Notice of Intent No. DE-FOA-0001309

Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0001286

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Wind and Water Power Technologies Office, a Funding Opportunity Announcement (FOA) entitled "Research and Development of Innovative Technologies for Low Impact Hydropower Development".

This FOA will support research and development of new innovations in hydropower drivetrain and civil works technologies for low impact hydropower development. The focus will be to reduce overall capital costs and recurring operation and maintenance costs and reduce the environmental impact of developing new hydropower projects.

The technologies to be developed will include low impact civil structures, alternative construction methods and materials, and innovative mechanical and electrical powertrain components. These technologies will also help to reduce installation and maintenance costs, while addressing the environmental and social concerns of new hydropower development.

DOE will solicit innovative ideas to harness hydropower that can be rapidly built, removed, and replaced when necessary. Applicants will be encouraged to provide new concepts for alternative hydropower systems that will lower the costs of civil infrastructure development, can be deployed in a maximum of two (2) years with relatively low environmental impacts, and can be removed or replaced after their intended life is completed. These concepts and systems should be able to operate at a cost that is competitive with traditional sources of generation.

It is anticipated that the FOA may include the following topic areas:

Topic Area 1: Design and laboratory testing of new rapidly deployable hydropower technologies that can be easily removed or replaced at the end of their useful life, including, but not limited to, water impounding structures, water conveying systems, and innovative pre-fabricated structures.

These technologies should be scalable in a range of head from 10 to 50 feet. The applicant will be responsible for first developing a proof of concept design and then advancing the prototype to the next stage of laboratory testing. Specific testing methodologies performed in the laboratory may vary based on the technology being developed. Examples of testing may include tests for structural and hydraulic performance, water-tightness, stability, etc. Applications to this topic area would address Technology Readiness Levels (TRLs) in the 3 to 6 range (3 anticipated awards, with an average award amount of $1,500,000).

Topic Area 2: Research on innovative methods and/or materials for construction of conventional hydropower facilities including, but not limited to, concrete alternatives, in-water construction, and innovative advanced tunneling methods.

This topic area is focused on exploring new, novel concepts associated with civil works construction as it applies to hydropower facilities. Conceptual designs should be based on sound engineering, analysis, and modeling practices. The expectation is that these technologies will be presented in a research paper style document. Applications to this topic area would address TRLs in the 1 to 3 range (2 anticipated awards, with an average award amount of $250,000).

Topic Area 3: Design and laboratory testing of new and innovative conventional hydropower powertrain components such as composite and replaceable blade technologies for turbine runners, new generator technologies, and/or materials and coatings for powertrain components.

This topic area is focused on developments that could be used to extend powertrain component life, and reduce service and maintenance requirements. The applicant will be responsible for first developing a proof of concept design and then advancing component prototype to the next stage of laboratory testing. Specific testing methodologies performed in the laboratory may vary based on the technology being developed. Examples of testing may include tests for efficiency (mechanical/electrical), operating range, cavitation, vibration, etc. Applications to this topic area would address TRLs in the 3 to 6 range (2 anticipated awards, with an average award amount of $1,000,000).

EERE envisions awarding multiple financial assistance awards in the form of cooperative agreements. The estimated period of performance for each award will be approximately one to two years in duration.

This Notice is issued so that interested parties are aware of the EERE's intention to issue a FOA as described herein 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 the March, 2015 timeframe 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 http://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.