersey territorial sea, and elsewhere to the interstate boundaries of the States of New York, and Delaware and the Commonwealth of Pennsylvania, This Federal Consistency Certification has been submitted because the proposed construction, operation and decommissioning of the Ocean Wind LLC Offshore Wind Project is presumed to have a reasonably foreseeable effect on the uses or resources of New Jersey's coastal zone.

Concurrent with this Federal Consistency Certification request, DLRP is reviewing an application for State permits (File 0000-21-0008.2, LUP220001 and LUP230001) which are

required for the other components of the Project that are within the State of New Jersey. This includes all project components located within those State waters located within the three-geographical mile limit of the New Jersey territorial sea as well as onshore components. Those Project components subject to the State permitting include the transmission cables located within the State's three-geographical mile limit, two onshore substations, an onshore export cable system, and connections to the existing electrical gride in New Jersey, which include underground cables or overhead transmission lines for connection to the existing grid.

BOEM is considering a range of project alternatives through the EIS process. BOEM may select a combination of alternatives that meet the purpose and need of the Project, which is to "ensure consistency with an 1,100-MW nameplate capacity (full-load sustained output of a facility) and annual Offshore Wind Renewable Energy Certificate (OREC) allowance to fulfill Ocean Wind LLC's contractual obligations with the Board of Public Utilities (BPU)".

It is well-settled in the scientific community that climate change is primarily driven by increased atmospheric levels of greenhouse gas concentrations. According to the 2020 New Jersey Scientific Report on Climate Change, human activities are now the primary cause of climate change, particularly greenhouse gas emissions from the burning of fossil fuels which, combined with land use changes like deforestation, have increased atmospheric carbon dioxide concentrations by more than one third over the past century. As discussed in the Department's NJ Climate Science Report, sea level rise is occurring throughout the world, and is an indicator of Earth's increasing temperature (NJDEP, 2020).

New Jersey has already been disproportionally affected by climate change, sea level rise in particular, at a rate that is more than two times the global average (Kopp et al. 2019). According to a 2019 report of the New Jersey Climate Change Alliance Science and Technical Advisory Panel (STAP), by 2050, there is a 50 percent chance that sea-level rise will meet or exceed 1.4 feet and a 17 percent chance it will exceed 2.1 feet (Kopp et al. 2019). Under a moderate emission scenario, those levels increase to 3.3 and 5.1 feet by the end of the century (Kopp et al. 2019). These impacts pose a threat to New Jersey's natural resources, communities, infrastructure, and economy.

Offshore wind energy production as an alternative to the burning of fossil fuels furthers the State's policy to reduce greenhouse gas emissions, advance renewable energy, improve energy efficiency, prepare the state for the impacts of climate change, and help New Jersey achieve its greenhouse gas emissions targets while improving resiliency for all communities throughout the State.

The Ocean Wind 1 project will contribute to New Jersey's clean energy goals of 50 percent renewable energy by 2030 and 100 percent clean energy by 2050.

Therefore, based on the foregoing, the Project is in the public interest.

The alternatives being considered by BOEM are:

DEIS and Project Alternatives being consider by BOEM

1. No-Action Alternative
2. Alternative A – Ocean Wind Project within BOEM Lease Area OCS-A 0498
3. Alternative B – This alternative includes 2 subsets, both of which reduce the number of turbines to reduce visual impacts
4. Alternative C – Modified turbine layout to create a buffer between Ocean Wind 1 and Atlantic Shores South
5. Alternative D- Sand Ridge and Trough Avoidance
6. Alternative E – Submerged Aquatic Vegetation Avoidance (This alternative does not involve the Offshore component of the Ocean Wind 1 Project)

BOEM's DEIS analysis shows no significant differences between the alternatives in terms of impacts on benthic resources, cultural resources, finfish, invertebrates, essential fish habitats, marine mammals, recreation and tourism, and sea turtles.

Coastal Zone Management Rule Analysis (N.J.A.C. 7:7-1.1 et seq.):

7:7-9.2 Shellfish habitat

The Offshore Project area is located within Federal waters and is not defined as an estuarine bay or river bottom. Therefore, this Rule is not applicable to the Offshore component of the Ocean Wind LLC project.

7:7-9.3 Surf clam areas

According to the DEIS, while the Project is located within areas suitable for surf clams, it would not result in the destruction, condemnation, or contamination of surf clam areas. Other than localized Project impacts to the seabed associated with installing the Project infrastructure during construction, the Project will not have long term adverse impacts to the seabed and Applicant Proposed Measures (APMs) and Best Management Practices (BMPs) will be implemented to reduce temporary effects of increased turbidity associated with construction (COP Volume II, Table 1.1-2). The offshore export cable will be buried at a target depth of at least 4 feet (1.2 meters) in surf clam areas. Where it is demonstrated that achieving the 4-foot depth (1.2 meters) is not practicable, the cable will be buried as close as practicable to the target depth.

As discussed in Section 2.3.4 of Volume II of the COP (Commercial Fisheries), surf clam fisheries have experienced declines in commercial landings in New Jersey from 1980 through 2016 and landings in New Jersey are at an all-time low (NEFSC 2016).

As referenced in the DEIS, Atlantic sea scallop, Atlantic surf clam, and ocean quahog were identified as shellfish species of concern for the New Jersey Wind Energy Area ("WEA"), which includes the WTG area. Economically and ecologically important species associated with soft sediments in the vicinity of the Lease Area include Atlantic sea scallop, bay scallop, horseshoe crab, Atlantic surf clam, squid, and ocean quahog. Live Atlantic surf clams and

scallops were found within the Lease Area but were not observed within either export cable route corridor.

As discussed in the DEIS, the most recent trends in primary invertebrate species have been summarized by NOAA (2021, 2022) in the 2021 and 2022 State of the Ecosystem reports for the mid-Atlantic and recent information about individual invertebrate stock assessment is provided by NMFS (2022). For both information sources, the most recent invertebrate information was typically available for the years 2019, 2020, and 2021. The reported trends include:

• Climate-related stress is increasing, which is expected to affect stock distributions and is a warning sign for the potential for ecosystem-level changes. The mid-Atlantic has incurred more frequent and intense marine heatwaves and a less stable Gulf Stream. The cold pool is becoming warmer and smaller and occurs for a shorter time period, which can affect invertebrate species distributions.

• In general, finfish and invertebrate stocks are changing throughout the Northeast U.S. large marine ecosystems, with a general movement of stocks in a northeasterly direction and into deeper areas.

• Combined landings of surf clam and ocean quahog decreased in 2020, while landings of combined squid species increased. Since 2017 northern shortfin squid has been more available in the mid-Atlantic, with a higher fishery catch per unit effort.

• The analysis by NOAA in 2022 concluded that the decline in surf clam and ocean quahog was not likely due to major shifts in feeding guilds, shifts in ecosystem trophic structure, stock status, or management restrictions. NOAA noted that climate change appears to be affecting distributions of surf clam and ocean quahog because both species are sensitive to warmer temperatures and acidification, although acidification in surf clam summer habitat is approaching (and not at) conditions that could potentially affect clam growth.

Nevertheless, the New Jersey Department of Environmental Protection (NJDEP) Marine Resources Administration (MRA) has indicated that impacts to surf clam areas, the surf clam industry, and the shoreside businesses supported by the fishery are expected due to installation of the turbine array and the export cables. According to MRA, the Atlantic surf clam is one of the most economically valuable commercial fisheries in New Jersey. In addition, New Jersey has the highest level of landings, dockside revenue, and secondary revenue through dependent industries (including docking, fueling, processing and shipping). MRA considers this fishery to be most at risk from offshore wind because of the overlap of fishing areas with leases, the incompatibility of gear operation and turbine arrays (according to the surf clam industry it is not possible to operate their current gear within 2 nautical miles of the turbines), and the value of the industry.

MRA acknowledges that all of the potential impacts and mitigation options cannot be defined at this time. Consequently, MRA advocates for effective, professionally facilitated engagement between Ocean Wind LLC and the surf clam industry. Ocean Wind LLC has

committed to developing and implementing a Fisheries Communication and Outreach Plan. (COP Appendix O). The plan includes the appointment of a dedicated fisheries liaison as well as fisheries representatives who will serve as conduits for providing information to, and gathering feedback from, the fishing industry, as well as project-specific details on fisheries engagements.

In Executive Order 14008, Tackling the Climate Crisis at Home and Abroad, issued January 27, 2021, President Biden stated that it is the policy of the United States "to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure." Therefore, the Project is in the national interest.

Ocean Wind LLC's stated purpose and need is to construct and operate a commercial-scale offshore wind energy facility in the Lease Area intended to fulfill the New Jersey Board of Public Utilities' (BPU) September 20, 2018, solicitation for 1,100 MW of offshore wind capacity that was awarded to Ocean Wind LLC on June 21, 2019 (BPU Docket No. QO18121289).

Through a competitive leasing process under 30 Code of Federal Regulations (CFR) 585.211, Ocean Wind LLC was awarded commercial Renewable Energy Lease OCS-A 0498 covering an area offshore of New Jersey (Lease Area). Therefore, the Project is confined to the lease area defined as OCS-A 0498 and cannot be relocated to another area. In addition, the Project would contribute to New Jersey's goal of 11 gigawatts (GW) of offshore wind energy generation by 2040 as outlined in New Jersey's Governor's Executive Order No. 307, issued on September 21, 2022.

Therefore, the project does not have a feasible or prudent alternative and minimizes impacts to surf clam areas to the maximum extent practicable.

Ocean Wind LLC proposes to conduct surf clam surveys once yearly in the project area and 2 control sites in August over a period of at least 6 years. MRA supports the survey work in the wind farm area. According to the DEIS, Ocean Wind LLC has committed to measures to minimize impacts on commercial fisheries and for-hire recreational fishing such as developing and implementing a Fisheries Communication and Outreach Plan, working with commercial and recreational fishing entities to ensure the Project will minimize potential conflicts, and implementing Ocean Wind LLC's (Ørsted's) corporate policy and procedure to compensate commercial/recreational fishing entities for gear loss during construction, as well as during operation and management (O&M) activities. In addition, the DEIS states that Ocean Wind LLC would implement a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. These measures, if adopted, would reduce impacts from the impact-producing factor (IPF) presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Therefore, to minimize

impacts to the fisheries resource and fishing industries uses, a Memorandum of Understanding (MOU) to be executed by the Department and Ocean Wind LLC will establish a Compensatory Mitigation Fund to compensate fishermen for verifiable claims of negative impacts of a significant nature, including economic losses, caused by the Ocean Wind 1 offshore wind facility during its construction, operation and/or decommissioning. The Letter of Intent to execute the MOU was executed by the Department and Ocean Wind LLC on April 27, 2023.

Conditions

1. Ocean Wind LLC and the State of NJ shall execute a Memorandum of Understanding (MOU) to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.

2. Ocean Wind LLC shall implement all protective and/or mitigative measures as outlined in BOEM's Final EIS and Record of Decision for protection of fisheries, aquatic and benthic resources.

Consistency with this rule has been demonstrated.

7:7-9.4 Prime fishing areas

The proposed 98 Offshore Wind Turbine Generators, substations and cables are located within prime fishing areas that support both recreational and commercial fisheries. However, according to BOEM's Draft Environmental Impact Statement (DEIS), there is not a high level of commercial fishing effort within the Lease Area compared to the surrounding area. According to the DEIS, the Lease Area accounted for approximately 0.03 percent of the total revenue across all Fishery Management Plan fisheries in the Mid-Atlantic and New England regions. Dredge clam and dredge-scallop account for approximately 74 percent of the total revenue generated by commercial fishing activity in the Lease Area.

Nonetheless, access for fishing would be temporarily restricted during the construction and decommissioning phases of the Offshore project. The installation and future decommissioning of the Project could temporarily restrict access to the lease area and the cable routes thereby reducing harvest opportunities and revenue.

Similarly, access will also be temporarily restricted for recreational fishermen but they may be drawn to the area post-construction due to the reef effect provided by the pile structures supporting the turbines and offshore substations.

Alternatively, the presence of structures has the potential to impact commercial fisheries through allisions, navigational hazards, collisions, space use conflicts, entanglements or fishing gear loss/damage. WTG foundations and associated scour protection would locally convert the sand or sand and gravel seafloor habitat favored by surf clams, sea scallops, squid, and summer flounder with hard structures favored by lobsters, striped bass, black sea bass and cod. In addition, the northeastern corner of the Lease Area contains sand and trough features, which provide valuable fishery habitat. Sand and trough features provide physical structural habitat for fish species, that provide the benefits of greater species diversity and abundance. Because of the

habitat that these features provide, BOEM is considering a modification to the wind turbine layout under Alternative D to minimize impacts to the sand and trough features. Under Alternative D, up to 15 WTG's would be eliminated. The selection of Alternative D with the exclusion of more than 9 WTG's would be contingent however, on a larger turbine with a 240-meter rotor diameter being commercially available when BOEM issues its ROD (Record of Decision) as well as its technical and economic feasibility, and consistency with the purpose and need.

The removal of 15 WTG's may result in a 19% reduction in annual energy production. According to the DEIS, BOEM is continuing to assess the energy production impacts and feasibility of alternatives. The final number of WTG's that may be eliminated may be fewer than 9 to 15 to ensure consistency with an 1,100-MW nameplate capacity (for intermittent power sources, such as wind and solar, nameplate power is the source's output under ideal conditions, such as maximum usable wind or high sun on a clear summer day) and annual OREC allowance to fulfill Ocean Wind LLC's contractual obligations with BPU.

BOEM concludes that the impacts from the Proposed Action would range from minor to major, depending on the fishery and fishing operations. According to the DEIS, in context of reasonably foreseeable environmental trends in the area, the incremental impacts contributed by the Proposed Action to the overall impacts on commercial fisheries and for-hire recreational fishing would be appreciable. BOEM anticipates further, that the overall impacts on commercial fisheries and for-hire recreational fishing associated with the Proposed Action when combined with impacts from ongoing and planned activities including offshore wind would be major because some commercial and for-hire recreational fisheries and fishing operations would experience substantial disruptions indefinitely, even with mitigation measures proposed by Ocean Wind LLC. BOEM's impact rating is primarily driven by climate change, regulated fishing effort, and the presence of offshore structures. . However, given the array of measures available to mitigate impacts of offshore wind projects on commercial fisheries and for-hire recreational fishing, BOEM expects that regulated fishing effort and climate change would continue to be the most important factors affecting the sustainability of commercial and for-hire recreational fisheries in the area.

The NJDEP has a publicly available GIS layer depicting previously identified Prime Fishing Areas (see https://gisdata-njdep.opendata.arcgis.com/ and Figure 1 below). However, according to MRA there are additional Prime Fishing Areas in the project area that were identified by NOAA's review of site assessment information (pers com Keith Hanson). In a letter to BOEM dated February 24, 2023, NOAA described the potential impacts to Prime Fishing that require additional mitigation.

MRA supports the recommendation that all impacts to Prime Fishing Areas be mitigated and suggests that if avoidance and minimization are not feasible, then information should be provided that clearly shows any permanent changes to the bathymetry, including but not limited to flattening sand waves, filling, and relocation of boulders. This might include the location and extent of modification of sand waves (figures and GIS shapefiles with locations and dimensions of these features within the project area should be provided), the need (if any) for fill, avoidance and minimization measures proposed to reduce the area that will be permanently modified.

Pursuant to 7:7-12.13, sand and gravel mining is the removal of sand or gravel from the water bottom substrate, usually by suction dredge, for the purpose of using the sand or gravel at another location. While the project may impact bathymetry, it does not involve the removal of sand or gravel for the purpose of using the sand or gravel at another location.

According to the DEIS, Ocean Wind will implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. BOEM recognizes that Ocean Wind has an applicable gear loss and damage claims process resulting from survey activities. This measure, if adopted, would be applicable to the impact producing factor (IPF) presence of structures during both construction and operations. If adopted, this measure would reduce negative impacts resulting from loss of gear associated with uncharted obstructions resulting from the Proposed Action.

In addition, Ocean Wind would implement a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. It is in fact, Ørsted's (Ocean Wind LLC parent company) corporate policy and procedure to compensate commercial/recreational fishing entities for gear loss during construction, as well as during operation and management (O&M) activities. This measure, if adopted, would reduce impacts from the IPF presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction.

According to the DEIS, Ocean Wind has committed to measures to minimize impacts on commercial fisheries and for-hire recreational fishing such as developing and implementing a Fisheries Communication and Outreach Plan, working with commercial and recreational fishing entities to ensure the Project will minimize potential conflicts, and implementing Ørsted's corporate policy and procedure to compensate commercial/recreational fishing entities for gear loss as a result of Project activities. In addition, the DEIS states that Ocean Wind would implement a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. This measure, if adopted, would reduce impacts from the IPF presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Therefore, an MOU to be executed by the Department and Ocean Wind LLC will establish a Compensatory Mitigation Fund to compensate fishermen for verifiable claims of negative impacts of a significant nature, including economic losses, caused by the Ocean Wind 1 offshore wind facility during its construction, operation and/or decommissioning. The Letter of Intent to execute the MOU was signed by the Department and Ocean Wind on April 27, 2023. Further, this Federal Consistency Determination is conditional upon Ocean Wind, LLC implementing all protective and/or mitigative measures as outlined in

BOEM's Final EIS and Record of Decision for the protection of fisheries, aquatic and benthic resources.

The Project is not a prohibited use under this Rule. Ocean Wind's commitment to implementing the above compensation plans will serve to mitigate any impacts to prime fishing areas.

Consistency with this rule has been demonstrated.

Conditions

1. Ocean Wind LLC and the State of NJ shall execute a Memorandum of Understanding (MOU) to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.

2. Ocean Wind, LLC shall implement all protective and/or mitigative measures as outlined in BOEM's Final EIS and Record of Decision for protection of fisheries, aquatic and benthic resources.

3. If avoidance and minimization to Prime Fishing Areas identified on NOAA and NJDEP's publicly available GIS layer depicting previously identified Prime Fishing Areas (see https://gisdata-njdep.opendata.arcgis.com/) is not feasible, then Ocean Wind, LLC shall provide the NJDEP, Division of Land Resource Protection with information that clearly shows any permanent changes to the bathymetry, including but not limited to flattening sand waves, filling, and relocation of boulders, post-construction. This shall include the location and extent of modification of the pre-existing bathymetry (figures and GIS shapefiles with locations and dimensions of these features within the project area should be provided), which structures were installed within these areas, and the avoidance and minimization measures which were implemented to reduce the area permanently modified.

7:7-9.5 Finfish migratory pathways

The are no rivers, streams, creeks, bays, or inlets in the Offshore Project component located within federal jurisdictional waters, and therefore this Rule is not applicable to the Offshore component of the Ocean Wind project.

7:7-9.6 Submerged vegetation habitat

The Offshore Project component located within federal waters does not contain habitat for submerged vegetation. Submerged vegetation habitat is associated with near shore, shallow waters which are not present within the area of the Offshore Project component. Therefore, this Rule is not applicable to the Offshore component of the Ocean Wind project.

7:7-9.7 Navigation channels

The components of the Project that are within the jurisdiction of the State of New Jersey, and the subject of the State of New Jersey permitting review, will cross navigation channels

associated with the inter-coastal waterway and those crossings will be evaluated through the State permit review process.

The Offshore Project component, which is the subject of this review, is located within the waters of the Atlantic Ocean.

The project will be located within waters of the Atlantic Ocean, which has sufficient depth for the navigation of boat traffic. The activities will not cause terrestrial soil and/or shoreline erosion and siltation in any navigation channel. The project will not result in the loss of navigability as there will be spacing of 0.8 nautical miles between the turbines. The WTG's will not be located in any navigation channel, and they will not be located within 50 feet of any authorized navigation channel. There are no proposed dredging activities within Federal waters.

To further navigational safety, all structures will be marked with appropriate markings and lighting following USCG and BOEM requirements. Furthermore, according to the DEIS, NOAA would also chart the wind turbine locations, and while not definitive, NOAA could also require each structure to have a virtual Automatic Identification System (AIS).

Consistency with this Rule has been demonstrated.

7:7-9.12 Submerged infrastructure route

As indicated within the DEIS, Ocean Wind will develop crossing agreements with utility owners prior to utility crossings. In addition, Ocean Wind intends to site and design the Project to minimize the potential for damage to existing utilities. Ocean Wind's own cables will be buried a minimum of 4 feet below the seabed, and cables will be protected with armoring where such depth cannot be attained.

Consistency with this Rule has been demonstrated.

7:7-9.13 Shipwrecks and artificial reef habitats

As indicated within the DEIS, the Lease Area and two export cable corridors have a high probability for containing shipwrecks, downed aircraft and related debris fields. BOEM does not anticipate impacts on known shipwrecks within the Lease Area from the project development.

According to information provided in Appendix Q of the Coastal Zone Consistency Assessment prepared by Ocean Wind, a geophysical survey is being conducted to identify potentially unmapped shipwrecks and artificial reef habitats and the proposed cable routes would avoid these areas. The report also states that known shipwrecks and artificial reef habitats have been mapped and will be avoided.

Marine remote-sensing studies within the marine area of potential effects identified a total of 19 submerged cultural resources, the majority of which are either known shipwrecks or potential shipwrecks from the Historic period (COP Volume III, Appendix F-1, pages 168–169; Ocean Wind 2022). Seventeen of these would be avoided, with 50-meter avoidance buffers, by all Project activities that are part of the undertaking. Two additional resources would also be avoided, but seafloor impacts could encroach into the recommended 50-meter avoidance buffers.

One of the two resources is a potential shipwreck within the Oyster Creek export cable route corridor. The other is a shipwreck in the BL England export cable route corridor believed to be one of three possible shipwrecks: the Huron, which sunk in 1866; the Rhine, which sunk in 1840; or the Sindia, which sunk in 1901 (COP Volume III, Appendix F-1, page 123; Ocean Wind 2022). Ocean Wind proposes to modify the design to avoid the two resources, but the Project would still fall within their associated avoidance buffers. None of these 3 ships are located within the Offshore component of the project.

Ocean Wind, BOEM, the New Jersey Historic Preservation Officer and the Advisory Council on Historic Preservation have a draft Memorandum of Agreement (MOA) in place that establish procedures and processes for the avoidance, minimization, and mitigation of project adverse effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act. This MOA includes measures to avoid and minimize impacts to shipwrecks.

Ocean Wind, LLC has agreed to enter into a Memorandum of Agreement among BOEM, the New Jersey State Historic Preservation Officer and the Advisory Council on Historic Preservation, which among other measures, will require Ocean Wind to avoid known shipwrecks, significant debris fields, and ancient submerged landform features (ASLF's).

While the Project is not proposed to be situated on any artificial reef, according to MRA, noise generated during pile driving is expected to affect fishing on the Atlantic City Reef, Great Egg Reef, and Deep Water Reef. The potential geographic range of impacts is shown in Figure 1 (reefs shown as light green rectangles) with distances drawn from Kusel et al. 2022, shown in Figure 2.

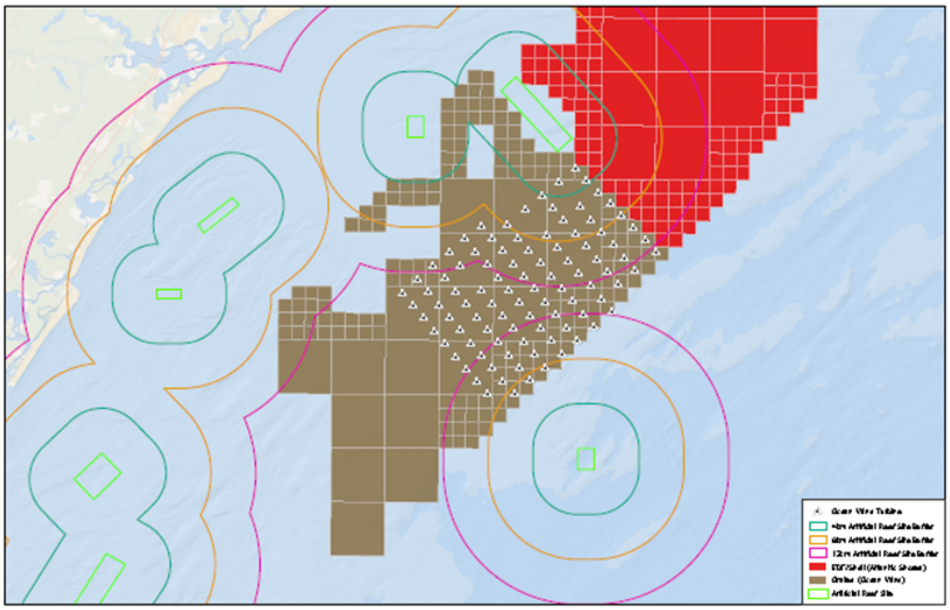

Figure 1. Ocean Wind turbine locations and nearby Artificial Reefs.

Table 22. Ranges ($R_{95\%}$ in meters) to thresholds for fish (GARFO 2016) due to impact hammering of two 12 m monopile in 12 hr, using an IHC S-4000 hammer at two selected modeling locations (L024-002 and L024-114). The duration of impact pile driving will be <12 hr per day, so 12 and 24 hr SEL are equivalent.

Group	Metric	Threshold (dB)	L024-002								L024-114							
			Winter				Summer				Winter				Summer			
			Hammer energy (kJ)								Hammer energy (kJ)							
			1000	2000	3000	4000	1000	2000	3000	4000	1000	2000	3000	4000	1000	2000	3000	4000
GARFO (2016)																		
Small fish	$L_{E,12hr}$	183	12,003				6,967				11,190				6,351			
	L_{pk}	206	41	70	94	115	50	69	88	89	49	67	88	105	51	66	82	99
Large fish	$L_{E,12hr}$	187	8,717				5,420				7,997				4,968			
	L_{pk}	206	41	70	94	115	50	69	88	89	49	67	88	105	51	66	82	99
Small fish	L_p	150	7,085	9,862	9,562	10,664	4,916	5,829	5,952	6,301	6,063	8,755	8,992	9,758	4,390	5,413	5,343	5,805
Large fish	L_p	150	7,085	9,862	9,562	10,664	4,916	5,829	5,952	6,301	6,063	8,755	8,992	9,758	4,390	5,413	5,343	5,805

Small fish are defined as having a total mass of <2 g.
Large fish are defined as having a total mass of ≥2 g.

Figure 2. Distance in meters from sound source (pile driving) to limit of physiological effects on fish.

The DEIS acknowledges the presence of the Atlantic City reef, Great Egg reef, Deepwater reef, but also the Ocean City reef. While the DEIS addresses noise impacts to fish, turtles and marine mammals, it is not specific to artificial reefs.

The major underwater noise-producing activities of this Project would include impact pile driving during construction. The piles to be driven would include large (11-meter-diameter at the mudline) monopiles and 2.44-meter-diameter pin piles.

The likelihood of injury from monopile installation depends on proximity to the noise source, intensity of the source, effectiveness of noise-attenuation measures, and duration of noise exposure. Results from modeling show that injury from a single strike is limited to 70 meters from the pile for both winter and summer seasons and injury from prolonged cumulative exposure (over 24 hours) extends as far as 9.35 kilometers from the pile during the winter water profile. Modeling indicates that behavioral effects on fish could occur up to 7.54 kilometers from the pile source during the winter and 5.18 kilometers from the pile source during the summer. Within this area, it is likely that some level of behavioral reaction is expected and could include startle responses or migration out of areas exposed to underwater noise (Hastings and Popper 2005). Behavioral disturbance to fish from pile driving noise is therefore considered temporary for the duration of the activity. To mitigate impacts to the extent practicable, the Project would employ either a double big bubble curtain or a single big bubble curtain in combination with a hydrodamper to achieve a minimum of 10 dB of noise reduction. Additionally, the Project would employ soft starts during impact pile driving, allowing a gradual increase of hammer blow energy, thus allowing mobile marine life to leave the area. Soft starts would be employed on the Project such that, prior to the commencement of any impact pile driving (and any time following a cessation of 30 minutes or more), soft-start techniques would be implemented and would include at least 20 minutes of four to six strikes per minute at between 10 and 20 percent of the maximum hammer energy.

Adherence to these mitigation measures and practices will minimize potential impacts to artificial reefs and demonstrate consistency with this rule.

Conditions

1 Prior to commencement of project construction, an Ocean Wind Offshore Wind Project Memorandum of Agreement shall be executed among the Section 106 consulting parties for the avoidance, minimization, and mitigation of project adverse effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act.

7:7-9.15 Intertidal and subtidal shallows

The Offshore component of the project will not be located within any intertidal or subtidal shallows. Therefore, this Rule is not applicable to the Offshore component of the Ocean Wind project.

7:7-9.16 Dunes

The Offshore component of the project will not be located within any dune area. Therefore, this Rule is not applicable to the Offshore component of the Ocean Wind project.

7:7-9.18 Coastal high hazard areas

FEMA does not prepare flood mapping beyond the 3-geogrpahical mile boundary from the mean high-water line. Nonetheless, the Offshore component of the Project does not involve any of the land uses identified by this rule. Therefore, this Rule is not applicable to the Offshore component of the Ocean Wind project.

7:7-9.19 Erosion hazard areas

There are no erosion high hazard areas within the Offshore component of the Project. Therefore, this Rule is not applicable to the Offshore component of the Ocean Wind project.

7:7-9.20 Barrier island corridor

There are no barrier islands located within the Offshore component of the project and therefore this rule is not applicable. However, the transmission lines associated with components of the Project that are within the jurisdiction of the State of New Jersey do cross barrier islands and those crossings are being evaluated under the pending State Permit application review.

7:7-9.22 Beaches

There are no beaches located within the Offshore component of the project and therefore this rule is not applicable. However, the transmission lines associated with components of the Project that are within the jurisdiction of the State of New Jersey do cross under beaches; however, those crossings are being evaluated under the pending State Permit application review.

7:7-9.25 Flood hazard areas

The Offshore component subject to federal jurisdiction is located below the mean high-water line of the Atlantic Ocean and does not involve the construction of a habitable building, railroad, roadway, bridge or culvert. Therefore, this Rule is not applicable to the Offshore component of the Ocean Wind project.

7:7-9.26 Riparian zones

There are no riparian zones associated within the Offshore component of the Project. Therefore, this Rule is not applicable.

7:7-9.27 Wetlands
7:7-9.28 Wetlands buffers

There are no wetlands or wetland buffer areas within the Offshore component of the Project. Therefore, these Rules are not applicable to the Offshore component of the Ocean Wind project.

7:7-9.34 Historic and archaeological resources

BOEM has determined that the proposed Project is an undertaking subject to Section 106 review. The construction of the WTG's and OSS's, installation of inter-array cables, and development of staging areas are ground- or seabed-disturbing activities that may adversely affect archaeological resources. The presence of WTGs may also introduce visual elements out of character with the historic setting of historic structures or landscapes; in cases where historic setting is a contributing element of historic properties' eligibility for the National Register of Historic Places (NRHP), the Project may adversely affect those historic properties.

Summary of Adverse Effects:

BOEM has determined that the Ocean Wind 1 Project will adversely affect the following historic properties:

- Brigantine Hotel, Brigantine City, Atlantic County
- Absecon Lighthouse, Atlantic City, Atlantic County
- Atlantic City Boardwalk, Atlantic City, Atlantic County
- Atlantic City Convention Hall, Atlantic City, Atlantic County
- Ritz-Carlton Hotel, Atlantic City, Atlantic County
- Riviera Apartments, Atlantic City, Atlantic County
- Vassar Square Condominiums, Ventnor City, Atlantic County
- House at 114 South Harvard Avenue, Ventnor City, Atlantic County
- Lucy the Margate Elephant, Margate City, Atlantic County
- Great Egg Coast Guard Station, Longport Borough, Atlantic County
- Ocean City Boardwalk, Ocean City, Cape May County
- Ocean City Music Pier, Ocean City, Cape May County
- The Flanders Hotel, Ocean City, Cape May County
- Hereford Inlet Lighthouse, North Wildwood, Cape May County
- North Wildwood Lifesaving Station, North Wildwood, Cape May County
- U.S. Lifesaving Station #35, Stone Harbor Borough, Cape May County
- Little Egg Harbor U.S. Lifesaving Station #23 (U.S. Coast Guard Station #119), Little Egg Harbor Township, Ocean County
- Thirteen ancient submerged landforms (Targets 21–26, 28–31, and 33–35)

The Project will introduce visual and add cumulative effects from visibility of the wind turbine generators (WTG) to 17 historic properties where ocean views are character-defining

features that contribute to their National Register of Historic Places (NRHP)-eligibly. Thirteen of the 16 identified ancient submerged landforms within the Lease Area (Targets 21–26, 28–31, 33–35) cannot be avoided and would be affected by the proposed project, as WTGs, inter-array cables, export cables, and associated work zones are proposed for locations within the defined areas of these resources. As a result, the Project is considered to have an adverse effects on these marine cultural resources, which are historic properties potentially eligible for listing in the NRHP.

According to the State Historic Preservation Office (HPO) the proposed project requires review pursuant to Section 106 of the National Historic Preservation Act, as amended. The Bureau of Ocean Energy Management (BOEM) has initiated consultation with the HPO, pursuant to their obligations under Section 106. Consultation is still ongoing at this time. BOEM has recommended a finding that historic properties will be adversely affected by the proposed project. BOEM is currently in the process of evaluating ways to avoid, minimize, and mitigate project adverse effects in accordance with 36 CFR § 800.6. To resolve the adverse effects of the project, BOEM has prepared a Draft Memorandum of Agreement (MOA) among BOEM, the New Jersey State Historic Preservation Officer, and the Advisory Council on Historic Preservation, in accordance with 36 CFR § 800.6(c) to memorialize the steps to avoid, minimize, and mitigate project adverse effects. Execution of the Memorandum of Agreement will demonstrate compliance with Section 106 of the National Historic Preservation Act. As a result, HPO has determined that the project is consistent to the maximum extent practicable with New Jersey's Coastal Management Program through the completion of Section 106 consultation and the execution of the Memorandum of Agreement among the Section 106 consulting parties for the Ocean Wind Offshored Wind project.

Condition

1 Prior to commencement of project construction, an Ocean Wind Offshore Wind Project Memorandum of Agreement shall be executed among the Section 106 consulting parties for the avoidance, minimization, and mitigation of project adverse effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act.

Consistency with this Rule is conditionally met.

7:7-9.36 Endangered and Threatened Wildlife or Vegetation Species Habitat

The Department's GIS Landscape Project mapping for endangered and threatened wildlife or vegetation species habitat does not extend beyond the State's three-nautical mile geographical limit.

Pursuant to information contained within the DEIS, five Federally listed endangered marine mammals are known to occur within the Offshore Project Area: Blue Whale, Fin Whale, North Atlantic Right Whale, Sei Whale, and Sperm Whale. The Offshore Project Area is within the migratory corridor for North Atlantic Right Whale and are considered regular visitors to the Offshore Project Area.

In addition, five Federally listed endangered reptiles are known to occur in the Offshore Project Area: Atlantic Hawksbill, Atlantic Leatherback, Atlantic Loggerhead, Atlantic Ridley, Atlantic Green Turtle

Two Federally listed Endangered Fish are known to occur in the Offshore Project Area: Atlantic Sturgeon and Shortnose Sturgeon

The project is not anticipated to have an adverse impact on either Atlantic Sturgeon or Shortnose Sturgeon.

Potential impacts to sea turtles are from pile-driving noise and associated potential for auditory injury, the presence of structures, ongoing climate change, and ongoing vessel traffic posing a risk of collision. Between the alternatives to the Project being considered by BOEM, there are no differences in the potential impacts to sea turtles.

As discussed in the DEIS, there is uncertainty 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. 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.

As discussed in the DEIS, 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. BOEM has concluded that the analysis provided is sufficient to support sound scientific judgments and informed decision-making regarding the impacts from proposed Project 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.

The conditions that BOEM are considering for mitigating impacts to marine mammals are similar for sea turtles as well, as outlined below.

As discussed in the DEIS, the 98 WTG's will be placed in a grid-like pattern spaced approximately 1 by 0.8 nautical miles (approximately 1.15 miles) between the WTG's. With this spacing, the presence of the monopile foundations are not anticipated to impede the movement of small marine mammals. Thus, the DEIS concludes that the WTG foundations would pose a negligible risk of displacement effects on marine mammals.

Pursuant to 16 U.S.C. 1379 Sec. 109, of the Marine Mammal Protection Act, no State may enforce, or attempt to enforce, any State law or regulation relating to the taking of any species (which term for purposes of this section includes any population stock) of marine mammal within the State unless the Secretary has transferred authority for the conservation and management of that species (hereinafter referred to in this section as "management authority") to the State under subsection (b)(1). In other words, the Marine Mammal Protection Act preempts State laws related to marine mammals. Therefore, the Endangered and Threatened Species Rule as it relates to marine mammals is non-enforceable by the State of New Jersey.

Ocean Wind has applied to the National Marine Fisheries Service (NMFS) for an incidental take authorization under the Marine Mammal Protection Act (MMPA) of 1972, as amended (16 USC 1361 et seq.), for incidental take of marine mammals during Project construction.

BOEM and other federal and state agencies have proposed, but have not yet adopted, measures to minimize impacts on marine mammals including marine debris awareness training (for regular gear haul out and reporting of lost gear), a passive acoustic monitoring plan (surveying and monitoring using sound recorders), noise mitigation for pile driving, and vessel speed restrictions as outlined below in greater detail. Other measures under consideration include the implementation of offshore and nearshore marine waters monitoring by approved protected species observers.

According to BOEM, if one or more of these measures are adopted, some adverse impacts would be further reduced. These measures include:

- Vessels related to project planning, construction, and operation shall travel at speeds in accordance with National Oceanic and Atmospheric Administration (NOAA) requirements or the agreed to adaptive management plan per to Project Protected Species Mitigation and Monitoring Plan (PSMMP) when assemblages of cetaceans are observed. Vessels will also maintain a reasonable distance from whales, small cetaceans, and sea turtles, as determined through site-specific consultations (specifics to be added based on consultations).

- Project-related vessels will be required to adhere to NMFS Regional Viewing Guidelines for vessel strike avoidance measures during construction and operation to minimize the risk of vessel collision with marine mammals and sea turtles. Operators shall be required to undergo training on applicable vessel guidelines.

- Vessel operators will monitor NMFS North Atlantic right whale (NARW) reporting systems (e.g., the Early Warning System, Sighting Advisory System) [daily] for the presence of NARW during planning, construction, and operations within or adjacent to Seasonal Management Areas and/or Dynamic Management Areas.

- Ocean Wind will post a qualified observer as agreed to during the NMFS incidental take authorization process, on vessels during construction activities to avoid and minimize impacts to marine species and habitats in the Project Area.

- Obtain necessary permits to address potential impacts on marine mammals from underwater noise and establish appropriate and practicable mitigation and monitoring measures in coordination with regulatory agencies.

- The Project will implement a vessel strike avoidance policy for all vessels under contract to Ocean Wind to reduce the risk of vessel strikes, and the likelihood of death and/or serious injury to marine mammals that may result from collisions with vessels.

- Vessel operators and crews shall receive protected species identification training. This training will cover sightings of marine mammals and other protected species known to occur or which have the potential to occur in the Project area. It will include training on making observations in both good weather conditions (i.e., clear visibility, low wind, low sea state) and bad weather conditions (i.e., fog, high winds, high sea states, in glare). Training will include not only identification skills but information and resources available regarding applicable federal laws and regulations for protected species. It will also cover any Critical Habitat requirements, migratory routes, seasonal variations, behavior identification, etc.

- All attempts shall be made to remain parallel to the animal's course when a traveling marine mammal is sighted in proximity to the vessel in transit. All attempts shall be made to reduce any abrupt changes in vessel direction until the marine mammal has moved beyond its associated separation distance (as described above).

- If an animal or group of animals is sighted in the vessel's path or in proximity to it, or if the animals are behaving in an unpredictable manner, all attempts shall be made to divert away from the animals or, if unable due to restricted movements, reduce speed and shift gears into neutral until the animal(s) has moved beyond the associated separation distance (except for voluntary bow riding dolphin species).

- All vessels will comply with NMFS regulations and speed restrictions and state regulations as applicable for NARW (see vessel speed restriction Standard Plan and Adaptive Plan outlines below).

- Ocean Wind will submit a final NARW Vessel Strike Avoidance Plan at least 90 days prior to commencement of vessel use that details the Adaptive Plan and specific monitoring equipment to be used. The plan will, at minimum, describe how the Passive Acoustic Monitoring Plan (PAM), in combination with visual observations, will be conducted to ensure the transit corridor is clear of NARWs. The plan will also provide details on the vessel-based observer protocols on transiting vessels.

- Vessels will maintain, to the extent practicable, separation distances of:
  >500 m distance from any sighted North Atlantic right whale or unidentified large marine mammals; >100 m from all other large whales; >50 m for dolphins, porpoises, seals, and sea turtles.

- Localized detections of NARWs in an action zone would trigger a slow-down to 10 knots or less in the respective zone for the following 12 h. Each subsequent detection would trigger a 12-h reset. A zone slow-down expires when there has been no further visual or acoustic detection in the past 12 h within the triggered zone.

- Year Round: All underway vessels (transiting or surveying) operating >10 knots will have a dedicated visual observer (or NMFS approved automated visual detection system) on duty at all times to monitor for marine mammals within a 180° direction of the forward path of the vessel (90° port to 90° starboard). Visual observers must be equipped with alternative monitoring technology for periods of low visibility (e.g., darkness, rain, fog). The dedicated visual observer must receive prior training on protected species detection and identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements. Visual observers may be third-party observers (i.e., NMFS-approved PSOs) or crew members.

  Consistency with this rule has been demonstrated.

7:7-9.37 Critical Wildlife Habitat

The Offshore component of the project does not contain any rookeries for bird species. Both marine mammals and fish species move through the Project area. However, as previously discussed, the Marine Mammal Protection Act preempts state law for the protection of marine mammals. The Project has the potential for impacting marine fisheries. However, those impacts are not known and long-term monitoring is being proposed to evaluate those impacts and to address appropriate mitigation. The marine fisheries impacts are discussed further in the Marine Fish and Fisheries section of this report.

Consistency with this rule has been demonstrated.

7:7-9.39 Special hazard areas

Comments received via email on March 20, 2023 from the Department's Bureau of Emergency Response indicate that based on available information, there is potential for military munitions and explosives of concern ("MECs") and unexploded ordinances ("UXOs") to be encountered during project construction within the Ocean Wind 1 project area. Ocean Wind LLC has indicated that likelihood of encountering UXO/MECs is very low, however, they intend to implement an UXO/MECs Risk Assessment with Risk Mitigation Strategy designed to evaluate and reduce risk. Therefore, a condition will be added requiring Ocean Wind LLC to notify the USCG if MECs or UXOs are encountered during project construction.

Consistency with this rule has been demonstrated.

7:7-9.48 Lands and waters subject to public trust rights

The Offshore component is not located within New Jersey's territorial waters and is not adjacent to any New Jersey tidal shore. Therefore, this rule is not applicable to the Offshore component of the Ocean Wind 1 Project.

7:7-12.7 New dredging

The proposed installation of electric transmission cables within the Atlantic Ocean will involve the temporary displacement and removal of sediment. However, this rule only applies to the installation of submerged pipelines and cables. Submerged pipelines are defined at N.J.A.C. 7:7-12.15(a) as "underwater pipelines which transmit liquid or gas, including crude oil, natural gas, water, petroleum products or sewerage". Submerged cables are defined at N.J.A.C. 7:7-12.21(a) as "underwater telecommunication cables" and "all associated structures in the water". The proposed electric transmission cables will convey electricity from an offshore wind farm to two (2) proposed substations and therefore are not telecommunication cables or submerged pipelines.

Therefore, this rule is not applicable to the Offshore component of the Ocean Wind 1 project.

7:7-12.21 Submerged cables

The proposed cables are for transmitting electricity and are not telecommunication cables. Therefore, this rule is not applicable.

7:7-12.24 Miscellaneous uses

The Offshore Wind Project is considered a water-dependent activity. Offshore Wind projects by design generate electricity from the wind that blows across the ocean. Offshore Wind projects benefit from the reliability of ocean winds, the higher wind speeds associated with the ocean versus over land, and the lack of physical interferences that can be encountered on land.

With the inclusion of the conditions discussed in the marine fisheries section of this report, the proposed project will be protective of protective of wildlife and marine fisheries to the maximum extent practicable.

Consistency with this rule has been demonstrated.

7:7-14.1 Rule on location of linear development

According to N.J.A.C. 7:7-1.5, "Linear development" means a development with the basic function of connecting two points, such as a road, drive, public walkway, railroad, sewerage pipe, stormwater management pipe, gas pipeline, water pipeline, or electric, telephone or other transmission lines. Therefore, this rule is applicable to the proposed cables but is not applicable to the WTG's. Because the proposed cables must connect to the proposed onshore substations, there are no practicable alternative route locations within Federal waters. The cable installation is likely to impact existing sand ridges which provide fishery habitat. According to the DEIS, Ocean Wind LLC has committed to measures to minimize impacts on commercial fisheries and for-hire recreational fishing such as developing and implementing a Fisheries Communication and Outreach Plan, working with commercial and recreational fishing entities to ensure the Project will minimize potential conflicts, and implementing Ocean Wind LLC's corporate policy and procedure to compensate commercial/recreational fishing entities for gear loss during construction, as well as during operation and management (O&M) activities. In addition, the DEIS states that Ocean Wind LLC would implement a compensation program for

lost income for commercial and recreational fishermen and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. This measure, if adopted, would reduce impacts from the IPF presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Therefore, a Memorandum of Understanding (MOU) to be executed by the Department and Ocean Wind LLC will establish a Compensatory Mitigation Fund to compensate fishers for verifiable claims of negative impacts of a significant nature, including economic losses, caused by the Ocean Wind 1 offshore wind facility during its construction, operation and/or decommissioning. The Letter of Intent to execute the MOU was executed by the Department and Ocean Wind on April 27, 2023. Further, this Federal Consistency Determination is conditional upon Ocean Wind, LLC implementing all protective and/or mitigative measures as outlined in BOEM's Final EIS and Record of Decision for the protection of fisheries, aquatic and benthic resources.

Aside from established shipping lanes, there are no existing transportation corridors or alignments within the ocean environment. In addition, the cables will be installed below the seabed.

Consistency with this rule has been demonstrated.

7:7-14.2 Basic location rule

Governor Murphy through Executive Order 28 established the goal of setting New Jersey on the path to 100% clean energy by 2050. Building upon that goal, in 2019, Executive Order #92 effectively raised New Jersey's offshore wind goal from 3,500 megawatts (MW) by 2030 to 7,500 MW by 2035. On September 21, 2022, Governor Murphy signed Executive Order #307, increasing New Jersey's offshore wind goal by nearly 50 percent to 11,000 MW by 2040. Executive Order #307 also directs the New Jersey Board of Public Utilities to study the feasibility of increasing the target further.

Governor Murphy's agenda enhances and expands already existing programs that advance renewable energy, improves energy efficiency, reduces greenhouse gas emissions, prepares the State for the impacts of climate change, and establishes a path forward to ensure New Jersey achieves its greenhouse gas emissions targets while improving resiliency for all communities throughout the State. DEP is now looking ahead to NJ's 2050 Goal and accelerating its transition to a low carbon economy through reducing carbon pollution, expanding clean energy infrastructure and building resilient communities. Offshore wind projects will deliver the clean, renewable energy generation needed to meet the State's goals of 50 percent renewable energy by 2030 and a 100 percent clean energy economy by 2050.

Therefore, the project promotes public health, safety, and welfare.

With the inclusion of the conditions discussed in the marine fisheries section of this report, the proposed project will be protective of protective of wildlife and marine fisheries to the maximum extent practicable.

Consistency with this rule has been demonstrated.

7:7-14.3 Secondary impacts

The project is not anticipated to have any secondary impacts such as traffic increases or increased recreational demand and will not induce further development. The Offshore component of the project is outside of New Jersey's territorial waters and therefore is not included in the State Development and Redevelopment Plan. The project would contribute to New Jersey's goal of 11,000 megawatts of offshore wind energy generation by 2040 as outlined in New Jersey's Governor's Executive Order No. 307, issued on September 21, 2022.

Consistency with this rule has been demonstrated.

7:7-15.4 Energy facility

Through a competitive leasing process under 30 Code of Federal Regulations (CFR) 585.211, Ocean Wind LLC was awarded commercial Renewable Energy Lease OCS-A 0498 covering an area offshore of New Jersey (the Lease Area). Under the terms of the lease, Ocean Wind LLC has the exclusive right to submit a Construction and Operations Plan (COP) for activities within the Lease Area, and it has submitted a COP to BOEM proposing the construction and installation, operations, and maintenance (O&M), and conceptual decommissioning of an 1,100-megawatt (MW) offshore wind energy facility in the Lease Area in accordance with BOEM's COP regulations under 30 CFR 585.626, et seq.

According to the Construction and Operation Plan (COP) submitted to BOEM, the Ocean Wind 1 offshore wind farm is anticipated to power approximately 500,000 New Jersey homes and will help New Jersey achieve its renewable energy generation goal of supplying more than 1.5 million New Jersey homes with offshore wind power. The construction of the Ocean Wind LLC offshore wind farm is intended to contribute to New Jersey's clean energy goals, specifically the goal of 11 gigawatts (GW) of offshore wind energy generation by 2040 as outlined in New Jersey's Governor's Executive Order No. 307, issued on September 21, 2022. Further, it is intended to fulfill the New Jersey's Board of Public Utilities (BPU) September 20, 2018, solicitation for 1,100 megawatts (MW) of offshore wind that was awarded to Ocean Wind LLC, via the New Jersey BPU on June 21, 2019 (BPU Docket No. QO18121289). BPU is the agency with the responsibility to determine the project's effectiveness to create energy and BPU identified 1,100 megawatts of offshore wind as the required capacity of the Project.

Historically the power grid in New Jersey was built up to supply the main load centers from large conventional fuel generation, such as coal, oil, gas and nuclear, as well as interconnection with the rest of the state and neighboring states. Two large generators of this type have recently retired on the Atlantic Coast, which were connected to the grid near the Ocean Wind 1 offshore wind farm. These are the Oyster Creek nuclear (636 MW) and the BL England coal, oil, and diesel (450 MW) generators. The power output of these plants was less than the planned capacity of the Ocean Wind 1 offshore wind farm. The Project would have long term beneficial impacts as it is an air quality impact avoidance measure that would result in a long-term net reduction of regional air pollution over the life of the Project through displacement of fossil fuel-generated power plants. Offshore Wind projects by design generate electricity from the wind that blows across the oceans. Offshore Wind projects benefit from the reliability of ocean

winds, the higher wind speeds over associated with the ocean versus on over land, and the lack of physical interferences that can be encountered on land. Turbine blades positioned hundreds of feet into the air are also exposed to much faster and almost constant wind allowing them to generate electricity even when there is no wind on land.

The WTG's are located within habitat for surf clams and marine fish and fisheries. As discussed under the surf clam rule and the marine fish and fisheries rules contained herein, the impacts will mainly be accessing these resources by commercial fishermen. To mitigate those impacts, the NJDEP and Ocean Wind LLC have agreed to enter into a Memorandum of Understanding to compensate fishermen for lost income and gear.

Public access will not be affected. This is discussed further under the Public Access Rule.

As discussed in the DEIS, the presence of offshore WTG's and OSS would change perceptions of ocean scenes from natural and undeveloped to a developed wind energy environment characterized by WTG's and OSS's. In clear weather, the WTG's and OSS would be an unavoidable presence in views from the coastline, with moderate to major effects on seascape character and landscape character.

To minimize visibility, the WTG's would be a tubular design and would be painted white or light gray to help reduce potential visibility against the horizon.

The WTG's will be required to have permanent FAA aviation warning lighting which would be visible from beaches and coastlines and according to the DEIS and would have a major impact on scenic and visual resources within the study area. According to the DEIS, the cumulative effect of the Project, and other proposed WTG's projects, and the associated synchronized flashing strobe lights consisting of three red flashing lights at the mid-section of each tower and one at the top of each WTG would have long-term minor to major impacts on sensitive onshore and offshore viewing locations, based on viewer distance and angle of view and assuming no obstructions.

However, Ocean Wind LLC has committed to installing Aircraft Detection Lighting Systems (ADLS) on WTG's to meet FAA nighttime lighting requirements instead of standard warning lights. ADLS's activate the hazard lighting system in response to detection of nearby aircraft. The synchronized flashing of the navigational lights occurs only when an aircraft is within a predefined distance of the structures, resulting in shorter-duration night sky impacts on the seascape, open ocean, landscape, and viewers. The shorter-duration synchronized flashing of ADLS is anticipated to have reduced visual impacts at night as compared to standard continuous, medium-intensity red strobe FAA warning system due to the duration of activation. It is anticipated that the reduced time of FAA hazard lighting resulting from an implemented ADLS would reduce the duration of the potential impacts of nighttime aviation lighting to less than 1 percent of the normal operating time that would occur without using ADLS. Technology.

The DEIS states that visitors are expected to be able to continue to pursue activities that rely on other coastal and ocean environments, scenic qualities, natural resources, and establishments that provide services to recreation and tourism. The DEIS concludes that seaside

locations could experience some reduced recreational and tourism activity, but the visible presence of WTGs would be unlikely to affect shore-based or marine recreation and tourism in the geographic analysis area as a whole.

It is not anticipated that the Project will result in a net loss of 200 jobs in NJ. The project does have the potential to impact jobs associated with commercial and recreational fishing and associated land based support businesses. The DEIS reports that Ocean Wind LLC's economic impact study estimates that the Proposed Action would support the following employment in New Jersey alone in direct, indirect, and induced job-years: an estimated 663 FTE job-years during development, 6,598 FTE job-years during construction, 6,114 FTE job-years during operations, and 1,202 FTE job-years during decommissioning (COP Volume II, Table 2.3.1-4; Ocean Wind 2022).

The WTG's have no practicable alternative location in the coastal zone because they are water-dependent and require expansive areas that cannot be accommodated on land in New Jersey. In addition, the WTG's must be confined to Renewable Energy Lease OCS-A 0498. Through a competitive leasing process under 30 Code of Federal Regulations (CFR) 585.211, Ocean Wind LLC was awarded commercial Renewable Energy Lease OCS-A 0498 covering an area offshore of New Jersey (the Lease Area). Under the terms of the lease, Ocean Wind LLC has the exclusive right to submit a Construction and Operations Plan (COP) for activities within the Lease Area, and it has submitted a COP to BOEM proposing the construction and installation, operations and maintenance (O&M), and conceptual decommissioning of an 1,100-megawatt (MW) offshore wind energy facility in the Lease Area in accordance with BOEM's COP regulations under 30 CFR 585.626, et seq. Ocean Wind LLC does not have the ability to construct the Project outside of the Lease Area.

The Offshore Wind Project is considered a water-dependent activity. Offshore Wind projects by design generate electricity from the wind that travel across the ocean. Offshore Wind projects benefit from the reliability of ocean winds, the higher wind speeds associated with the ocean versus over land, and the lack of physical interferences that can be encountered on land. The Wind Farm Area is not located within New Jersey's coastal zone or waters, which extend from the mean high water line out to the three-geographical-mile limit of the New Jersey territorial sea and therefore not subject to CAFRA or Waterfront Development jurisdiction. Consequently, the siting requirements at (b)2 and 3 are not applicable.

Avian survey findings by NJDEP that cover the Project were used by BOEM to inform the predictive models and analyze the potential adverse impacts on bird resources in the EIS. The DEIS states that the impacts of the Project alone as a result of presence of structures would be long term but minor and may include some minor beneficial impacts. Due to the anticipated use of flashing red tower lights, restricted time period of exposure during migration, and small number of migrants that could cross the Wind Farm Area, BOEM and the United States Fish and Wildlife Service (USFWS) conclude that the Proposed Action would not likely adversely affect roseate terns, piping plovers, eastern black rail, and red knots.

According to the DEIS, the locations of the OCS offshore wind lease areas were selected to minimize impacts on all resources, including birds. Within the Atlantic Flyway along the

North American Atlantic Coast, much of the bird activity is concentrated along the coastline (Watts 2010). Waterbirds use a corridor between the coast and several kilometers out onto the OCS, while land birds tend to use a wider corridor extending from the coastline to tens of kilometers inland (Watts 2010). However, operation of the Project would result in impacts on some individuals of offshore bird species and possibly some individuals of coastal and inland bird species during spring and fall migration. These impacts could arise through direct mortality from collisions with WTGs or through behavioral avoidance and habitat loss (Drewitt and Langston 2006, Fox et al. 2006, Goodale and Millman 2016).

Ocean Wind LLC performed an exposure assessment to estimate the risk of various offshore bird species encountering the Wind Farm Area (COP Volume III, Appendix H; Ocean Wind 2022). Most species were identified as having "minimal" to "low" overall exposure risk. Of the approximately 40 species of marine birds that use the mid-Atlantic marine environment, the northern gannet and loons had the highest potential exposure, both considered "low-medium" exposure risk. In addition, two raptors—peregrine falcon and merlin—were found to have "low-medium" exposure risk; non-falcon raptors were found to have limited use of the offshore environment. While some non-marine birds have the potential to be exposed to the Wind Farm Area, the Wind Farm Area is far enough offshore as to be beyond the range of most breeding terrestrial or coastal bird species. Of the species considered to have a higher overall exposure risk (i.e., loons, northern gannet, peregrine falcon, and merlin), two have a special status designation: red-throated loon is a Bird of Conservation Concern and peregrine falcon is state-listed as endangered (breeding) and special concern (non-breeding).

According to the DEIS, because the relative density of birds in the Outer Continental Shelf is low, relatively few birds are likely to encounter WTGs.

Bats are terrestrial species that spend almost their entire lives on or over land. According to the DEIS, tree bats may potentially occur offshore during spring and fall migration and under very specific conditions like low wind and high temperatures.

The NJDEP Ecological Baseline Study identified 6 species of bats offshore, but none within the lease area although they could pass through the area.

Unlike tree bats, the likelihood of detecting a Myotis species or other cave bat is substantially less in offshore areas. Bats have been documented temporarily roosting on structures (i.e., lighthouses) on nearshore islands and there is evidence of eastern red bats migrating offshore in the Atlantic. According to the DEIS, in a mid-Atlantic bat acoustic study conducted during the spring and fall of 2009 and 2010, the maximum distance that bats were detected from shore was 13.6 miles (21.9 kilometers) and the mean distance was 5.2 miles (8.4 kilometers). In Maine, bats were detected on islands up to 25.8 miles (41.6 kilometers) from the mainland. In the mid-Atlantic acoustic study, eastern red bat represented 78 percent of all bat detections offshore and bat activity decreased as wind increased. In addition, eastern red bats were detected in the mid-Atlantic up to 27.3 miles (44 kilometers) offshore by high-definition video aerial surveys (Ocean Wind 2022). According to the DEIS, there is some uncertainty regarding the level of bat use of the OCS. However, available data indicates that bat activity levels are generally lower offshore compared to onshore (Hein et al. 2021).

Cave-hibernating bats hibernate regionally in caves, mines, and other structures (e.g., buildings) and feed primarily on insects in terrestrial and fresh-water habitats. These species generally exhibit lower activity in the offshore environment than the migratory tree bats (Ocean Wind 2022), with movements primarily during the fall. According to the DEIS, a recent nano-tracking study on Martha's Vineyard recorded little brown bat movements off the island in late August and early September, with one individual flying from Martha's Vineyard to Cape Cod. Big brown bats were also detected migrating from the island later in the year (October–November). The DEIS reports that these findings are supported by an acoustic study conducted on islands and buoys off the Gulf of Maine that indicated the greatest percentage of activity in July–October. Given that the use of the coastline as a migratory pathway by cave-hibernating bats is likely limited to their fall migration period, that acoustic studies indicate lower use of the offshore environment by cave-hibernating bats, and that cave-hibernating bats do not regularly feed on insects over the ocean, exposure to the Wind Farm Area is unlikely for this group (Ocean Wind 2022). Tree bats migrate south to overwinter and have been documented in the offshore environment (Ocean Wind 2022). Eastern red bats have been detected migrating from Martha's Vineyard late in the fall, with one bat tracked as far south as Maryland. These results are supported by historical observations of eastern red bats offshore and recent acoustic and survey results (Ocean Wind 2022). While little local data are available for the Project area, the NJDEP Ecological Base Studies surveys recorded several observations of bats flying over the ocean, with observations of migratory tree bats in the near-shore portion of the Wind Farm Area. Given that tree-bats were detected in the offshore environment, they may pass through the Project area during the migration period. However, according to the DEIS, few bats would be expected to encounter structures on the OCS and no population-level effects would be expected. BOEM anticipates the presence of structures to have a negligible impact on bat populations.

As discussed above, Ocean Wind LLC has committed to installing Aircraft Detection Lighting Systems (ADLS) on WTG's to meet FAA nighttime lighting requirements instead of standard warning lights. ADLS's only activate the hazard lighting system in response to detection of nearby aircraft and are not activated in the absence of aircraft.

Consistency with this rule has been demonstrated.

7:7-15.7 Industry

The proposed project involves the construction of an offshore wind farm within BOEM Lease Area (OCS-A 0498), to deliver renewable energy and additional capacity to meet State and regional renewable energy demands and goals.

The Project has been reviewed in accordance with the rules cited above, including 7:7-9.16, 9.30, 9.48, 16.9, and 16.11, and all other applicable location and resource rules and has been found to be consistent with these rules. The rationale for the Industry Rule recognizes that water dependent industry must be located somewhere along the waterfront. The Offshore Wind Project is considered a water-dependent activity. Offshore Wind projects by design generate electricity from the wind that blows across the oceans. Offshore Wind projects benefit from the reliability of ocean winds, the higher wind speeds over associated with the ocean versus on over land, and the lack of physical interferences that can be encountered on land.

Consistency with this rule has been demonstrated.

7:7-15.14 High-rise structures

While the WTG's exceed the 60-foot height definition that is applied to high rise structures, this rule is not applicable because the rule specifically excludes wind turbines.

7:7-16.2 Marine fish and fisheries

As discussed within BOEM's DEIS, impacts to commercial fisheries and for-hire recreational fisheries are expected without the project as a result of climate change events, such as increased magnitude or frequency of storms, shoreline changes, ocean acidification, and water temperature changes. The DEIS cites studies by Barange et al (2018) and Hare et al (2016) that conclude the catch potential for the temperate Northeast Atlantic is projected to decrease between now and the 2050's. For approximately half of the 82 species assessed, the authors of these studies report that overall climate vulnerability is high to very high, with diadramous fish (fish that migrate between fresh and salt water) and benthic species such as surf clam, ocean quahog, and scallops exhibiting the highest vulnerability. The DEIS also reported that most species included in the assessment have a high potential for a change in distribution in response to projected changes in climate. Adverse effects of climate change are expected for approximately half of the species assessed, while Hare (2016) foresees some beneficial impacts to approximately 17 percent of the species, including longfin squid, butterfish, and Atlantic croaker.

As discussed within the DEIS, the WTG and substation foundations, and cables have the potential to reduce fishing access and to increase the risk of damage to fishing gear. The fishing industry has expressed concerns about operating fishing vessels with trawl gear within the Wind Farm Area given the size of the gear, the spacing between the WTG's and the space needed to safely navigate, particularly in the presence of other fishing vessels and poor weather conditions. To mitigate the impacts, Ocean Wind LLC proposes to space and orient the WTG's 1 nautical mile by 0.8 nautical mile between WTGs in a southeast-northwest orientation to better accommodate commercial fishing vessels transiting the offshore lease areas and commercial fishing path orientations, the burial of the cable to minimum depths deeper than trawl gear would penetrate, and financial compensation programs for lost or entangled gear.

Commercial fishing involves pulling gear such as netting or fishing lines. Navigating while pulling such gear, and following hooked pelagic fish, requires a wide area that may not be provided by the spacing between the WTG's. These conditions, as well as the underground cables, can present opportunities for gear snagging or damage. To avoid the economic loss of gear and the ability to continue fishing, it is expected that some fishermen will choose to avoid the WTG area. In addition, fishermen who have commented on the project have stated that the 1 nautical mile by 0.8 nautical mile orientation may not be adequate to allow safe navigation particularly in low visibility inclement weather. Specifically, trawl and dredge operators have stated that spacing that is less than 1 nautical mile between WTG's may not be sufficient to safely navigate due to maneuverability of fishing gear and gear not directly following in line with the vessel orientation. Representatives from the clam industry have said that their

operations require a minimum of 2 nautical miles between WTG's, in alignment with bottom contours, for safe operations.

The Wind Farm Area would not be a problem for most for-hire fishing vessels because their vessels are smaller and they are not using the kind of expansive fishing gear used by commercial fishermen. However, some recreational for-hire fishermen target large pelagic species that once hooked may require many feet of extended line which can be problematic within the spacing of the WTG's.

BOEM anticipates that the impacts to commercial fisheries and for-hire recreational fishing to be minor to major depending on the fishery. The offshore structures, including the foundations and cable protection measures, could reduce fishing access and increase the risk of fishing gear or damage loss. The extent of adverse impacts would vary by fishery and fishing operation due to differences in target species, gear type, and predominant location of fishing activity. The impacts could also include longer-term, beneficial impacts for some for-hire recreational fishing operations due to the artificial reef effect. BOEM concludes that with mitigation measures implemented across all offshore wind projects, including WTG spacing and orientation measures to better accommodate commercial fishing vessels transiting the offshore wind lease areas and typical commercial fishing path orientations, offshore cable burial to minimum depths deeper than trawl gear would penetrate, and financial compensation programs for fishing interests that have lost or entangled gear, the moderate to major impact rating for some commercial fisheries could decrease to moderate.

Noise impacts associated with offshore construction activities, including pile driving, trenching for cable installation and vessel traffic, could cause indirect impacts on commercial and for-hire recreational fisheries within the Wind Farm Area. BOEM anticipates that the impacts from noise would be short term and behavioral in nature, with most finfish species avoiding the noise-affected area, while invertebrates may experience more significant behavioral changes, such as bivalves who may close their valves and burrow deeper. Lengthy valve closure could reduce respiration and growth, prevent the expulsion of wastes and lead to mortality and population level impacts. This could lead to moderate impacts on commercial fisheries. As discussed within the DEIS, the greatest impacts would be the result of pile diving and the impulse noise impacts it would create. The impulse noise from pile driving may exceed physiological and sound thresholds for some species, resulting in injury or mortality particularly for species within 50 meters of the pile driving activity. To lessen the impacts from pile driving, Ocean Wind LLC has committed to using ramp-up techniques that allow mobile species to leave the area prior to experiencing full-impact pile driving. In addition, as discussed within the DEIS, BOEM will require Ocean Wind LLC to implement additional protective measures and best management practices to ensure minimization of impacts.

Noise resulting from trenching for cable installation is expected to be less of an impact because the noise generated will extend only a short distance from the area and will be temporary.

When operational, the WTG's may be audible to some finfish and invertebrates, but the noise would only be audible a short distance from the WTG and there is no information to conclude that such noise would adversely affect this resource.

Noise generated from construction and operation vessel traffic would be considered low intensity and is not anticipated to affect species on a fisheries level.

As discussed within the DEIS, BOEM shall require Ocean Wind LLC to implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment. In addition, Ocean Wind LLC would implement a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment.

Other measures are being considered by BOEM to mitigate potential impacts to marine fish and fisheries which include:

- During pile-driving activities, use ramp up procedures as agreed with National Marine Fisheries Service (NMFS) to allow mobile marine species to leave the area before full-intensity pile-driving begins.

- Minimize adverse impacts to sand ridge and trough habitat features by micrositing the placement of two WTGs (D06 and E05) out of the sand ridge or trough centerline buffer areas. The buffer area extends 500 feet on both sides of the centerline of each ridge and trough.

- Minimize perpendicular crossings of sand ridges and troughs by inter-array cables.

- Avoid the use of concrete mattress as cable protection (in all areas, but most critically within sand ridge/trough habitat features) to the extent possible.

- Minimize the installation of scour protection, especially within the sand ridge and trough habitat features. Scour protection should consist of natural or engineered stone that does not inhibit epibenthic growth and provides three-dimensional complexity, both in height and in interstitial spaces, as technically and economically feasible.

- Avoid and minimize adverse impacts to complex benthic habitats by micrositing WTG locations into low multibeam backscatter return areas and restricting seafloor disturbance (from anchoring, jack-up legs, etc.) during construction to avoid and minimize impacts to higher multibeam backscatter return areas to the extent possible.

- The lessee shall implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational

Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment.

- The lessee shall implement a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment.

- Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure chiefly ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. Thus, the cable protection measures should be trawl-friendly with tapered/sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then the lessee should consider using materials that mirror the benthic environment.

In addition to the above enforceable policies, the following Best Management Practices are proposed and considered by BOEM:

- Ocean Wind LLC would work cooperatively with commercial/recreational fishing entities and interests to ensure that the construction and operation of the Project will minimize potential conflicts with commercial and recreational fishing interests. Ørsted will review planned activities with potentially affected fishing organizations and port authorities to prevent unreasonable fishing gear conflicts.

- Ocean Wind would develop and implement a Fisheries Communication and Outreach Plan, as outline in Appendix O of the COP. (COP Appendix O). The plan includes the appointment of a dedicated fisheries liaison as well as fisheries representatives who will serve as conduits for providing information to, and gathering feedback from, the fishing industry, as well as Project-specific details on fisheries engagements.

- Implement Ocean Wind's (Ørsted's) corporate policy and procedure to compensate commercial/recreational fishing entities for gear loss as a result of Project activities.

It is anticipated that through the implementation of mitigative measures, impacts will be minimized to the maximum extent practicable.

Conditions

1. Ocean Wind LLC and the State of NJ shall execute a Memorandum of Understanding (MOU) to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.

2. Ocean Wind, LLC shall implement all protective and/or mitigative measures as outlined in BOEM's Final EIS and Record of Decision for protection of fisheries, aquatic and benthic resources.

3. Ocean Wind, LLC shall develop a Project Mitigation Plan that is informed by public engagement, consultation with the appropriate state, federal (National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries), and regional, non-government organizations (i.e., the Regional Wildlife Science Collaborative for Offshore Wind and the Responsible Offshore Science Alliance). The Plan shall summarize the expected impacts; describe and provide technical details for each mitigation measure (including the type of impact to which it relates and the conditions under which it is required); identify policies and standards to be used and complied with; and, be responsive to impacts detected in project monitoring and other monitoring and research studies and initiatives, including Ocean Wind Fisheries Monitoring Plan, Ocean Wind Benthic Monitoring Plan, and the New Jersey Research and Monitoring Initiative for Offshore Wind.

4. If avoidance and minimization to Prime Fishing Areas identified on NOAA and NJDEP's publicly available GIS layer depicting previously identified Prime Fishing Areas (see https://gisdata-njdep.opendata.arcgis.com/) is not feasible, then Ocean Wind, LLC shall provide the NJDEP, Division of Land Resource Protection with information that clearly shows any permanent changes to the bathymetry, including but not limited to flattening sand waves, filling, and relocation of boulders, post-construction. This shall include the location and extent of modification of the pre-existing bathymetry (figures and GIS shapefiles with locations and dimensions of these features within the project area should be provided), which structures were installed within these areas, and the avoidance and minimization measures which were implemented to reduce the area permanently modified.

5. For Wind Turbine Generators (WTGs) and Offs Shore Substations (OSSs) - including most WTGs of Rows 1 through 8 and OSSs 1 and 2 - with the potential to impact artificial reefs and species using those reefs within the Atlantic City Reef and Great Egg Harbor artificial reef sites, additional noise dampening devices that result in greater noise dampening shall be utilized to avoid and minimize impacts to habitats and species. Devices may include, but are not limited to isolation casings, isolation casings with bubble curtains inside, and double-walled isolation casings.

   Consistency with this rule has been demonstrated.

7:7-16.3 Water quality

The construction of the WTG's, cable installation and scour protection is anticipated to resuspend sediments as a result of pile driving and cable installation. However, these impacts would be localized and temporary.

According to the DEIS, the Project would have a maximum of 39,690 gallons of coolants, 426,671 gallons of oils and lubricants, and 236,216 gallons of diesel stored within WTG foundations and Offshore Substations according to the DEIS. BOEM anticipates that the risk of spills from any single offshore structure would be low, and any effects would be localized. Based upon modelling for an area near the Project (Maryland WEA), it is estimated

that the most likely type of spill to occur during the life of a project is 90-440 gallons, which would have brief, localized impacts on water quality.

Under a maximum-case accidental release scenario, there is a potential for moderate water quality impacts. However, the likelihood of such an event is low and therefore the most likely spill event would be small and of low frequency occurrence. As discussed within the DEIS, any overall impacts to water quality is expected to be short term, localized, and minor, resulting in little change to water quality. In addition, a Spill Prevention, Control, and Countermeasure Plan will be developed in accordance with all regulatory requirements and implemented during all phases of the project to minimize impacts to water quality.

Consistency with this rule has been demonstrated.

7:7-16.9 Public access

The offshore component of the project is not located within New Jersey territorial waters and is not adjacent to any shoreline. Therefore, this rule is not applicable.

7:7-16.10 Scenic resources and design

The Scenic Resources and Design rule at N.J.A.C. 7:7-16.10(c) discourages new coastal development that is not visually compatible with existing scenic resources in terms of large-scale elements of building and site design. The rule, as discussed at N.J.A.C. 7:7-16.10(d), further clarifies that wind turbines are not subject to the setback requirements and open view corridor restrictions of this rule. Discouraged coastal development, as defined in the Coastal Zone Management Rules at N.J.A.C. 7:7-1.5, allows for uses that the Department considers to be in the public interest provided mitigating or compensating measures can be taken so that there is a net gain in quality and quantity of the coastal resource of concern. As discussed in the Project Description section of this report, as well as within the environmental report accompanying the State permits, the construction of Ocean Wind LLC's offshore wind farm and associated infrastructure is in the public interest.

As proposed, the State and Federal projects have been designed to minimize visual impacts to the extent feasible. BOEM awarded Ocean Wind LLC a lease area within which an offshore wind farm could be planned. Ocean Wind LLC does not have access to other parts of the outer continental shelf outside of the lease area for potential wind farm development. Ocean Wind's lease area begins approximately 9 miles off New Jersey's coast and extends offshore to about 27 miles. According to Ocean Wind LLC, siting turbines within the westernmost portion of the lease area, closer to shore was eliminated from consideration because it did not minimize visual impacts. Ocean Wind LLC made the decision to locate the Wind Turbine Generators 15 miles off the coast and omit the use of the lease area that is closer to shore thereby eliminating from the development plans a valuable development area. To move even further offshore, the Project would have to remove a significant number of turbines and as a result would not be able to produce 1,100 MW of energy, which Ocean Wind LLC is required to do based on their contract with the New Jersey Board of Public Utilities. Ocean Wind LLC can only plan the wind farm within the federal lease area which was established by the Bureau of Ocean Energy Management.

The Federal project's layout was adjusted to align turbines at the eastern portion of the lease area, so that the closest turbines are at least 15 miles from shore. To minimize visibility further, the WTG's would be a tubular design and would be painted white or light gray to help reduce potential visibility against the horizon. Additionally, to resolve the visual and cumulative effects from visibility of the WTGs to 17 New Jersey historic properties where ocean views are character-defining features that contribute to their National Register of Historic Places ("NRHP") eligibly, BOEM is proposing the development and execution of a Memorandum of Agreement in accordance with 36 CFR § 800.6(c) to memorialize the steps BOEM will take to avoid, minimize, and mitigate the project's adverse effects. Execution of the Memorandum of Agreement will demonstrate BOEM's compliance with Section 106 of the National Historic Preservation Act.

As an alternative to permanent lighting, the Applicant will install Aircraft Detection Lighting Systems (ADLS) on WTGs to minimize visibility from all identified properties within the Preliminary Area of Potential Effects. ADLS activates the hazard lighting system in response to detection of nearby aircraft. The synchronized flashing of the navigational lights occurs only when aircraft are present, resulting in shorter-duration night sky impacts as compared to standard continuous, medium-intensity red strobe Federal Aviation Administration ("FAA") warning system.

The DEIS evaluated alternatives to the Proposed Action for viewshed impacts:

Alternative B-1 – For those shoreline viewers directly northwest of the Wind Farm Area, the distance to the nearest WTG would be increased from 15.3 miles under the Proposed Action to 16.1 miles. The DEIS concludes that this alternative would be unnoticeable to the casual viewer at this distance and would not have noticeable differences in form, line, color, or texture contrasts to seascape unit character, open ocean unit character, or landscape unit character, or onshore or offshore viewer experience as compared to the Proposed Action.

Alternative B-2 – For those onshore viewers directly northwest of the Wind Farm Area, the distance to the nearest WTG would be increased from 15.3 miles to 16.9 miles. The outcome of this alternative is identical to Alternative B-1 and thus would not result in any noticeable difference.

For both Alternative C (modified layout to create buffer between Project and Atlantic Shores South) and Alternative D (Sand Ridge and Trough Avoidance), the effects of both of these alternatives would be similar to the Proposed Action and the differences between the alternatives and the Proposed Action would not be noticeable to the casual viewer.

Under the proposed alternative, the Offshore component of the project will include 98 WTG's extending up to 906 feet above mean lower low water (MLLW) and three OSS's extending up to 296 feet above MLLW within the lease area. The WTG's would be painted white or light gray to help reduce potential visibility against the horizon. In addition, the tubular design of the monopoles minimizes visual impacts.

As discussed in the DEIS, in clear weather, the WTGs and Offshore Substations would be visible from the coastline. Nonetheless, the DEIS states that visitors will continue to be able to

enjoy activities that rely on coastal and ocean environments, scenic qualities, natural resources, and establishments centered around coastal recreation and tourism. The DEIS concludes that seaside locations could experience some reduced recreational and tourism activity, but the visible presence of WTGs would be unlikely to affect shore-based or marine recreation and tourism in the geographic analysis area as a whole.

Consistency with this Rule has been demonstrated.

7:7-16.11 Buffers and compatibility of uses

As proposed, the Project has been designed to minimize visual impacts to historic and cultural properties to the extent feasible. The Project's layout was adjusted to align turbines at the eastern portion of the lease area, so that the closest turbines are at least 15 miles from shore.

Because the project is located in a marine environment, the implementation of a vegetated buffer is not applicable. The Offshore component of the Project will not generate dust, fumes or odors. The WTG's would be painted white or light gray to help reduce potential visibility against the horizon. In addition, the tubular design of the monopoles minimizes visual impacts.

Consistency with this Rule has been demonstrated.

7:7-16.12 Traffic

While the rule defines traffic as the movement of vehicles, pedestrians, and ships, the Traffic Rule does not contain any standards for ships or vessels.

Nonetheless, the offshore wind component of the Project would generate vessel traffic during construction, operation, and decommissioning within the navigation and vessel traffic geographic analysis area. Other vessel traffic in the region (e.g., from commercial fishing, for-hire and individual recreational use, shipping activities, military uses) would overlap with offshore wind-related vessel activity in the open ocean and near ports supporting the offshore wind projects.

As discussed in the DEIS, the WTGs will be arranged in equally spaced rows on a northwest to southeast orientation to aid the safe navigation of vessels operating within the Wind Farm Area. The United States Coast Guard (USCG) has stated that it does not plan to create exclusionary zones around offshore wind facilities, with the exception of possibly implementing safety zones during construction and conceptual decommissioning, to be determined on a project-by-project basis. BOEM will ensure that Ocean Wind LLC coordinates with the U.S. Coast Guard in advance of export cable installation to develop a navigation safety plan. BOEM anticipates that USCG may establish temporary safety zones around offshore wind construction areas within 12 nm of the coast, which would minimize the potential for recreational boater interaction with anchored construction vessels in these areas.

The WTG's and OSS's would be lit and marked in accordance with Federal Aviation Administration (FAA) and United States Coast Guard (USCG) lighting standards.

Consistency with this Rule has been demonstrated.

Section 10 Compliance N.J.S.A 13:19-1 et seq.

a. Conforms with all applicable air, water and radiation emission and effluent standards and all applicable water quality criteria and air quality standards.

The proposed development will conform with all applicable air, water and radiation emission and effluent standards and all applicable water quality criteria and air quality standards. Wind energy conversions are an alternative source of energy production which reduces dependency on energy obtained from other sources such as fossil fuels, nuclear generation, etc. Wind energy is considered a clean renewable energy source. The US Environmental Protection Agency ("EPA") regulates air emissions on the OCS and will require appropriate approvals be obtained.

b. Prevents air emissions and water effluents in excess of the existing dilution, assimilative, and recovery capacities of the air and water environments at the site and within the surrounding region.

The proposed development will not generate air emissions and water effluents in excess of the existing dilution, assimilative and recovery capacities of the air and water environments at the site and within the surrounding region. No wastewater will be generated. Wind energy conversions are an alternative source of energy production which reduces dependency on energy obtained from other sources such as fossil fuels, nuclear generation, etc. Wind energy is considered a clean renewable energy source. The EPA regulates air emissions on the OCS and will require appropriate approvals be obtained.

c. Provides for the [handling and] collection and disposal of litter [trash and refuse], recyclable material and solid waste in such a manner as to minimize adverse environmental effects and the threat to the public health, safety, and welfare.

Any litter, recyclable material and/or solid waste generated by the project will be disposed of in accordance with applicable laws and regulations. There will be no adverse environmental effects and/or threat to the public health, safety, and welfare.

d. Would result in minimal feasible impairment of the regenerative capacity of water aquifers or other ground or surface water supplies.

The project is not located within any ground or surface water supply areas.

e. Would cause minimal feasible interference with the natural functioning of plant, animal, fish, and human life processes at the site and within the surrounding region.

With the mitigation measures proposed in the DEIS, the project will cause minimal feasible interference with plant, animal, fish and human life processes.

f. Is located or constructed so as to neither endanger human life or property nor otherwise impair the public health, safety and welfare.

The proposed project will be located and constructed so as to neither endanger human life or property nor otherwise impair the public health, safety and welfare.

g. Would result in minimal practicable degradation of unique or irreplaceable land types, historical or archaeological areas, and existing public scenic [and aesthetic] attributes at the site and within the surrounding region.

With the mitigation measures proposed in the DEIS, the project will cause minimal practicable degradation of unique or irreplaceable land types, historic or archaeological resources, and existing public scenic attributes at the site and within the surrounding area.

Conclusion

RECOMMEND CONDITIONAL CONCURRENCE

The Director of the Division hereby finds that the applicable findings as embodied in the Coastal Zone Management Rules, will be met provided all conditions of the Federal Consistency Certification are met.

Conditions

1. Ocean Wind LLC and the State of NJ shall execute a Memorandum of Understanding (MOU) to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized project.

2. Ocean Wind LLC shall implement all protective and mitigative measures as outlined in BOEM's Final EIS and Record of Decision for protection of fisheries, aquatic and benthic resources.

3. Prior to commencement of project construction, an Ocean Wind Offshore Wind Project Memorandum of Agreement shall be executed among the Section 106 consulting parties for the avoidance, minimization, and mitigation of project adverse effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act.

4. Ocean Wind LLC shall develop a Project Mitigation Plan that is informed by public engagement, consultation with the appropriate state, federal (National Oceanic and Atmospheric Administration (NOAA) Fisheries)), and regional, non-government organizations (i.e., the Regional Wildlife Science Collaborative for Offshore Wind and the Responsible Offshore Science Alliance). The Plan shall summarize the expected impacts; describe and provide technical details for each mitigation measure (including the type of impact to which it relates and the conditions under which it is required); identify policies and standards to be used and complied with; and, be responsive to impacts detected in project monitoring and other monitoring and research studies and initiatives, including Ocean Wind Fisheries Monitoring Plan, Ocean Wind Benthic Monitoring Plan, and the New Jersey Research and Monitoring Initiative for Offshore Wind.

5. If avoidance and minimization to Prime Fishing Areas identified on NOAA and NJDEP's publicly available GIS layer depicting previously identified Prime Fishing Areas (see https://gisdata-njdep.opendata.arcgis.com/) is not feasible, then Ocean Wind LLC shall provide the Division of Land Resource Protection with information that clearly shows any permanent changes to the bathymetry, including but not limited to flattening sand waves, filling, and relocation of boulders, post-construction. This shall include the location and extent of modification of the pre-existing bathymetry (figures and GIS shapefiles with locations and dimensions of these features within the project area should be provided), which structures were installed within these areas, and the avoidance and minimization measures which were implemented to reduce the area permanently modified.

6. For Wind Turbine Generators (WTGs) and Off Shore Substations (OSSs) - including most WTGs of Rows 1 through 8 and OSSs 1 and 2 - with the potential to impact artificial reefs and species using those reefs within the Atlantic City Reef and Great Egg Harbor artificial reef sites, additional noise dampening devices that result in greater noise dampening shall be utilized to avoid and minimize impacts to habitats and species. Devices may include, but are not limited to isolation casings, isolation casings with bubble curtains inside, and double-walled isolation casings.

6. If any military munitions and explosives of concern (MECs) or unexploded ordinances (UXOs) are encountered during project construction, Ocean Wind LLC shall immediately notify the United States Coast Guard (USCG) of the munition and its location.

Prepared by: Christopher Jones _____ Date: 4/27/23
Christopher Jones
Division of Land Resource Protection

Reviewed by: Janet L. Stewart _____ Date: 4/27/23
Janet L. Stewart, Manager
Division of Land Resource Protection
Bureau of Coastal Permitting

Approved by: Jennifer Moriarty _____ Date: 4/27/23
Jennifer Moriarty, Director
Division of Land Resource Protection