



**U.S Department of Energy (DOE)  
Office of Energy Efficiency and Renewable Energy  
"Marine and Hydrokinetic System Performance Advancement"  
Notice of Intent (NOI) Number: DE-FOA-0000897**

**Technology Office Director/Technology Office:**

Jose Zayas, Office Director, Wind and Water Power Technologies Office, Office of Energy Efficiency and Renewable Energy

**Subject:**

Notice of Intent to Issue Funding Opportunity Announcement (FOA) No: DE-FOA-0000848

**Description:**

The purpose of this Notice is to provide potential applicants advance notice that the Wind and Water Power Technologies Office (WWPTO), on behalf of the DOE Office of Energy Efficiency and Renewable Energy (EERE), intends to issue a FOA titled "Marine and Hydrokinetic (MHK) System Performance Advancement (SPA)". **NO APPLICATIONS WILL BE ACCEPTED THROUGH THIS NOTICE.** Please do not submit questions or respond to this Notice of Intent.

Prospective applicants to the FOA should begin developing partnerships, formulating ideas, and gathering data in anticipation of the issuance of this FOA. It is anticipated that this FOA will be posted to EERE Exchange (<https://eere-Exchange.energy.gov/>) in the second quarter of Calendar Year 2013.

The objective of the proposed MHK System Performance Advancement FOA is to advance *technology performance* of existing marine and hydrokinetic systems through the development and application of innovative components that are designed and built specifically for MHK applications. For the purposes of this FOA, SPA will be measured as increasing the "power to weight ratio" and/or "availability" of MHK systems. Improvements in these criteria are viewed as critical drivers in reducing the levelized cost of energy (LCOE). This FOA will focus on improving the cost competitiveness of systems already in development, with the goal of advancing the *technology performance* of these systems.

This FOA will support component development projects in three topic areas that have the greatest potential to impact power to weight ratio and availability:

- Topic Area 1: Advanced Controls – to improve energy capture, availability, and safety.

- Topic Area 2: Next-Gen Power Take-Off (PTO) – to increase energy efficiency, reduce weight, and improve reliability.
- Topic Area 3: Optimized Structures – to improve energy capture, reduce weight, and improve reliability.

The proposed FOA would seek projects that design components to meet performance objectives, conduct numerical simulation and analysis to verify performance, and/or validate performance through physical model testing.

Applicants would be expected to have expertise in component development, system integration, and testing (as needed). As a result, teaming may be necessary. Given that the performance advancements are targeted for existing MHK systems, strong partnership and engagement of MHK system developers would be expected.

### **Background:**

The mission of the DOE Wind and Water Power Technologies Office (WWPTO) is to research, develop, and test innovative technologies capable of generating renewable, environmentally responsible, and cost-effective electricity from U.S. water resources. These include MHK technologies that harness the energy from waves and from tidal, river, and ocean currents.

The Technology Office's investments in MHK technologies aim to advance the technical readiness and performance of MHK systems and support the development of a robust and competitive MHK industry in the U.S. The Technology Office's overarching goal is to develop innovative MHK systems with a credible potential for lowering the LCOE below the local "hurdle" price at which MHK energy can compete with other regional generation sources without subsidies.

Over the past several years, the Technology Office has advanced the technical maturity of MHK systems across the full spectrum of technology readiness levels (TRLs). The investments in this area seek to address a wide range of technical challenges associated with these emerging technologies, with the goal of developing "commercial ready" systems. Through technology demonstrations, DOE and industry have identified the performance advancements needed to better position the next generation of MHK systems to compete in the marketplace. Consequently, the Technology Office is pursuing two complementary paths of technology advancement through its planned initiatives:

- Advance *technology readiness* to reduce the technical risk of MHK technologies developed and to deliver robust products to the market.
- Advance *technology performance* to drive the cost of MHK systems towards economic competitiveness.

To date, the Technology Office has invested heavily in advancing *technology readiness*. Under this Funding Opportunity Announcement (FOA) the Technology Office will focus on advancing *technology performance* by making investments in component technology improvements that improve the performance of today's MHK systems. For the purposes of this FOA, "components" are the elementary technologies or sub-systems that are combined to form the

overall MHK system.

### **Registration Information**

In anticipation of the Funding Opportunity Announcement being released, Applicants are advised to complete the following, which is **required** for application submission:

- Register and create an account on EERE Exchange at <https://eere-exchange.energy.gov/>. This account will then 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](mailto:EERE-ExchangeSupport@hq.doe.gov)

**Applicants should not wait until the last minute to begin the submission process.** During the final hours before the submission deadline, Applicants may experience server/connection congestion that prevents them from completing the necessary steps in EERE Exchange to submit their applications. **EERE will not extend the submission deadline for Applicants that fail to submit required information and documents due to server/connection congestion.**

The EERE Exchange registration does not have a delay; however, **the remaining registration requirements below could take several weeks to process and are necessary in order for a potential applicant to receive an award under this announcement.** Therefore, although not required in order to submit an Application through the EERE Exchange site, **all potential applicants lacking a DUNS number, or not yet registered with SAM or FedConnect should complete these registrations as soon as possible:**

- 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](https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf)
- Register in Grants.gov to receive automatic updates when Amendments to this FOA are posted. However, please note that applications **letters of intent, and/or concept papers** will

not be accepted through Grants.gov. <http://www.grants.gov/>. Note: Announcements regarding modifications will also be sent out through EERE Exchange.

DOE will not entertain questions at this time. If the proposed FOA is posted, all questions and answers related to the FOA will be publically available on EERE Exchange at: <https://eere-exchange.energy.gov/>.

### **Disclaimer**

DOE is issuing this Notice of Intent so that interested parties are aware of DOE's intention to issue a FOA. DOE reserves the right to change the requirements of any proposed FOA, issue a FOA involving only a portion of the elements listed, or not issue a FOA at all. Any of the information contained in this Notice is subject to change. Any amounts proposed for funding are subject to the availability of Congressional appropriations.