



February 17, 2015

U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy  
Wind and Water Power Technology Office

Subject: Request for Information: Laboratory-Scale and Open Water Testing of Marine and Hydrokinetic Systems

Submitted via electronic mail to [MHKtestRFI@ee.doe.gov](mailto:MHKtestRFI@ee.doe.gov)

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As the national trade association for all water power technologies, the National Hydropower Association represents all types and stages of marine energy technology, including wave, tidal, currents, OTEC and run-of-river through its Marine Energy Council. The Council feels strongly that the marine energy industry is hampered by the lack of testing facilities, of the type the European industry has enjoyed for several years, and that federal support for such facilities is of paramount importance to the long-term success of this promising new source of clean, emissions free energy. The Council offers the following general comments in regard to Question 2 of the DOE's request for information.

*Question 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?*

The Marine Energy Council of the National Hydropower Association fully supports federal financial and planning support for testing facilities appropriate for the various stages and types of MHK technologies, including wave, tidal, current, OTEC and run-of-river technologies. All technologies benefit from accessible testing facilities ranging from early stage wave-tank and modeling capability through locations that represent fully energetic open-ocean testing for commercial readiness. While some shore-side testing facilities exist, they are expensive and often unavailable due to other competing uses. Open water testing is much more limited, and likely represents the most important area for DOE support over the next three years.

The Marine Energy Council recognizes that there are many competing demands on the DOE's limited budget for marine energy technologies. However, the lack of affordable and available testing facilities in the United States, especially pre-permitted open-water sites, is a serious deficiency in our industry and a competitive disadvantage compared to our European partners. While every effort should be made to seek private and state support for such facilities, federal support is absolutely necessary.



For TRL 3-9 testing facilities, the Marine Energy Council urges the DOE to consider funding programs similar to MARINET. MARINET is a European Commission-sponsored program that “offers periods of free-of-charge access to world-class R&D facilities & expertise and conducts joint activities in parallel to standardise testing, improve testing capabilities and enhance training & networking”. This will accelerate the pace of innovation for the less-mature technologies.

Regarding more mature technologies, several companies in the United States have moved their respective technologies through technology readiness levels (TRL) approaching TRL 5-9. As these companies move towards commercial readiness, the need for established federally funded test sites becomes paramount. Open-water test sites for all forms of marine energy should have the following characteristics.

- A range of energy resources to accommodate the varying maturities of the technologies.
- Be fully permitted so as to avoid lengthy and costly delays in deployment. No site will provide a “permit-free” experience for developers; however, every effort should be made to reduce the number and expense of any additionally required permits or studies and DOE should support the permitting process as this is a very expensive and time consuming process that acts as a significant barrier to development of test centers.
- Provide a means by which each developer can isolate its technology and measure directly how the device functions and performs.
- Support arrays of similar technologies, so that companies and regulators can better understand array effects on the technology and the environment.
- Provide a range of durations available to the developers, from short term (less than a year) to multi-year deployments.

Thank you for the opportunity to provide comments on the Department of Energy’s Request for Information on Laboratory-Scale and Open Water Testing of Marine and Hydrokinetic Systems. We welcome any questions or feedback.

Sincerely,

A handwritten signature in black ink that reads "Linda Church Ciocci". The signature is written in a cursive, flowing style.

Linda Church Ciocci  
Executive Director  
National Hydropower Association