PMC-EF2a

(2.04.02)

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

**RECIPIENT:** Illinois Institute of Technology **STATE:** IL

**PROJECT TITLE:** A World-Class University-Industry Consortium for Wind Energy Research, Education, and Workforce Development

| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
|---|---|---|---|
| DE-FOA-0000090 | DE-EE0002979 | GFO-10-114-001 | 0 |

**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 (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.

**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).

**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:

Illinois Institute of Technology (IIT) is proposing to use ARRA funding to develop an industry/academe wind consortium. Project activities under this proposal include small wind turbine construction and deployment; curriculum and undergraduate degree program development; control algorithms development for enhancing the reliability of wind turbine components; operation and planning tool development for accommodating the high penetration of intermittent wind energy in electric power utility systems; and stakeholder/student education.

Tasks include:

Phase 1:
Task 1.0 Procure a (previously constructed) 1.5MW GE Test Wind Turbine
Task 2.0 Install an 8KW Viryd Test Wind Turbine
Task 3.0 Install a Small Wind Turbine for Public Awareness

Phase 2:
Task 4.0 GE Wind Turbine Reliability Study
Task 5.0 Viryd Wind Turbine Reliability Study
Task 6.0 Noise Reduction in Wind Turbine Design through Fluid Dynamics and Acoustics

Phase 3:
Task 7.0 Advanced Reactive Power and Low-Voltage-Ride-Through Technology
Task 8.0 Advanced Wind Integration Study for Utility-Grade Operation
Task 9.0 International Collaboration on Wind Energy Research

Phase 4:
Task 10.0 Engage Undergraduate Students in Wind Energy Research
Task 11.0 Develop Undergraduate Courses and Laboratories on Wind Energy

Task 12.0 Offer Degree Program and Certificates on Wind Energy
Task 13.0 Develop Teaching Materials and Textbooks on Wind Energy
Task 14.0 Project Management and Reporting

In Task 1.0, IIT will procure an existing wind turbine unit from Invenergy which is located at their existing wind farm in Grand Ridge, Illinois. The designated unit is a 1.5 MW GE unit for that was installed in accordance with applicable laws and is fully permitted and operational

Tasks 2.0 and 3.0 involve the installation of two small wind turbines of variable sizes. Details of these installations are not known at this time.

Tasks 4.0 – 6.0 involve research and development activities in conventional laboratories on the IIT campus and at DOE's National Renewable Energy Laboratories. ITT has submitted an R&D questionnaire for their lab facilities that addresses their integrated safety equipment/protocols and waste stream handling that follows OSHA standards; therefore a CX B3.6 will apply for this phase.

Phase 3 (tasks 7.0 – 9.0) involves additional R&D activities, paper studies and technical collaboration with international students; therefore a CX A9, A11 and B3.6 will apply.

Phase 4 (tasks 10.0 – 14.0) will involve curriculum development, information gathering and dissemination; therefore a CX A9 will apply.

Tasks that can be categorically excluded under DOE NEPA regulations (task 1.0 and tasks 4.0 through 14.0) comprise procuring a previously installed wind turbine and its associated equipment for research and education in order to demonstrate potential energy conservation and promote energy-efficiency; curriculum development; computer modeling; and technical assistance; therefore a CX A9, A11, B3.6 and B5.1 will apply.

This NEPA determination does not apply to Task 2.0 and 3.0. Additional information and a subsequent EF1 and EF2 forms will need to be submitted and reviewed prior to making a determination. These task are currently unallowable under NEPA.

**NEPA PROVISION**

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:
Task 2.0 Install an 8KW Viryd Test Wind Turbine
Task 3.0 Install a Small Wind Turbine for Public Awareness

Prohibited activities also include capital equipment purchase, site prep, and construction and deployment activities for small wind turbine deployments.

This restriction does not preclude you from:
Task 1.0 and tasks 4.0 through 14.0
If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are 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:
Submit an additional EF1 with specific details regarding proposed locations for all small wind turbines. Including, but not limited to: turbine description and specs; specific sites for construction including maps and/or photos; documentation from informal USFWS consultation; construction plans and implementation; and description of infrastructure construction and associated equipment installation associated with the small turbine installations and deployments.

Note to Specialist :

This project included project tasks that are unallowable under NEPA (tasks 2.0 and 3.0); therefore NEPA requests this project be placed on ASAP approval.

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: Kristin Ken Date: 7/26/2010
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