Statement of Project Objectives

[Award Number] [Mod Number]

[Recipient Organization Name]

[Project Title]

*The examples in* ***red*** *and instructions in* ***blue*** *text should be removed in the final version of the SOPO*

*All of the information to be included in the SOPO must be consistent with the Application content, and the Funding Opportunity Announcement (FOA) requirements. Specifically, the SOPO must be consistent with the Workplan portion of the Technical Volume submitted by the Applicant.*

***Do not include*** *the following items in the body of the SOPO:*

|  |  |
| --- | --- |
| * *Dollar amounts* | *This information should be in the budget.* |
| * *Subcontractors, vendors or individuals by name* | *The award is with the prime and, as such, the SOPO should not generally reference the subcontractors.* |
| * *Dates/schedule information in task descriptions* | *Schedule will be kept separately if selected for an Award negotiations* |

***Include*** *the following important items in the SOPO:*

|  |  |
| --- | --- |
| * *Acronyms* | *Spell out all acronyms* |
| * *Use non-technical language if possible* | *To the extent practicable use language that can be understood by non-technical readers such as the DOE’s environmental oversight team (National Environmental Policy Act (NEPA) compliance review), contractual, and legal personnel.* |
| * *Clarify the scope* | *If this project is building off prior work, make it clear what scope is being performed on this project.* |
| * *Consistent measuring units* | *Consistent use of multiple measuring units (Metric vs Imperial). Use the same units of measurement or include conversions.* |

***Intellectual property (IP) information*** *and other aspects of the project that could be considered proprietary or business confidential should be clearly marked in the SOPO, per original FOA requirements, identifying the specific pages containing confidential, proprietary, or privileged information:*

*Notice of Restriction on Disclosure and Use of Data:*

*Pages [list applicable pages] of this 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 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. [[example]], example*

# Project Objectives

*This content must be consistent with the Workplan submitted by the Applicant and follow objectives described in FOA Phases. This section should be a high level, executive summary of the entire project. This summary should serve as a stand-alone description of the project and answer the following questions:*

* *What is being done in this project in this project by Phase? Describe your commercial, social, economic and commercialization objectives for each Phase.*
* *How you plan to achieve the objectives of the FOA? List the relevant FOA objectives and how the outputs of this award will achieve those objectives*
* *What does success look like for this project? To the extent possible, provide quantitative metrics with associated target values.*

*For FOA2845, include objective(s) for Phase 1/BP1.*

*The following text provides example SOPO text for Topic Area 1 (TA1) projects under FOA-0002845.*

*Example:*

*This project will develop a pilot demonstration site and install 1-5MW of tidal and/or current capacity that meets current local, state, and federal regulatory requirements. The overall objective of this project* *is to perform the R&D activities that are needed to demonstrate commercial viability, enabling the pilot demonstration site to be transitioned into a commercial project that continues operation and provides opportunities for further development of the demonstration site into a large (> 5 MW), grid connected current energy project. Other specific project objectives include:*

* *[ Phase 1 Objective 1]*
* *[Phase 2 Objective 2]*

*This project will provide clear implementation plan to develop a demonstration site within 5 years that would install between 1-5MW of tidal and/or current installation(s) in line with proposed local, state, and federal requirements. Tidal and/or current turbines installed at the site will complete power performance testing and will operate at the site for a minimum of 3 months. At the end of the project, the project team will deliver a working financial business model for tidal and/or current energy business model that allows for the site to continue operation after completion of the project and for how the site can be expanded after the project is complete. This will also include estimates for continued future economic benefits and community opportunities as the site reaches full commercialization.*

*Figure 1: Proposed pilot demonstration site location and layout.*

# Technical Scope Summary

*This content must be consistent with the Workplan submitted in the Application showing objectives for Phase1/BP1. Provide a summary of the work scope and work approach to achieve those project objectives.*

*Example:*

*In Phase 1 BP1, the project team will fully characterize the site, and tasks will involve physical and desk top data collection and analysis.* *R&D in this phase is to inform and understand the interactions between the onshore, offshore environment and the technology, thereby improving confidence in the level of risk associated with these interactions. Plans and schedules will be created for licensing and environmental monitoring, site health and safety, site commercialization, stakeholder engagement, community benefits, supply chain procurement and finally technology selection and qualification.* *This phase will culminate in either a FERC draft hydrokinetic pilot project license application submission if grid connected site or a USACE permit if a non-grid connected site.*

*A Down Select meeting will be held at the conclusion of Phase 1 BP1 where the project team will present the project goals, progress, and accomplishments to-date to the Water Power Technologies Office (WPTO).*

*In Phase 2 BP2, the detailed site design will be reviewed and refined with DOE and either* *the USACE permit or FERC hydrokinetic pilot project license will be successfully secured.*

*A Go/No-Go meeting will be held at the conclusion of Phase 2 BP2 where the project team will present the project goals, progress, and accomplishments to-date to the Water Power Technologies Office (WPTO).*

*In Phase 3 and Phase 4 BP3, the focus will be on the physical build out or mobilization of the site. The onshore and offshore infrastructure development, finalization of the tidal and/or current technology manufacturing and fabrication acceptance tests, and IO&M SOPs should be complete.*

*A Go/No-Go meeting will be held at the conclusion of Phase 3 and Phase 4 BP3 where the project team will present the project goals, progress, and accomplishments to-date to the Water Power Technologies Office (WPTO).*

*In Phase 5 BP4, tidal and/or current technology fabrication, mobilization, installation, and connection activities will occur. A fully commissioned site will be ready for testing and operations, and the site will move to full operations once tidal and/or current turbines are ready for power performance testing. A Site Sustainability Report will be created to address site longevity with a plan for long-term permitting and licensing.*

# Tasks To Be Performed

*This content must be consistent with the Workplan submitted in the Application showing tasks to be performed for Phase1/BP1. Describe the planned approach to the project, the specific activities to be conducted over the life of the project. Clearly articulate what work must be accomplished to execute the project scope and meet the established project objectives. Consider these definitions while writing this section:*

* ***(D) Deliverable*** *is an input/output term that refers specifically to the unique and individual products, elements, results, or items that are produced for delivery at the conclusion of a specific project component, or at the conclusion of the project as a whole.*
* ***(M) Milestone*** *is a significant event in a project that occurs at a point in time, with a method of verification specified.**The SOPO should identify appropriate milestones throughout the project to show project progress. A milestone may be either a progress measure (which can be activity based) or a SMART technical milestone. SMART technical milestones should be* ***S****pecific,* ***M****easurable,* ***A****chievable,* ***R****elevant, and* ***T****imely, and must demonstrate a technical achievement rather than simply completing a task. In both cases, the Applicant should indicate how the milestone will be verified. It is up to the recipient to include verification procedures within each milestone or in section D. Project Management and Reporting at the end of the SOPO.*
* ***Down-Select:*** *for FOA-0002845, EERE intends to conduct a competitive project review (down-selection process) upon the completion of BP1. See FOA for additional details.*
* ***Go/No-Go (GNG) Decision Points:*** *Generally, GNG Decision Points are only applicable for projects with more than one budget period. The SOPO is expected to include GNG decision points at the end of each budget period as required by the FOA or as directed during negotiations by the DOE project team. A GNG decision point is a risk management tool and a project management best practice to ensure that, for the active budget period technical success is definitively achieved and potential for success in future budget periods is evaluated prior to beginning future budget periods. For FOA-0002845, Table 3 of the FOA shows anticipated phases and budget periods of TA1. This SOPO is expected to have detailed information for Phase 1/BP1 only. Phase 2-5/BP2-4 details will be negotiated at the end of Phase 1/BP1 with the selected Awardee.*
* ***End of Project Goal:*** *The SOPO should include one SMART goal at the end of the project’s period of performance. The Applicant should also provide the means by which the goal will be verified. In addition to describing the end of project goal in the SOPO text, the end of project goal should be listed as a milestone.*

**PHASE 1/BUDGET PERIOD 1 [Enter Title]**

**Task 1.0.0:** *Distinctive Title*

***Task Summary:*** *Describe what work is to be accomplished, identify the project objectives/outcomes being addressed and provide a concise statement of the objectives of that task. Indicate the project deliverables, milestones or expected results that this task will help achieve. Reminder, applicant should indicate how milestone will be verified.*

**Milestone 1.0.1** *(add task milestones as needed)*

**Deliverable 1.0.1** *(add task deliverables as needed)*

**Milestone 1.0.2** *(add task milestones as needed)*

**Deliverable 1.0.2** *(add task deliverables as needed)*

**Subtask 1.1.0:** *Distinctive Title*

**Subtask Summary:** *Describe the specific and detailed work efforts that go into achieving the higher-level tasks.*

**Milestone 1.1.1** *(add subtask milestones as needed)*

**Deliverable 1.1.1** *(add subtask deliverables as needed)*

**Milestone 1.1.2** (*add subtask milestones as needed)*

**Deliverable 1.1.2** (*add subtask deliverables as needed)*

*Example: (The red text below is an example only. Specific task/subtasks/milestone/deliverables will vary based on the specific needs of the project.)*

***PHASE 1/BUDGET PERIOD 1: PRELIMINARY TIDAL and/or CURRENT SITE R&D***

***TASK 0.0.0: Project Management***

***Deliverable 0.0.1:*** *Project Management Plan*

***Subtask 0.1.0:*** *Risk Management*

***Deliverable 0.1.1:*** *Risk Management Plan*

***TASK 1.0.0******Site Characterization: Data Collection and Analysis***

*Project team will fully characterize the site. Tasks will involve physical and desk top data collection and analysis.*

***Deliverable 1.0.1:*** *Resource Characterization Plan*

***Milestone 1.0.1:*** *Conclusion of Phase 1 data collection reporting and analysis (The verification process of the milestone can be described here or covered in section ‘D. Project Management and Reporting’. Applicant to use at their discretion.)*

***Subtask 1.1.0 Stakeholder Engagement***

*Identify all relevant stakeholders and interested parties. Define their interests and expectations in the project.*

***Deliverable 1.1.1:*** *Preliminary Stakeholder Engagement Plan*

***Subtask 1.2.0 Economic Analysis***

*Define how project will provide benefits to local or disadvantaged communities.* *Identify and provide estimates on the economic or fiscal impacts for the site, number of jobs, and impact on the local community economy for development and sustainable operations for a tidal and/or current site.*

***Deliverable 1.2.1:*** *Updated Community Benefits Plan*

***Deliverable 1.2.2:*** *Baseline Social and Economic Impact Assessment*

***Subtask 1.3.0 Technology Qualification***

*Provide evidence and arguments to support claims that the technology under assessment will function reliably in a target operating environment within specific limits and with acceptable level of confidence.*

***Deliverable 1.3.1:*** *Technology Selection and Qualification Plan*

***Subtask 1.4.0 Market Research and Business Plan***

*Define the project mission and strategy. Draft a business cash flow model for project development, which includes the initial 6 years and a forecast out to 10 years after period of performance of active award. Identify all procurement needs that will be needed for the development of the project.*

***Deliverable 1.4.1:*** *Preliminary Market Transformation Plan*

***Deliverable 1.4.2:*** *Preliminary Procurement Plan*

***Subtask 1.5.0 Health and Safety (H&S)***

*Identify and record all project H&S hazards using the NREL risk management register as described under the risk management plan.*

***Deliverable 1.5.1:*** *Health and Safety (H&S) Management Plan*

***TASK 2.0.0******FERC License and/or USACE Permit***

*Plans and schedules will be created for licensing, and a FERC License and/or USACE Permit application will be submitted.*

***Subtask 2.1.0******License and/or Permit Analysis***

*Data collection and analysis to support the draft FERC hydrokinetic pilot project license and/or other regulatory applications for site permits.*

***Deliverable 2.1.1:*** *Preliminary Environmental Management Plan*

***Subtask 2.2.0******FERC License and/or USACE Permit Application***

*Submit license and/or permit applications.*

***Deliverable 2.2.1:*** *FERC draft Hydrokinetic Pilot Project License and Notice of Intent, or USACE permit.*

***Milestone 2.2.1:*** *FERC License and/or USACE Permit Application Submission*

*(Continue until all BP1 tasks and subtasks are listed)*

***Task 6.0.0: Down-Select Process and Negotiations of BP2-4 /or Project Closeout*** *NOTE: This task is estimated to take two (2) months and includes the following:*

|  |  |
| --- | --- |
| *Applicant submits final BP1 deliverables to WPTO Project Officer* | *End of BP1 Month 10* |
| *Down Select presentation to WPTO* | *Beginning of BP1 Month 11* |
| *WPTO issues Down Select decision* | *Approximately two to four weeks after DS presentation* |
| *Depending on the DS decision, WPTO and Applicant negotiate subsequent BP, or proceed to closeout BP1 award* | *Conducted during remaining time in BP1 from DS decision to end of BP1* |

*Please include the language in black color below as an Appendix in the submitted SOPO:*

*EERE intends to conduct a Down-Select (DS) in which only one awardee will proceed to BP2.* ***At the end of Month 10****, the Recipient will submit to the WPTO Technology Manager/Project Officer a continuation application which includes the information/deliverables listed below.*

*The Recipient will then participate in a Down Select meeting with the WPTO team and present their project to the EERE Project Review committee. Subject matter experts from academia, national laboratories, and industry may be used as reviewers, subject to conflict of interest and non-disclosure considerations. Projects will be evaluated based on the following criteria:*

* *Extent to which the Phase 1 results specifically and convincingly demonstrates how the Awardee will meet FOA’s goals and objectives in future Phases. This should include completeness of all Phase 1 deliverables, including but not limited to site characterization information and analysis of social, economic and environmental impacts of the proposed project.*
* *Discussion and demonstrated understanding of the project risks and the quality of the mitigation strategies to address them. This should include but not be limited to labor and community support, opposition or disputes, and timely and appropriate strategies for mitigation and resolution.*
* *Demonstration of how Phase 1 work addressed environmental, siting, and other regulatory requirements for the project and soundness of plan for future Phases.*
* *Extent to which project demonstrates buy-in from needed stakeholders to ensure success to continue the project to Phase 2 and beyond.*
* *Extent to which Awardee demonstrates licensing, environmental, stakeholder, community and data collection performance and progress towards stated project objectives and in accordance with FOA goals and objectives.*
* *Sufficiency of project technical and administrative detail in the Down-Select application to assess all project risks and risk mitigations, clearly understand the costs, evaluate the social, and environmental impacts and ultimately be confident in site developer business model and organization to deliver a tidal and/or current energy demonstration.*
* *Extent to which the Stakeholder Engagement and Community Benefits Plan demonstrates how the project supports the BIL objectives through the collection and reporting of measurable metrics (See Appendix E and Section IV.D of this FOA for the Community Benefits Plan content requirements).*
* *Baseline Social and Economic Impact Assessment metrics to report at a minimum (1) employment or number of new jobs, (2) economic output, and (3) value added or increase in value of the tidal and/or current project developed for the site.*
* *Technology baseline LCOE and quality of costs incorporated into the SAM tool will be evaluated.*
* *Applicants must demonstrate their financial readiness to proceed into Phase 2. Awardees must demonstrate that they can meet the financial needs of their project.*

*Upon completion of this competitive project review (down-selection process), WPTO will select which TA1 project will receive federal funding beyond BP1. Due to program considerations, only one (1) awardee will be selected to receive funding for project continuation into BP2. As a result of this down-select process, certain projects will not receive federal funding beyond BP1 even if the project is meeting the pre-defined metrics.*

*Down Select Deliverable 6.0.1: Down Select Report*

*Down Select Deliverable 6.0.2: Down Select presentation to WPTO*

*Down Select Milestone 6.0.1: Down Select Decision Received*

***Subtask 6.1.0: Negotiations of Phase 2-5 BP2-BP4 (or Closeout of BP1) depending on the Down Select decision.***

**PHASE 2 BUDGET PERIOD 2-4 [Enter Title]**

*Note: FOA 2845 has a competitive Down-Select at the conclusion of Phase 1 BP1. Thus, all budget periods after BP1 will be subject to negotiations after the Down-Select. BP2-4 information is not required at the time of Application in the SOPO. However, the workplan as part of the applicant’s technical volume must cover all phases and budget periods.*

# Project Management and Reporting

*Briefly describe relevant project management and administrative reporting activities during all budget period and phases, including any special reporting requirements or deliverables such as submission of a Project Management Plan or Risk Register. Development of the risk management plan and risk register must follow the “Marine and Hydrokinetic Technology Development Risk” risk register template -https://www.nrel.gov/docs/fy15osti/63258.pdf. The risk management plan and risk register must consider risks that could be encountered during a potential device manufacturing, deployment, and testing project. Include a discussion of knowledge dissemination and participation in WPTO’s Peer Review.*

Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein.

# DOE Marine Energy Data Repository Plan

All data collected, as well as key deliverables, should be delivered in accordance with the Federal Assistance Reporting Checklist. Data will be uploaded either to the [EERE Project Management Center (PMC)](https://www.eere-pmc.energy.gov/SubmitReports.aspx), [DOE CODE](https://www.osti.gov/doecode/), Interagency Edison ([iEdison](http://www.iedison.gov/)), USDOE Scientific and Technical Information management system ([OSTI elink](http://www.osti.gov/elink-2413)), to the relevant WPTO-funded [PRIMRE Knowledge Hubs](https://openei.org/wiki/PRIMRE/Knowledge_Hubs) ([MHKDR](https://mhkdr.openei.org/), [Tethys](https://tethys.pnnl.gov/), [Tethys Engineering](https://tethys-engineering.pnnl.gov/), and [MRE Software](https://openei.org/wiki/PRIMRE/Software)). Data should be uploaded as it is generated, but no later than the end of each reporting quarter in which the data is generated. The data will be made publicly available once it has been submitted, curated, and accepted into the appropriate system. Data submitted to MHKDR that have been identified as protected, or subject to a moratorium, will not be made publicly available until the period of protection is over or the moratorium has expired, and will be held in a secure section of the system. Protected Data will be treated according to the Intellectual Property Provisions of the Award.

Products resulting from WPTO financial assistance should be uploaded to the appropriate PRIMRE Knowledge Hub:

* MHKDR
  + Data; including any modeling outputs, visualizations, schematics, videos, code, software, raw data or other digital assets suitable for public release should be uploaded to DOE Marine and Hydrokinetic Data Repository ([https://mhkdr.openei.org](https://mhkdr.openei.org/)). Additionally, the Marine Energy Data pipeline and MHKiT should be leveraged to convert data to a standardized format and can be used to automate the upload to the MHKDR. Data submitted to PRIMRE’s MHKDR that have been identified as protected, or subject to a moratorium, will not be made publicly available until the period of protection is over or the moratorium has expired, and will be held in a secure section of the system.
  + For more information, see the MHK Data Repository Training Video online at <https://youtube.com/openei> or access tutorials and frequently asked questions (FAQs) under “Help” at [https://mhkdr.openei.org](https://mhkdr.openei.org/).
* Tethys
  + Publications (such as journal articles, technical reports, conference papers, white papers, or as well as other public documents) focused on research, monitoring results, or technology development to assess and mitigate environmental effects of marine energy will be [contributed to Tethys](https://tethys.pnnl.gov/contributing-tethys). (<https://tethys.pnnl.gov/contributing-tethys>). All uploads are carried out by the Tethys team at PNNL.
* Tethys Engineering
  + Publications (such as journal articles, technical reports, conference papers, white papers, or as well as other public documents) focused on technical and engineering information about marine energy will be contributed to Tethys Engineering (<https://tethys-engineering.pnnl.gov/contribute-tethys-engineering>). All uploads are carried out by the Tethys Engineering team at PNNL.
* MRE Software
  + Software developed for marine energy applications should be hosted on the PRIMRE Code Catalog (<https://openei.org/wiki/PRIMRE/Code_Catalog>). Submit software through the MRE Code Submission Form. Open-source software hosted on a public repository will automatically be forked into the GitHub MRE Code Hub (<https://github.com/MRE-Code-Hub>).