

Notice of Intent No. DE-FOA-0001066**Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0001006**

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 “Water Power Manufacturing”.

This FOA supports the application of advanced materials and advanced manufacturing techniques to the development of new hydropower technologies. With the significant advancements realized over the last decade, the application of advanced materials, and Computer Aided Design (CAD) driven, additive manufacturing technologies can effectively push the performance and speed the adoption of new hydropower technologies.

There is a significant opportunity to substantially increase hydropower generation at low-head sites in the US and around the world (“low-head” = sites with heads in the range of 2-20 meters, or 6-66 feet). These “new” hydropower opportunities, which are typically capable of generating between 100 kW - 30 MW, are readily present at existing non-powered dams, and existing constrained waterways (to include canals and conduits). The ability to leverage existing water resource infrastructure makes these sites particularly attractive from an economic and permitting perspective. For example, these sites (non-powered dams and constrained waterways) tend to have roads and transmission lines already established on-site (or at least within close-proximity), and as the core infrastructure is already in place (dams and/or man-made conduits and canals), there would be minimal environmental impact due to the addition of a hydropower unit.

The development of low-cost, integrated hydropower turbine-generator sets capable of delivering cost-competitive electricity from these resources and within these head ranges is critical to fully exploit this emerging global opportunity. The following criteria are considered essential design elements in this regard:

- **Modular, self-contained units:** hydropower turbine-generator units should be relatively lightweight and be designed to be readily packaged to ease shipment and installation upon delivery.
- **Variable Speed:** High efficiency across a range of flows.
- **Cost Competitive:** Capital costs at full-scale production runs of less than \$2k/kW, and an LCOE of \$0.06/kW-hr or less: Systems must be able to compete with local hurdle rates.
- **Minimize costs of manufacturing, operations and maintenance, and repair:** The application of advanced materials and advanced manufacturing techniques to maximize the efficiency of unit production; and improve performance, survivability, and

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reparability of hydro turbine generator sets should yield cost-competitive, high performance systems with broad applicability.

- Ecologically non-disruptive: turbine/generator units should not have a significantly deleterious effect on marine life compared to the existing resource and infrastructure.

Under the subject FOA, applicants would propose to design an integrated hydropower turbine generator system that applies advanced materials and/or additive manufacturing techniques and produce a prototype unit at an appropriate scale to enable in-water performance testing in a laboratory environment. Projects should include design, in-water performance testing, Levelized Cost of Energy (LCOE) analysis that takes into account production scale manufacturing costs, as well as development of a manufacturing plan that estimates the material and process requirements for full-scale production of the design.

EERE envisions awarding multiple financial assistance awards in the form of cooperative agreements. The estimated period of performance for each award will be approximately two years. The funding amount is anticipated to be a maximum of \$2,200,000 per award with a minimum required cost share of 20%.

This Notice 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 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 [April of 2014](#) 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.

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- 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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