

Notice of Intent No. DE-FOA-0001049**Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-00000984
Wind Forecasting Improvement Project in Complex Terrain**

The Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Wind and Water Power Technologies Office (WWPTO), a Funding Opportunity Announcement (FOA) entitled "Wind Forecasting Improvement Project in Complex Terrain."

By researching physical processes in complex terrain that drive wind and ramp events, the WWPTO is seeking proposals for improving short-term (0 to 15 hour) wind forecasts. Additionally the research is intended to benefit the day-ahead wind forecasts as well in order to benefit the U.S. wind industry. Increasing confidence in wind forecasts for the utility balancing of wind power generation is challenging, particularly in areas of complex terrain where several factors can play a role in rapidly altering wind speed and direction.

This FOA will fund one recipient to populate a study area (approximately 800 by 800 kilometers) with additional meteorological instrumentation and equipment to measure specific physical properties. The WWPTO is interested in the region between the Rocky Mountains and the Pacific coastline as a candidate area for studying these physical properties.

The FOA recipient, working with the National Oceanic and Atmospheric Administration (NOAA), will design and implement a field campaign and conduct analyses with the goal of improving the understanding and modeling capabilities of physical properties within community-based atmospheric models. The physical properties shall include:

- temperature and moisture profiles of the atmosphere, at a minimum, through the depth of the turbine rotor (~200m) and deeper, if possible, to capture a more complete profile of certain phenomena (e.g. low-level jet, full depth of sea breezes);
- low-level jets;
- mountain drainage winds;
- other boundaries such as fronts, outflows and wakes;
- surface flux measurements from which atmospheric stability parameters can be derived; and
- pressure measurements.

Additional physical processes for research under this FOA can include, but are not limited to:

- land-sea breezes;

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- turbulence; and
- snow and soil moisture.

Data collected during this field measurement campaign will be shared in near real-time with NOAA and used to develop new physics packages for the Weather Research and Forecasting (WRF) model. These developed physics packages will be incorporated into NOAA's Numerical Weather Prediction (NWP) models to assess improvements in short-term and possibly day-ahead wind forecasts.

It is anticipated that the project team will consist of a public-private partnership between the recipient, DOE, NOAA and an appropriate Balancing Authority (BA). This project will help develop WRF model schemes to enhance the forecast probability and accuracy needed to reliably operate wind plants under differing atmospheric conditions. As such, the ability to openly share atmospheric data, and possibly wind plant SCADA (Supervisory Control and Data Acquisition) data, and load-related information, amongst these partners is critical to the success of this project.

WWPTO will fund Argonne National Laboratory (ANL), Pacific Northwest National Laboratory (PNNL), Lawrence Livermore National Laboratory (LLNL), and the National Renewable Energy Laboratory (NREL) separately in a support role to provide government-owned observational equipment and technical services to the recipient. Among existing Federally Funded Research and Development Centers (FFRDCs) and Government-owned, Government-operated laboratories (GOGO) laboratories, these FFRDCs have developed core competency in the subject matter of this FOA. WWPTO is also planning to fund NREL to provide support for economic analysis to the recipient for the duration of the award. Potential applicants should not contact NOAA or these FFRDCs for assistance in preparing their application. Applicants will collaborate with these partners at DOE expense only if competitively selected and awarded.

EERE envisions negotiating one financial assistance award in the form of a cooperative agreement. The estimated period of performance for each award will be three years, which includes acquiring land easements, deploying instrumentation, conducting a field campaign with data collected during each season, and the analysis of data and model improvements.

Eligible applicants under this FOA include individuals, domestic entities, foreign entities, incorporated consortia, and unincorporated consortia. FFRDCs or GOGOs are not eligible to apply as prime or subrecipients.

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

EERE plans to issue the FOA in early 2014 via the EERE Exchange website (<https://eere-exchange.energy.gov/>). If Applicants wish to receive official notifications and information from

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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/PublicPages/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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