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

RECIPIENT: Western Ecosystems Technology, Inc. (WEST) **STATE:** MN

PROJECT TITLE : Advanced Wind R&D to Reduce Costs and Environmental Impact (DE-FOA-0001924)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001924	DE-EE0008734	GFO-0008734-003	GO8734

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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Western EcoSystems Technology, Inc. (WEST) to design, develop, and test a multi-sensor system for quantifying bird and bat collision rates at offshore wind facilities. The project would further develop an existing detection system, with the goal of improving detection accuracy, image processing, and detection quantification. The system would be installed on existing turbines at land-based and offshore wind energy projects.

The project would be completed over two Budget Periods (BPs) with a Go/No-Go Decision Point in between each BP. Previous NEPA Determinations were completed for Tasks 1 and 2 and Subtask 3.1 (GFO-0008734-001, 6/14/2019, CXs A9 and B3.6) and for Subtask 3.2 (GFO-0008734-002, 6/7/2021, CXs A9 and B3.3). Tasks 4 and 5 were not reviewed, as field testing plans had not been fully defined and field-testing site locations had not yet been selected. A site has now been selected and study plan developed for Task 4. Accordingly, this NEPA Determination is applicable to Task 4 only. Task 5 will be reviewed once a study plan and sites have been defined.

Task 4 involves the validation of the sensing system on a land-based turbine. Testing would occur at an existing 2.5-megawatt turbine in Rosemount, MN belonging to the University of Minnesota. This turbine has a 262-foot hub height and 315-foot rotor diameter. The avian and bat study would be conducted on a single cleared plot (492 square feet) centered around the turbine. Vegetation would be mowed regularly to less than six inches to minimize search complexity.

The sensing system would include vibration sensors, cameras, and acoustic detectors. In order to compare performance of the full collision monitoring system with traditional land-based monitoring methods (i.e. human-based carcass searches in which participants walk transects), surveys using both methods would be performed. Following the field season, the total bird and bat mortality estimates from both methods would be computed and compared.

To support statistical analyses, searcher efficiency trials and carcass persistence trials would be conducted.

Efficiency trials would be run to estimate the percentage of carcasses found by human searchers. At least 44 carcasses (bat, small bird, medium bird, and large bird) would be distributed, and the number and location of carcasses found during the search would be recorded. Carcass persistence trials would be run to estimate the likelihood of a carcass being removed by predation, scavengers, or by other means. For these trials, at least 32 carcasses would be distributed.

Prior to applicable activities, permits would be in place to allow for the handling of wildlife and collecting and storing carcasses. Bat carcasses found would be collected and stored under a state salvage permit issued to WEST. When possible, injured birds or bats would be either released or delivered to an appropriate rehabilitation facility. Only permitted biologists would handle state or federally listed birds or bats, including eagles.

Fatality monitoring would begin in May or June of 2022 once the sensors are installed in and around the turbine. Sensors would operate for 24 hours a day. Normal operations of the wind turbine would remain unchanged, but carcasses searches would occur more often than usual. Searches would be conducted at least three times per week during the study period ending in October resulting in approximately 19 weeks of surveys.

Monitoring would begin immediately following the installation of the sensors on the blades and would be concurrent with traditional post-construction fatality monitoring for the duration of the study. The system would consist of sensors glue-mounted to the interior of the leading edge of the blade at predetermined intervals. Each sensor would be connected to its own fiber optic lines installed along the length of the blade to the turbine hub. Independent of the blade sensors, three high-resolution full-color security cameras would be installed outside the turbine with the cameras facing upward to capture the full extent of the rotor-swept area. Cameras would be arranged around the tower within two to three meters of the turbine base, with each stationed at about 120-degree intervals around the tower circumference. In addition to these cameras, three, high-intensity infrared illuminators and three thermal cameras would be installed for nighttime imagery. The cameras and illuminators would be within an existing chain link fence with signs warning of tripping hazards and eye exposure hazard from infrared illuminators. Once deployed, the equipment would be used to passively (i.e., no active interventions with wildlife) collect data on bird and bat passage near the turbine.

The location at which equipment would be deployed has been previously disturbed and is actively used for research purposes. No modifications to existing facilities, ground disturbing activities, or changes to the use, mission, or operation of existing facilities would be required to perform project activities. Aside from the permits mentioned above, no additional permits would be required. The system components would not alter the functioning of the turbine and would result in no effect to threatened or endangered species or migratory birds.

Project hazards associated with the system installation and carcass searches under turbines would be mitigated by ensuring that personnel receive appropriate training and follow health and safety policies and procedures. WEST would adhere to all applicable Federal, state, and local health, safety, and environmental regulations.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

Task 4 - Validation of the next generation WT-Bird® system on a land-based turbine

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Task 5 - Implementation of the next generation WT-Bird® system on offshore turbines

Notes:

Wind Energy Technologies Office
NEPA review completed by Shaina Aguilar on 4/29/22.

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.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 4/29/2022

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- [x] 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