Notice of Intent No. DE-FOA-0001587

Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0001554

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Wind and Water Power Technology Office, a Funding Opportunity Announcement (FOA) titled "Wind Energy – Eagle Impact Minimization Technologies and Field Testing Opportunities".

This FOA aims to advance the technical readiness of eagle detection, classification, and impact minimization technologies in order to 1) expand the scientific basis of and number of technical options available for further development and testing (Topic Areas 1 & 2 – described in detail below), and 2) support the field testing and evaluation of near-commercial technologies (Topic Area 3 – described in detail below), which, if successful, will provide wind plant owner-operators with viable and cost effective tools to reduce eagle impact risks and ease regulatory hurdles.

It is anticipated that the FOA may include the following Topic Areas:

Topic Area 1: Eagle Physiology and Behavior

> Awards under this Topic Area will intend to support research on eagle ability to sense and respond to stimuli, in an effort to identify signals that will serve as optimal deterrents. Awards under this Topic Area may include physiological research, genetics research, and/or behavioral testing to evaluate the ability to sense and respond to stimuli in controlled settings. Projects would be short (1 year) in duration with the intent of making the data available to Topic Area 2 and Topic Area 3 award recipients as they work to refine their technologies after initial testing. Project teams will be expected to submit their results to peer reviewed journals. Applicant teams should currently possess permits for this research (e.g., for use of captive birds) or demonstrate ability to obtain permits and other necessary approvals (e.g., Institutional Animal Care and Use Committee (IACUC)) soon after the awards are made.

Topic Area 2: Prototype Advancement through Laboratory and Small-Scale Field Testing

> Awards under this Topic Area will intend to further the technical readiness of Technology Readiness Level (TRL) 5-6 detect and deter and informed curtailment systems through technical improvement and testing activities. At minimum, awards should result in a prototype that has undergone demonstration testing in the field.

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Under this Topic Area, testing of technology at a wind farm is not required. For example, this Topic Area might support the field testing of a prototype eagle detection or deterrent system in an outdoor environment not associated with a wind facility to establish its ability to reliably detect or reduce eagle activity without habituation. While wind farm testing is not required, systems that are intended to integrate with the supervisory control and data acquisition (SCADA) system of wind turbines are encouraged in order to test system integration capabilities. Applicants are also encouraged to describe how they plan to evaluate the impact of moving turbine blades on the detection portion of their systems.

In order to receive funding under this solicitation, applications will need to credibly demonstrate that the proposed technology has the potential to be an effective and affordable long-term solution for reducing eagle mortality at wind farms compared to current eagle detection and risk minimization methods. For deterrent technology, demonstration of efficacy should include demonstration of a consistent and statistically significant change in behavior in response to deterrent stimuli at a scale likely to be sufficient to prevent collisions.

Testing Partners, Oversight, Peer Review, and Analysis

Following the announcement and negotiation of awards under this FOA, where applicable, awardees will work with an entity identified by DOE to: coordinate peer review of testing methodology; ensure, to the greatest extent practicable, that field tests are conducted with standardized research methodology; and provide independent verification of results. EERE strongly encourages teams to include biologists or consultants capable of conducting the biological field studies associated with demonstrating the impact minimization technology. These biologists should have appropriate biological expertise, including well-demonstrated experience with designing and conducting successful relevant environmental monitoring or research at wind farms, expertise regarding the species of interest, and expertise in relevant statistical methodology for wind farm environmental impact study design and data analysis.

Topic Area 3: Operational Demonstration and Validation

With this Topic Area, DOE intends to support the demonstration of a proposed TRL 7+ detection and/or minimization technology at an operational wind facility at a scale sufficient to provide an accurate demonstration of efficacy through a statistically significant reduction of impact at a reasonable cost. The intent of this Topic Area is to provide final technical improvements and independent verification of system performance prior to commercialization. In order to receive funding under this FOA, applications will need to credibly demonstrate that the proposed technology has the

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potential to be an effective and affordable long-term solution for reducing eagle mortality at wind farms.

Projects under this Topic Area should last approximately 3-4 years in duration and are **recommended** to include the following components: 1) initial testing of device effectiveness outside of an operating wind plant, 2) technical improvements following initial testing, and are **required** to include 3) field testing at a **minimum of two wind farms** for a **minimum of two field seasons** with a study design appropriate for meta-analyses across sites and years. DOE anticipates making a Go/No-Go decision after the initial testing and technical improvements, based on an evaluation of initial performance and demonstrated degree of readiness for wind farm trials, including successful receipt of any necessary permits or authorizations to cover these testing activities. Information regarding technical specifications will be protected under this FOA; however, performance results will be made publicly available.

Testing Partners, Oversight, Peer Review, and Analysis
Following the announcement and negotiation of awards under this FOA, where applicable, awardees will work with an entity identified by DOE to: coordinate peer review of testing methodology; to work to ensure, that to the greatest extent practicable, ensure that field tests are conducted with standardized research methodology; and provide final independent verification of results. The entity is identified by DOE party may also lead conduct a meta-analysis of system efficacy results across projects awarded under this FOA.

It will be essential that awardees conduct technology demonstrations at an operational wind facility, and have the active participation and support of the facility operator to ensure safe and effective integration of the impact minimization technology being evaluated, as well as to allow for a full evaluation of the costs associated with implementing the technology. EERE therefore strongly encourages teams to include the following entities in their applications: 1) a wind facility operator, 2) a mitigation technology provider, and 3) biologists or consultants capable of conducting the biological field studies associated with demonstrating the impact minimization technology. These biologists should have appropriate biological expertise, including well-demonstrated experience with designing and conducting successful relevant environmental monitoring or research at wind farms, expertise regarding the species of interest, and expertise in relevant statistical methodology for wind farm environmental impact study design and data analysis.

Additional Information:
EERE envisions awarding multiple financial assistance awards in the form of cooperative agreements. The estimated period of performance for each Topic Area 1 award will be

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approximately 1 year. The estimated period of performance for each Topic Area 2 award will be 2-3 years, and each Topic Area 3 award will be 3-4 years.

This NOI is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All of the information contained in this NOI is subject to change. EERE will not respond to questions concerning this NOI. Once the FOA has been released, EERE will provide an avenue for potential Applicants to submit questions.

EERE plans to issue the FOA on or about May 23, 2016 via the EERE Exchange website https://eere-exchange.energy.gov/. If Applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE Exchange. When the FOA is released, applications will be accepted only through EERE Exchange.

In anticipation of the FOA being released, Applicants are advised to complete the following steps, which are **required** for application submission:

- Register and create an account in EERE Exchange at https://eere-exchange.energy.gov/. This account will allow the user to register for any open EERE FOAs that are currently in EERE Exchange. It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission.

  Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov
- Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including the plus 4 extension, if applicable) at http://fedgov.dnb.com/webform
- Register with the System for Award Management (SAM) at https://www.sam.gov. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.
- Register in FedConnect at https://www.fedconnect.net/. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf
- Register in Grants.gov to receive automatic updates when Amendments to a FOA are posted. However, please note that applications will not be accepted through Grants.gov. http://www.grants.gov/. All applications must be submitted through EERE Exchange.

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