

PMC-EF2a

(20102)

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



RECIPIENT: NREL

STATE: TX

PROJECT TITLE : Small Wind Turbine Regional Test Center, Canyon Texas; NREL Tracking No. 10-026

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
		NREL-10-026	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:
- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).
- 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.

Rational for determination:

This proposed project includes NREL/DOE funding and expertise for the establishment of a small wind turbine Regional Test Center (RTC) in conjunction with the Alternative Energy Institute (AEI) at West Texas A&M University at an existing facility near Canyon, Texas located at approximately: Latitude/Longitude 34.9603°N, 101.7990°W. These 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.

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 2,500 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, the testing and certification of third party wind turbines, the exact specifications for every turbine design that would be tested is not known. However, turbine testing sites constructed using DOE funding would fall into the category of small turbines and would 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 300 feet, blade lengths up to 170

feet, rotor swept area up to 7,000 square meters, and maximum turbine ratings in the multi-megawatt range. The testing site would have a maximum of two small wind turbines and associated infrastructure constructed by the proponent. Turbines would be removed upon test completion, making the turbine test pad and infrastructure available for future testing.

Specific information for the NREL-funded proposed Canyon RTC site includes:

- * Access Road. A minimal gravel and road-base access road would be built for the overall project as an extension of the existing road, running south then turning east connecting to the data shed, parking/laydown area, the two turbine test pads, and a single met tower. Approximate dimensions for the access road would be 3,850 feet in length by 12-feet in width for a total disturbance of 46,200 SQFT (1.1 acres).
- * Turbine Test Pads. Two (2) turbine test pad foundations would be installed per manufacturer's specifications, but would be less than 17 feet in diameter. Total area of disturbance for both turbine pads would be 454 SQFT.
- * Turbine Towers. Two (2) turbines would be installed per manufacturer's specifications, but typically 12 and 37 meters (40 and 120 feet) tall. The turbine towers would be self-support lattice towers anchored by helical anchors. Turbines would be dismantled after completion of the testing period, which would last up to 12 to 18 months.
- * Meteorological Tower. One (1) met tower would be installed in a configuration effective in recording weather data for both turbines, and erected to the same height as the turbine hubs being tested. The met tower would be a tubular NRG Systems, Inc. tilt-up tower anchored with three (3) to six (6) guy wires and anchor bolts. Bird diverters would be installed on the guy wires of the met tower. The met tower would be installed on a base plate (approximately 10 SQFT in area), which does not require any excavation. Total area of disturbance would be 10 SQFT for the base plate plus 6 SQFT for six (maximum) anchor bolts.
- * Underground Cabling/Conduit. Underground data and electricity conduit would be installed from turbine test pads to the data shed and the offsite power supply. Trenching for cabling or sensor wire would require excavation, but the spoils would be used to backfill the trench. Revegetation in these small, narrow areas would occur naturally and all state weed control regulations would be followed. The anticipated area of disturbance for the data lines would be 900 feet in length and 4 feet in width (3,600 SQFT) and 950 feet in length and 1.5 feet in width (1,425 SQFT) for the utility lines.
- * Data shed. A prefabricated structure, no greater in size than 30-feet by 30-feet, would be placed onsite to house the data acquisition system, wind turbine inverters, and electrical equipment (900 SQFT).
- * Gravel Parking and Laydown Area. A gravel parking and laydown area would be constructed adjacent to the data shed and would be approximately 40 feet by 60 feet in dimension (2,400 SQFT).
- * Total Area of Disturbance. Based upon the information above, total land disturbance and area of excavations for this undertaking would be approximately 1.3 acres. Construction activities would be conducted in accordance with industry best management practices to control erosion, minimize fugitive dust, and would conform to all state permitting standards for storm water management and erosion control.

As the total area of land disturbance is greater than one acre, a storm water associated with construction activity permit (CGP TXR150000) from Texas Commission of Environmental Conservation (TCEQ) would be required, and a Storm Water Pollution Prevention Plan would be developed and implemented. 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. Given the limited size and duration of the construction activity, potential fugitive air emissions are de minimis and would be further reduced by standard construction industry best management practices to control erosion and minimize fugitive dust. This proposed project would not be subject to any FAA restrictions or lighting requirements, as the turbine tower would not exceed 150 feet nor is the site within an airport approach zone.

Given the agriculture landscape of the proposed site and the potential to impact land designated as Prime Farmland, NREL/DOE consulted with USDA NRCS pursuant with Farmland Protection Policy Act and submitted a Farmland Conversion Impact Rating form (AD-1006). NRCS determined that the permanent impact of this action does not impact Prime or Important Farmland, and NREL/DOE received NRCS concurrence on 06/11/2010. NREL/DOE began informal consultation with U.S. Fish & Wildlife Service (USFWS) for compliance with Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Golden and Bald Eagle Protection Act in late September 2010. Listed or candidate species in Randall County include the interior least tern (*Sterna antillarum*), whooping crane (*Grus americana*), and the lesser prairie-chicken (*Tympanuchus pallidicinctus*)(candidate species). On 10/07/2010 NREL/DOE received a request from USFWS for additional information, which required NREL/DOE to consult with researchers to obtain more information on the potential impacts to the whooping crane and lesser prairie-chicken. On 12/10/2010 NREL/DOE submitted documentation to USFWS with a no effect determination for the interior least tern and a not likely to adversely affect determination for the whooping crane, and received USFWS concurrence on 12/15/2010 (see PMC). Additionally, NREL/DOE consulted with Texas Parks and Wildlife Department (TPWD) and considered their recommendations as documented in the TPWD 09/30/2010 letter (see PMC). Bird diverters would be installed on the guy wires to the met tower to further reduce the project's potential impact to migratory birds. AEI would also voluntarily conduct post-construction monitoring that was specified as a committed measure in consultations with USFWS and TPWD.

AEI consulted with the Texas State Historic Preservation Officer and conducted a record research for cultural resources. There are no known cultural resource sites in the vicinity nor any structures or districts listed or eligible for

inclusion into the National Register of Historic Places. The project site is not located within a floodplain (see FEMA FIRM Map Panel FM48381C0400E in PMC), and does not contain nor is adjacent to any wetlands (see USFWS National Wetland Inventory map in PMC). 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:
AEI shall install bird diverters or equivalent bird strike deterrent measures on the guy wires of the proposed met towers. AEI shall also conduct post-construction mortality monitoring.

Note to Specialist :

EF2A prepared by Rob Smith on 01/11/2011.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Lori Plummer *Lori Plummer* Date: 1/11/2011
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