

PMC-ND

(1.08.09.13)

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



RECIPIENT: NREL

STATE: CO

PROJECT TITLE NREL; Bergey Windpower - Distributed Wind Turbine Competitiveness Improvement Project; NREL
: Tracking No. 17-026

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-17-026	GO28308

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:

B5.18 Wind turbines The installation, modification, operation, and removal of a small number (generally not more than 2) of commercially available wind turbines, with a total height generally less than 200 feet (measured from the ground to the maximum height of blade rotation) that (1) are located within a previously disturbed or developed area; (2) are located more than 10 nautical miles (about 11.5 miles) from an airport or aviation navigation aid; (3) are located more than 1.5 nautical miles (about 1.7 miles) from National Weather Service or Federal Aviation Administration Doppler weather radar; (4) would not have the potential to cause significant impacts on bird or bat populations; and (5) are sited or designed such that the project would not have the potential to cause significant impacts to persons (such as from shadow flicker and other visual effects, and noise). Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices. Covered actions include only those related to wind turbines to be installed on land.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the National Renewable Energy Laboratory (NREL) to install a 15 kW wind turbine at a test site located in Norman, Oklahoma.

The purpose of the proposed project is to test the use of three helical (screw-like) anchors as an alternative to a concrete foundation to support a 15 kW turbine. The anchors would be instrumented with strain gauges, and the test tower and turbine would also be instrumented to record loads and deflections. Approximately 12 months of data would be collected to validate design assumptions and assess the viability of helical anchors to secure towers.

The turbine would be 30 meters (98.4 feet) tall and have 3 blades with a rotor diameter of 9.6 meters (31.4 feet). The turbine is a direct drive device and does not have a gearbox, and no guy wires are required. The wind generator would be installed on a 3-leg truss tower at an industrial site with existing turbines.

Electrical wiring between the tower and an existing electrical intertie point would be installed underground using a vibratory cable plow and "cable in conduit" (a continuous plastic conduit with electrical wire pre-installed in it). A vibratory plow cuts the soil, inserts the wiring conduit, and tamps the soil back in place. Soil disturbance would be minimal because the surface vegetation is not removed, and the soil is parted enough to accommodate the conduit and the soil falls back into place. This process would be used to assess the viability of it as an alternative to the traditional method of trenching and pulling wires in conduit. The length of the cable would be approximately 250 feet and would be at a depth of 18 to 24 inches.

The Bergey Windpower manufacturing site is located approximately 0.30 miles away from a small airport. The FAA conducted an aeronautical study of the project location and issued a "Determination of No Hazard to Air Navigation" on April 5, 2018.

There are two historical resource locations within view of the proposed project, which are the Moore-Lindsay House and Norman City Park. The proposed project is unlikely to adversely affect these resources due to the fact that the area is developed and intervening structures between the test site and these resources would obscure the turbine from view. Additionally, the site has four existing turbines and the addition of one turbine would not dramatically alter the view shed.

There are four threatened or endangered species that could encounter the project area: the least tern, piping plover, red knot, and whooping crane. It is unlikely that the least tern and piping plover would encounter the turbine as these species would be above the rotor swept area during active migration and would gravitate towards suitable stopover

habitat along the South Canadian River, approximately 8 miles west of the project area. The red knot would not likely encounter the turbine due to the lack of suitable habitat in the project area; the closest sighting occurred at the Salt Plains National Wildlife Refuge in Alfalfa County, OK, over 150 miles north of the project location. The whooping crane could encounter the project area during migration as they search for stopover habitat, and there have been recorded sightings in Cleveland County (the county where the project would be located). However, the likelihood of a whooping crane stopping near the project area is low as this species prefers wetlands and roosting on isolated stream or river channels, neither of which are found in the project area. The closest suitable stopover habitat for this species is located along the South Canadian River, approximately 8 miles west of the project area. For the reasons outlined above, DOE has determined that NREL's proposed project would have no effect on these threatened and endangered species.

All work would be performed at the Bergey Windpower manufacturing site in Norman, Oklahoma. Project activities would not affect critical habitat, wetlands, floodplains, or prime farmlands. It is unlikely that structural and electrical permits would be required by the city of Norman for the proposed project, but this will be verified prior to construction and all requested permits would be obtained. The proposed project would not result in air emissions or additional noise impacts.

Individuals working on this project could be exposed to hazards during installation of the anchors and during the lifting of the tower and turbine. Existing corporate health and safety policies and procedures would be followed.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action and the integral elements of 10 CFR 1021 subpart B outlined in the DOE categorical exclusion 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.

Note to Specialist :

NREL

Prepared by Nicole Serio, April 18, 2018

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically Signed By: **Kristin Kerwin**
NEPA Compliance Officer

Date: 4/19/2018

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: _____

Field Office Manager

Date: _____