PMC-EF2a

(2.06.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT:NREL **STATE:** UT

PROJECT TITLE : Small Wind Turbine Regional Test Center Windward Engineering, LLC in Utah; NREL Tracking No. 10-027

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
		NREL-10-027	GO10337

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:

B3.1 Onsite and offsite site characterization and environmental monitoring, including siting, construction (or modification), operation, and dismantlement or closing (abandonment) of characterization and monitoring devices and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to:

A9 Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

A11 Technical advice and planning assistance to international, national, state, and local organizations.

B5.1 Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

B1.15 Siting, construction (or modification), and operation of support buildings and support structures (including, but not limited to, trailers and prefabricated buildings) within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible). Covered support buildings and structures include those for office purposes; parking; cafeteria services; education and training; visitor reception; computer and data processing services; employee health services or recreation activities; routine maintenance activities; storage of supplies and equipment for administrative services and routine maintenance activities; security (including security posts); fire protection; and similar support purposes, but excluding facilities for waste storage activities, except as provided in other parts of this appendix.

Rational for determination:

This proposed project is for NREL/DOE funding and expertise to establish a Regional Test Center (RTC) at an existing turbine testing facility in conjunction with Windward Engineering, LLC, of 10768 S. Covered Bridge Canyon, Spanish Fork, Utah 84660. The proposed activities are part of an overall project to help establish self supporting RTCs that would offer small wind turbine certification testing to the industry by subsidizing the cost of testing the initial turbines and providing advice and mentoring to the RTCs. This effort is part of an industry effort to establish a small wind certification infrastructure to increase consumer confidence in small wind turbine technology.

The proposed Spanish Fork RTC site location is at an existing wind turbine test facility near Spanish Fork in Utah County that has been operated by Windward for about 15 years. The site is southeast of Spanish Fork and directly northwest of the junction of Hwy 89 and Hwy 6 near the mouth of the Spanish Fork Canyon. The approximate location of the proposed test center is Lat/Long: 40.0849°N/111.5913°W.

Scope of the project would include the establishment of the infrastructure (facilities, staff & procedures, and equipment) necessary to conduct certification testing of small wind turbines; coordination with the manufacturer for pre-test inspection, installation, instrumentation, commissioning and post-test inspection of the wind turbine systems at the RTC test site; evaluation of the turbines through testing and other observations over a test period of up to eighteen (18) months (need to meet duration standard of 2500 hours of operation) per the IEC standard; and documentation of the test findings in written reports (1 report per turbine) and posting of that information on a publicly available web site upon NREL's review and consent.

Given the nature of this project, testing 3rd party turbines, the exact specifications for each turbine design/model that would be tested are not known. However, RTC sites constructed using DOE/NREL funding would fall into the category of small turbines that have a rotor swept area of up to 200 square meters (equivalent maximum turbine rating is 65 kW). This would be significantly smaller than the turbine size usually associated with commercial wind farms, which can have turbine tower heights up to 400 feet, blade lengths up to 200 feet, rotor swept area up to 7,000 square meters, and maximum turbine ratings in the multi-megawatt range. The testing center would have a maximum of two small wind turbines and associated infrastructure constructed by Windward.

The Spanish Fork small wind turbine RTC site would have a maximum of two small wind turbines and associated infrastructure constructed by the Windward. Small turbine site design/build would involve adding two small spur roads, erection of one test shed, trenching for cabling and sensor wire, installation of two turbine tower foundations and towers, and erection of two meteorological towers. The existing access roads are adequate and only two small spur roads to each turbine test site would be constructed with gravel. The turbine foundation installation would require an area of excavation no greater than 100 SQFT and would be constructed to manufacturer specifications. Typical turbines are free standing either tube or lattice with heights typically between 30 to 100 feet. A small building (data shed/office - approx 10-feet by 10-feet) would be installed near the turbine foundations, and would house equipment and researchers. Trenching for cabling or sensor wire between each turbine and the data shed would require excavation and would be roughly 30 feet in length, 3 feet wide by 6 feet deep, but the spoil would be used to backfill the trench. A meteorological tower would be installed near each turbine location. The height of the met tower would be changed to match the turbine hub height, but would be no higher than 150 feet and more typically about 30 to 100 feet. The met towers would have guy wires leading to 3 anchor points. Depending on soil stability, anchor bolts may be used or concrete blocks if more stability is needed. Typical anchor blocks require excavation of a 3 foot by 3 foot by 3 foot area. All excavated areas that are temporary would be backfilled and revegetation in these small, narrow areas would occur naturally. All state weed control regulations would be followed. Turbines would be removed upon test completion, making the turbine test pad and infrastructure available for future testing.

The first manufacturer proposed to use this regional test center is Windspire Energy, Inc. of Reno, Nevada to test and certify their vertical axis wind turbine called the Windspire. Unlike traditional horizontal turbines, the Windspire has three narrow 20-foot tall airfoils that spin vertically in lieu of traditional turbine blades. The manufacturer claims that this design is safer for birds given the smaller rotor swept area and the airfoils are more visible due to the slower rotational speeds than traditional horizontal turbine blades. The manufacturer's specification sheets and noise dosimetry data are included in the PMC.

Total land disturbance is less than 0.1 acre and would occur on land previously disturbed. Given the relatively small size of land disturbance, a National Pollutant Discharge Elimination System (NPDES) storm water associated with construction activity permit with Utah Department of Environmental Quality would not be required. Standard industry practices for construction control would however be followed. Small amount of emissions or dust (particulates) is typical from mechanical construction equipment used to construct/upgrade access roads, excavate tower foundations, or for trenching for cabling. These actions are not considered to be significant contribution to criteria pollutants. This proposed project would not be subject to any FAA restrictions or lighting requirements, as the turbine and met towers would not exceed 150 feet nor is the site within an airport approach zone.

Per data available from U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), this site is not classified as prime or unique farmland. NREL/DOE began informal consultation with U.S. Fish & Wildlife Service for compliance with Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Golden and Bald Eagle Protection Act on 06/21/2010. USFWS concurred on 08/24/2010 that the proposed project would not likely to adversely effect the listed species in Utah County. Mr. David Laino, Vice President, with Windward Engineering indicated that in the 15 years that they have operated their wind turbine testing facilities he was unaware of any reported avian mortality associated with the four turbine test pads or three met towers currently present at their site. Bird diverters would be installed on the guy wires to the met towers to reduce the project's impacts to birds and bats. Furthermore, Windward would continue to conduct their informal monitoring.

It is not anticipated that this project would impact cultural resources or historic structures. This site has been completely disturbed for decades by a variety of activities and therefore is considered a disturbed site from a cultural and historic resource perspective. Given the method the spur roads would be constructed (adding gravel with little or no excavation, the further disturbance of potential cultural/historic during spur road or infrastructure construction is very unlikely. If objects or structures are unearthed, an archeologist would be called to the site to properly record and handle the cultural/historic artifacts. The project site is not located within a floodplain, and does not contain nor is adjacent to any wetlands. Utilization of hazardous materials or generation of hazardous waste is not anticipated.

Based upon the information above, this proposed action would qualify for Categorical Exclusions A9, A11, B1.15, B3.1 (h), and B5.1.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Insert the following language in the award:

You are required to:
Install bird diverters on the guy wires to the met towers to minimize impacts to bats and birds.

Note to Specialist :

EF2A prepared by Rob Smith on 09/01/2010

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Lori Plummer Date: 9/2/2010
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