



U.S. DOE WATER POWER ACTIVITIES

Alejandro Moreno
Water Power Technology Lead
Wind and Hydropower Technologies Office
U.S. Department of Energy

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Introduction



- DOE directed to establish marine and hydrokinetic technology program
- \$10 million in FY08 to address advanced water power technologies
- \$3 million requested for '09
- The majority of '08 funds will be distributed to industry, academia and others via competitive solicitations
- All water power technologies eligible to apply



Program Priorities

Energy Efficiency &
Renewable Energy



Reestablish effective Water Power Program after
Hydropower Program eliminated

Orient FY08 funding towards objectives specified in EISA
2007 and appropriations

- Reduce costs and improve performance through technology development and testing
- Understand the full-range of potential environmental impacts and how they can be mitigated or minimized
- Develop National Marine Energy RD&D Centers
- Work with industry leaders to develop international standards
- Help move technologies towards deployment and commercialization
- Encourage information-sharing within the industry





Programmatic priority to work with other interested agencies

- EISA directed DOE to develop marine and hydrokinetic program in consultation with Department of Commerce (NOAA) and Department of Interior
 - DOE has met with NOAA (Office of Habitat Conservation), Fish and Wildlife Service; has made initial contact with DoI HQ, MMS
- Further inter-agency cooperation can only benefit industry and other stakeholders
 - Relatively little is known about these technologies; what is known must be well disseminated
 - DOE has begun to work with both MMS and FERC
 - DOE working with both agencies' regional offices to organize West Coast ocean energy working group (also includes state regulators from CA, OR, WA)
 - Work has begun to identify other potentially interested agencies and establish a forum to share information on marine and hydrokinetics

FY 08 Program Activities

Energy Efficiency &
Renewable Energy



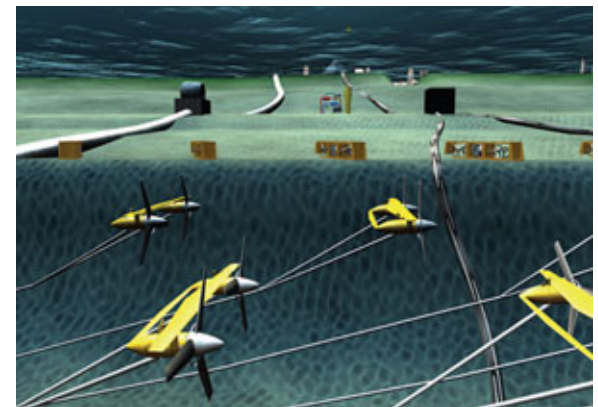
- Competitive solicitations in three primary areas:
 - Cost-share agreements with industry partners to improve technologies and reduce manufacturing and operational costs via technology development and testing (includes conventional hydropower)
 - Cost-share agreements with one or more universities or university-led consortia to help develop marine technology RD&D centers
 - Grants or cost-shares to industry experts to address resource assessments, environmental concerns, interconnection requirements, and other barriers to development and deployment
- Proposals due June 16; awards announced late July
- Report on environmental impacts as directed by EISA 2007 (Sec 633 b)
- Identification and comparison of existing marine and hydrokinetic technologies

DOE Solicitation – Area 1

Energy Efficiency &
Renewable Energy



- Focus on technology testing, deployment and development
- Up to \$5 million in FY08, possible additional funding in FY 09 depending on appropriations
- Eligibility limited to industry-led partnerships (at least one other industrial, university, or national laboratory partner).
- At least 50% cost-share required
- No. of awards: up to 8
- Size of awards: up to \$650k/yr (max 2 yrs)
- Time period:
 - Go/no go decision after year one
 - Up to one year additional funding contingent on performance review and available resources



DOE Solicitation – Area 2

Energy Efficiency &
Renewable Energy



- Focus on projects that accelerate the market penetration of marine and hydrokinetic technologies
- Up to \$2.5 million in FY 08
 - Including resource assessments, standards development, project siting, grid interconnection
- No eligibility restrictions (except Federal agencies and Nat. Labs)
 - National Labs may serve as partners
- No cost-share required
- No. of awards: up to 6
- Award size: up to \$500k (total)
- Time period: up to 2 yrs



DOE Solicitation – Area 3

Energy Efficiency &
Renewable Energy



- Marine energy RD&D centers to advance the commercial availability and application of marine renewable energy
- Up to \$2.5 million in FY08, possible additional funding in FY 09-FY12 depending on appropriations
 - also serve as an integrated, standardized test center
- Eligibility limited to universities or consortia of universities
- At least 50% cost-share required
- No. of awards: up to 3
- Size of awards: up to \$1.25 M/yr (max 5 yrs)
- Time period:
 - Go/no go decision after years one and three
 - Maximum five years federal funding
 - Centers should plan for self-sufficiency after 5 years

DOE Solicitation – Where to find it

Energy Efficiency &
Renewable Energy



Solicitation available at: www.grants.gov

- CFDA #: 81.087

or

EERE website:

www1.eere.energy.gov/financing/business.html

Questions must be asked online at grants.gov

Thank You

Energy Efficiency &
Renewable Energy



Alejandro Moreno

Technology Lead, Water Power

Wind and Hydropower Technologies Office

U.S. Department of Energy

202-586-8171

alejandro.moreno@ee.doe.gov





DOE directed to establish marine and hydrokinetic technologies program

Energy Independence and Security Act of 2007, Subtitle C

Sec. 633. Marine and Hydrokinetic Renewable Energy Research and Development:
“The Secretary...shall establish a program of research, development, demonstration, and commercial application to expand marine and hydrokinetic renewable energy production...”

‘marine and hydrokinetic renewable energy’ defined as following:

- (1) waves, tides, and currents in oceans, estuaries, and tidal areas;
- (2) free flowing water in rivers, lakes, and streams;
- (3) free flowing water in man-made channels; and
- (4) differentials in ocean temperature (ocean thermal energy conversion).

Explicitly excludes “energy from any source that uses a dam, diversionary structure, or impoundment for electric power purposes.”



FY 2008 Authorization/Appropriations

EISA 2007, Sec. 636. Authorization of Appropriations.

“There are authorized to be appropriated to the Secretary to carry out this subtitle \$50,000,000 for each of the fiscal years 2008 through 2012.”

Energy Efficiency and Renewable Energy – *Water Power Energy R&D*

... the amended bill provides \$10,000,000 ... for research on conventional hydropower technologies and innovative waterpower technologies, such as thermal and wave technologies, for ocean, tidal and instream-based generation.

Congressionally-mandated deliverables

Energy Independence and Security Act of 2007, Subtitle C

Sec 633 (b). The Secretary... shall provide to the Congress a report that addresses--
(1) the potential environmental impacts, including impacts to fisheries and marine resources, of marine and hydrokinetic renewable energy technologies...

Sec. 634. National Marine Renewable Energy Research, Development, and Demonstration Centers: “The Secretary shall award grants to institutions of higher education...for the establishment of 1 or more National Marine Renewable Energy (RD&D) Centers.”



DOE must also address conventional hydropower

Energy Policy Act of 2005, Section 931

(D) Hydropower.--The Secretary shall conduct a program of research, development, demonstration, and commercial application for cost competitive technologies that enable the development of new and incremental hydropower capacity, adding to the diversity of the energy supply of the United States, including:

Fish-friendly large turbines.

Advanced technologies to enhance environmental performance and yield greater energy efficiencies.

FY08 Appropriations

Energy Efficiency and Renewable Energy – Water Power Energy R&D

... the amended bill provides \$10,000,000 ... for research on ***conventional hydropower technologies*** and innovative waterpower technologies, such as thermal and wave technologies, for ocean, tidal and instream-based generation.