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

RECIPIENT: Electric Power Research Institute **STATE:** CA

PROJECT TITLE: Evaluation of the Turbine Integrated Mortality Reduction (TIMR) Technology as a Smart Curtailment Approach

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001924	DE-EE0008727	GFO-0008727-002	GO8727

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.
B3.6 Small-scale research and development, laboratory operations, and pilot projects	Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Electric Power Research Organization (EPRI) to design, develop, and test a novel wind energy curtailment system (i.e., the Turbine Integrated Mortality Reduction (TIMR) system) designed to reduce bat mortality rates and reduce economic losses associated with traditional curtailment techniques. The system would be composed of custom hardware/software that would process, in real-time: 1) acoustic data, which would be auto-classified into bat and non-bat calls; and 2) wind speed data, which would communicate real-time risk conditions to a wind operator's supervisory control and data acquisition (SCADA) system. Utilizing this data, the TIMR system and SCADA system would automatically curtail/reinitiate energy production based on risk conditions for bat mortality. The system, composed of both sound detection hardware (i.e., microphone systems on wind turbine nacelles) and software to be integrated into a SCADA system, would be installed/integrated at an existing wind utility site.

This project received one previous NEPA review which reviewed Tasks 1, 2 and 7 (GFO-0008727-001, CX A9, 7/9/2019). This NEPA review is for tasks 3-8.

In Task 3 EPRI would develop a methodology for determining the difference in power production between control and treatment groups in the proposed research. This task is limited to information gathering and analysis.

In Task 4, EPRI would install the TIMR system on 18 existing wind turbines located at the Mid-American Orient Wind Farm, located in Adair County, Iowa. Turbines are located on previously disturbed farm land and thus no new ground clearing would occur.

In Task 5, EPRI would operate the TIMR system. Operation would include conducting the experimental design over

four different approximate 60 day periods over a two year study timeline. For each study period, EPRI would operate the TIMR system by operating the wind turbines at the manufacturers cut in speed, but then curtailing the system if a bat call is detected. Curtailment would continue until no further bat calls are detected for over 30 minutes. The TIMR system would be compared to a Control group of turbines (with no change in normal operation), as well as a group of turbines that undergo a Blanket Curtailment, such as feathered up to 5 meters a second wind speeds.

Tasks 4 and 5 would require installation of equipment on existing wind turbines and would require field surveys that could include handling of bat carcasses. All installation would be completed by trained personnel and would follow existing corporate health and safety policies and procedures including proper protective equipment. Carcass handling would be completed only by trained personnel and would be in compliance with the requirements found below in this NEPA determination.

In Task 6, EPRI would analyze results of the study and, in Task 6, EPRI would prepare a final report. Some data analysis may be conducted by the National Renewable Energy Lab in Golden, Colorado, and the United States Geological Survey in Corvalis, Oregon.

In Tasks 7 and 8 EPRI would produce a final report, disseminate information, and oversee the management of the project, including filing reports with DOE and the United States Fish and Wildlife Service (USFWS). These tasks are limited to information gathering and data analysis.

There are five Endangered Species Act listed species (hereinafter, listed species) that could be present at the chosen study site. There is no critical habitat at the proposed study site. As such, EPRI prepared a Biological Evaluation analyzing potential impacts of the proposed study. DOE has determined that the proposed project would have No Effect on three listed species; Mead's Milkweed, Prairie Bush-clover, and Western Prairie Fringed Orchid. DOE has determined that the proposed study May Effect and is Likely to Adversely Affect two listed species, the Indiana bat and the northern long-eared bat, and may result in an incidental take of 1.36 to 2.06 Indiana bats and 0.22 to 0.32 northern long-eared bat at the study site over the two year study. DOE further has determined that the proposed project would not jeopardize the continued existence of either species. On March 12, 2020, DOE engaged in formal consultation with the USFWS regarding the potential impacts to listed species. On April 23, 2020, USFWS issued a Biological Opinion concurring with DOE's opinion, issuing an Incidental Take Statement (ITS), and mandating Reasonable and Prudent Measures as well as Terms and Conditions, and Monitoring and Reporting Requirements.

USFWS issued an ITS finding that the action, over the two year period of the study, is expected to take up to three Indiana bats and up to one northern long-eared bat. Because the northern long-eared bat is subject to a 4(d) rule, take is not prohibited. As such, the USFWS issued Reasonable and Prudent Measures and Terms and Conditions are in regards to the Indiana bat only. Monitoring and Reporting Requirements apply to both the Indiana bat and the northern long-eared bat. These measures are non-discretionary requirements of the ITS. DOE is allowed to (and will) require that the grant recipient (EPRI) fulfill the mandated measures.

Reasonable and Prudent Measures:

• In order to reduce Indiana bat mortality at the site, study turbine blades must be feathered below the cut-in speeds described in the March 2020 BE.
• The DOE must report to the Service on whether or not the feathering of turbine blades was implemented successfully at the study turbines.

Terms and Conditions:

• The DOE must report to the Service on whether or not the feathering of turbine blades was implemented successfully at the study turbines.
• If fatality monitoring at the proposed project indicates that take of Indiana bats or northern long-eared bats may exceed the expected levels analyzed in this BO, (three Indiana bats and one northern long-eared bat over the two year study period) the DOE and partners should reinitiate consultation and reevaluate the effects of the take on the species. All research may continue as planned during revisions to the consultation.
• If a carcass of either an Indiana or northern long-eared bat is discovered in the project area, the Illinois – Iowa Field Office should be notified within one business day of positive identification.
• Results of the research, including statistical analyses, calculated fatality estimates, summaries of monitoring efforts, searcher efficiency calculations, and carcass removal times should be provided to the Service upon conclusion of the research. Should the results demonstrate conservation value to the Indiana bat, northern long-eared bat, or other wildlife, we request that the DOE, grantee, and/or partners allow for the dissemination of the research results and conclusions among Service personnel to enable others to apply the technique evaluated during the study as a wildlife conservation measure at wind facilities.

In addition USFWS mandated specific Monitoring and Reporting Requirements as follows:

• After the first year of the study, the DOE and partners will discuss the results with the Service and the observed effectiveness of the research. If interim reports are prepared, a copy should be provided to the Service after the first year of study. Following the second year of study and the completion of the research, a copy of the final report should be provided to the Service.

• The DOE and partners shall process the results of fatality monitoring using Evidence of Absence Software, v2.0 or later (Dalthorp et al. 2017). An estimation of fatalities of Indiana and northern long-eared bats should be provided using an alpha level of 0.5 to calculate M* and lambda outputs by the program. The take estimate should be conducted after the first year of the study, and a projection of the cumulative take expected after the conclusion of the second year of study should be provided.

• The DOE, grantee, and partners (those conducting the field research) are authorized under this BO to collect and handle covered bat species found incidentally or during fatality monitoring associated with the research. The collection and disposition of covered bat species, including non-living specimens (whole carcasses or body parts), injured live specimens, or grounded, uninjured live specimens shall be conducted by qualified individuals, as defined below.

i. Properly qualified for collection of non-living covered bat remains means that any surveyor must be properly trained by the DOE or partners in carcass handling and collection protocols, including data collection, recording, and protection. The surveyor must have knowledge of and take all reasonable precautions to prevent harm to the self and others as a result of handling non-living remains. Also, all applicable federal, state, and local laws relating to the collection and disposition of wildlife remains should be followed by the surveyor.
ii. Properly qualified for handling of living, but injured or grounded covered bat specimens means that any surveyor must be properly trained by a person holding a valid ESA section 10(a)(1)(A) recovery permit for bats from the Service. The surveyor must have knowledge of and take all reasonable precautions to prevent harm to the self, others, and the animal as a result of handling living covered bat specimens. Also, all other applicable federal, state, and local laws and guidelines relating to the collection and disposition of wildlife specimens should be followed by the surveyor.
iii. Properly qualified for the identification of the non-living remains or living specimens of covered bat species means that the person must hold an ESA section 10(a)(1)(A) recovery permit for bats from the Service that is valid in the State of Iowa.

As a condition of this NEPA determination DOE requires that EPRI fulfill all of the Reasonable and Prudent Measures, Terms and Conditions, and Monitoring and Reporting Requirements listed above.
The proposed project would include installation and testing of passive instrumentation on existing wind turbines. No new ground clearing or disturbing activities would take place. There would be no change in visual or noise impacts. There would be no impacts to cultural resource.

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 assisstance agreement:

EPRI must comply with all Reasonable and Prudent Measures, Terms and Conditions, and Monitoring and Reporting Requirements as found in sections 5.1.1, 5.1.2 and 5.1.3 on the USFWS Biological Opinion dated April 23, 2020 and must assume responsibility for complying with all requirements specifically mandated by USFWS upon the DOE, as identified below:

Reasonable and Prudent Measures:

• In order to reduce Indiana bat mortality at the site, study turbine blades must be feathered below the cut-in speeds described in the March 2020 Biological Evaluation.
• Recipient must report to DOE and the US Fish and Wildlife Service (Service) on whether or not the feathering of turbine blades was implemented successfully at the study turbines.

Terms and Conditions:

• Recipient must report to DOE and to the Service on whether or not the feathering of turbine blades was implemented successfully at the study turbines.
• If fatality monitoring at the proposed project indicates that take of Indiana bats or northern long-eared bats may exceed the expected levels analyzed in this BO, (three Indiana bats and one northern long-eared bat over the two year study period) recipient must notify the DOE and cooperate in reinitiating consultation with the Service to reevaluate the effects of the take on the species. All research may continue as planned during revisions to the consultation.
• If a carcass of either an Indiana or northern long-eared bat is discovered in the project area, the Illinois – Iowa Field Office should be notified within one business day of positive identification.
• Results of the research, including statistical analyses, calculated fatality estimates, summaries of monitoring efforts, searcher efficiency calculations, and carcass removal times should be provided to the DOE and the Service upon conclusion of the research. Should the results demonstrate conservation value to the Indiana bat, northern long-eared bat, or other wildlife, recipient should allow for the dissemination of the research results and conclusions among Service personnel to enable others to apply the technique evaluated during the study as a wildlife conservation measure at wind facilities.

Monitoring and Reporting Requirements:

• After the first year of the study, recipient will discuss the results with the DOE and the Service regarding the observed effectiveness of the research. If interim reports are prepared, a copy should be provided to the Service after the first year of study. Following the second year of study and the completion of the research, a copy of the final report should be provided to the Service.

• Recipient shall process the results of fatality monitoring using Evidence of Absence Software, v2.0 or later (Dalthorp et al. 2017). An estimation of fatalities of Indiana and northern long-eared bats should be provided using an alpha level of 0.5 to calculate M* and lambda outputs by the program. The take estimate should be conducted after the first year of the study, and a projection of the cumulative take expected after the conclusion of the second year of study should be provided.

• The DOE, recipient, and partners (those conducting the field research) are authorized under the USFWS BO to collect and handle covered bat species found incidentally or during fatality monitoring associated with the research. The collection and disposition of covered bat species, including non-living specimens (whole carcasses or body parts), injured live specimens, or grounded, uninjured live specimens shall be conducted by qualified individuals, as defined below.

i. Properly qualified for collection of non-living covered bat remains means that any surveyor must be properly trained by the DOE or partners in carcass handling and collection protocols, including data collection, recording, and protection. The surveyor must have knowledge of and take all reasonable precautions to prevent harm to the self and others as a result of handling non-living remains. Also, all applicable federal, state, and local laws relating to the collection and disposition of wildlife remains should be followed by the surveyor.

ii. Properly qualified for handling of living, but injured or grounded covered bat specimens means that any surveyor must be properly trained by a person holding a valid ESA section 10(a)(1)(A) recovery permit for bats from the Service. The surveyor must have knowledge of and take all reasonable precautions to prevent harm to the self, others, and the animal as a result of handling living covered bat specimens. Also, all other applicable federal, state, and local laws and guidelines relating to the collection and disposition of wildlife specimens should be followed by the surveyor.

iii. Properly qualified for the identification of the non-living remains or living specimens of covered bat species means that the person must hold an ESA section 10(a)(1)(A) recovery permit for bats from the Service that is valid in the State of Iowa.

Notes:

Wind Energy Technologies Office
This NEPA determination does require a tailored NEPA provision.
Review completed by Roak Parker, 6/9/2020

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.

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: Roak Parker Date: 6/9/2020

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