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U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: Duke University **STATE:** NC

PROJECT TITLE: Wildlife and Offshore Wind (WOW): A Systems Approach to Research and Risk Assessment for OffshoreWind Development from Maine to North Carolina

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002237	DE-EE0010287	GFO-0010287-001	GO10287

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B3.3 Research related to conservation of fish, wildlife, and cultural resources	Field and laboratory research, inventory, and information collection activities that are directly related to the conservation of fish and wildlife resources or to the protection of cultural resources, provided that such activities would not have the potential to cause significant impacts on fish and wildlife habitat or populations or to cultural resources.
B3.16 Research activities in aquatic environments	Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur within the boundary of an established marine sanctuary or wildlife refuge, a governmentally proposed marine sanctuary or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Duke University to develop a structured framework for comprehensive evaluation of potential effects of offshore wind energy on wildlife and habitats across a range of spatial and temporal scales. The project would be completed over three Budget Periods (BPs) with a Go/No-Go decision point between each BP. DOE previously completed a NEPA determination for BP1 on 4/21/22 (GFO-0009798-001; CXs A9, A11, and B3.6). Outcomes of activities performed in BP1 defined the proposed scope, plan, and sites for field work to be conducted in BP2 and BP3. As such, this NEPA determination applies to BP2 and BP3.

Duke University is the prime recipient. Subrecipients on the project would include Cornell University, Florida State University, New England Aquarium, Rutgers University, Southall Environmental Associates, Syracuse University, University of St. Andrews (in the United Kingdom), Wildlife Conservation Society, Scientific Innovations, Pacific

Northwest National Laboratory, Stony Brook University (SBU), Biodiversity Research Institute (BRI), and Woods Hole Oceanographic Institution. All participants would assist with data analysis and manuscript preparation activities. Additionally, SBU and BRI would prepare equipment for capture, handling, and tagging of seabirds and would store samples collected during capture.

Project participants hold research permits that authorize them to conduct the type of work proposed. The National Marine Fisheries Service (NMFS) issued Permit no. 22156 valid 5/8/2020 to 5/31/2025 and Permit no. 18059 valid 3/13/2017 to 3/1/2023 (this permit is expired but in the process of renewal). The Biodiversity Research Institute holds a Federal Master Banding Permit from US Geological Survey (Permit no. 22636 valid 3/1/1994 to 1/31/2025). NMFS Northeast Fisheries Science Center holds NMFS Permit no. 21371, valid 6/4/2018 to 6/15/2023. Participants would also follow Duke Institutional Animal Care and Use Committee (IACUC) protocol A057-21-03 and Syracuse University IACUC Protocol #2022-0062. Permit holders would be responsible for abiding by conditions and precautionary measures included in permits and assuring that permits are renewed as required. All methods would be performed by trained researchers.

BP2 and BP3 activities consist of offshore research in wind lease areas in Massachusetts/Rhode Island (Vineyard Wind 1) and New York/New Jersey Bight areas (Empire Wind 1 and 2) and potentially some effort focused on South Fork (NY) and/or Ocean Wind (southern NJ). Field activities would be conducted to obtain targeted data collection and technology validation during pre-construction, construction, and post-construction phases of offshore wind development and to characterize the effects to marine mammals, seabirds, sea turtles, and bats.

Descriptions of field activities are as follows:

• Short-term suction tags on baleen whales – These would be deployed either by using a hand-held carbon fiber pole or through remote deployment by dropping the tag from 3-10 meters above the whale's back using an unmanned aerial system. These tags need to be recovered to obtain recorded data. When the tag is released, it floats to the surface and can be collected.

• Satellite-linked dart tags on baleen whales – These would be fired from a crossbow or pneumatic gun with the animals 5-30 meters from the vessel. Tags are powered by Lithium-ion batteries. These tags do not need to be collected to obtain data, therefore, when the tag falls off, the battery is released into the ocean and not recovered.

• Passive acoustic monitoring of ocean floor using Rockhopper – Rockhoppers are fixed position, bottom-mounted archival recorders that would be used for passive acoustic monitoring of marine mammals. Six Rockhopper recording units would be deployed in MA and NY areas. Rockhoppers are slightly positively buoyant and would be anchored to the seafloor by a 50 kg iron anchor and acoustic release. For recovery, after approximately 9 months, a series of acoustic signals is played to each instrument and the acoustic release detaches from the anchor assembly. The release and Rockhopper float to the surface. The anchor assembly remains on the seafloor, it is made from iron and degrades over time.

• Aerial surveys in MA and RI – Drone flights for marine mammals would be conducted off-shore to support vessel-based research efforts in uncontrolled airspace only. Drones would be used to collect overhead imagery of marine mammals, collection of exhalations, and to deploy suction cup attached tags to large whales. Drone flights would be conducted in and around the Block Island Wind Farm (BIWF) area. Small, manned aircrafts might also be used to conduct calibration flights at heights above those at which drones are allowed to fly under FAA 14 CFR Part 107 certification. Operations conducted near local airports would be coordinated with the nearest FAA Flight Standards District Office and a Notice to Airmen would be issued as needed.

• Biological sampling of marine mammals – From a vessel, a dart would be fired from a crossbow 5-30 meters from the target mammal. Biopsies, blow sampling, and fecal sampling would be conducted to quantify levels of stress hormones. Photo ID would also be taken of relevant marine mammal species encountered during survey.

• Passive acoustic monitoring for bats – Bat acoustic detectors would be deployed on the Southern New England shelf and New York Bight on offshore wind turbines, buoys, meteorological towers, and other offshore platforms. Bats would not be captured or handled as part of this project. Acoustic detectors would be deployed on existing offshore structures to monitor the presence and activity of bats. Ultrasonic detectors would be either directly attached to a controller or connected through a less than 10-meter cable and mount setup. Up to ten bat detectors would be deployed at locations potentially including turbine nacelles, turbine platforms, offshore substations, offshore vessels, and coastal land-based sites. Detectors would not affect normal operations of turbines, substations, or vessels.

• Passive acoustic monitoring using Medusa. – Medusa is a satellite-connected acoustic drifter that combines real-time acoustic detection of animal sounds with data telemetry of detections and noise statistics. These would be deployed opportunistically around cetaceans to record and quantify animal signal source properties and ambient noise. They would be retrieved either on the same day or left out over short deployment periods of up to a few days and recovered using satellite telemetry data.

• Passive acoustic monitoring using Motus automated radio telemetry – Motus is an international research network that uses coordinated automated radio telemetry to track birds, bats, and insects. It would be used in this project to listen for bird tags. Major components of offshore Motus stations include one omnidirectional and four Yagi-Uda antennas, a mast, coaxial cables, a receiver, and a power source. The mast is 10 ft above surrounding objects. Efforts would be focused on upgrading existing Motus Wildlife Tracking Systems in offshore wind areas. Two Motus stations currently deployed on land on the south shore of Block Island, RI would be updated to dual-mode stations. One Motus station currently deployed on a turbine at BIWF would be upgraded to dual-mode station. These stations would be upgraded by replacing or adding antennas. The Motus station staging area and collection of test field calibration data would occur on South Kingstown, RI on a rural private property.

• GPS tags on seabirds – Small radio transmitters (120 to 160) would be deployed on large seabirds concurrent with GPS tracking device deployments to understand detection ranges of Motus stations relative to distance and altitude of tags. Drones would also assist here by carrying handheld GPS devices to provide locational data and a Motus tag to communicate with receiving stations. Some calibration may be conducted from small-manned aircraft or vessels. Birds would be captured on breeding colonies on Muskeget Island, MA; Tuckernuck Island, MA; Youngs Island, NY; and unnamed islands in Moriches Bay, NY. Great Black-backed Gulls and Herring Gulls would be captured, handled, sampled, and tagged at nest sites. Non-breeding Northern Gannets, Great Black-backed Gulls, and Herring Gulls would be captured at-sea in a small boat off the coast of Long Island in NY, less than 3 miles from the shore. Additional capture locations in MA, RI, and NJ might be considered as needed. All at-sea handling, sampling, and tagging would occur on the boat. Established seabird capture techniques and protocols would be followed. Birds would be banded with US Geological Survey metal band for future identification. GPS tags would be deployed on the bird by either externally taping the tags to the tail feathers or attaching a cross-wing harness which uses two loops that each go around and under the wings, positioning the GPS device at the center of the bird's back. Some birds would have an additional small, automated radio telemetry tag attached directly to the GPS tag or separately to a plastic leg band. Morphometric measurements (e.g. tarsus, culmen, max girth), sample feathers, and 1-2 mL of blood from a tarsal or wing vein would be collected. Opportunistic wet diet and fecal samples would also be collected. Tag attachment techniques are designed such that tags fall off on their own within a few months or a couple of years. Gannet transmitters would fall off after several months and would not be recovered.

This project includes the use of small unmanned aerial systems (sUAS). The recipient is responsible for ensuring that all activities involving sUAS are compliant with 14 CFR Part 107 or an applicable Certificate of Waiver or Authorization (COA). This includes, but is not limited to, aircraft requirements such as remote pilot-in-command certification, authorities and responsibilities; ensuring the sUAS is in a condition for safe operation; registration; understanding airspace classifications and requirements; and accident reporting (if applicable).

ESA-listed species such as North Atlantic right whales, Finback whales, and Sei whales could be encountered during the marine mammal research and data would be obtained relating to the behavior of these species, tagging, passive acoustic data collection, biopsy sampling and visual behavior observations. All activities are covered in existing permits. Animals may experience short-term behavioral disturbance due to close vessel approaches, biopsy sampling, and tagging. The physical environment would not be impacted. The quality and/or quantity of essential fish habitat would not be reduced.

Project activities would involve work from boats at sea, bird tagging, and aerial surveys from airplanes. Any risks associated with project activities would be mitigated through adherence to established health and safety policies and procedures. Protocols would include the use of personal protective equipment and adhering to established travel safety and accident and near-miss incident policies. Precautions would be taken to reduce the chance of viral transmission of avian influenza such as through the use of new gloves and bags for weighing birds for each individual capture. All waste products would be disposed of by licensed waste management service providers. Duke University and its project partners would observe all applicable federal, state, and local health, safety, and environmental regulations.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Permit holders would be responsible for abiding by conditions and precautionary measures included in permits and assuring that permits are renewed as required.

This project includes the use of small unmanned aerial systems (sUAS). The recipient is responsible for ensuring that all activities involving sUAS are compliant with 14 CFR Part 107 or an applicable Certificate of Waiver or Authorization (COA). This includes, but is not limited to, aircraft requirements such as remote pilot-in-command certification, authorities and responsibilities; ensuring the sUAS is in a condition for safe operation; registration; understanding airspace classifications and requirements; and accident reporting (if applicable).

Notes:

Wind Energy Technologies Office
This NEPA determination requires legal review of the tailored NEPA provision.
Review completed by Shaina Aguilar on 4/25/23.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; “Environmental Effects Abroad of Major Federal Actions.”

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Casey Strickland Date: 4/26/2023

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☑ Field Office Manager review not required
☐ Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____

Field Office Manager