

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-19-029 Rock Concrete Fiber Reinforced Foundation and Wind Turbine Installation – Yuma County, CO

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-19-029	GO28308

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:

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's (DOE) Wind Energy Technologies Office (WETO) is proposing to provide federal funding to the National Renewable Energy Laboratory to partner with Eocycle Technologies, Inc., Rock Concrete, Inc., and Champion Valley Cattle Co. The purpose of the proposed project is to demonstrate the effectiveness of a novel, fiber-reinforced foundation for small wind turbines as part of the "Distributed Wind Turbine Competitiveness Improvement Project (CIP) Component Improvements and Overall System Optimization – FY18" funding opportunity, which seeks to increase the competitiveness of small and midsize wind turbine manufacturers in the U.S.

A 25 KW wind turbine would be installed on Champion Valley's site located approximately 26 miles southeast of the city of Yuma in Yuma County, Colorado. NREL would manage the overall project and provide technical support for the design and engineering of the foundation, as well as any tests or measurements carried out on the prototype foundation. Rock Concrete would install the concrete base for the turbine. Eocycle would provide the turbine and tower. Hoss Consulting, a subcontractor to Eocycle, would manage the installation of the turbine. Champion Valley would own and operate the turbine, which would be permanently installed at their site.

Project activities would include:

- 1) Construction of a fiber-reinforced concrete foundation. Approximately 400 sq. ft. of ground would be excavated, and the 20' x 20' x 6' pit would be leveled, formed, reinforced, and bolts and fixtures would be embedded before pouring activities begin. The concrete forms would be removed after use.
- 2) Installation of a data shed. Approximately 8' x 8' x 6' of ground would be excavated and a 64 sq. ft. concrete pad would be poured. A 4' x 6' prefabricated data shed would be installed with associated electrical components, including a controller, inverter, line filter, disconnects, and meters.
- 3) Installation of a 450' electrical interconnection cable to connect the turbine to the local utility line. A trench measuring approximately 450' long, 1' wide, and 4' deep would be excavated, and excavated soil would run along the trench length and approximately 5' wide. A controller, inverter, meter, line filter, disconnects, and breakers would also be installed.
- 4) Installation of a 25 kW Eocycle wind turbine. The turbine would be approximately 105' tall (tip height) and have 3 blades with a rotor diameter of approximately 52'. The wind turbine would be installed on a 78' hydraulically-tilting 3-

piece monopole tower. The turbine is a direct drive device and does not have a gearbox, and no guy wires are required. The tower base elements would first be secured to the fiber-reinforced concrete foundation. While the tower is on the ground, the remaining turbine elements would be installed using a hydraulic "reach" fork/telehandler, including affixing the nacelle to the tower, assembling the rotor, and installing tower wiring. The tower would then be raised using an integral hydraulic lift system.

All work would be performed at the Champion Valley site. The total area of disturbance would be approximately 6,000 sq. ft. of previously disturbed area, including laydown area for excavated soils and equipment. Of this area, approximately 1,000 sq. ft. would be permanently altered. Excavation activities could result in stormwater and erosion impacts. All disturbed areas would be backfilled, reseeded, and mulched as needed to stabilize these areas. The site would continue to be used for agriculture and ranching. Once installed, the foundation would be inspected periodically to ensure it is functioning as designed.

The U.S. Fish & Wildlife Service's IPaC tool was used to determine if endangered species, migratory birds, or wetlands are present at the proposed project site. These resources are not present at or near the proposed project site; as such DOE has determined that project activities would have no effect on threatened or endangered species, migratory birds, or wetlands. Similarly, the proposed project would not affect floodplains, prime farmlands, or cultural resources. The site of the proposed project is not located near local or regional airports, nor near National Weather Service or Federal Aviation Administration (FAA) Doppler weather radar detection systems.

After construction, operation of the wind turbine would result in a slight increase in ambient noise levels; wildlife are likely to become easily habituated to the noise and avoid the area if distressed. The proposed project would not result in an increase of air emissions.

Non-hazardous waste materials would be produced, including excess concrete, dirt, shipping materials, and other miscellaneous waste materials. Concrete washout would occur offsite or EcoPans would be used. Excess material from excavation would be removed and disposed offsite. Other waste materials would be disposed of or recycled as appropriate. The hydraulic lift contains approximately 5 gallons of oil, which poses a spill risk. The tower's base acts as secondary containment, and any spills would be contained while cleanup actions proceed.

An interconnection approval pre-application form has been filed with Y-W Electric Cooperative and approved for the fast-track process to proceed to net metering and full interconnection approval. An Administrative Land Use Permit application has been submitted to Yuma County, and small wind energy is an allowable use of the proposed location per county zoning ordinances. No building permit is required. An electrical inspection would be conducted by Yuma County, and a Y-W Electric Cooperative relay witness test would also be conducted once the turbine has been installed. All required permits and approvals will be obtained prior to commencing work.

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

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

A migratory bird nesting survey will be completed if project activities involving ground disturbance occur between March 15 and September 15.

All required permits and approvals will be obtained prior to commencing work.

Notes:

NREL
Nicole Serio 5/24/2019

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: _____


NEPA Compliance Officer

Date: 5/30/2019

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: _____

Field Office Manager

Date: _____