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

RECIPIENT: Texas Christian University **STATE:** TX

PROJECT TITLE: Texturizing Wind Turbine Towers to Reduce Bat Mortality

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001181	DE-EE0007033	GFO-0007033-002	GO7033

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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 federal funding to Texas Christian University (TCU) to develop a wind turbine tower coating that would deter bats. The goals of the proposal are to develop a tower coating that is economically feasible, can be applied on-site to operational turbines, and will deter bats.

This award previously received a final NEPA determination (GFO-0007033-001 CX A9, B3.3, B3.6, 6/17/2015). As originally proposed, the project had five tasks divided between two Budget Periods. However, since the original NEPA determination significant changes that necessitate further review were made to the Statement of Project Objectives (SOPO) for Budget Period 2.

Task 1 and 2 (flight room testing with wild-caught bats, and the wind turbine tower coating development and application plan) were successfully completed in Budget Period 1. The recipient proposes changes to Budget Period 2 including adding new tasks and reorganizing/redefining others. This NEPA review is for the five amended tasks for Budget Period 2 as identified below:

Task 3 would include a second round of flight room testing that would evaluate the behavioral responses of bats to the texture coating surface developed in Task 2. This study would take place in the spring and summer of 2016.

Task 4 would include a feasibility study which would be conducted to monitor bat activity at up to 5 smooth, operational wind turbine tower surfaces at the Wolf Ridge Wind, LLC wind farm (Wolf Ridge) near Muenster, TX. This study would take place in the summer of 2016.

Task 5, which would occur in the spring of 2017, would involve applying the texture coating developed in Task 2 and

tested in-lab in Task 3 to a 20-30m vertical section on up to 5 wind turbine towers currently operational at Wolf Ridge.

Task 6, which would occur in the summer of 2017, would involve monitoring bat activity at both control and texture-treated wind turbine towers at the Wolf Ridge facility. Monitors would evaluate the effectiveness of the texture treatment at reducing bat activity at operational wind turbines.

Task 7 would involve summarizing the findings from Task 6 and also evaluate the cost of treating the wind turbine towers from Task 5. The data would be used to provide a cost-benefit analysis of treating wind turbine towers to reduce bat mortality.

In Task 3, as occurred in Task 1, TCU would use mist netting to catch wild bats in the Fort Worth area. TCU has permission from the City of Fort Worth Parks and Community Service Department to conduct mist netting at specified parks. Bat species found in the capture areas include Eastern Red, Hoary, Silver-haired, Evening, Mexican free-tailed, and Tri-colored species. There are no endangered bat species found in the capture area (as verified by IPaC). TCU would follow the University's Institute and Animal Care Use Protocol (IACUC permit #14-01). Wild caught bats would be housed in a bat flight facility at TCU, in Fort Worth, Texas. The bat flight facility is pre-existing and no modifications to the facility would be undertaken. No hazardous materials would be used in the coating application. After completion of the flight-testing, research bats would be released to the wild at the location where they were originally caught. Bats used at the facility would be kept in captivity for approximately 4 weeks.

Task 5 would involve application of the coatings developed in Task 2 to up to five existing wind turbine towers. Treatment would be applied to the towers per the design and plan developed in Task 2. The treatment coatings would not involve use of hazardous materials. As with the bat capture area, there are no known endangered bat species found near the wind farm (as verified by IPaC). No new construction or ground disturbance would be required for these tasks.

Tasks 4, and 6 would involve the use of night vision technology, and thermal cameras to record bat activity. In addition, ultrasonic bat detectors would be placed in proximity to the turbines to detect bat sounds. Use of video analysis software would determine if bats are present during the paired activity surveys.

The night vision set up is comprised of a Sony HDR-PJ790 Handycam handheld camcorder with an ATN NVM14-3 night vision scope attached. Combined the camcorder and lens are approximately one foot in length. Together they are mounted on a standard tripod placed 2 meters away from the base of the turbine on the gravel pad of the wind turbine. Supplemental infrared lighting would be provided for each night vision camera using infrared lights. Two infrared lights would be mounted on smaller than standard tripods and placed approximately 5 m behind each camera and angled upwards towards the turbine tower surfaces. While these do emit light, the infrared light is not considered to be visible to wildlife in their vicinity. Two night vision setups are used for each of the up to five wind turbines during a survey: One camera is placed on the leeward side of the tower and one is located on the windward side of the tower.

The thermal cameras are Axis Q1932-E 19MM thermal cameras with a tripod attachment. These are approximately one foot in length and are mounted on standard tripods. Two thermal camera set ups are used, one on the leeward side of the wind turbine tower and one on the windward side for the up to five wind turbines during a survey.

An ultrasonic bat detector would be placed on the gravel pad during the surveys to record acoustic bat activity at the wind turbine towers. An AR-125 bat detector mounted on a standard tripod and powered by a 12 v car battery would be deployed at the base of the each of the up to five study wind turbines near to the night vision setup. Its microphone would be angled up towards the tower to record echolocation calls from bats near the turbine towers where the camera are recording.

All researchers handling bats would be required to have pre-exposure rabies vaccinations. All work with bats would be conducted using trained bat handling technicians using appropriate protective equipment.

Based on the review of the proposal, DOE has determined the revised proposal fits within the class of action(s) and the integral elements of 10 CFR 1021 subpart B outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:
The recipient must comply with requirements of City of Fort Worth Parks and Community Service Department in regards to mist netting of bats and with requirements of the University's general Institute and Animal Care Use Protocol (IACUC permit #14-01).

Note to Specialist :

Wind and Hydropower Technologies Program
This NEPA determination requires a tailored NEPA provision.
Review completed by Chris Rowe 08/02/2016

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 8/3/2016
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

☐ Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
☐ Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

Field Office Manager's Signature: _____ Date: _____
Field Office Manager