

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



RECIPIENT: Iowa State University

STATE: IA

PROJECT TITLE : Optimal Operation and Impact Assessment of Distributed Wind for Improving Efficiency and Resilience of Rural Electricity Systems

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002071	DE-EE0008956	GFO-0008956-002	

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:

A9 Information gathering, analysis, and dissemination Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B5.15 Small-scale renewable energy research and development and pilot projects Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Iowa State University (ISU) to develop optimization methods, models, and algorithms that would enable rural utilities to leverage distributed wind energy in coordination with battery storage and other distributed energy resources (DERs) to shave peak demand, provide emergency power, and regulate voltage/frequency.

DOE previously completed one NEPA Determination (ND) (GFO-0008956-001; A9; 4/2/2020) for this award, which applied to Budget Period (BP) 1 activities only. ISU is now planning to add an additional subtask to BP1, subtask 5.3 (controls upgrades to wind turbines necessary for field validation). This NEPA review is for the additional subtask 5.3 only and does not apply to any BP2 activities.

The new subtask 5.3 would involve upgrading the control and communication systems of three preexisting wind turbines controlled by Algona Municipal Utilities (AMU) located approximately 5 miles southeast of Algona, IA (43 deg 2'5.63" N, 94 deg 8'26.95" W). The upgrades would integrate turbine systems with AMU's supervisory control and data acquisition (SCADA) system, which would permit remote observation (power, reactive power, voltage) and control (power factor, power set-point) of the wind turbines from AMU facilities in Algona. AMU would install the upgrades with assistance from Wind Utility Consulting (WUC), PC after removing preexisting electronic equipment.

Preexisting wind turbine operating conditions, including approved cut in speeds, would not change due to the upgrades. Upgrades would allow for quicker notification of turbine outages and allow for remote reset of some turbine faults, resulting in an increase of 1-2% operating time annually.

Award activities would involve the handling and use of hazardous materials, including electrical components. All such handling and storage would occur within controlled settings and would follow existing policies and procedures for handling and disposal of these materials. Removal and installation of electrical components would be completed by qualified personnel in a manner consistent with the National Electrical Safety Code (NESC), National Electrical Code (NEC), and AMU best practices. Installation of components would require climbing the turbine towers. Older equipment removed during the upgrade activities would be disposed of according to AMU policies and procedures. Existing university, corporate, and government health, safety, and environmental policies and procedures would be followed at all work sites, including: personnel training, proper personal protective equipment (PPE), engineering controls, monitoring, and internal assessments.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

[Budget Period 1](#)

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

[Budget Period 2](#)

Notes:

[Wind Energy Technologies Office \(WETO\)](#)
[NEPA review completed by Dan Cahill, 2/15/2022.](#)

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.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically Signed By: **Roak Parker**
NEPA Compliance Officer

Date: 2/16/2022

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: _____