

Laboratory-Scale and Open Water Testing of Marine and Hydrokinetic Systems

DATE: January 14, 2015

SUBJECT: Request for Information (RFI)

DESCRIPTION:

The U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy invites input from the public regarding a potential effort to facilitate laboratory-scale, or open-ocean testing of prototype marine and hydrokinetic (MHK) devices. Details regarding the planned testing of prototype MHK devices for system integration, structural performance, and power performance (see below) are specifically requested; as well as discussion of the anticipated facility, site, instrumentation, expertise, and logistical support needed to advance the technical readiness of the device.

BACKGROUND:

The U.S. Department of Energy's (DOE) Wind and Water Power Technology Office (WWPTO) has a clear role in advancing the development and deployment of innovative marine and hydrokinetic (MHK) devices and systems. DOE's objectives are to drive innovation, compress the development cycle, and demonstrate the technical readiness and performance of U.S. MHK technologies. To this end, DOE makes strategic investments in wave energy converter (WEC) and current (tidal, river, or ocean) energy converter (CEC) technologies that have the greatest potential to achieve economic viability. With this RFI, DOE seeks to better understand the state of development of existing WEC and CEC systems nearing laboratory-scale or open-water testing for performance validation within the next two years. Information gathered through this request will be used to inform future DOE strategic decisions regarding the advancement of early to mid-stage MHK technologies.

DOE requests information regarding MHK systems in the early stage of technology development that have established the potential for economic viability through a design proof-of-concept. The next step for these systems is laboratory-scale testing and validation under controlled conditions. Specifically of interest are technologies ready to validate design performance, reliability, and survivability predictions from numerical modeling.

Additionally, the DOE requests information regarding MHK systems that have validated the performance under controlled conditions, independently tested key components, and are ready to test fully integrated systems in an open water environment, prior to grid connection. These systems are ready to face the deployment and operation conditions relevant to the intended deployment site. Specifically of interest are technologies ready to evaluate a system prototype for performance and reliability, as well as address the permitting and risk mitigation efforts planned over the duration of deployment.

This is a Request for Information (RFI) only. EERE will not pay for information provided under this RFI and no project will be supported as a result of this RFI. This RFI is not accepting applications for financial assistance or financial incentives. EERE may or may not issue a Funding Opportunity Announcement (FOA) based on consideration of the input received from this RFI.

PURPOSE:

The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other marine and hydrokinetic power stakeholders. The information gathered with this RFI will be used to inform strategic planning by the DOE to advance the marine and hydrokinetic industry. DOE is specifically interested in collecting information regarding existing MHK systems and the anticipated resources necessary to test and validate these early-stage technologies at a laboratory scale, or in an open-water environment.

DISCLAIMER AND IMPORTANT NOTES:

This RFI is not a Funding Opportunity Announcement (FOA); therefore, EERE is not accepting applications at this time. EERE may issue a FOA in the future based on or related to the content and responses to this RFI; however, EERE may also elect not to issue a FOA. There is no guarantee that a FOA will be issued as a result of this RFI. Responding to this RFI does not provide any advantage or disadvantage to potential applicants if EERE chooses to issue a FOA regarding the subject matter. If EERE chooses to issue a FOA related to this matter, final details, including the anticipated award size, quantity, and timing of EERE funded awards will be subject to Congressional appropriations and direction.

Any information obtained as a result of this RFI is intended to be used by the Government on a non-attribution basis for planning and strategy development; this RFI does not constitute a formal solicitation for proposals or abstracts. Your response to this notice will be treated as information only. EERE will review and consider all responses in its formulation of program strategies for the identified materials of interest that are the subject of this request. EERE will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that EERE is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind EERE to any further actions related to this topic.

PROPRIETARY INFORMATION:

Because information received in response to this RFI may be used to structure future programs and FOAs, and/or otherwise be made available to the public, **respondents are strongly advised NOT to include any information in their responses that might be considered business sensitive, proprietary, or otherwise confidential.** If, however, a respondent chooses to submit business sensitive, proprietary, or otherwise confidential information, it must be clearly and conspicuously marked as such in the response, as described below.

Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The U.S. Federal Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

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If your response contains confidential, proprietary, or privileged information, you must include a cover sheet marked as follows identifying the specific pages containing confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this response may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for the purposes described in this RFI, DE-FOA-0001274. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.

In addition, (1) the header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: “Contains Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure” and (2) every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

EVALUATION AND ADMINISTRATION BY FEDERAL AND NON-FEDERAL

PERSONNEL: Federal employees are subject to the non-disclosure requirements of a criminal statute, the Trade Secrets Act, 18 USC 1905. The Government may seek the advice of qualified non-Federal personnel. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The respondents, by submitting their response, consent to EERE providing their response to non-Federal parties. Non-Federal parties given access to responses must be subject to an appropriate obligation of confidentiality prior to being given the access. Submissions may be reviewed by support contractors and private consultants.

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REQUEST FOR INFORMATION QUESTIONS:

The DOE requests information regarding MHK systems ready for laboratory-scale or open-water testing and validation within the next couple of years. The information gathered from this RFI will be used to inform strategic planning by DOE in advancing the U.S. MHK industry.

1. Regarding your organization's MHK device or system and testing objectives:
 - a) What is the device/system type? (e.g. point absorber)
 - b) Does the current phase of technology development require device or system proof-of-concept laboratory-scale testing and validation?
 - c) Does the current phase of technology development require device or system initial open-water testing and validation?
 - d) What specific research and development goal(s) does your organization seek to address through testing?
 - e) What data collection and processing requirements are anticipated to reach the abovementioned goal(s)?

2. Regarding the laboratory-scale or open-water testing site:
 - a) What testing facilities are needed and where is the location of the anticipated, or desired test site?
 - b) Is a contract, permit, and/or license needed for testing at the above mentioned site? Please describe where your organization stands in acquiring the needed documents.
 - c) What is the soonest your organization could be prepared to test the device at this location? What significant challenges remain to be addressed prior to testing?

3. Regarding participation in a collaborative testing and validation effort coordinated by the DOE:
 - a) What resources and capabilities (e.g. expertise, vessels, and instruments) are available to aid in the testing and validation effort?
 - b) What additional resources and capabilities are needed for successful testing?

4. Regarding risk management for open-water testing:
 - a) Is there an established deployment, operation, and recovery plan for testing and validation?
 - b) What are your highest risks and the associated failure modes? Please describe.
 - c) What type of reliability and performance measurements (load, fatigue, strain etc) have been performed or considered to date? Where on the device or system would additional measurements be most valuable?

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REQUEST FOR INFORMATION RESPONSE GUIDELINES: Responses to this RFI must be submitted electronically to MHKtestRFI@ee.doe.gov no later than 5:00pm (EDT) on February 17, 2015. Responses must be provided as a Microsoft Word (.docx) attachment to the email, of no more than 5 pages in length, 12 point font, 1 inch margins. Only electronic responses will be accepted.

Please identify your answers by responding to a specific question or topic if possible. Respondents may answer as many or as few questions as they wish.

EERE will not respond to individual submissions or publish publicly a compendium of responses. A response to this RFI will not be viewed as a binding commitment to develop or pursue the project or ideas discussed.

Respondents are requested to provide the following information at the start of their response to this RFI:

- Company / institution name;
- Company / institution contact;
- Contact's address, phone number, and e-mail address.

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