



Department of Energy
Golden Service Center
1617 Cole Boulevard
Golden, Colorado 80401-3393

DE-FOA-0000816
Amendment No. 001

DATE: April 25, 2013
FROM: Pamela Brodie, Contracting Officer
TO: All Prospective Applicants

SUBJECT: Amendment No. 001 to Announcement DE-FOA-0000816, "Marine and Hydrokinetic (MHK) Environmental Effects Assessment and Monitoring."

- I. The purpose of this amendment is to:
 1. Update the section identification for the foreign waiver information in SECTION II – AWARD INFORMATION and SECTION III - ELIGIBILITY INFORMATION.
 2. Inform applicants to identify the topic area they are applying to in both the Project Summary / Abstract File and Project Narrative File in SECTION IV – APPLICATION AND SUBMISSION INFORMATION.
- II. All other parts of the Funding Opportunity Announcement remain unchanged.
- III. All edits are highlighted in yellow to clearly call attention to the revisions that have been made.

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. Department of Energy
Energy Efficiency and Renewable Energy
Golden Service Center**

**Marine and Hydrokinetic (MHK) Environmental Effects Assessment and
Monitoring**

Funding Opportunity Announcement Number: DE-FOA-0000816

Announcement Type: Initial

CFDA Number: 81.087

Issue Date: 03/19/2013
Letter of Intent Due Date: 04/18/2013, 11:59 PM Eastern Time
Application Due Date: 05/16/2013, 5:00 PM Eastern Time

REGISTRATION REQUIREMENTS

There are several one-time actions before submitting an Application in response to this Funding Opportunity Announcement (FOA), as follows:

- 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.

The applicant will receive an automated response when the Letter of Intent and Application are received. This will serve as a confirmation of receipt. Please do not reply to the automated response. The applicant will have the opportunity to re-submit a revised Letter of Intent and Application for any reason as long as the relevant submission is submitted by the specified deadline. The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements is found at <https://eere-exchange.energy.gov/Manuals.aspx>.

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 those registrations as soon as possible**.

Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov

- 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
- 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/>

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SECTION I – FUNDING OPPORTUNITY DESCRIPTION

Objective

In conjunction with the National Oceanographic Partnership Program (NOPP), the Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE), Wind and Water Power Technologies Office (WWPTO), is issuing a Funding Opportunity Announcement (FOA) entitled “Marine and Hydrokinetic (MHK) Environmental Effects Assessment and Monitoring.”

The DOE, as described in detail below, is working closely with the Bureau of Ocean Energy Management (BOEM) to support and promote increased understanding of the potential environmental effects of marine and hydrokinetic energy devices. This FOA will support the collection of environmental monitoring and experimental data from MHK devices and analyses of existing data.

National Oceanographic Partnership Program and Interagency Involvement

The NOPP was established by law (10 U.S.C. 7902 et seq.) to (1) promote the national goals of assuring national security, advancing economic development, protecting quality of life, and strengthening science education and communication through improved knowledge of the ocean; and (2) coordinate and strengthen oceanographic efforts in support of those goals by identifying and carrying out partnerships among Federal agencies, academia, industry, and other members of the oceanographic scientific community in the areas of data, resources, education, and communication.

All projects selected under this FOA will be awarded and managed by the Department of Energy. This FOA will be coordinated in conjunction with the National Oceanographic Partnership Program (NOPP) to allow for inter-agency partnership on funding of projects. In this role, NOPP will help coordinate review panels and facilitate interagency partnerships, in accordance with the rules and regulations of the participating agencies. Other agencies participating in this FOA will provide funding directly to DOE. Currently, BOEM anticipates providing approximately \$300,000 for projects selected under this FOA.

Applications are solicited that meet the goal and purpose of the NOPP outlined in Title II, subtitle E, of Public Law 104-201. Any NOPP member agency may provide funding to DOE for projects in response to this FOA. The federal agencies collaborating under the NOPP reserve the right to fund all, some, or none of the applications received under this FOA. It is the policy of the NOPP to treat all applications as sensitive competitive information and to disclose their contents only for the purposes of evaluation. Data disclosed in applications will be treated as set forth in Section VIII Paragraph D of this FOA.

The authorizing statute for this FOA is the Energy Policy Act of 2005, section 931(a)(2)(E)(i) and the Energy Independence and Security Act of 2007 (EISA), Section 633-Marine and Hydrokinetic Renewable Energy Research and Development, Public Law 110-140 (Dec. 19, 2007).

Background

The mission of the DOE Water Power Technologies Office (the Office) is to support research, testing, and development of innovative technologies capable of generating renewable, environmentally responsible, and cost-effective electricity from U.S. water resources. These include marine and hydrokinetic (MHK) technologies that harness the energy from waves and ocean/tidal/river currents. DOE investments in these technologies aim to advance the technical readiness of MHK systems and support the development of a robust and competitive MHK industry in the United States.

The Office has a strong interest in supporting research efforts to reduce market barriers and inform the environmentally responsible deployment of these new technologies. Since 2008, the Office has funded a suite of research, both individually and in partnership with other agencies, to investigate the potential environmental effects of MHK devices. Results from these research efforts, combined with the environmental studies conducted by MHK developers in the course of the regulatory process, have identified several areas where additional data and analyses would be helpful. The Office is now partnering with other agencies with similar interests to fund research under these identified high priority topics.

To date, the lack of deployed devices has limited the ability to assess the environmental effects of MHK devices. Field monitoring data is needed to validate results from lab experiments, to prioritize future environmental monitoring and mitigation efforts, to reduce uncertainty about what environmental effects are most likely to occur, and subsequently to help reduce deployment costs for developers. Recent and upcoming MHK deployments will provide excellent opportunities to collect valuable operational data and to develop and test environmental monitoring equipment for high priority environmental issues at project sites. This data will inform the future of the industry while supporting pioneer MHK projects. Additionally, carefully planned experimentation, and in some cases analyses of analogous data, can help answer questions regarding environmental impacts of MHK technologies.

DOE's intent through this FOA is to fund projects across three topic areas, described in more detail below, which address the need for essential data to increase understanding of the environmental effects of MHK technologies. See Table 1 for Topic Area Summary.

- Topic Area 1: Fish Behavior and Mortality Around Hydrokinetic Turbines
- Topic Area 2: Environmental Monitoring of MHK Projects
- Topic Area 3: Analysis of Environmental Effects of MHK Surrogate Technologies

Topic Area 1: Fish Behavior and Mortality around Hydrokinetic Turbines

The selected award under this topic is expected to have a period of performance of 2 – 3 years and range between \$200,000 and \$500,000, based on the complexity of the environment in which the experiments will be conducted (i.e. flume vs. field studies).

The issue of potential injury or mortality of fish caused by passage through hydrokinetic turbines is an important environmental concern. Past studies have indicated that fish mortality is very low when exposed to operating turbine blades in a laboratory flume setting and suggest that a significant number of fish successfully avoid the rotating turbine blades when forced to pass through or very close to the blades' swept-area. To date, models that estimate fish survival following passage through a hydrokinetic turbine have generally been limited in their ability to quantify and validate the crucial abilities of fish to detect and avoid passing through the swept-area of hydrokinetic turbine blades or evade strike by timing passage through a rotor swept area, leading to probable overestimations of injury and mortality.

The primary objective of this topic area is to quantify the behavior of fish around tidal or current turbines, with an emphasis on avoidance and evasion behaviors. Research under this topic may also include a secondary objective to quantify fish mortality and injury due to turbine passage to be reported with the behavioral data.

Successful applications should include plans to conduct controlled studies to assess and quantify fish behavior and mortality in a field, mesocosm, or a flume setting. Studies should focus on representative species that are of particular relevance in the context of permitting and environmental review of MHK development by federal and state environmental resource agencies. Studies that consider species analogous to protected species may also be considered (e.g. striped bass for salmon), but in such instances the applicability of analogue species should be well justified. Studies should build upon rather than duplicate similar efforts already underway or recently completed, such as the Electric Power Research Institute's (EPRI) *Evaluation of Fish Injury and Mortality Associated with Hydrokinetic Turbines*¹, Hydro Green Energy's estimation of fish injury and mortality at a hydrokinetic project site², and research currently underway at the Alden laboratories which is examining the availability of light on strike mortality in rainbow trout and white sturgeon.

Proposed studies should contain a well-tested or justified method for making fine-scale observations of fish avoidance or similar behaviors in high-flow environments. Applications should demonstrate a familiarity with past research and modeling efforts to address this topic.

¹ Amaral, S. *Evaluation of Fish Injury and Mortality Associated with Hydrokinetic Turbines*. EPRI, Palo Alto, CA: 2011. 1024569.

http://mhk.pnnl.gov/wiki/images/c/cb/Evaluation_of_Fish_Injury_and_Mortality_Associated_with_Hydrokinetic_Turbines.pdf

² FERC, Project No. 4306-017, *Environmental Assessment for Installation of Hydrokinetic Turbines, Mississippi Lock and Dam No. 2 Hydrokinetic Project*. 2008. http://mhk.pnnl.gov/wiki/images/1/1d/Hastings_Fish_Passage_Report.pdf

The application at a minimum should include the following:

1. Documentation from the applicant or project partner demonstrating that the applicant will have access to a deployed device for use in conducting project activities. **If an application fails to meet this requirement, it may be deemed non-responsive and eliminated from full Merit Review.**
2. A robust study design, which includes:
 - a. A clear articulation of the scientific question that will be asked and answered in the course of experiment, and the methodology that will be employed to answer that question.
 - b. A description of the fish species to be studied and justification of the selection.
 - c. A power analysis to assess the required number of individuals needed to detect a change in behavior between control and experimental conditions. Though studies may include plans to test multiple species of fish, plans must ensure there will be enough of each species to quantify and evaluate behavioral responses.
 - d. A thorough description of how behavior will be monitored and how the methodology addresses any foreseen challenges with monitoring behavior in high-flow settings (e.g. bubbles, turbidity).
 - e. A description of analysis techniques, including information on the statistical approach that will be used to compare control treatments versus experimental treatments.
3. Description of plans to modify and validate existing fish passage survival models that estimate fish passage survival through hydrokinetic turbines using the quantified behavioral observations (e.g. avoidance/evasion of turbine blades).
4. A detailed timeline of all project activities.

Reporting requirements:

1. Quarterly reports outlining progress made on awarded tasks.
2. Annual technical reports to both DOE and NOPP for multi-year awards, containing preliminary analyses, to be publicly available to interested stakeholders.
3. A final report that includes a detailed technical summary of all completed tasks, including a thorough literature review, experimental design, including data analyses and power analysis, experimental results and analysis, description of the predictive model development or modification to existing model, and results from the model output.

Topic Area 2: Environmental Monitoring of MHK Projects

Individual awards under this topic are expected to range between \$150,000 and \$400,000 with a period of performance of 2 – 3 years.

Monitoring information from construction activities and standard operation of MHK technologies is critical to reduce uncertainty around the potential environmental effects of these devices. The overall objective of this topic is to reduce uncertainty for high priority environmental impacts of MHK technologies through collection of environmental monitoring data from deployed devices. Applicants are strongly encouraged to demonstrate how proposed studies capitalize on existing environmental studies, and to go beyond what is required in existing monitoring plans to satisfy regulatory requirements.

The application at a minimum should include the following:

1. Documentation from the applicant or project partner demonstrating that the applicant will have access to a deployed device for use in conducting project activities. **If an application fails to meet this requirement, it may be deemed non-responsive and eliminated from full Merit Review.**
2. Applicants must provide proof that proposed tasks are planned for MHK projects that are already deployed or that have a credible plan to deploy within the first year of the project (by the end of Fiscal Year (FY) 2014). See Topic Area 2, Merit Review Criterion I (Section V; A) for further explanation.
3. A clear articulation of the scientific question that will be asked and answered in the course of the research and a discussion of how the data to be collected will be used to answer the posed question.
4. Plans for use of existing or collection of new baseline environmental data to be compared with monitoring data collected during device construction activities or operation, if baseline data are needed to assess the environmental effect. Funds awarded under this topic may be used to collect baseline environmental data at a project site only if the project also includes a post-deployment monitoring component. If existing baseline data are planned for use, it must be comparable in spatial and temporal scale to serve as a robust estimation of ambient conditions and subsequent determination of project impact.
5. Description of monitoring techniques and instrumentation, including a discussion of the strengths and limitations of the monitoring plan (e.g. extent of species identification ability, near-field vs. far-field detection capabilities, need for duty cycling due to data demands).
6. Data analysis approach.
7. Development of robust monitoring methodology that can be repeated by other researchers, regulators, or developers seeking to monitor the same environmental parameters in similar conditions.
8. If experimentation is included in the application, a thorough description of the scientific question the experimentation will address, the methodology, and planned data analyses must be provided. A robust power analysis should be included to inform sample sizes. Experimentation is not a required portion of the project application and experimentation plans that do not address relevant questions, or are deemed unlikely to provide useful results at sufficient samples sizes, will detract from project evaluation.

Reporting requirements:

1. Quarterly reports outlining progress made on all awarded tasks.
2. Annual technical reports to both DOE and NOPP for multi-year awards, containing preliminary analyses, to be publicly available to interested stakeholders.
3. A detailed monitoring methodology that can be used by other researchers, regulators, or developers to perform similar environmental monitoring activities. These methodologies should include estimated cost, and specific conditions, assumptions, or limitations of the plans. Methodologies should also include a discussion of strengths and weaknesses of the methodologies employed and recommendations for adjustments to the regime for other devices and conditions, if possible.
4. A final report that includes a detailed technical summary of all completed tasks, including a detailed summary of the monitored issue, experimental design, monitoring results, and environmental impact analysis. PIs will be encouraged to also publish their work in peer reviewed journals.

High priority environmental issues that may be studied are listed below, along with specific monitoring objectives. This list represents the environmental issues of highest interest to the funding partners. However, it may not be a comprehensive list and applications proposing projects to monitor other environmental effects will be considered. Applicants who suggest projects with other environmental issues should ensure that the issue has a strong basis in the permitting and licensing requirements for MHK projects and include an explanation of this justification.

Applicants may apply for multiple awards by submitting multiple and discrete applications. Each individual application should address a distinct monitoring issue (defined below). For some of the suggested environmental monitoring issues, there will be two levels of funding for this topic area. The first and lesser level of funding (up to \$150,000) will be for studies that only consider baseline information and characterization of the environmental stressor (e.g. characterization of background acoustics and acoustic output from construction and operation activities). The second and greater level of funding (up to \$400,000) will be for studies that not only characterize the baseline and stressor information, but also look at the response of the receptor (e.g. in the above example, measuring and evaluating the behavioral response of fish or marine mammals to acoustic output). The second level of funding may also support experimentation aimed at validating or increasing understanding of the monitoring results. In such cases, experimentation may not exceed 25% of project budgets.

High Priority Environmental Issues:

1) MHK Construction and/or Operational Noise

Monitoring Objective: To conduct in-water monitoring to assess the effects of MHK operation and construction noise on aquatic animals, with an emphasis on marine mammals and fish.

Level 1: (Funding level: up to \$150,000)

1. Characterization of background acoustics and adequate measurements of construction and/or operation noise. Temporal and spatial aspects should be included.

Level 2: (Funding level: up to \$400,000)

1. Characterization of baseline and construction and/or operational noise *and* the behavioral response of organisms to that noise. Effects proposed for monitoring may include, but are not limited to: sub lethal behavioral changes (e.g. attraction/avoidance, barrier effects to migration, behavioral state, etc.), potential for physiological effects to occur with an emphasis on marine mammals and fish, especially those species of regulatory concern (e.g. marine mammals, salmonids, sturgeon, eulachon, etc.). Effects should have a strong basis in regulatory requirements for MHK project development.
2. Applications should include a plan to explain how potential observed changes can be tied directly to noise production and how results will be reported and analyzed in the context of the ambient noise levels. Discussions should include a comparison to other anthropogenic noise sources in terms of both sound characteristics and anticipated effects.

2) **Static and Dynamic Interactions between Hydrokinetic Turbines and Aquatic Animals**

Static Interactions: Refers to an interaction or behavioral alteration due to presence of MHK device (e.g. reefing/attraction, barrier effect/avoidance behavior, etc.).

Dynamic Interactions: Refers to direct physical interaction with a MHK device or device component (e.g. strike, collision, entanglement, etc.).

Monitoring Objective: To conduct in-water monitoring to assess and quantify the static and dynamic interactions between hydrokinetic turbines and aquatic animals in a realistic MHK device deployment scenario, with an emphasis on marine mammals and fish, and to determine natural occurrence of interactions. *It is expected that projects under this topic will differ from projects under Topic Area 1 by focusing on monitoring of natural occurrence of static and dynamic interactions, rather than conducting an experiment to inform strike risk.*

Note: Level 1 projects will not be funded for static and dynamic interactions issues. Only Level 2 projects that attempt to measure the response of organisms will be considered.

1. Effects to be monitored may include, but are not limited to: quantification of blade strike incidents, including assessment of blade strike risk; and behavioral changes (e.g. attraction/avoidance, etc.). Applications may address more than one static and

dynamic effect if methodologies overlap substantially (e.g. using video monitoring to observe near-field aggregation and strike). Effects should have a strong basis in regulatory requirements for MHK project development.

3) Static and Dynamic Interactions between Wave Energy Converters and Aquatic Animals

Static Interactions: Refers to an interaction or behavioral alteration due to presence of MHK device (e.g. reefing/attraction, barrier effect/avoidance behavior, etc.).

Dynamic Interactions: Refers to direct physical interaction with a MHK device or device component (e.g. collision, entanglement, etc.).

Monitoring Objective: To monitor static and dynamic interactions between aquatic organism interactions with wave devices, with an emphasis on marine mammals, and determine level of risk from observed interactions. While some of these effects may be unlikely to occur, monitoring will help establish level of risk for future projects.

Note: Level 1 projects will not be funded for static and dynamic interactions issues. Only Level 2 projects that attempt to measure the response of organisms will be considered.

1. Potential interactions to be monitored may include, but are not limited to: entanglement in device and mooring components, secondary entanglement in derelict gear snagged on device components, collision with device, and changes in behavior (e.g. avoidance/attraction, behavioral state, etc.). Applications may address more than one static and dynamic effect if methodologies overlap substantially (e.g. using video monitoring to monitor for possible collision and entanglement events).

4) Effects of Electromagnetic Fields (EMF) on Aquatic Organisms

Monitoring Objective: To measure EMF emissions and conduct in-water monitoring to assess behavioral and benthic community effects of EMF emitted from subsea cables and potentially other components of MHK devices, with an emphasis on electro-sensitive species, fish, and marine mammals. Preference will be given to measurements taken at MHK cables and devices, but projects focused on collecting data at other undersea power cables will also be considered.

Level 1: Funding Level: Up to \$150,000

1. Characterization of background EMF levels and measurements of EMF emissions from existing submarine cables, MHK cables, devices, and other in-water components such as junction boxes. Temporal and spatial components of the study design should be included. Studies should include a plan to provide detailed measurements of entire EMF signatures detected from cables and if possible, from devices or components (e.g. junction boxes), including comparisons to ambient

background levels and other EMF sources. Preference will be given to projects that plan to take measurements from multiple undersea cables or MHK devices.

Level 2: Funding Level: Up to \$400,000

1. Potential effects to be monitored may include, but are not limited to: attraction/avoidance of aquatic species, barrier effects to movement and migration, and changes to community composition.
2. Studies should include a plan to explain how potential observed changes can be tied directly to EMF emissions and how results will be reported in the context of background EMF
3. Studies should include a plan to provide detailed measurements of entire EMF signatures detected from cables and if possible, from MHK device components, including comparisons to ambient background levels and other EMF sources. Preference will be given to projects that plan to take measurements from multiple undersea cables or MHK devices, though behavioral response monitoring does not need to occur at each site.
4. Studies should include plans to use EMF field measurements and organismal response data to assess the potential ecological impact (if any) of EMF on individual organisms, populations, and species in the vicinity to the greatest extent possible.

Topic Area 3: Analysis of Environmental Effects of MHK Surrogate Technologies

Multiple awards are expected under this topic area, ranging between \$50,000 and \$150,000 with a period of performance of 12 – 18 months.

There have been few deployments of MHK technologies in U.S. waters to date, and no long-term deployments to monitor potential environmental effects over time. In order to initially reduce uncertainty regarding the level of risk of certain environmental effects, some marine surrogate technologies may serve as useful comparisons to predict potential risk from MHK devices. The primary objective of this topic is to analyze existing data from appropriate surrogate technologies with stressors and receptors similar to those expected from MHK technologies, in order to characterize the potential environmental risk posed by MHK device deployments. Projects should focus on surrogate technologies that are most similar to MHK device designs. Examples are provided below of some types of surrogate technologies that are more appropriate and less appropriate for comparison with MHK devices.

Projects should focus on analysis of existing information and should be short-term (single year). The potential environmental effects proposed for assessment under this topic should have a strong basis in the permitting and licensing requirements for MHK development and should include an analysis of risk over spatial and temporal scales to address potential long-term or broad-scale effects (i.e. effects to populations, ecosystems, etc.). The applicant funding request should reflect the complexity of the analysis.

Examples of High Priority Surrogate Technologies:

- EMF from operating power cables (of similar capacity to those considered for near-term MHK deployments) as potential impediments to migration of marine mammals and fish. Example projects might compare existing movement track data from tagged animals with the presence of operating power cables to determine if there is a discernible effect on animal movement patterns in the vicinity of the cables.
- Mooring configurations and monitoring data from offshore aquaculture facilities and oceanographic buoys as entanglement hazards for marine mammals.

Examples of Low Priority Surrogate Technologies:

- Effects of energy removal in marine systems (on sedimentation patterns, benthic habitat, erosion) from offshore oil and gas platforms – these devices were designed to shed energy, not extract it as MHK devices are designed to do and thus would not serve as appropriate surrogates.
- Blade strike and injury to fish from conventional hydropower turbines – the conditions and injury mechanisms for fish species encountering conventional hydropower turbines are significantly different from those associated with hydrokinetic turbines and thus would not serve as appropriate surrogates.

The application should describe:

1. Plans to conduct a literature review to fully assess available information on selected stressor-receptor interaction.
2. Plans to conduct a detailed analysis of the level of environmental impact and potential risk from the selected stressor-receptor interaction. Conclusions of this assessment must be supported by the evidence presented in the study.
3. Plans to develop recommendations for data collection to close any important knowledge gaps regarding the stressor-receptor interaction, focusing specifically on MHK technologies.

Reporting requirements:

1. Quarterly reports outlining progress made on all awarded tasks.
2. A final report that includes a detailed technical summary of all completed tasks, including a detailed summary of the literature review, detailed analysis, and results of the full study. The report should include the researchers' expert conclusions on the implications of the study results and recommendations for future efforts to address any important data gaps of the selected stressor-receptor interaction. A NOPP Annual Report will also need to be submitted, to the NOPP Office.
3. A detailed timeline of all project activities.

Table 1 - Topic Area Summary

Topic Area	Period of Performance	Expected Number of Awards	Total Estimated Federal Funding*	Estimated FY13 Federal Funding*	Estimated Range per Award (Total Federal Funding)*	Required Cost Share
1. Fish Behavior and Mortality Around Hydrokinetic Turbines	24 – 36 Months	1	\$200k - \$500k	\$200k - \$500k	\$200k - \$500k	20%
2. Environmental Monitoring of MHK Projects	24 – 36 Months	4	\$150k - \$1,100k	\$150k - \$1,100k	\$150k - \$400k	20%
3. Analysis of Environmental Effects of MHK Surrogate Technologies	12 – 18 Months	2 – 6	\$300k	\$300k	\$50k - \$150k	0%

***Federal funding is subject to annual appropriations. All figures above should be treated as estimates. DOE also reserves the right to adjust the number of awards (and funding levels) within/between categories to meet program goals and objectives.**

SECTION II – AWARD INFORMATION

A. Type of Award Instrument

DOE anticipates awarding grants under this funding opportunity announcement.

B. Estimated Funding

Approximately \$ 1,600,000 in DOE funding is expected to be available for new awards under this announcement. Additionally, approximately \$ 300,000 in BOEM funding is expected to be available for new awards under this announcement.

C. Maximum and Minimum Award Amount

The anticipated maximum/minimum amount for projects under each Topic Area in this announcement is:

Topic Area	Floor	Ceiling
Topic 1: Fish Behavior and Mortality Around Hydrokinetic Turbines (1 award)	\$200,000	\$500,000
Topic 2: Environmental Monitoring at Deployed Devices (4 awards)	\$150,000	\$400,000
Topic 3: Studies of Environmental Effects of MHK Surrogate Technologies (2-6 awards)	\$50,000	\$150,000

D. Expected Number of Awards

DOE anticipates making approximately 7 – 11 awards under this announcement.

E. Anticipated Award Amount

The anticipated award amount for projects under each Topic Area in this announcement is:

Topic Area	Award Amount
Topic 1: Fish Behavior and Mortality Around Hydrokinetic Turbines (1 award)	\$200,000 - \$500,000
Topic 2: Environmental Monitoring at Deployed Devices (4 awards)	\$150,000 - \$400,000
Topic 3: Studies of Environmental Effects of MHK Surrogate Technologies (2-6 awards)	\$50,000 - \$150,000

F. Period of Performance

The anticipated period of performance for projects under each Topic Area in this announcement is:

Topic Area	Period of Performance
Topic 1: Fish Behavior and Mortality Around Hydrokinetic Turbines (1 award)	Up to 3 Years
Topic 2: Environmental Monitoring at Deployed Devices (4 awards)	Up to 3 Years
Topic 3: Studies of Environmental Effects of MHK Surrogate Technologies (2-6 awards)	Up to 1.5 Years

G. Type of Application

DOE will accept only new applications under this announcement (i.e., applications for renewals of existing DOE funded projects will not be considered).

H. Environmental Review in Accordance with National Environmental Policy Action (NEPA)

The federal funds distributed under this FOA are subject to the National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq. (NEPA). NEPA requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions. For additional background on NEPA, please see DOE’s NEPA website, at <http://nepa.energy.gov/>.

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all projects selected for an award will be required to assist in the timely and effective completion of the NEPA process in the manner most pertinent to their proposed project.

I. Performance of Work in the United States

EERE strongly encourages interdisciplinary and cross-sectoral collaboration spanning organizational and national boundaries. Such collaboration enables the achievement of scientific and technological outcomes that were previously viewed as extremely difficult, if not impossible.

EERE requires all work under EERE funding agreements to be performed in the United States – i.e., prime recipients must expend 100% of the total project cost in the United States.

Applicants and prime recipients may request a waiver of this requirement. Applicants must include a written waiver request in the Full Application. Prime recipients must submit any waiver requests in writing to the assigned DOE Contracting Officer. The DOE Contracting Officer has discretion to waive this requirement if he/she determines that it will further the purposes of this FOA and is otherwise in the interests of EERE. See Section IV.C.12 of the FOA for waiver request information.

SECTION III - ELIGIBILITY INFORMATION

A. Eligible Applicants

1. Individuals

U.S. citizens and lawful permanent residents are eligible to apply for funding as a prime recipient or subrecipient.

2. Domestic Entities

For-profit entities, educational institutions, and nonprofits³ that are incorporated (or otherwise formed) under the laws of a particular State or territory of the United States are eligible to apply for funding as a prime recipient or subrecipient.

State, local, and tribal government entities are eligible to apply for funding as a prime recipient or subrecipient.

DOE/National Nuclear Safety Administration (NNSA) Federally Funded Research and Development Centers (FFRDCs) and DOE Government-Operated Government-Owned laboratories (GOGOs) are eligible to apply for funding as a prime recipient or subrecipient.

Non-DOE/NNSA FFRDCs and non-DOE GOGOs are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient.

Federal agencies and instrumentalities (other than DOE) are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient.

3. Foreign Entities

Foreign entities, whether for-profit or otherwise, are eligible to apply for funding under this FOA.

Other than as provided in the “Individuals” or “Domestic Entities” sections above, all prime recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a prime recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the prime recipient. The Full Application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate. Foreign entities may request a waiver of this requirement in the Full Application. See Section IV.C.12 for waiver request information. The DOE Contracting Officer has

³Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, are not eligible to apply for funding.

discretion to waive this requirement if he/she determines that it will further the purposes of this FOA and is otherwise in the interests of EERE.

A foreign entity may receive funding as a subrecipient.

4. Incorporated Consortia

Incorporated consortia, which may include domestic and/or foreign entities, are eligible to apply for funding as a prime recipient or subrecipient. For consortia incorporated (or otherwise formed) under the laws of a State or territory of the United States, please refer to “Domestic Entities” above. For consortia incorporated in foreign countries, please refer to the requirements in “Foreign Entities” above.

Each incorporated consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE Contracting Officer.

5. Unincorporated Consortia

Unincorporated consortia, which may include domestic and foreign entities, must designate one member of the consortium to serve as the prime recipient/consortium representative. The prime recipient/consortium representative must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. The eligibility of the consortium will be determined by the eligibility of the prime recipient/consortium representative under Section III.A of the FOA.

Upon request, unincorporated consortia must provide the DOE Contracting Officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the individual consortium members together and should discuss, among other things, the consortium's:

- Management structure;
- Method of making payments to consortium members;
- Means of ensuring and overseeing members' efforts on the project;
- Provisions for members' cost sharing contributions; and
- Provisions for ownership and rights in intellectual property developed previously or under the agreement.

B. Cost Sharing

Topic Area 1:

- The cost share must be at least 20% of the total allowable costs for research and development projects (i.e., the sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-Federal sources unless otherwise allowed by law. (See 10 CFR Part 600 for the applicable cost sharing requirements.)

Topic Area 2:

- The cost share must be at least 20% of the total allowable costs for research and development projects (i.e., the sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-Federal sources unless otherwise allowed by law. (See 10 CFR Part 600 for the applicable cost sharing requirements.)

Topic Area 3:

- Cost sharing is not required for analysis activities.

C. Other Eligibility Requirements

- **DOE National Laboratory Contractors and Other Federally Funded Research and Development Center (FFRDC) Contractors.**

A DOE National Laboratory Contractor is eligible to apply for funding under this announcement if its cognizant Contracting Officer provides written authorization and this authorization is submitted with the application. If a DOE National Laboratory Contractor is selected for award, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's Management and Operating (M&O) contract.

The following wording is acceptable for the authorization:

“Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory, will not adversely impact execution of the DOE assigned programs at the laboratory.

FFRDC contractors may be proposed as team members on another entity's application, subject to the following guidelines:

Authorization for non-DOE FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award.

Authorization for DOE FFRDCs. The cognizant Contracting Officer for the FFRDC must

authorize in writing the use of a DOE FFRDC contractor on the proposed project and this authorization must be submitted with the application. The following wording is acceptable for this authorization:

“Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory, will not adversely impact execution of the DOE assigned programs at the laboratory.

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a DOE FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Cost Share. The applicant’s cost share requirement will be based on the total cost of the project, including the applicant’s and the FFRDC contractor’s portions of the effort.

FFRDC Contractor Effort: The FFRDC contractor effort, in aggregate, shall not exceed 50% of the total estimated cost of the project, including the applicant’s and the FFRDC contractor’s portions of the effort.

Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the FFRDC contractor.

D. Questions Regarding Eligibility

DOE will not make eligibility determinations for potential applicants prior to the date on which applications to this FOA must be submitted. The decision whether to submit an application in response to this FOA lies solely with the applicant.

SECTION IV – APPLICATION AND SUBMISSION INFORMATION

A. Address to Request Application Forms

The Application forms and instructions are available on EERE Exchange. To access these materials, go to <https://eere-exchange.energy.gov/> and select the appropriate funding opportunity number.

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10MB but is still within the maximum page limit specified in the FOA it must be broken into parts and denoted to that effect. (e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.)

B. Letter of Intent, Pre-Application, and Concept Paper

1. Letter of Intent

Applicants are requested to submit a Letter of Intent by April 18, 2013. Letters of intent will be used by DOE to organize and expedite the merit review process. They should not contain any proprietary or sensitive business information. Failure to submit such letters will not negatively affect a responsive application submitted in a timely fashion. You are encouraged to transmit the Letter of Intent well before the deadline. **LETTERS OF INTENT MUST BE SUBMITTED VIA EERE EXCHANGE AT <https://eere-exchange.energy.gov/>.**

The Letter of Intent should include the following information:

1. Applicant Name
2. Title of the Project
3. Topic Area of Interest
4. Brief description of the project
5. Estimated total DOE funding request
6. Point of Contact

2. Pre-application

- A pre-application is not required.

3. Concept Paper

- A concept paper is not required

C. Content and Form of Application

You must complete the following application forms found on the EERE Exchange website at <https://eere-exchange.energy.gov/>, in accordance with the instructions. **Applicants will receive a Control Number once they select “Apply to this FOA” on the EERE Exchange website and should include the Control Number in the file name, as indicated below. This Control Number was issued if a Letter of Intent was previously submitted.**

1. SF-424 – Application for Federal Assistance

Complete all required fields in accordance with the instructions on the form. The list of certifications and assurances in Field 21 can be found at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>, under Certifications and Assurances. Note: The dates and dollar amounts on the SF 424 are for the complete project period and not just the first year, first phase or other subset of the project period. Save the information in a single file titled “ControlNumber_LeadOrganization_App424”.

2. Project Summary/Abstract File

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that **clearly identifies the topic area of the application**, the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information, as the Department may make it available to the public if an award is made. The project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right), single spaced, with font not smaller than 11 point. Save the information in a single file titled “ControlNumber_LeadOrganization_Summary”.

3. Project Narrative File

The project narrative must not exceed 20 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right), single spaced. EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Section VIII.D for instructions on how to mark proprietary application information. Save the information in a single file titled “ControlNumber_LeadOrganization_Project”.

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10MB but is still within the maximum page limit specified in the FOA it must be broken into parts and denoted to that effect. (e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.)

The project narrative must include:

1. Project Objectives:

This section should provide a clear, concise statement of the specific objectives/aims of the proposed project. The topic area of interest should be clearly labeled on the cover page.

2. Merit Review Criterion Discussion:

This section should be formatted to address each merit review criterion and sub-criterion listed in Part V. A. below. Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT SEPARATELY ADDRESS EACH MERIT REVIEW CRITERION AND SUB-CRITERION.

3. Project Timetable:

This section should outline as a function of time, year by year, all the important activities or phases of the project, including any activities planned beyond the project period. Successful applicants must use this project timetable to report progress.

4. Roles of Participants:

For multi-organizational or multi-investigator projects, describe the roles and the work to be performed by each participant/investigator, business agreements between the applicant and participants, and how the various efforts will be integrated and managed.

5. Facilities and Other Resources:

Identify the facilities (e.g., office, laboratory, computer, etc.) to be used at each performance site listed, and, if appropriate, indicate their capacities pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Provide any information describing the other resources available to the project, such as machine and electronics shops.

6. Equipment:

List important items of equipment already available for this project, and if appropriate, note the location and pertinent capabilities of each. If you are proposing to acquire equipment, describe comparable equipment, if any, already at your organization and explain why it cannot be used.

7. Bibliography and References, if applicable:

Provide a bibliography for any references cited in the Project Narrative section. This section must include only bibliographic citations.

All the components of your Project Narrative must be within the Narrative page limit specified in paragraph 3. Documents listed below may be included as clearly marked

appendices to your Narrative and will not count towards the Project Narrative page limit. Please note that some of the required documents listed below may have their own page limits to which you must adhere.

4. Resume File

Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of a key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. The biographical information for each resume must not exceed 2 pages when printed on 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right), single spaced, with font not smaller than 11 point and should include the information below, if applicable. Save the information in a file titled “ControlNumber_LeadOrganization_Resume”.

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10MB but is still within the maximum page limit specified in the FOA it must be broken into parts and denoted to that effect. (e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.)

Education and Training. Undergraduate, graduate and postdoctoral training; provide institution, major/area, degree and year.

Professional Experience. Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications. Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address, if available electronically.

Patents, copyrights and software systems developed may be provided in addition to, or substituted for, publications.

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

- Of the key personnel identified in this file, indicate the Principal Investigator(s) (PI(s)).

For Multiple Principal Investigators:

The applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PIs. The decision to use multiple PIs for a project is the sole responsibility of the applicant. If multiple PIs will be designated, the application must identify the Contact PI/Project Coordinator and provide a “Coordination and Management Plan” that describes the organization structure of the

project as it pertains to the designation of multiple PIs. This plan should, at a minimum, include:

- Process for making decisions on scientific/technical direction;
- Publications;
- Intellectual property issues;
- Communication plans;
- Procedures for resolving conflicts; and
- PIs' roles and administrative, technical, and scientific responsibilities for the project.

The resume file does not have a page limitation.

5. Budget File

SF 424 A Excel, Budget Information – Non-Construction Programs File

You must provide a separate budget for each year of support requested and a cumulative budget for the total project period. Use the SF 424 A Excel, “Budget Information – Non Construction Programs” form on the DOE Financial Assistance Forms Page at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>. The SF424A provides columns for each individual budget-year as well as the commulative project-budget.

You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (see Section IV, G). Save the information in a single file titled “ControlNumber_LeadOrganization_SF424A”.

6. Budget Justification File (PMC 123.1)

PMC 123.1 Budget Justification File

You must justify the costs proposed in each Object Class Category/Cost Classification category using the PMC 123.1 Budget Justification File. The total project cost, including cost share (if applicable) and federal funding, must be represented in this document. Save the budget justification information in a single file titled “ControlNumber_LeadOrganization_Budget”.

7. Letters of Commitment

If cost share is required, you must have a letter from each third party contributing cost share (i.e., a party other than the organization submitting the application) stating that the third party is committed to providing a specific minimum dollar amount of cost share. **All Letters of Commitment must be attached as an Appendix to the Project Narrative File.** Identify the following information for each third party contributing cost share: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed type of cost share – cash, services, or property. Letters of Commitment from parties participating in the project, exclusive of

vendors, who will not be contributing cost share, but will be integral to the success of the project must be included as part of this Appendix to the Narrative. Letters of Commitment will not count towards the Project Narrative page limit.

8. Subaward Budget File(s)

You must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). The SF424A provides columns for each individual budget-year as well as the cumulative project-budget. The total project cost, including cost share (if applicable) and Federal funding, must be represented in this document. Use the SF 424 A Excel for Non Construction Programs or the SF 424 C Excel for Construction Programs. This form is found on the DOE Financial Assistance Forms Page at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>. Save each Subaward budget in a single file titled “ControlNumber_LeadOrganization_Subawardee_SF424A”.

A PMC 123.1 Budget Justification file for the subaward budget is also required for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). The budget justification must include the same justification information described in Paragraph 6 above. Save each Subaward budget justification in a single file titled “ControlNumber_LeadOrganization_Subawardee_Budget”.

9. Budget for DOE Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable

If a DOE FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal (FWP) in accordance with the requirements in DOE Order 412.1 Work Authorization System. The DOE Order 412.1, Work Authorization System and the DOE O 412.1, Field Work Proposal form are available at the following link, under “DOE Budget Forms”: <https://www.directives.doe.gov/directives/current-directives/412.1-BOrder-a/view>. Save the Field Work Proposal in a single file titled “ControlNumber_LeadOrganization_FFRDC_FWP”.

10. Authorization for non-DOE or DOE FFRDCs

Save the Authorization for non-DOE or DOE FFRDCs, as specified in Section III.C. Other Eligibility Requirements, in a single file titled “ControlNumber_LeadOrganization_FFRDC_Auth”.

11. SF-LLL Disclosure of Lobbying Activities

If applicable, complete the SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying." If applicable, save the SF-LLL in a single file titled “ControlNumber_LeadOrganization_SF LLL”.

12. Waiver Request- (a) Foreign Entities and (b) Performance of Work in the United States (If Applicable)

As set forth in Section III, all prime recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a prime recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the prime recipient. Section III further requires that all work under EERE funding agreements to be performed in the United States – i.e., prime recipients must expend 100% of the total project cost in the United States.

To seek a waiver of either requirement, the Applicant must submit a waiver request in the Full Application, which includes the following information: entity name, country (or state) of incorporation, description of the work to be performed by that entity, and the location where the work will be performed. If the applicant is seeking a waiver to have a foreign entity serve as the prime recipient, the applicant must explain why it is necessary to have a foreign entity serve as the prime recipient. If the applicant is seeking a waiver of the “Performance of Work in the United States” requirement, the applicant must explain why it is necessary to have the work performed outside of the United States. All waiver requests should explain how the waiver would further the purposes of this FOA and otherwise serve the interests of EERE. The Contracting Officer may require additional information before considering the waiver request. Save the Waiver Request(s) in a single file titled “ControlNumber_LeadOrganization_Institution_Waiver”.

13. Documentation of Device Access (Topic Area 1 and Topic Area 2, Only)

For Topic Areas 1 and 2, you must provide a letter from the applicant or project partner demonstrating that the applicant will have access to a deployed device for use in conducting project activities. If an application fails to meet this requirement, it may be deemed non-responsive and eliminated from full Merit Review. Save the documentation in a single file titled “ControlNumber_LeadOrganization_Device_Access”.

Summary of Required Forms/Files
Your application must include the following documents:

Name of Document	Format	File Name
SF 424 - Application for Federal Assistance	Part of Adobe Application Package	ControlNumber_LeadOrganization_App424
Project Summary/Abstract File	PDF	ControlNumber_LeadOrganization_Summary
Project Narrative File, including required appendices (Letters of Commitment)	PDF	ControlNumber_LeadOrganization_Project
Resume File	PDF	ControlNumber_LeadOrganization_Resume
SF 424A Excel – Budget Information for Non-Construction Programs File	Excel	ControlNumber_LeadOrganization_SF424A
PMC 123.1 Budget Justification File	Excel	ControlNumber_LeadOrganization_Budget
SF-424A Subaward Budget File(s), if applicable	Excel	ControlNumber_LeadOrganization_Subawardee_SF424A
PMC 123.1 Budget Justification(s), if applicable	Excel	ControlNumber_LeadOrganization_Subawardee_Budget
Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable	PDF	ControlNumber_LeadOrganization_FFRDC_FWP
Authorization from cognizant Contracting Officer for FFRDC, if applicable	PDF	ControlNumber_LeadOrganization_FFRDC_Auth
SF-LLL Disclosure of Lobbying Activities, if applicable	PDF	ControlNumber_LeadOrganization_SF LLL

Waiver Request: Foreign Entities and / or Performance of Work in the United States, if applicable	PDF	ControlNumber_LeadOrganization_Institution_Waiver
<u>For Topic Areas 1 and 2 only:</u> Documentation from the applicant or project partner demonstrating that the applicant will have access to a deployed device for use in conducting project activities	PDF	ControlNumber_LeadOrganization_Device_Access

D. Submissions from Successful Applicants

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Commitment Letter from Third Parties Contributing to Cost Share, if applicable
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Environmental Questionnaire

E. Submission Dates and Times

1. Letter of Intent Due Date

Letters of Intent are requested and should be submitted by April 18, 2013, not later than **5:00 PM Eastern Time**. You are encouraged to transmit the Letter of Intent well before the deadline. **LETTERS OF INTENT MUST BE SUBMITTED VIA EERE EXCHANGE AT <https://eere-exchange.energy.gov/>.**

2. Pre-application Due Date

- Pre-applications are not required.

3. Application Due Date

Applications must be received by May 16, 2013, not later than **5:00 PM Eastern Time**. You are encouraged to transmit your application well before the deadline.

APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

F. Intergovernmental Review

- This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. Funding Restrictions

Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in: 2 CFR 220 for Educational Institutions; 2 CFR 225 for State, Local, and Indian Tribal Governments; 2 CFR 230 for Non Profit Organizations and FAR Part 31 for commercial organizations.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award and no earlier than the selection date, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the Contracting Officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

If recipients are State or Local Governments, they may not incur pre-award costs prior to award, without prior approval of the DOE Contracting Officer.

National Environmental Policy Act (NEPA) Requirements. DOE's decision whether and how to distribute federal funds under this FOA is subject to NEPA. Applicants should carefully consider and should seek legal counsel or other expert advice before taking any action related to the proposed project that would have an adverse effect on the environment or limit the choice of reasonable alternatives prior to EERE completing the NEPA review process.

EERE does not guarantee or assume any obligation to reimburse costs where the recipient incurred the costs prior to receiving written authorization from the Contracting Officer. If the applicant elects to undertake activities that may have an adverse effect on the environment or limit the choice of reasonable alternatives prior to receiving such written authorization from the Contracting Officer, the applicant is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share. Likewise, if a project is selected for negotiation of award, and the recipient elects to undertake activities that are not authorized for Federal funding by the Contracting Officer in advance of DOE completing NEPA review, the recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share. Nothing contained in the pre-award cost reimbursement regulations or any pre-award costs approval letter from the Contracting Officer override these NEPA requirements to obtain the written authorization from the Contracting Officer prior to taking any action that may have an adverse effect on the environment or limit the choice of reasonable alternatives.

H. Submission and Registration Requirements

1. Where to Submit

LETTERS OF INTENT AND APPLICATIONS MUST BE SUBMITTED UNDER THIS ANNOUNCEMENT THROUGH EERE EXCHANGE AT

<https://eere-exchange.energy.gov/> TO BE CONSIDERED. You cannot submit a Letter of Intent or an application through EERE Exchange unless you are registered. Please read the registration requirements below carefully and start the process immediately. Letter of Intent or Applications submitted by any other means will not be accepted.

If you have problems completing the registration process or submitting your application, send an email to the EERE Exchange helpdesk at EERE-ExchangeSupport@hq.doe.gov. It is the responsibility of the applicant to verify successful transmission, prior to the Application due date and time.

2. Registration Process Requirements

There are several one-time actions that must be completed before submitting an Application in response to this Funding Opportunity Announcement (FOA), as follows:

- 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 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 appropriate contact point for each submission.

The applicant will receive an automated response when the Letter of Intent or Application is received. This will serve as a confirmation of receipt. Please do not reply to the automated response. The applicant will have the opportunity to re-submit a revised Letter of Intent or Application for any reason as long as the relevant submission is submitted by the specified deadline. The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements is found at <https://eere-exchange.energy.gov/Manuals.aspx>.

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 those registrations as soon as possible.**

Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov

- Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including 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
- Register in Grants.gov to receive automatic updates when Amendments to this FOA are posted. However, please note that applications will not be accepted through Grants.gov. <http://www.grants.gov/>

3. Electronic Authorization of Applications and Award Documents

Submission of an application and supplemental information under this announcement through electronic systems used by the Department of Energy, including EERE Exchange, constitutes the authorized representative's approval and electronic signature.

Submission of award documents, including modifications, through electronic systems used by the Department of Energy, including FedConnect, constitutes the authorized representative's approval and acceptance of the terms and conditions of the award. Award acknowledgement via FedConnect constitutes the authorized representative's electronic signature.

SECTION V - APPLICATION REVIEW INFORMATION

A. Criteria

1. Initial Review Criteria

Application Award Eligibility

- Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; (4) the proposed project is responsive to the objectives of the funding opportunity announcement; and (5) for Topic Areas 1 and 2, documentation from the applicant or project partner demonstrating that the applicant will have access to a deployed device for use in conducting project activities. If an application fails to meet these requirements, it may be deemed non-responsive and eliminated from full Merit Review.

2. Merit Review Criteria

Applications will be evaluated against the merit review criteria shown below.

The following criteria are proposed to be used to evaluate applications in Topic Area 1:

Criterion 1: Study Design, Rigor and Impact

Weight: [60%]

- The overall relevance and applicability of the scientific concept and approach in addressing the specific objectives of the FOA.
- The degree to which the study design addresses the proposed objectives outlined above, including comprehensive justification of the spatial and temporal scale of the study.
- The degree to which the methods and results may be applied to other MHK projects and future study.

Criterion 2: Work Plan

Weight: [25%]

- The thoroughness and feasibility of the overall project work plan and schedule, including the clarity, adequacy, and timing of major goals, objectives and milestones.
- The clarity and adequacy of the work plan, including detailed task descriptions and resource loaded schedule.
- The clarity and adequacy of the work plan to address project deliverables.

Criterion 3: Team Qualifications and Project Management **Weight: [15%]**

- The capability of the proposed team to address all aspects of the proposed work.
- The relevant experience, clarity, and appropriateness of the team member's roles.

- The knowledge and experience in project management and scientific techniques, methods, and practices to successfully complete the project scope on budget and on schedule.
- The approach to managing the team and ensuring communication among team members.
- The extent to which project teams include entities from at least two of the following types of sectors:
 - academic
 - other research institutions (including FFRDCs)
 - private entities (including non-profits)
 - government (including but not limited to State, Local and Tribal governments).

The following criteria are proposed to be used to evaluate applications in Topic Area 2:

Criterion 1: Study Design, Rigor and Impact

Weight: [50%]

- The overall relevance and applicability of the scientific concept and approach in addressing the specific objectives of the FOA.
- A thorough characterization of the installation and operational environment at the proposed site.
- The degree to which the study design addresses the proposed objectives outlined above, including a comprehensive justification of the spatial and temporal scale of the study.
- The degree to which the project addresses questions of regulatory barriers to the MHK industry.
- The degree to which the methods and results may be applied to other MHK projects and future study.

Criterion 2: Industry Involvement and Schedule

Weight: [20%]

- The degree to which evidence is presented indicating that the project, if not yet deployed, can be commissioned no later than the end of FY 2014 (e.g. for projects seeking FERC licensure, submission of Draft License Application or Final License Application; for projects that do not require FERC licensure, evidence of submission of application for Army Corps of Engineers ACOE Nationwide Permit).

Criterion 3: Work Plan

Weight: [15%]

- The relevance and clarity of the goals and objectives of the project.
- The clarity and adequacy of the work plan, including detailed task descriptions and resource loaded schedule.
- The clarity and adequacy of the work plan to address project deliverables.

Criterion 4: Team Qualifications and Project Management Weight: [15%]

- The capability of the proposed team to address all aspects of the proposed work.
- The relevant experience, clarity and appropriateness of the team member's roles.
- The knowledge and experience in project management and scientific techniques, methods, and practices to successfully complete the project scope on budget and on schedule.
- The approach to managing the team and ensuring communication among team members.
- The extent to which project teams include entities from at least two of the following types of sectors:
 - academic
 - other research institutions (including FFRDCs)
 - private entities (including non-profits)
 - government (including but not limited to State, Local and Tribal governments).

The following criteria are proposed to be used to evaluate applications in Topic Area 3:

Criterion 1: Study Design, Rigor and Impact Weight: [60%]

- The overall relevance and applicability of the scientific concept and approach in addressing the specific objectives of the FOA outlined above.
- The degree to which the study design answers questions of regulatory concern to the MHK industry.
- The degree to which the methods and results may be applied to other MHK projects.

Criterion 2: Work Plan Weight: [25%]

- The degree to which data can be obtained and analyzed within a one-year time frame.
- The relevance and clarity of the goals and objectives of the project.
- The clarity and adequacy of the work plan, including detailed task descriptions and resource loaded schedule.
- The clarity and adequacy of the work plan to address project deliverables.

Criterion 3: Team Qualifications and Project Management Weight: [15%]

- The capability of the proposed team to address all aspects of the proposed work.
- The relevant experience, clarity and appropriateness of the team member's roles.
- The knowledge and experience in project management and scientific techniques, methods, and practices to successfully complete the project scope on budget and on schedule.

- The approach to managing the team and ensuring communication among team members.
- The extent to which project teams include entities from at least two of the following types of sectors:
 - academic
 - other research institutions (including FFRDCs)
 - private entities (including non-profits)
 - government (including but not limited to State, Local and Tribal governments).

3. Other Selection Factors

Program Policy Factors

The selection official may consider the following program policy factors in the selection process:

- Alignment with the mission and goals of the Federal Agency(ies) involved.
- Selection to ensure adequate distribution of awards geographically.
- Selection to ensure a diverse range of projects.
- Greatest advancement of the national knowledge base.

B. Review and Selection Process

1. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the “Department of Energy Merit Review Guide for Financial Assistance”. This guide is available at <http://energy.gov/management/office-management/operational-management/financial-assistance> under Financial Assistance Policy and Guidance.

It is very important that the Project Abstract and Project Narrative file used during the Merit Review Process do not contain any Personally Identifiable Information as described in Appendix B.

2. Pre-Selection Clarification

Based upon the results of the merit review of written applications, DOE may determine that pre-selection clarifications are necessary from certain Applicants. These pre-selection clarifications will be for the purposes of clarifying the application and may take the form of one or more of the following procedures: written responses to DOE’s written clarification questions, video or conference calls with DOE representatives, in person-meetings or presentations at DOE or applicant site. DOE, based upon the results of the merit review of written applications and in its sole discretion, may decide not to hold any pre-selection clarifications. The information provided by Applicants to DOE through pre-selection clarifications is incorporated in their application and contributes to the merit review evaluation and DOE’s selection decisions. Selection for participation in pre-selection

clarifications does not signify that Applicants have been selected for negotiation of award. Applicant costs incurred to participate in pre-selection clarifications (such as travel or other presentation costs) are application costs and are only allowable to awardees as indirect expenses to Federally sponsored projects to the extent that those costs are allowable, allocable and reasonable.

3. Selection

The Selection Official may consider the merit review recommendation, program policy factors, and the amount of funds available.

4. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including, but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. Anticipated Notice of Selection and Award Dates

DOE anticipates notifying applicants selected for award by **the end of August 2013** and making awards by **the end of September 2013**.

SECTION VI - AWARD ADMINISTRATION INFORMATION

A. Notice of Selection

1. Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Section IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

A Financial Assistance Award or Assistance Agreement issued by the Contracting Officer is the authorizing award document. It normally includes, either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE; (4) DOE assistance regulations at 10 CFR part 600; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Intellectual Property Provisions; (7) Statement of Project Objectives; (8) Federal Assistance Reporting Checklist, which identifies the reporting requirements; and (9) Budget Summary.

For grants and cooperative agreements made to universities, non-profits and other entities subject to OMB Circular A-110, the Award also includes the Research Terms and Conditions and the DOE Agency Specific Requirements located at:

<http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>.

B. Administrative Requirements, National Policy Requirements, and Applicant Representations and Certifications

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in Title 10 CFR Part 600 (See: [10 CFR 600](#)). Grants and cooperative agreements made to universities, non-profits and other entities subject to Title 10 CFR Part 600 are subject to the Research Terms and Conditions located on the National Science Foundation web site at:

<http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>.

DUNS and SAM Requirements

Additional administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR, Part 25 (See: <http://ecfr.gpoaccess.gov>). Prime awardees must keep their data at the System for Award Management (SAM) current at <https://www.sam.gov>. SAM is the government-wide system that replaced the SAM. If you had an active registration in the CCR, you have an active registration in SAM. Subawardees at all tiers must obtain DUNS numbers and provide the DUNS to the prime awardee before the subaward can be issued.

Subaward and Executive Reporting

Additional administrative requirements necessary for DOE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR, Part 170. (See: <http://ecfr.gpoaccess.gov>). Prime awardees must register with the new FSRS database and report the required data on their first tier subawardees. Prime awardees must report the executive compensation for their own executives as part of their registration profile in the System for Award Management (SAM).

2. Special Terms and Conditions, National Policy Requirements, and Applicant Representations and Certifications

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at:

<http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>.

The National Policy Assurances To Be Incorporated as Award Terms are located at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>

Applicant Representations and Certifications

Corporate Felony Conviction and Federal Tax Liability Representations (March 2012)

By submitting an application in response to this FOA the Applicant represents that:

- (1) It is **not** a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months,
- (2) **No** officer or agent of the corporation have been convicted of a felony criminal violation for an offence arising out of actions for or on behalf of the corporation under Federal law in the past 24 months,
- (3) It is **not** a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations the following definitions apply:

A Corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations]. It includes both for-profit and non-profit organizations.

3. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>

C. Reporting

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement.

SECTION VII - QUESTIONS

A. Questions

Questions regarding the content of this announcement and program requirements must be submitted to: Environmental_Assessment_FOA@go.doe.gov not later than 3 business days prior to the application due date.

All questions and answers related to this FOA will be posted on EERE Exchange at: <https://eere-exchange.energy.gov/>. **Please note that you must first select this specific FOA Number in order to view the questions and answers specific to this FOA.** DOE will attempt to respond to a question within 3 business days, unless a similar question and answer has already been posted on the website.

Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov

SECTION VIII - OTHER INFORMATION

A. Amendments

Amendments to this announcement will be posted on the EERE eXCHANGE web site and the Grants.gov system. However, you will only receive an email when an amendment or an announcement is posted on these sites if you register for email notifications for this FOA in Grants.gov. DOE recommends that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any amendments or other announcements.

B. Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. Commitment of Public Funds

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. Proprietary Application Information

DOE will use data and other information contained in applications strictly for evaluation purposes. Applicants should not include confidential, proprietary, or privileged information in their applications unless such information is necessary to convey an understanding of the proposed project.

Applications containing confidential, proprietary, or privileged information must be marked 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. Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

The cover sheet of the application must be marked as follows and identify the specific pages containing confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:

Pages [*list applicable pages*] of this document may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.

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.”

In addition, every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

E. Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. Intellectual Property Developed under this Program

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

G. Notice of Right to Request Patent Waiver

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject

inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

I. Notice of Right to Conduct a Review of Financial Capability

DOE reserves the right to conduct an independent third party review of financial capability for applicants that are selected for negotiation of award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

J. Notice of Potential Disclosure under Freedom of Information Act

Applicants should be advised that identifying information regarding all applicants, including applicant names and/or points of contact, may be subject to public disclosure under the Freedom of Information Act, whether or not such applicants are selected for negotiation of award.

K. Lobbying Restrictions

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

REFERENCE MATERIAL

Appendix A – Definitions

“Amendment” means a revision to a Funding Opportunity Announcement

"Applicant" means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Application" means the documentation submitted in response to a Funding Opportunity Announcement.

“Authorized Organization Representative (AOR)” is the person with assigned privileges who is authorized to submit grant applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization’s E-Business Point of Contact designated in the SAM.

"Award" means the written documentation executed by a DOE Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be either a Grant or a Cooperative Agreement.

"Budget" means the cost expenditure plan submitted in the Application, including both the DOE contribution and the Applicant Cost Share.

"Consortium (plural consortia)" means the group of organizations or individuals that have chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Contracting Officer" means the DOE official authorized to execute Awards on behalf of DOE and who is responsible for the business management and non-program aspects of the Financial Assistance process.

"Cooperative Agreement" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between DOE and the Applicant during the performance of the contemplated activity. Refer to [10 CFR 600.5](#) for additional information regarding cooperative agreements.

"Cost Sharing" means the respective share of Total Project Costs to be contributed by the Applicant and by DOE. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus DOE Cost Shares) rather than to the DOE contribution alone.

“Data Universal Numbering System (DUNS) Number” is a unique nine-character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the SAM. Call 1-866-705-5711 to receive one free of charge.

“E-Business Point of Contact (POC)” is the individual who is designated as the Electronic Business Point of Contact in the SAM registration. This person is the sole authority of the organization with the capability of designating or revoking an individual’s ability to conduct SAM transactions.

“E-Find” is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. <http://www.grants.gov/search/searchHome.do>

“EERE Exchange” is the Department of Energy, Energy Efficiency and Renewable Energy’s web system for posting Federal Funding Opportunity Announcements and receiving applications. [EERE eXCHANGE website](#)

"Financial Assistance" means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and sub-awards. For DOE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

“FedConnect” is where federal agencies make awards via the web. <http://www.fedconnect.net/FedConnect/>

“Federally Funded Research and Development Center (FFRDC)” means a research laboratory as defined by Federal Acquisition Regulation 35.017.

“Funding Opportunity Announcement (FOA)” is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

"Grant" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find grant opportunities from all Federal grant-making agencies. Grants.gov is THE single access point for over 900 grant programs offered by the 26 Federal grant-making agencies. <http://www.grants.gov>

“Indian Tribe” means any Indian tribe, band, nation, or other organized group or community, including Alaska Native village or regional or village corporation, as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688)[43 U.S.C. § 1601 et seq.],

which are recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

"**Key Personnel**" mean the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

"**Marketing Partner Identification Number (MPIN)**" is a very important password designated by your organization when registering in SAM. The E-Business Point of Contact will need the MPIN to assign privileges to the individual(s) authorized to perform SAM transactions on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

"**Participant**" for purposes of this Funding Opportunity Announcement only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the Funding Opportunity Announcement.

"**Principal Investigator**" refers to the technical point of contact/Project Manager for a specific project award.

"**Project**" means the set of activities described in an Application, State plan, or other document that is approved by DOE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

"**Proposal**" is the term used to describe the documentation submitted in response to a Funding Opportunity Announcement. Also see Application.

"**Recipient**" means the organization, individual, or other entity that receives a Financial Assistance Award from DOE, is financially accountable for the use of any DOE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

"**System for Award Management (SAM)**" is the primary database which collects, validates, stores and disseminates data in support of agency missions (<https://www.sam.gov>).

"**Selection**" means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

"**Selection Official**" means the DOE official designated to select Applications for negotiation toward Award under a subject Funding Opportunity Announcement.

"**Substantial Involvement**" means involvement on the part of the Government. DOE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the

conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

“Technology Investment Agreement (TIA)” is a type of assistance instrument used to support or stimulate research projects involving for-profit firms, especially commercial firms that do business primarily in the commercial marketplace. TIAs are different from grants and cooperative agreements in that the award terms may vary from the Government-wide standard terms (See DOE TIA regulations at 10 CFR Part 603). The primary purposes for including a TIA in the type of available award instruments are to encourage non-traditional Government contractors to participate in an R&D program and to facilitate new relationships and business practices. A TIA can be particularly useful for awards to consortia (See 10 CFR 603.225(b) and 603.515, Qualification of a consortium).

"Total Project Cost" means all the funds to complete the effort proposed by the Applicant, including DOE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

“Tribal Energy Resource Development Organization or Group” means an “organization” of two or more entities, at least one of which is an Indian Tribe (see “Indian Tribe” above) that has the written consent of the governing bodies of all Indian Tribes participating in the organization to apply for a grant or loan, or other assistance under 25 U.S.C. § 3503.

Appendix B – Personally Identifiable Information

In responding to this Announcement, Applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the following documents: Project Abstract, Project Narrative, Biographical Sketches, Budget or Budget Justification. These documents will be used by the Merit Review Committee in the review process to evaluate each application. PII is defined by the Office of Management and Budget (OMB) and DOE as:

Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual's identity, such as their name, social security number, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

- a. **Public PII:** PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.
- b. **Protected PII:** PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that Applicants must not include in the files listed above to be evaluated by the Merit Review Committee.

- Social Security Numbers in any form
- Place of Birth associated with an individual
- Date of Birth associated with an individual
- Mother's maiden name associated with an individual
- Biometric record associated with an individual
- Fingerprint
- Iris scan
- DNA
- Medical history information associated with an individual
- Medical conditions, including history of disease
- Metric information, e.g. weight, height, blood pressure
- Criminal history associated with an individual
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions

- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal
- Financial information associated with an individual
- Credit card numbers
- Bank account numbers
- Security clearance history or related information (not including actual clearances held)

Listed below are examples of Public PII that Applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a program describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

Appendix C – Cost Share Information

Cost Sharing or Cost Matching

The terms “cost sharing” and “cost matching” are often used synonymously. Even the DOE Financial Assistance Regulations, 10 CFR Part 600, use both of the terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses the term “cost sharing,” as it conveys the concept that **non-federal share is calculated as a percentage of the Total Project Cost**. An exception is the State Energy Program Regulation, 10 CFR Part 420.12, State Matching Contribution. Here “cost matching” for the non-federal share is calculated as a percentage of the Federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. Following is an example of how to calculate cost sharing amounts for a project with \$1,000,000 in federal funds with a minimum 20% non-federal cost sharing requirement:

Formula: Federal share (\$) divided by Federal share (%) = Total Project Cost

Example: \$1,000,000 divided by 80% = \$1,250,000

Formula: Total Project Cost (\$) minus Federal share (\$) = Non-federal share (\$)

Example: \$1,250,000 minus \$1,000,000 = \$250,000

Formula: Non-federal share (\$) divided by Total Project Cost (\$) = Non-federal share (%)

Example: \$250,000 divided by \$1,250,000 = 20%

See the sample cost share calculation for a blended cost share percentage below. **Keep in mind that FFRDC funding is DOE funding.**

What Qualifies For Cost Sharing

While it is not possible to explain what specifically qualifies for cost sharing in one or even a couple of sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under a DOE grant or cooperative agreement, then it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, then it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though are generally the same for all types of entities. The specific rules applicable to:

- Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations are found at 10 CFR 600.123;

- State and Local Governments are found at 10 CFR 600.224;
- For-profit Organizations are found at 10 CFR 600.313.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, DOE generally does not allow pre-award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, DOE generally does not allow pre-award costs prior to the signing of the Selection Statement by the DOE Selection Official.

Following is a link to the DOE Financial Assistance Regulations. You can click on the specific section for each Code of Federal Regulations reference mentioned above.

[DOE Financial Assistance Rules \(10 CFR 600\)](#)

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

(A) *Acceptable contributions.* All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the recipient's cost sharing if such contributions meet all of the following criteria:

- (1) They are verifiable from the recipient's records.
- (2) They are not included as contributions for any other federally-assisted project or program.
- (3) They are necessary and reasonable for proper and efficient accomplishment of project or program objectives.
- (4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:

(a) *For-profit organizations.* Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit costs principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are not allowable unless specifically authorized in the award document. (v) Commercial Organizations. [FAR Subpart 31.2—Contracts with Commercial Organizations](#)

(b) *Other types of organizations.* Allowability of costs incurred by other types of organizations that may be subrecipients under a prime award is determined as follows:

(i) *Institutions of higher education.* Allowability is determined in accordance with: [2 CFR 220 Cost Principles for Educational Institutions](#)

(ii) *Other nonprofit organizations.* Allowability is determined in accordance with: [2 CFR 230 Cost Principles for Nonprofit Organizations](#)

(iii) *Hospitals.* Allowability is determined in accordance with the provisions of: [Title 45 Appendix E to Part 74—Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts With Hospitals](#)

(iv) *Governmental organizations.* Allowability for State, local, or federally recognized Indian tribal government is determined in accordance with: [PART 225—Cost Principles for State, Local, and Indian Tribal Governments \(OMB Circular A–87\)](#)

(5) They are not paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing or matching.

(6) They are provided for in the approved budget.

(B) *Valuing and documenting contributions*

(1) *Valuing recipient's property or services of recipient's employees.* Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:

(a) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or

(b) The current fair market value. If there is sufficient justification, the Contracting Officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The Contracting Officer may accept the use of any reasonable basis for determining the fair market value of the property.

- (2) *Valuing services of others' employees.* If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.
- (3) *Valuing volunteer services.* Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.
- (4) *Valuing property donated by third parties.*
- (a) Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.
 - (b) Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the Contracting Officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:
 - (i) The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.
 - (ii) The value of loaned equipment must not exceed its fair rental value.
- (5) *Documentation.* The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:
- (a) Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.
 - (b) The basis for determining the valuation for personal services and property must be documented.

**SAMPLE COST SHARE CALCULATION
FOR BLENDED COST SHARE PERCENTAGE**

The following example shows the math for calculating required cost share for a project with \$2,000,000 in Federal funds with four tasks requiring different Non-federal cost share percentages:

<u>Task</u>	<u>Proposed Federal Share</u>	<u>Required Federal Share %</u>	<u>Non-federal Cost Share %</u>
Task 1 (R&D)	\$1,000,000	80%	20%
Task 2 (R&D)	500,000	80%	20%
Task 3 (Demonstration)	400,000	50%	50%
Task 4 (Outreach)	<u>100,000</u>	100%	0%
	\$2,000,000		

Federal share (\$) divided by Federal share (%) = Task Cost

Each task must be calculated individually as follows:

Task 1

\$1,000,000 divided by 80% = \$1,250,000 (Task 1 Cost)

Task 1 Cost minus federal share = Non-federal share

\$1,250,000 - \$1,000,000 = **\$250,000 (Non-federal share)**

Task 2

\$500,000 divided 80% = \$625,000 (Task 2 Cost)

Task 2 Cost minus federal share = Non-federal share

\$625,000 - \$500,000 = **\$125,000 (Non-federal share)**

Task 3

\$400,000 / 50% = \$800,000 (Task 3 Cost)

Task 3 Cost minus federal share = Non-federal share

\$800,000 - \$400,000 = **\$400,000 (Non-federal share)**

Task 4

Federal share = \$100,000

Non-federal cost share is not mandated for outreach = **\$0 (Non-federal share)**

The calculation may then be completed as follows:

<u>Task</u>	<u>Proposed Federal Share</u>	<u>Federal Share %</u>	<u>Required Non-federal Cost Share \$</u>	<u>Required Non-federal Cost Share %</u>	<u>Total Project Cost</u>
Task 1	\$1,000,000	80%	\$250,000	20%	\$1,250,000
Task 2	500,000	80%	125,000	20%	625,000
Task 3	400,000	50%	400,000	50%	800,000
Task 4	<u>100,000</u>	100%	<u>0</u>	0%	<u>100,000</u>
	\$2,000,000		\$775,000		\$2,775,000

Blended Cost Share %

Non-federal share (\$775,000) divided by Total Project Cost (\$2,775,000) = 27.9% (Non-federal)

Federal share (\$2,000,000) divided by Total Project Cost (\$2,775,000) = 72.1% (Federal)