



Appendix S – BOEM’s Best Management Practices

**Appendix S, BOEM Best Management Practices (BOEM 2020)
Ocean Wind Offshore Wind Farm COP**

Best Management Practice
<i>Preconstruction Planning</i>
Lessees and grantees should minimize the area disturbed by preconstruction site monitoring and testing activities and installations.
Lessees and grantees should contact and consult with the appropriate affected federal, state, and local agencies early in the planning process.
Lessees and grantees should consolidate necessary infrastructure requirements whenever practicable.
Lessees and grantees should develop a program to monitor environmental conditions during construction, operation, and decommissioning phases. The monitoring program, including adaptive management strategies, should be established at the project level to mitigate potential adverse impacts.
<i>Seafloor Habitats</i>
Lessees and grantees should conduct seafloor surveys in the early phases of a project to ensure that the alternative energy project is sited appropriately to avoid or minimize potential impacts associated with seafloor instability or other hazards.
Lessees and grantees should conduct appropriate pre-siting surveys to identify and characterize potentially sensitive seafloor habitats and topographic features.
Lessees and grantees should avoid locating facilities near known sensitive seafloor habitats, such as coral reefs, hard-bottom areas, and chemosynthetic communities.
Lessees and grantees should avoid anchoring on sensitive seafloor habitats.
Lessees and grantees should employ appropriate shielding for underwater cables to control the intensity of electromagnetic fields.
Lessees and grantees should reduce scouring action by ocean currents around foundations and to seafloor topography by taking all reasonable measures and should employ periodic routine inspections to ensure structural integrity.
Lessees and grantees should avoid the use of explosives when feasible to minimize impacts to fish and other benthic organisms.
Lessees and grantees should take all reasonable actions to minimize seabed disturbance and sediment dispersion during cable installation.
<i>Marine Mammals</i>
Lessees and grantees should evaluate marine mammal use of the proposed project area and should design the project to minimize and mitigate the potential for mortality or disturbance. The amount and extent of ecological baseline data required should be determined on a project basis.
Vessels related to project planning, construction, and operation should travel at reduced speeds when assemblages of cetaceans are observed. Vessels also should maintain a reasonable distance from whales, small cetaceans, and sea turtles, and these should be determined during site-specific consultations.
Lessees and grantees should minimize potential vessel impacts to marine mammals and turtles by having project-related vessels follow the National Marine Fisheries Service (NMFS) Regional Viewing Guidelines while in transit. Operators should undergo training on applicable vessel guidelines.
Lessees and grantees should take efforts to minimize disruption and disturbance to marine life from sound

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emissions, such as pile driving, during construction activities.
Lessees and grantees should avoid and minimize impacts to marine species and habitats in the project area by posting a qualified observer on site during construction activities. This observer should be approved by BOEM and NMFS.
<i>Fish Resources and Essential Fish Habitats</i>
Lessees and grantees should conduct pre-siting surveys (may use existing data) to identify important, sensitive, and unique marine habitats in the vicinity of the projects; they should then design the project to avoid, minimize, or otherwise mitigate adverse impacts to these habitats.
Lessees and grantees should minimize construction activities in areas containing anadromous fish during migration periods.
Lessees and grantees should minimize seafloor disturbance during construction and installation of the facility and associated infrastructure.
<i>Sea Turtles</i>
Lessees and grantees should minimize potential vessel impacts to marine mammals and sea turtles by having project-related vessels follow the NMFS Regional Viewing Guidelines while in transit. Operators should undergo training on applicable vessel guidelines.
Lessees and grantees should take efforts to minimize disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities.
Lessees and grantees should locate cable landfalls and onshore facilities so as to avoid impacts to known nesting beaches.
<i>Avian Resources</i>
The lessee should evaluate avian use in the project area and should design the project to minimize or mitigate the potential for bird strikes and habitat loss. The amount and extent of ecological baseline data required should be determined on a project-to-project basis.
Lessees and grantees should take measures to reduce perching opportunities.
Lessees and grantees should locate cable landfalls and onshore facilities so as to avoid impacts to known nesting beaches of sensitive species during the breeding season.
Lessees and grantees must comply with Federal Aviation Administration (FAA) and USCG requirements for lighting in accordance with BOEM's "Draft Proposed Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development," dated October 2019, available at https://www.boem.gov/guidance , and should use lighting technology (e.g., low-intensity strobe lights) that minimize impacts on avian species.
<i>Acoustic Environment</i>
Lessees and grantees should plan site characterization surveys by using the lowest sound levels necessary to obtain the information needed.
Lessees and grantees should take efforts to minimize disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities.
Lessees and grantees should employ, to the extent practicable, state-of-the-art, low-noise turbines or other technologies to minimize operational sound effects.
<i>Fisheries</i>
Lessees and grantees should work cooperatively with commercial/recreational fishing entities and interests to minimize potential conflicts with commercial and recreational fishing interests during construction and

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operation of a project.
Lessees and grantees should review planned activities with potentially affected fishing organizations and port authorities to prevent unreasonable fishing gear conflicts. Lessees and grantees should minimize conflict with commercial fishing activity and gear by notifying registered fishermen of the location and time frame of the project construction activities well in advance of mobilization; they also should provide updates throughout the construction period.
Lessees and grantees should use practices and operating procedures that reduce the likelihood of vessel accidents and fuel spills.
Lessees and grantees should avoid or minimize impacts to the commercial fishing industry by marking applicable structures (e.g., wind turbines, wave generation structures) with USCG-approved measures (e.g., lighting) to ensure safe vessel operation.
Lessees and grantees should avoid or minimize impacts to the commercial fishing industry by burying cables, where practicable, to avoid conflict with fishing vessels and gear operation. If cables are buried, lessees and grantees should inspect cable burial depth periodically during project operation to ensure that adequate coverage is maintained to avoid interference with fishing gear/activity.
Coastal Habitats
Lessees and grantees should avoid hard-bottom habitats, including seagrass communities and kelp beds, where practicable, and should restore any damage to these communities.
Lessees and grantees should implement turbidity reduction measures to minimize effects to hard-bottom habitats, including seagrass communities and kelp beds, from construction activities.
Lessees and grantees should minimize effects to seagrass and kelp beds by limiting vessels related to project planning, construction, and operation to established traffic routes.
Lessees and grantees should minimize impacts to wetlands by maintaining buffers around wetlands, implementing BMPs from erosion and sediment control, and maintaining natural surface drainage patterns.
Electromagnetic Fields
Lessees and grantees should use submarine cables that have proper electrical shielding and bury the cables in the seafloor, when practicable.
Transportation and Vessel Traffic
Lessees and grantees should site alternative energy facilities to avoid unreasonable interference with major ports and USCG-designated Traffic Separation Schemes.
Lessees and grantees should meet FAA guidelines for sighting and lighting of facilities.
Lessees and grantees should place proper lighting and signage on applicable alternative energy structures to aid navigation per USCG circular NVIC 07-02 (USCG 2007) and must comply with any applicable USCG requirements.
Lessees and grantees should conduct all necessary studies of potential interference of proposed wind turbine generators with commercial air traffic control radar systems, national defense radar systems, and weather radar systems; they also should identify possible solutions.
Visual Resources
Lessees and grantees for wind projects should address key design elements, including visual uniformity, use of tubular towers, and proportion and color of turbines.
Lessees and grantees for wind projects should use appropriate viewshed mapping, photographic and virtual simulations, computer simulation, and field inventory techniques to determine, with reasonable accuracy, the

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visibility of the proposed project. Simulations should illustrate sensitive and scenic viewpoints.
Lessees and grantees must comply with FAA and USCG requirements for lighting in accordance with BOEM's "Draft Proposed Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development," dated October 2019, available at https://www.boem.gov/guidance , and should minimize visual impacts through appropriate application.
Lessees and grantees should seek public input in evaluating the visual site design elements of proposed wind energy facilities.
Within FAA guidelines, directional aviation lights that minimize visibility from shore should be used.
Operations
Lessees and grantees should prepare waste management plans, hazardous material plans, and oil spill prevention plans, as appropriate, for the facility.

Bureau of Ocean Energy Management (BOEM). 2020. Information Guidelines for a Renewable Energy Construction and Operations Plan (COP). Version 4.0, May 27, 2020. U.S. Department of the Interior, Office of Renewable Energy Programs, Bureau of Ocean Energy Management, Washington, D.C.