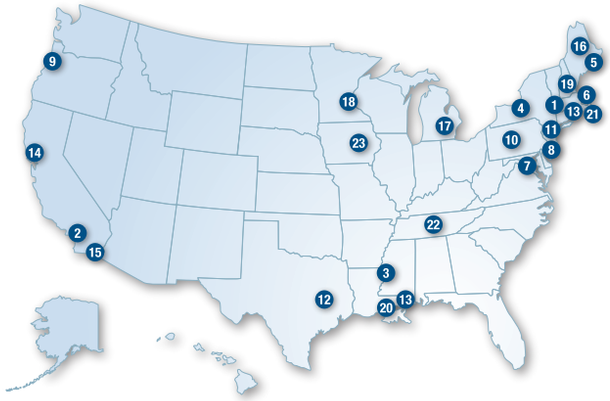
U.S. Hydrodynamic Testing Facilities

The Water Power Program is creating a searchable database of U.S. hydrodynamic testing facilities in an effort to widely distribute this information to technology developers. Users will be able to find specifications on a range of test capabilities and services available at commercial, academic, and government facilities. The following facilities have provided information on their device testing capabilities:



1. Alden Research Laboratory, Inc. (Holden, MA)
2. California Institute of Technology (Pasadena, CA)
3. Coastal & Hydraulics Laboratory, US Army Corp of Engineers (Vicksburg, MS)
4. Cornell University (Ithaca, NY)
5. Maine Maritime Academy (Castine, ME)
6. Massachusetts Institute of Technology (Cambridge, MA)
7. Naval Surface Warfare Center, Carderock – U.S. Navy (West Bethesda, MD)
8. Ohmsett – Mineral Management Service (Atlantic Highlands, NJ)
9. Oregon State University (Corvallis, OR)
10. Pennsylvania State University (State College, PA)
11. Stevens Institute of Technology (Hoboken, NJ)
12. Texas A&M University (College Station, TX)
13. U.S. Geological Survey (Turner Falls, MA; Stennis Space Center, MS)
14. University of California (Berkley, CA)
15. University of California – Scripps Oceanographic Institute (San Diego, CA)
16. University of Maine (Orono, ME)
17. University of Michigan (Ann Arbor, MI)
18. University of Minnesota (Minneapolis, MN)
19. University of New Hampshire (Durham, NH)
20. University of New Orleans (New Orleans, LA)
21. University of Rhode Island (Narragansett, RI)
22. University of Tennessee (Tullahoma, TN)
23. University of Iowa (Iowa City, IA)

To submit an additional U.S. hydrodynamic testing facility for inclusion in the database, please email details (along with appropriate facility contact information) to mhtdb@ee.doe.gov.

FY 2009 Opportunities

DOE issued two parallel funding opportunities on April 8, 2009 for research and development on water power technologies.

- **A Funding Opportunity Announcement (FOA #DE-FOA-0000069)** directed at industry partners and industry-led teams, with three separate competitions for funds; (a) MHK Energy Conversion Device or Component Design and Development, (b) MHK Site-specific Environmental Studies, and (c) Market Acceleration Projects.
- **A Program Announcement (PA #DE-FOA-0000070)** directed at DOE Laboratories to address technical challenges in water power development, as well as market acceptance barriers will also be issued.

Information on the FOA and PA can be found at **www.fedconnect.net/fedconnect**. Applications are due by **June 4, 2009**.

2009 U.S. DOE Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs

On September 17, 2008, DOE released its Annual Phase I SBIR/STTR Funding Opportunity Announcement (DE-PS02-08ER08-34). For the first time, it included a topic on Advanced Water Power Technology Development (Topic 19). This included subtopics on: (a) Wave and Current Energy Technologies; (b) Ocean Thermal Energy Conversion Systems (OTEC), and (c) Advanced Hydropower Systems. Applications are under review and awards are pending.

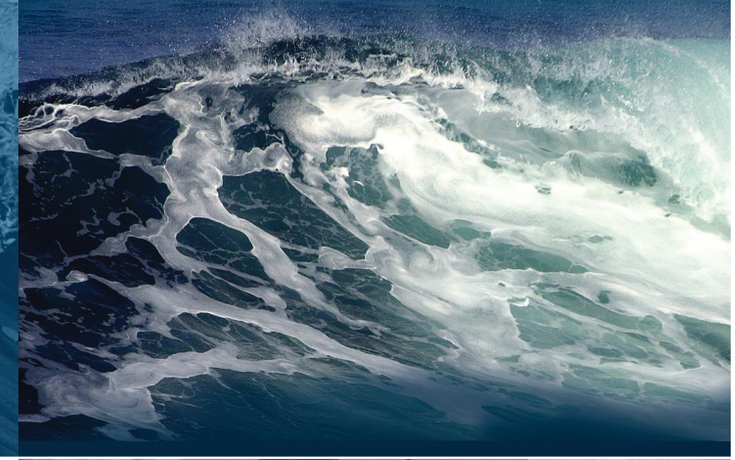
It is envisioned that another SBIR/STTR solicitation will be released in April or May 2009 with an expanded water power topic. Applicants can find more information on the SBIR Program and FOAs at:

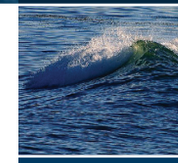
www.er.doe.gov/sbir/

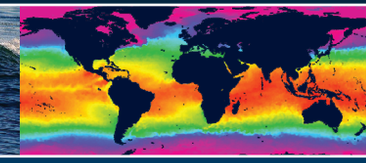
For more information contact:
EERE Information Center
1-877-EERE-INF (1-877-337-3463) | www.eere.energy.gov

WATER POWER PROGRAM

Marine & Hydrokinetic Technologies







U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Water Power Program
Team Leader: Alejandro Moreno

Wind and Hydropower Technologies Program
Program Manager: Megan McCluer

Marine & Hydrokinetic Technology Database

The Water Power Program has developed and released the web-based Marine and Hydrokinetic Technology Database that provides up-to-date information on marine and hydrokinetic companies, technologies, and projects in the U.S. and abroad. The database includes wave, hydrokinetic, and ocean thermal energy conversion technologies.

- Users can easily access details on a device's dimensions and mooring methods, as well as a project's permitting, power purchase agreements and partnerships.
- An interactive GPS mapping feature allows users to pinpoint project locations worldwide.
- A marine and hydrokinetic technology glossary features standard definitions co-developed by DOE and the Mineral Management Service (U.S. Department of the Interior).

Visit the Marine and Hydrokinetic Technology Database website:

www.eere.energy.gov/windandhydro/hydrokinetic/default.aspx

EISA Report to Congress

Section 633(b) of the Energy Independence and Security Act of 2007 (EISA) called for the U.S. Department of Energy (DOE) to prepare a Report to Congress to address the following issues relating to marine and hydrokinetic energy:

- Potential environmental impacts of marine and hydrokinetic energy projects on water quality and aquatic habitats and organisms
- Options to prevent adverse impacts
- Potential roles for environmental monitoring and adaptive management in mitigating impacts
- Necessary components of an adaptive management program

The report was based on a review of scientific literature and U.S. and international environmental assessments, along with input from the National Oceanic and Atmospheric Administration, the Department of the Interior, experts in federal and state regulatory and resource agencies, technology developers, and non-governmental organizations.

The report will be delivered to Congress in June 2009 and posted to:

www1.eere.energy.gov/windandhydro/

FY 2008 Advanced Water Projects Awards

Through an FY 2008 competitive solicitation, the U.S. Department of Energy awarded funding to 14 organizations for Advanced Water Power Projects. DOE's $7.3M investment leveraged a total cost-shared value of over $18M. The projects will advance commercial viability, cost-competitiveness, and market acceptance of new technologies that can harness renewable energy from oceans and rivers. The following projects were selected for funding:

Technology Development

- **Electric Power Research Institute, Inc (EPRI)**
  (Palo Alto, CA) **Fish-friendly hydropower turbine development and deployment.** EPRI will address the additional developmental engineering required to prepare amore efficient and environmentally friendly hydropower turbine for the commercial market and allow it to compete with traditional designs.
- **Verdant Power Inc.**
  (New York, NY) **Improved structure and fabrication of large, high-power kinetic hydropower systems rotors.** Verdant will design, analyze, develop for manufacture, fabricate and thoroughly test an improved turbine blade design structure to allow for larger, higher-power and more cost-effective tidal power turbines.
- **Public Utility District #1 of Snohomish County (SnoPUD)**
  (Everett, WA) **Puget Sound Tidal Energy In-Water Testing and Development Project.** SnoPUD will conduct in-water testing and demonstration of tidal flow technology as a first step toward potential construction of a commercial-scale power plant. The specific goal of this proposal is to complete engineering design and obtain construction approvals for a Puget Sound tidal pilot demonstration plant in the Admiralty Inlet region of the Sound.
- **Pacific Gas and Electric Company (PG&E)**
  (San Francisco, CA) **WaveConnect Wave Energy In-Water Testing and Development Project.** PG&E will complete engineering design, conduct baseline environmental studies, and submit all license construction and operation applications required for a wave energy demonstration plant for the two WaveConnect sites in Northern California.
- **Concepts ETI, Inc**
  (White River Junction, VT) **Development and Demonstration of an Oscillating Water Column (OWC) Power System.** Concepts ETI will prepare detailed design, manufacturing and installation drawings of an OWC. They will then manufacture and install the system in Maui, Hawaii.
- **Lockheed Martin Corporation**
  (Manassas, VA) **Advanced Composite Ocean Thermal Energy Conversion (OTEC) cold water pipe project.** Lockheed Martin will validate manufacturing techniques for coldwater pipes critical to OTEC in order to help create a more cost-effective OTEC system.

Market Acceleration

- **Electric Power Research Institute**
  (Palo Alto, CA) **Wave Energy Resource Assessment and GIS Database for the U.S.** EPRI will determine the naturally available resource base and the maximum practicable extractable wave energy resource in the U.S., as well as the annual electrical energy which could be produced by typical wave energy conversion devices from that resource.
- **Georgia Tech Research Corporation**
  (Atlanta, GA) **Assessment of Energy Production Potential from Tidal Streams in the U.S.** Georgia Tech will utilize an advanced ocean circulation numerical model to predict tidal currents and compute both available and effective power densities for distribution to potential project developers and the general public.
- **Re Vision Consulting, LLC**
  (Sacramento, CA) **Best Siting Practices for Marine and Hydrokinetic Technologies with Respect to Environmental and Navigational Impacts.** Re Vision will establish baseline, technology-based scenarios to identify potential concerns in the siting of marine and hydrokinetic energy devices, and to provide information and data to industry and regulators.
- **Pacific Energy Ventures, LLC**
  (Portland, OR) **Siting Protocol for Marine and Hydrokinetic Energy Projects.** Pacific Energy Ventures will bring together a multi-disciplinary team in an iterative and collaborative process to develop, review, and recommend how emerging hydrokinetic technologies can be sited to minimize environmental impacts.
- **PCCI, Inc.**
  (Alexandria, VA) **Marine and Hydrokinetic Renewable Energy Technologies: Identification of Potential Navigational Impacts and Mitigation Measures.** PCCI will provide improved guidance to help developers understand how marine and hydrokinetic devices can be sited to minimize navigational impact and to expedite the U.S. Coast Guard review process.
- **Science Applications International Corporation (SAIC)**
  (San Diego, CA) **International Standards Development for Marine and Hydrokinetic Renewable Energy.** SAIC will assist in the development of relevant marine and hydrokinetic energy industry standards, provide consistency and predictability to their development, and increase U.S. industry's collaboration and representation in the development process.

National Marine Renewable Energy Centers

- **Oregon State University (OSU), University of Washington (UW)**
  (Corvallis, OR and Seattle, WA) **Northwest National Marine Renewable Energy Center.** OSU and UW will partner to develop the Northwest National Marine Renewable Energy Center with a full range of capabilities to support wave and tidal energy development for the U.S. Center activities are structured to: facilitate device commercialization, inform regulatory and policy decisions, and close key gaps in understanding.
- **University of Hawaii**
  (Honolulu, HI) **National Renewable Marine Energy Center in Hawaii** will facilitate the development and implementation of commercial wave energy systems and to assist the private sector in moving ocean thermal energy conversion systems beyond proof-of-concept to pre-commercialization, long-term testing.