

**U.S. Department of Energy (DOE)
Office of Energy Efficiency and Renewable Energy (EERE)**

**Bipartisan Infrastructure Law (BIL), Section 41006(a)(2): U.S.
Tidal Energy Advancement**

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002845

FOA Type: Mod 0003

Assistance Listing Number: 81.087

FOA Issue Date:	5/08/2023
Informational Webinar:	5/30/2023 3:00pm ET
Topic Area 1: Submission Deadline for Concept Papers:	6/05/2023 5:00pm ET
Topic Area 1: Submission Deadline for Full Applications:	7/25/2023 5:00pm ET
Topic Area 1: Expected Submission Deadline for Replies to Reviewer Comments:	9/15/2023 5:00pm ET
Topic Area 1: Expected Date for EERE Selection Notifications:	November 2023
Topic Area 1: Expected Timeframe for Award Negotiations:	November 2023 - February 2024
Topic Area 2: Submission Deadline for Concept Papers:	7/13/2023 5:00pm ET
Topic Area 2: Submission Deadline for Full Applications:	10/19/2023 5:00pm ET
Topic Area 2: Expected Submission Deadline for Replies to Reviewer Comments:	1/19/2024 5:00pm ET
Topic Area 2: Expected Date for EERE Selection Notifications:	April 2024
Topic Area 2: Expected Timeframe for Award Negotiations:	April - June 2024

- Applicants must submit a Concept Paper by 5:00pm ET on the due date listed above to be eligible to submit a Full Application.

- To apply to this FOA, applicants must register with and submit application materials through EERE eXCHANGE at <https://eere-eXCHANGE.energy.gov/>, EERE's online application portal.
- **Unique Entity Identifier (UEI) and System for Award Management (SAM)** - Each applicant (unless the applicant is excepted from those requirements under 2 CFR 25.110) is required to: (1) Be registered in the SAM at <https://www.sam.gov> before submitting its application; (2) provide a valid UEI number in its application; and (3) continue to maintain an active SAM registration with current information at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency. DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, the DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process, they should utilize the [HELP](#) feature on [SAM.gov](https://www.sam.gov). SAM.gov will work entity service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue. Additional entity validation resources can be found here: [GSAFSD Tier 0 Knowledge Base - Validating your Entity](#).

- Applicants must designate primary and backup points-of-contact in EERE eXCHANGE with whom EERE will communicate to conduct award negotiations. If an application is selected for award negotiations, it is not a commitment to issue an award. It is imperative that the applicant/selectee be responsive during award negotiations and meet negotiation deadlines. Failure to do so may result in cancelation of further award negotiations and rescission of the selection.

Modifications

All modifications to the FOA are **HIGHLIGHTED** in the body of the FOA.

Mod. No.	Date	Description of Modification
0001	5/25/2023	The purpose of this modification is to clarify language on Page 17: WPTO's longer term vision for the site is to have this site expand to include additional devices.
0002	7/14/2023	The purpose of this modification is to clarify language to: <ul style="list-style-type: none"> Better distinguish between site market transformation and technology transformation plan (pages 20, 27, 28, 38, 121, 121). Further clarifying teaming arrangements in full applications between site developer and technology developers, demonstrating past successful relevant experiences and further demonstrating commitments between partners (page 124). Highlight of the importance of site commercialization and technology integration, removing potentially confusing references to any 'product' commercialization (page 121). Highlight stakeholder support to commercialization of the site in the Industry Adoption Plan (page 122).
0003	8/24/2023	The purpose of this modification is to include language for TA2 applications outlining requirements for Letters of Intent, Letters of Support, and Letters of Commitment on page 45 and to update Letters of Commitment language in Section IV.D.iv on page 94. These are required for TA2.

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I. Funding Opportunity Description

A. Background and Context

The Water Power Technologies Office (WPTO) is issuing this Funding Opportunity Announcement (FOA) “Bipartisan Infrastructure Law (BIL), Section 41006(a)(2): U.S. Tidal Energy Advancement” to significantly advance the state of tidal and/or current technologies in the U.S. Awards made under this FOA will be funded with funds appropriated by the Infrastructure Investment and Jobs Act¹, more commonly known as the Bipartisan Infrastructure Law (BIL).

The BIL is a once-in-a-generation investment in infrastructure, designed to modernize and upgrade American infrastructure to enhance U.S. competitiveness, drive the creation of good-paying union jobs, tackle the climate crisis, and ensure stronger access to economic, environmental, and other benefits for disadvantaged communities². The BIL appropriates more than \$62 billion to the Department of Energy (DOE)³ to invest in American manufacturing and workers; expand access to energy efficiency and clean energy; deliver reliable, clean and affordable power to more Americans; and demonstrate and deploy the technologies of tomorrow through clean energy demonstrations.

As part of and in addition to upgrading and modernizing infrastructure, DOE’s BIL investments will support efforts to build a clean and equitable energy economy that achieves a zero-carbon electricity system by 2035, and to put the U.S. on a path to achieve net-zero emissions economy-wide by no later than 2050⁴ to benefit all Americans.

Through this FOA, DOE will invest \$35,000,000 under Section 41006(a)(2) to fund the first large-scale investment for the development of a pilot tidal and/or current Research, Development and Demonstration (RD&D) site in the U.S., with

¹ Infrastructure Investment and Jobs Act, Public Law 117-58 (November 15, 2021).

<https://www.congress.gov/bill/117th-congress/house-bill/3684>. This FOA uses the more common name “Bipartisan Infrastructure Law”.

² Pursuant to E.O. 14008, “Tackling the Climate Crisis at Home and Abroad,” January 27, 2021, and the Office of Management and Budget’s Interim Justice40 Implementation Guidance M-21-28, and addendum M-23-09, DOE recognizes disadvantaged communities as defined and identified by the White House Council on Environmental Quality’s Climate and Economic Justice Screening Tool (CEJST), which can be located at <https://screeningtool.geoplatform.gov/>. DOE’s Justice40 Implementation Guidance is located at <https://www.energy.gov/sites/default/files/2022-07/Final%20DOE%20Justice40%20General%20Guidance%20072522.pdf>.

³ U.S. Department of Energy. November 2021. “DOE Fact Sheet: The Bipartisan Infrastructure Deal Will Deliver For American Workers, Families and Usher in the Clean Energy Future.” <https://www.energy.gov/articles/doe-fact-sheet-bipartisan-infrastructure-deal-will-deliver-american-workers-families-and-0>

⁴ [Executive Order \(EO\) 14008](#), “Tackling the Climate Crisis at Home and Abroad,” January 27, 2021.

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the aim to position tidal and/or current energy generation as a key clean energy contributor ready for net-zero emissions power sector while creating good jobs. An additional \$10,000,000 under Section 41006(a)(2) will be invested in a community-led tidal and/or current energy project, where balancing community energy priorities and technology innovation will accelerate tidal and current energy technologies for the generation of power to promote the resilience and economic development of coastal communities.

The role of marine energy in meeting the reliability, security, and energy resilience needs of disadvantaged communities, remote community power systems, islanded community systems, and other community energy priorities will all be critical areas supporting the Administration's Justice40 initiative as well as local economic development. Addressing underinvestment in sustainable infrastructure, developing participatory processes of community inclusion in local economic and energy development, and better serving the shared purposes of communities and technology developers in accelerating energy technologies are central motivations to this FOA. As established by Executive Order 14008 – Tackling the Climate Crisis at Home and Abroad, a government-wide approach to coordinating energy R&D and investment will be critical “to ensuring energy justice and spurring economic development.”

As part of the whole-of-government approach to advance equity and encourage worker organizing and collective bargaining,^{5,6,7} and in alignment with BIL section 41006(a)(2), this FOA and any related activities will seek to encourage meaningful engagement and participation of workforce organizations, including labor unions, as well as underserved communities and underrepresented groups, including consultation with Tribal Nations.^{8,9} Consistent with Executive Order 14008,¹⁰ this FOA is designed to help meet the goal that 40% of the overall benefits of the Administration's investments in clean energy and climate solutions flow to disadvantaged communities, as defined by the Department pursuant to the Executive Order and to drive the creation of accessible good-paying jobs with the free and fair chance for workers to join a union.

⁵ EO 13985, “Advancing Racial Equity and Support for Underserved Communities Through the Federal Government”, January 20, 2021.

⁶ EO 14025, “Worker Organizing and Empowerment,” April 26, 2021.

⁷ EO 14052, “Implementation of the Infrastructure Investment and Jobs Act,” November 18, 2021.

⁸ EO 13175, November 6, 2000 “Consultation and Coordination with Indian Tribal Governments”, charges all executive departments and agencies with engaging in regular, meaningful, and robust consultation with Tribal officials in the development of federal policies that have Tribal implications.

⁹ <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/26/memorandum-on-tribal-consultation-and-strengthening-nation-to-nation-relationships/>, “Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships” (January 26, 2021).

¹⁰ EO 14008, “Tackling the Climate Crisis at Home and Abroad,” January 27, 2021.

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The activities to be funded under this FOA support BIL section 41006(a)(2) and the broader government-wide approach to significantly advance tidal and current energy industry by developing a tidal/current RD&D site, building local marine energy supply chains, and supporting community-driven marine energy solutions to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis, empower workers, and advance environmental justice.

i. Program Purpose

WPTO's Marine Energy Program supports research, development, demonstration, and the commercial application of marine renewable energy technologies that expand and diversify the nation's clean energy portfolio by delivering power from ocean and river resources. WPTO supports tidal and river current energy technology Research and Development (R&D) from early Technology Readiness Levels (TRLs) to certified marine energy prototypes ready for commercialization at project sites. Ultimately, a commercially successful tidal and current energy industry in the U.S. will promote local economic security through good jobs, and enhance resilience and reduce carbon emissions of microgrids in coastal, remote, and islanded communities in the near term and provide clean and reliable power to the grid in the years following.

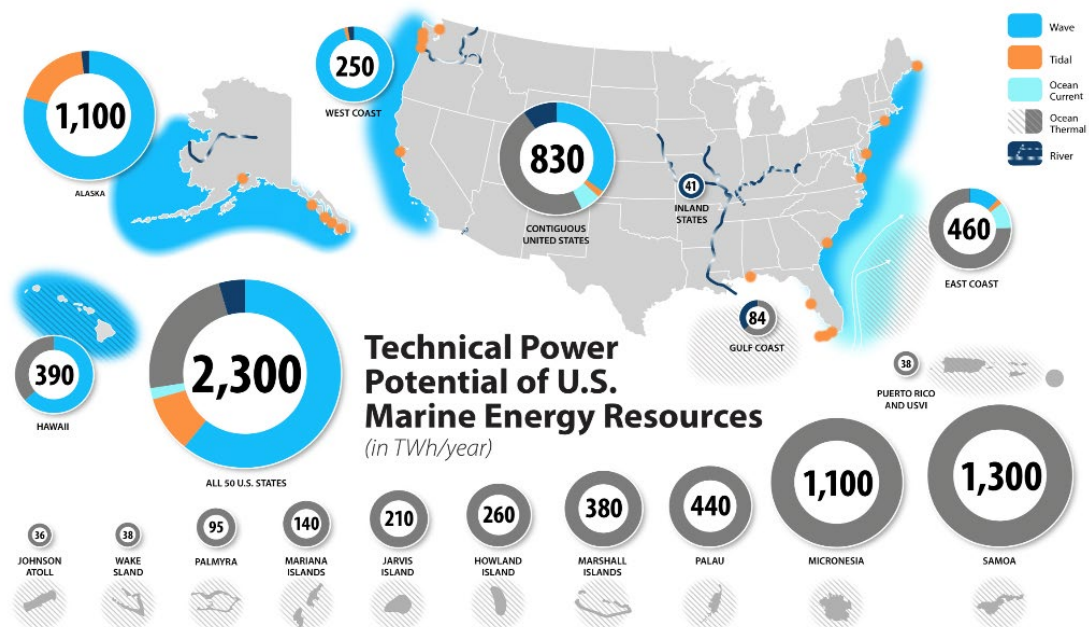
Resource Assessment

In 2021, the National Renewable Energy Laboratory (NREL) published a report titled, Marine Energy in the U.S.: An Overview of Opportunities. The report found that the marine energy resource potential in the U.S. is immense, distributed widely across the nation's coastlines and rivers (as shown in Figure 1), and that harnessing just one-tenth of the technically available marine energy resources could provide 5.7% of our nation's current electricity generation, enough energy to power 22 million homes.

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Figure 1. Technical Power Potential of U.S. Marine Energy Resources. More detail is provided in Marine Energy in the U.S.: An Overview of Opportunities¹¹, which included details on the definition of technical power potential.



The tidal, ocean, and river current technical resource potential were found to be 220 TWh/yr, 49 TWh/yr, and 99 TWh/yr, respectively, as shown in Table 1. Tidal energy is one of the most predictable renewable energy resources and there are abundant tidal resources in Alaska, Washington, and some Atlantic states, as shown in Table 2. Note that Table 2 identifies the tidal resources in the U.S. for illustrative purposes and is not intended to indicate the locations where projects funded by this FOA should be developed. River resources are distributed across much of the U.S. in proximity to many remote communities and can be harnessed to provide clean reliable power to microgrids and for other off grid opportunities. Ocean current resources are concentrated in the Gulf Stream off the east coast between Florida and North Carolina. The challenges of harnessing ocean current resources are significant due to deep water depths, the average distance the resource is located from shore, and the complexity of modeling the effects of large-scale energy extraction on the dynamics of the current. In the remainder of this document, tidal, ocean, and river current resources will be referred to as tidal and current resources.

¹¹ Marine Energy in the United States: An Overview of Opportunities
<https://www.nrel.gov/docs/fy21osti/78773.pdf>

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Table 1. The U.S. Tidal, Ocean, and River Current Technical Resource. See the full report¹² for more detail. Note that 1 TWh/year is equivalent to 0.114 GW.

Resource	Technical Resource* (TWh/yr)	Potential Number of Homes Powered	Resource as a Percent of U.S. Electricity Generation (%)
Tidal	220	21,000,000	5.4
Ocean current	49	4,600,000	1.2
River	99	9,300,000	2.4

Table 2. The top 5 tidal energy resources in the Continental U.S. (CONUS) and Alaska. See the full report¹³ for more detail.

State	Tidal	Technical Resource (TWh/yr)
Top 5 CONUS		
WA	Admiralty Inlet Entrance	2.02
DE/NJ	Delaware Bay	1.39
ME	E of Cross Island	1.18
NY	Fishers Island Sound Central Entrance	1.07
CA	San Francisco Bay Entrance	0.78
Top 5 Alaska		
AK	Cook Inlet	79.89
AK	Chatham Strait	52.73
AK	Clarence Strait	17.98
AK	Summer Strait	11.68
AK	N of Inian Islands	11.23

State of Technology Development

Over the last decade, WPTO supported several tidal and river current energy technology deployment projects that have advanced technologies while demonstrating system performance and improving installation, operations, and maintenance methods and knowledge. In recent years, there have been significant advances in the U.S. and abroad in the technical and commercial readiness of tidal and current energy technologies.

Domestically, the industry is at a phase in development that requires moving from single device testing to array testing. The earlier single device installations

¹² Marine Energy in the United States: An Overview of Opportunities
<https://www.nrel.gov/docs/fy21osti/78773.pdf>

¹³ Marine Energy in the United States: An Overview of Opportunities
<https://www.nrel.gov/docs/fy21osti/78773.pdf>

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have proven turbine power performance and or feasibility of installation, connection and operation of different rotor configurations on a single platform, however the projects lacked the financial backing to sustain operations and continue power generation into the local grid or provision of power to alternative end users.

Internationally, there are also robust efforts to develop tidal and current energy technologies that have recently achieved advances in floating and bottom mounted systems. And there has been significant financial support by governments to subsidize projects for power production that is allowing for installation at sites for multiple tidal devices. The United Kingdom (UK) for example has awarded pre-permitted tidal sites to install and have online 41MW by 2026/2027¹⁴. The European Union announced in December 2022 funding of €40M¹⁵ for demonstration of tidal energy farms.

U.S. and international R&D has moved tidal and current technologies to the point where further in-water testing of single devices and small arrays is the next step in developing a thriving industry. However, it is important to recognize that technology alone is insufficient to sustain a thriving tidal and current industry. A robust supply chain that can support the fabrication, installation, operation, and maintenance of deployed systems is needed as well.

Tidal and current energy systems have proven in field deployments that they are predictable, reliable, and clean power sources; the goal with future R&D projects is to translate that power to offset diesel and maximize value for baseload or dispatchable power in remote coastal and island communities. In fact, tidal power's predictability and high potential capacity factor can potentially offset diesel's role as baseload power in remote communities, especially considering long-term goals of renewably-sourced or emissions-free power generation in these regions. Despite strides in these areas, challenges remain. Direct feedback from remote communities has highlighted issues with microgrid operation, including frequency fluctuations, line losses, and lack of overcurrent protections within a microgrid. The lack of real-world marine energy device power output data limits the ability to develop autonomous microgrid management hardware and software. It is also critical that tidal and current projects are co-developed with and serve the communities in and around which they are located.

¹⁴ Contracts for Difference Allocation Round 4 results, UK government report
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1103022/contracts-for-difference-allocation-round-4-results.pdf

¹⁵ Sustainable, secure and competitive energy supply (HORIZON-CL5-2023-D3-01)
<https://ec.europa.eu/info/funding-tenders/opportunities>

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Connecting with Communities

Addressing a wide variety of socio-economic, and technical challenges on a community level, WPTO's Powering the Blue Economy™ (PBE) initiative aims to foster long-term, sustainable growth of the blue economy by 1) learning the power needs of emerging coastal and maritime markets, 2) advancing marine renewable energy technologies to power ocean activities and decarbonize the maritime sector, and 3) enabling the development of renewable energy-powered systems to monitor, observe, and protect the oceans. As a focus area of the PBE initiative, Resilient Coastal Communities (RCC) supports energy innovation and technology optimization for remote, coastal, and island communities.

Developing resilient technology pathways and design strategies for remote communities, understanding the practical challenges of making technologies work for community end-users, understanding community motivations and drivers, building a local workforce, and emerging near-shore blue economy markets are critical elements driving innovation.

Enabling innovation is a primary objective of PBE, where marine renewable energy can expand and provide new energy services critical to the nation's ocean-centric economic development. Key goals of the PBE initiative are exploring how the expansion and integration of tidal and/or current energy will facilitate community economic priorities such as seafood processing, integration of existing energy infrastructure or "islanding" existing infrastructure for resilience and adaptation needs. Diversification of local generation sources will also provide many benefits, especially significant where tidal and/or current energy could provide baseload power.

To better connect and work with communities evaluating using marine energy, WPTO initiated the Energy Transitions Initiative Partnership Project (ETIPP), now a crosscutting technical assistance program supported by the Water Power Technologies Office, Building Technologies Office, Energy Transitions Initiative, Geothermal Technologies Office, Solar Energy Technologies Office, Vehicle Technologies Office, and Wind Energy Technologies Office. ETIPP connects competitively selected remote, island, and islanded communities with regional stakeholder organizations and experts from national laboratories to help develop strategies to shift to a clean energy future that is equitable, sustainable, and resilient. Through ETIPP, WPTO has gained valuable insight into the motivations, goals, and challenges experienced by remote coastal and island communities which are considering tidal and/or current energy devices to support their electricity needs. This FOA will build on work conducted in ETIPP and expand offerings to support project development in remote and island communities.

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FOA Objectives

WPTO is releasing this FOA to develop technologies and an industry that can responsibly, and cost effectively harness the Nation's tidal /or current energy resources. The overall purpose of this FOA is to significantly advance the U.S. tidal and/or current energy industry. WPTO envisions doing so by funding the development of a pilot tidal and/or current RD&D site to improve access to pre-permitted tidal and/or current in-water validation and verification testing for a wide-variety of tidal and current devices; and by funding a community-led tidal and/or current energy planning and demonstration project to advance community tidal and current projects from energy resilience design to technology validation.

Accordingly, this FOA will fund projects that will develop a pilot tidal and/or current energy site, focus on technology and supply chain development, system verification and validation, and work with state, local, Tribal, and community partners to solve engineering, regulatory, and innovation challenges associated with advancement of tidal and/or current technologies in the U.S. Through this funding, projects will address time and costs associated with permitting and licensing, other regulatory requirements, pre- and post-deployment environmental characterization, and the monitoring needed to understand and minimize environmental impacts. Through these activities, awards under this FOA will directly support the WPTO programmatic objective of performing "design and testing of megawatt (MW) scale current energy converter devices/arrays that incorporate installation, operation, and maintenance lessons," as identified in the Multi Year Program Plan and published in 2022.

Additionally, building upon the success of the ETIPP program, WPTO is offering this FOA for community-scale¹⁶ tidal and/or current device deployment planning and development. A key programmatic goal is to develop a pipeline of opportunities for tidal and/or current energy development that will broadly benefit the advancement of those industries while also solving the energy challenges of remote coastal and island communities. This FOA will advance this objective by demonstrating both a process and technology solution to meet community needs and priorities.

ii. Strategic Objectives

There are significant opportunities for the U.S. to lead commercialization and testing of tidal and/or current energy, which could serve U.S. populations and lessons learned could be exported to international markets. But the most

¹⁶ For the purposes of the FOA, community-scale is defined as a diverse set of tidal and/or current energy projects, broadly interpreted to fall under the 500kW cap and encompassing applications from specific distributed energy needs to power systems needs of remote coastal and island communities.

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resource-rich U.S. potential tidal and/or current sites are in locations where manufacturing and other marine supply chain companies are not well developed, with many promising sites being in remote locations far from manufacturing infrastructure. The complexity of installing devices, navigating permitting and licensing processes, and a lack of connection to states or local utilities have proven to – and will continue to – be a consistent barrier to advancing tidal and/or current energy.

This solicitation is focused on addressing these and other commercialization challenges by developing a pilot deployment site, deploying and demonstrating technologies, building relationships with Tribal, local, state, labor, and regulatory partners, and developing commercial and supply chain relationships needed to sustain the industry moving forward. A key component of these projects will be planning for how the site will continue operation after the completion of this FOA and identifying opportunities for continued use and further development of the site. This FOA will support projects across two (2) Topic Areas (TA) focused on advancing the tidal and/or current industry towards commercialization for utility- and community-size applications:

Topic Area 1 (TA1): Tidal and/or Current Site Development will provide up to \$35M to support the development of a pilot tidal and/or current technology demonstration site in state waters¹⁷. Topic Area (TA) 1 projects will develop plans for a tidal and/or current demonstration site, engage with Tribal, local, state, labor, and regulatory partners, build local commercial and supply chain relationships, develop needed infrastructure at the site, and install 1-5 MW of tidal and/or current turbine capacity at the site. WPTO anticipates making two awards under TA1, with a down-select to one project at the end of the first Budget Period (BP).

A key goal of TA1 is for the project team to perform the R&D activities that are needed to demonstrate commercial viability, enabling the project to be transitioned into a commercial project that continues operation after the end of this FOA's period of performance. Success in this objective will also provide opportunities for further development of the demonstration site into a large (> 5 MW), grid connected current energy project, jumpstarting the tidal and/or current industry in the U.S. Working with state and federal regulatory bodies to secure the necessary permits, building learning for the industry, is another key goal of TA1 projects. Accordingly, a successful TA1 project will result in the establishment of a tidal and/or current energy generation project in the U.S. that

¹⁷ Defined by [Submerged Lands Act](#), [BOEM/FERC Guidelines on Regulation of Marine Hydrokinetic Energy Projects in the OCS](#)

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has the potential to be expanded into a future commercial project, delivering on BIL objectives in 41006 (a)(2).

In order to ensure that TA1 projects are as effective as possible at advancing the entire industry, projects that use a systematic process to consider multiple turbine technologies (potentially from different technology developers) and use a quantitative process to select the best turbine technology for the site are encouraged. With this objective in mind, TA1 projects should also develop collaboration with R&D entities, so that technology and project performance can be quantified and to build stakeholder confidence in tidal and/or current technologies and identify R&D needs.

Topic Area 2 (TA2): Community-led Tidal and/or Current Energy Planning and Project Execution will provide up to \$10 million to support a community-led tidal and/or current energy planning and development project in the U.S., preferably led by a community-based organization¹⁸, a Tribe and/or Tribal government / organization / corporation / union, or local/municipal government entity.

Coastal and island communities are located in challenging environments for delivering critical energy services and infrastructure and often have high costs of energy, difficult transportation logistics, and lack of available storage. Facing immediate impacts of climate change and natural hazards, these communities also have unique resiliency needs across their respective social and physical infrastructures. While these challenges to reliability and demonstration are formidable, they are also an opportunity for technology advancement and validation of tidal and/or current technologies. In administering TA2, WPTO's goals are to show how tidal and/or current energy technologies can support community transitions to a resilient and renewably-sourced energy system.

This topic area seeks to blend technology development goals and community priorities as an integrated process. Alongside a project developer, community members will inform the technology design and development process and drive community engagement and education, ensuring appropriate awareness and consideration of the needs and priorities of those who will be directly and indirectly impacted. The goal is to create a collaborative partnership between the developer and community to ensure community energy and employment goals align with proposed technologies and to prioritize the reliable installation,

¹⁸ Community-based organization here refers to a nonprofit organization that represents a community or significant segments of a community and is engaged in meeting that community's needs related to their energy system goals and objectives.

operation, and maintenance of technologies in challenging geographies with limited resources.

A key technology goal of this topic area is to find a balance between the community priorities and the opportunity for tidal and/or current energy developers, which may drive longer-term value, expedite regulatory and permitting processes, and benefit developers by supporting and integrating many components of project development. In addition, technology demonstrations in communities will provide critical feedback to central R&D questions, such as improving the siting and marinization of marine energy systems to understand how they can be deployed in an environmentally responsible way, and survive in harsh, highly corrosive, and energetic environments.

Smaller, decentralized community energy systems are a growing market globally, where it can be less costly to develop local power generation sources connected to off-grid or islanded microgrids. WPTO has previously supported a community river project in Igiugig, AK with the goal of decarbonizing their off-grid power system and provide clean, renewable baseload energy. Similarly, there is a growing international interest in distributed systems enabling new services or aspects of the blue economy. An example is the Orkney Islands, where the European Marine Energy Center (EMEC) installed hydrogen generation technology at a tidal test site substation; the impact has been a community-owned green hydrogen project, helping to fuel local transport and decarbonize marine transport.

Coastal and island communities are also a critical proving ground as a near-term market for the development of marine energy technologies¹⁹. A key feature of these markets is to establish performance, lower technology costs, address integration challenges, and scale-up production. The challenging geographies presented by communities in Alaska, Maine, or the Pacific Islands also present reliability and operational challenges encouraging technologies which are modular and simple to use, repair, and maintain.

In the face of natural disasters and climate change impacts, high energy costs, and unreliable energy infrastructure that is vulnerable to outages or damage, ETIPP provides technical assistance to communities so that they are armed with the information needed for energy decision making. As noted above (Section I.A.i), ETIPP has provided on the ground information on community energy priorities, challenges, and potential readiness and demand for emerging

¹⁹ Nemet, G. F. (2019). *How solar energy became cheap: A model for low-carbon innovation*. Routledge.

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renewable energy technologies²⁰. The program envisions this FOA topic area as a mechanism to build from community technical assistance programs, like ETIPP, to R&D demonstrations that provide appropriate marine energy solutions aligned with community priorities.

Detailed technical descriptions of the specific Topic Areas are provided in the sections that follow.

B. Topic Areas

Topic Area 1: Tidal and/or Current Site Development

\$35M in Federal Funds, 20% Cost Share requirement.

Up to 2 Awards, 4 budget periods.

Down-Select at the end of Budget Period 1 from 2 awards to 1 award.

TA1 Overview

TA1 projects must develop a pilot demonstration site and install 1-5MW of tidal and/or current capacity that meets current local, state, and federal regulatory requirements. TA1 is separated into five (5) development phases:

- PHASE 1: Preliminary Tidal and/or Current Site Research & Development
- PHASE 2: Detailed Site Characterization
- PHASE 3: Site Mobilization
- PHASE 4: Site Commissioning and Technology Fabrication
- PHASE 5: Testing and Operations

Each phase will have a schedule, budget, scope, set of deliverables, and programmatic commercial, technical and social objectives and metrics that applicants must deliver to as summarized in text below. Project site development requires a phased approach that captures and includes flexibility of the site as development moves from concept to final design. The foundations for site development include tidal and/or current resource data collection and site characterization, stakeholder engagement, attraction and promotion for supply chain co-location, and the onshore and offshore build outs and tidal and/or current device installations. This FOA encourages robust teaming and development of business organizations that can execute successful TA1 projects and continue to operate and expand the demonstration site after the project is complete.

²⁰ Sitka's Energy Transition Journey <https://www.youtube.com/watch?v=pdjlriSUJPE&t=170s>

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TA1 Goals

- Develop a pilot tidal and/or current demonstration site in state waters²¹.
- Engage with Tribal, local, state, labor, regulatory, and university research partners and build on local and state clean energy strategies.
- Consider multiple tidal and/or current technologies and systematically select the best technology for deployment at the site attracting competitive tidal and/or current developers for technology integration.
- Build site infrastructure and supply chains, with a focus on local and state industry and union partnerships.
- Develop R&D relationships needed to quantify system performance and advance technologies. Improve tidal and/or current Research and Development (R&D) activities from resource characterization, environmental monitoring through device performance testing.
- Install 1-5MW of tidal and/or current turbine capacity at the proposed site.
- Operate the turbines and generate power for the grid or an off-grid energy system.
- Increase the number of quality-clean energy jobs in and surrounding the project site.
- Establish a working financial business model for tidal and/or current energy that allows for the site to continue operation after completion of the TA1 project and for how the site can be expanded after the project is complete. **WPTO's longer term vision for the site is to have this site expand to include additional devices.** WPTO does not want to see the site decommissioned at the end of 5 years and would like to see a plan to have continuous in-water testing for tidal or/and current technologies for years (6-10) after the FOA project's end.

TA1 Applications Requirements

TA1 Application requirements include information in the following section. TA1 Applications should follow below outline (See Section IV.D of this FOA, TA1 Technical Volume Content Requirements, for additional information):

1. Tidal and/or Current Site Identification, Characterization, and Implementation Description
2. Stakeholder/Community Description
3. Project and Business Model Description and Organizational Structure
4. Technology Identification Description

²¹ Defined in [Submerged Lands Act](#), and [BOEM/FERC Guidelines on Regulation of Marine Hydrokinetic Energy Projects on the OCS](#)

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Tidal and/or Current Site, Identification, Characterization, and Implementation

- Propose no more than 1 site per Application for tidal and/or current energy development. NOTE: "Site" is defined here as a single geographical location. Options within the same geographical location are allowed to be included in the Application with detailed information provided for all options.
- Provide baseline information on the proposed site at the time of the Application including necessary site maps, descriptions of social (community, supply chain), economic (existing industry such as tourism, fishing), environmental, and existing infrastructure state of the site.
- Propose a plan to perform pre-deployment studies that are necessary to quantify the current resource, site topology, and other information that will inform system design, installation, operation, and maintenance activities.
- Provide a 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. Must operate in State waters²² only.
- Outline key project development and performance parameters (i.e. estimated project milestones or decision points, indicative acceptable costs).
- Describe the proposed demonstration site in respect to state policy, federal permitting, and licensing, state permitting, local permitting, environmental monitoring, and resource characterization status (with associated schedules), goals and requirements.
- Describe necessary infrastructure proposed for the site, both onshore and offshore infrastructure requirements. Include maps.
- Clarify and describe if the site proposed is for grid or non-grid connected technologies. Electrical (grid) connection or non-grid/other connection options should be explained, including status of electrical infrastructure onshore (substation) and offshore (High Voltage Alternating Current (HVAC)/High Voltage Direct Current (HVDC) = cables and or size of electrical cables).
- Applicant must perform due diligence to ensure the proposed site does not have an existing Federal Energy Regulatory Commission (FERC) preliminary permit for an entity not listed on the project partner list.
- Describe how and when the project will secure needed permits and satisfy regulatory requirements needed to implement the project.
- Describe how and when the project will secure a bond or an equivalent financial assurance for project decommissioning, as required to receive a FERC license. Note that federal funds and project cost share cannot be used

²² Defined in [Submerged Lands Act](#), and [BOEM/FERC Guidelines on Regulation of Marine Hydrokinetic Energy Projects on the OCS](#)

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to secure this bond or financial assurance equivalent as this FOA aims to fill a long-term commercialization life of this site, outside of this FOA's timeline.

Stakeholder/Community Description

- Provide a description of teaming arrangements at the time of the Application.
- Describe a plan for developing and sustaining partnerships with local, union, regulatory, and state stakeholders and Tribal entities to enable further development of the site after project completion, while continuously addressing their considerations.
- Demonstrate knowledge of current state of community support for site development and propose a plan for community engagement.
- Describe a plan to facilitate active participation at the state level, including local agencies, and actively encouraging Tribal, labor, and university research participation.
- Describe the local knowledge and expertise informing the site and workforce development, key challenges and risks.
- Demonstrate knowledge of current state of available local supply chain, specifically include maritime vessel availability, and local manufacturing availability.
- Provide a plan to develop commercial and supply chain partnerships.
- Include Letters of Intent, Letters of Support, and Letters of Commitment from a wide variety of stakeholders. At a minimum:
 - Letters of support from: community representatives - regional/state/local/coastal and Tribal communities - with an emphasis on groups in the community that actively make a living from the water body or site under consideration.
 - Letters of Support from: state and local entities, local utility/utilities or relevant tidal and/or current power end users.
 - Letters of Commitment or Intent from: supply chain representatives, labor groups including unions, and Technology developers who are interested in installing and operating at the proposed site.
- Clearly describe all the benefits as prescribed by BIL objectives to the local community (See Section IV.D of this FOA for the Community Benefits Plan content requirements), stakeholders, project consortium, and to the technology developers contracted for the site.

Project Business Model Description and Organizational Structure

- Submit a thorough Project Management Plan including a Risk Register focusing at a minimum on the following risks to:
 - Community at proposed site,
 - Project development at site,

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- Site accessibility, feasibility, sustainability,
 - Health and Safety (H&S), and
 - Environmental risk.
 - Provide information on the potential for the site to be expanded after the completion of the TA1 project. i.e., how much capacity could be installed at the site and what are the permitting, regulatory, and stakeholder considerations.
 - Provide a detailed **site** market transformation plan for how the proposed demonstration site will continue to operate after the TA1 project ends, and a vision of how the site will continue operating beyond the 5 years funded under this FOA expanding into a future commercial site.
 - Demonstrate an understanding of available financing opportunities including all currently available and forecasted funding mechanisms (Inflation Reduction Act (IRA), incentives, Loan Buy Back (LBB), loans administered by DOE's Loan Programs Office, other opportunities through DOE's Office of Clean Energy Demonstrations (OCED) and grants like the Small Business Innovation Research (SBIR) program, etc.).
 - Describe Health and Safety considerations prioritized under each phase.

Technology Identification

- The tidal and/or current site proposed is based upon technology selection that is mature TRL7/8 (See Appendix F), i.e., the technology has been successfully demonstrated in an open-water environment, and suited for the size and type of development envisioned.
- If a proposed tidal and/or current technology is identified beforehand, then the potential technical, physical and environmental constraints influencing the site identification should be described in relation to the current technology's performance characteristics (power capture). It is expected the site developer qualify the technology suited for the site in Phase 1 following the International Electrotechnical Commission (IEC) TC114 62600-4 Technology Qualification standard or equivalent qualification standard²³.
- Describe anticipated environmental monitoring data collection requirements before and after site development and turbine installation.
- Describe the sustainability of the site for a minimum of 3-6 months turbine installation, with the expectation to prove continued site operations and longevity plus 10 years.

²³ NREL's IEC TC114 standards cheat sheet - <https://www.nrel.gov/water/assets/pdfs/iec-tc-114-marine-stds-brochure-june2022.pdf>

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- Describe how the Applicant will execute a measurement campaign to quantify the performance of turbine/s and the pilot demonstration as a whole and generate power for the grid or an off-grid energy system.

Table 3 describes the phases and budget periods of TA1. WPTO anticipates two TA1 awards, with a down-select to one project at the end of BP1.

Table 3: Topic Area 1, Tidal and/or Current Site Development – Budget by Phase, Administrative Milestones, and Schedule.

Phase #: Award #	BP#	Federal Share 80%	Cost Share 20%	Total Project Costs (sum of Federal Share and Cost Share)	Anticipated Schedule and Administrative Milestones
Phase 1: Preliminary Tidal and/or Current site R&D - 2 Awards	BP1	\$3,000,000	\$750,000	\$3,750,000	Phase 1= BP1 = 12 months: BP1 Technical Scope: 10 months (M1-M10), Down-Select (DS) 2 Awards to 1 at the end of BP1: 2 months (M11-M12) includes negotiation of, and administrative time needed to closeout BP1 or proceed to BP2
		\$3,000,000	\$750,000	\$3,750,000	
Phase 2: Detailed Site Characteriza tion- 1 Award	BP2	\$4,000,000	\$1,000,000	\$5,000,000	Phase 2 = BP2 = 24 months: Go/No-Go at end of BP2, and negotiation of BP3: 2 months (M34-M36)
Phase 3: Site Mobilization - 1 Award	BP3	\$10,000,000	\$2,500,000	\$12,500,000	Phase 3 = BP3 = 12 months: Go/No-Go at the end of BP3 (including a Design Review) and negotiation of BP3: 2 months (M47-M48)
Phase 4: Site Commission ing and Technology Fabrication	BP4 *	\$15,000,000	\$3,750,000	\$18,750,000	Phase 4 + Phase 5 = BP4 = 18 months Milestone required to proceed from Phase 4 to Phase 5: completion of

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- 1 Award					commissioning and being ready to start testing with DOE approval at Month 60
Phase 5: Testing and Operations - 1 Award					
Totals		\$35,000,000	\$8,750,000	\$43,750,000	

While Phase 1 is competitive budget period with a firm timeline, starting in Phase 2, TA1 Awardee will be able to move through phases faster than the suggested schedule and budgets, provided they show completion of milestones and deliverables associated with each Phase that meet DOE's approval.

* BP4 allows for a total maximum budget of \$15M over Phases 4 and 5. The amount allocated for each phase is flexible, but the total amount shall not exceed \$15M in federal share.

Contingency

A contingency reserve is required for 10% and it is expected that this contingency reserve is demonstrated at the end of Phase 3, before project advances to site commissioning and technology fabrication. The contingency reserve is in addition to Total Project Costs and cannot count towards cost share, until expended. If expended, the contingency will not result in reimbursement by DOE above the total federal share approved in the award. DOE discourages recipients from reducing scope to comply with the contingency reserve requirement.

Awardees must demonstrate that they can meet the financial needs of their project when submitting a go/no-go continuation application for Phase 4. The continuation application must include documentation showing that the recipient has access to this minimum 10% required contingency. Contingency funds must be: (a) liquid, (b) immediately available, and (c) unrestricted funds dedicated exclusively to the project for the purpose of mitigating project performance baseline risk.

Figure 2: TA1 Suggested at-a-glance schedule.

PHASE 1: Preliminary Tidal/Current Site Research & Development												
BUDGET PERIOD 1, YEAR 1												
MONTH	1	2	3	4	5	6	7	8	9	10	11	12
MILESTONE										FERC DLA or USACE		
MILESTONE										DS		

PHASE 2: Detailed Site Characterization												
BUDGET PERIOD 2, YEAR 2												
MONTH	13	14	15	16	17	18	19	20	21	22	23	24
MILESTONE						FERC FLA						MPD
MILESTONE						EA START						
BUDGET PERIOD 2, YEAR 3												
MONTH	25	26	27	28	29	30	31	32	33	34	35	36
MILESTONE										FERC License	GNG	
MILESTONE										EA NEPA Completed		

PHASE 3: Site mobilization												
BUDGET PERIOD 3, YEAR 4												
MONTH	37	38	39	40	41	42	43	44	45	46	47	48
MILESTONE											GNG	

PHASE 4: Site Commissioning and Technology Fabrication												
BUDGET PERIOD 4, YEAR 5												
MONTH	49	50	51	52	53	54	55	56	57	58	59	60
MILESTONE												C

PHASE 5: Testing and Operations						
BUDGET PERIOD 5, YEAR 6						
MONTH	61	62	63	64	65	66
MILESTONE						

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Acronyms:

FERC DLA or USACE: Submission of FERC draft hydrokinetic pilot project license application²⁴ submission if grid connected site, or a U.S. Army Corp of Engineers (USACE) permit²⁵ if a non-grid connected site.

DS: Down-Select Process/ Submissions of associated deliverables.

FERC FLA: Final License Application (FLA) Start.

EA START: Environmental Assessment (EA) submission milestone – approximately 2-year duration.

FERC License: Receipt of FERC License estimated data milestone.

EA NEPA Completed: EA estimated end date milestones.

MPD: Mid-Phase Deliverables due.

GNG: Go/No-Go Decision Point Process/ Submission of associated deliverables.

C: Commissioned

PHASE 1: PRELIMINARY TIDAL and/or CURRENT SITE R&D (BP1)

Schedule: Total 12 months: 10 months (M1-M10) for technical scope, submission of Down-Select (DS) deliverables at (M10), receipt of DS decision (M11), closeout of award or negotiations of BP2 (M11-12)

PHASE 1: Preliminary Tidal/Current Site Research & Development												
BUDGET PERIOD 1, YEAR 1												
MONTH	1	2	3	4	5	6	7	8	9	10	11	12
MILESTONE										FERC DLA or USACE		
MILESTONE										DS		

Acronyms:

FERC DLA or USACE: Submission of FERC draft hydrokinetic pilot project license application²⁶ submission if grid connected site, or a U.S. Army Corp of Engineers (USACE) permit if a non-grid connected site.

DS: Down-Select Process/ Submissions of associated deliverables.

Budget: Total \$6M: Up to two (2) Awards at \$3M each. Down-Select at the end of Budget Period 1 from 2 awards to 1 award.

²⁴ Federal Energy Regulatory Commission (FERC) draft hydrokinetic pilot project license application

<https://www.usace.army.mil/missions/civil-works/Regulatory-Program-and-permits/Obtain-a-Permit/>

²⁵ USACE permits by district: <https://www.usace.army.mil/missions/civil-works/Regulatory-Program-and-permits/Obtain-a-Permit/>

²⁶ FERC Hydrokinetic Pilot Project Criteria and Draft Application Checklist

https://www.ferc.gov/sites/default/files/2020-04/pilot_project.pdf

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Scope: Site developer²⁷ will fully characterize the site. 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. Additionally, for non-grid connected sites, the site developer must provide proof of consultation with FERC for either a jurisdictional determination²⁸ or Declaratory Order²⁹, also known as the Verdant Exception. If a sovereign Tribal Nation³⁰ is a project partner and the proposed site is on Tribal land, the site developer must show proof of meeting with FERC's Tribal liaison³¹.

Deliverables:

- **Down-Select Report:** Includes all BP1 deliverables noted below, a discussion of BP1 accomplishments, budget, and schedule. The report must provide an updated site description and evaluation of the proposed site's environmental and resource feasibility. Any data gaps and their relevance should be highlighted in order to identify, define and prioritize the requirements for further and more detailed activities in BP2. This includes onshore and offshore biological, physical and geologic attributes; bathymetric, and metocean data with maps and figures; and onshore and offshore operational accessibility and infrastructure concept designs with preliminary architectural or artistic representation drawings.
- **Project Management Plan:** Describes how the site development project will be executed and by whom, how it will be monitored, controlled and reported to the stakeholders including the DOE. It will include information from the Statement of Project Objectives (SOPO³²), risk register as defined below, and

²⁷ Relevant terms: **Site developer** is defined here as an entity who partners with a technology developer. Technology developer licenses or sells the site developer the respective technology. The partnership also includes other relevant site stakeholders to invest in, build and operate the site. If **technology developer is a site owner** - technology developer can develop the site themselves. They borrow funds and own the property and hire a project manager to manage the site development.

²⁸ Federal Energy Regulatory Commission Jurisdictional Determination <https://www.ferc.gov/industries-data/hydropower/administration-and-compliance/jurisdiction-determination>

²⁹ Verdant Power LLC, 111 FERC ¶ 61,024 (2005) and Maine Maritime Academy 130 FERC ¶ 62,234 (2010) [p-12771.pdf \(ferc.gov\)](https://www.ferc.gov/12771.pdf)

³⁰ National Congress of American Indians <https://www.ncai.org/policy-issues/tribal-governance>

³¹ FERC Tribal Relations <https://www.ferc.gov/tribalrelations>

³² For information about the SOPO, see Section IV.D.

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a project schedule. This deliverable will be due in Month 1 (M1), revised in M10 of the project and is expected to be updated on a regular basis throughout the project.

- **Risk Management Plan:** Includes relevant risk and control parameters to project costs, environment, quality, time, and health and safety of people working on project. Use of NREL Technology Risk Management Framework and Risk Register³³ is required. This deliverable will be due in M1 of the project, revised in M10, and is expected to be updated on a regular basis throughout the project.
- **Resource Characterization Plan and end of Phase 1 data collection reporting and analysis:** Must follow the IEC standard TC114 TS62600-201 or TS62600-301³⁴. All data collected for resource or environmental will be Quality Assured (QA) and Quality Controlled (QC) and standardized in a format ready for publication on to the relevant WPTO-funded data repositories (See Appendix D).
- **Preliminary Environmental Management Plan:** Includes schedule for applicable permits and/or FERC license for the proposed site for the length of the full award. The plan must include an adaptive management approach and a list of anticipated requirements by relevant regulatory bodies for environmental data collection and monitoring. All data collection, analysis and reporting should support the draft FERC hydrokinetic pilot project license and or other regulatory applications for site permits.
- **Preliminary Stakeholder Engagement Plan:** Identifies all relevant stakeholders and interested parties, describes their interests and expectations in the project. The plan describes how the site developer will engage (i.e. monthly consultations) and manage the stakeholder expectations, compile issues raised, and incorporate the local and specialist knowledge throughout all the phases of the project. Adequate communication protocols and channels such as project website should be included. Stakeholder mapping will inform a stakeholder matrix for the project.
- **Baseline Social and Economic Impact Assessment:** Identifies and provides 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. Adverse and positive social, and cultural impacts should be identified, and assessed. The social and economic impact assessment will help determine where the business model will focus on the gaps in the economy. (For example, only small fishing vessels in

³³ Marine and Hydrokinetic Technology Development Risk Management Framework David Snowberg and Jochem Weber, 2015 <https://www.nrel.gov/docs/fy15osti/63258.pdf>.

³⁴ NREL's IEC TC114 standards cheat sheet - <https://www.nrel.gov/water/assets/pdfs/iec-tc-114-marine-stds-brochure-june2022.pdf>

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location, business model to cost access to larger vessels or identify opportunities to design out need for large or specialty vessels. Number of jobs and forecasting growth of jobs in sector.)

- **Updated Community Benefits Plan:** If necessary, updated Community Benefits Plan to show how investment in America's workforce and supported labor engagement, advanced diversity, equity, inclusion, and accessibility (DEIA) (See Appendix E and Section IV.D of this FOA), and directed material benefits to local or disadvantaged community.
- **Technology Selection and Qualification Plan:** Details methodology for technology selection including which technologies are feasible for the proposed site. Technology qualification (TQ) to follow IEC standard TC114 62600-4 Part 4: Specification for establishing qualification of new technology or equivalent methodology. TQ is a process of providing 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. The Technology Qualification Plan is the deliverable arising from this process and it will provide all the necessary actions to achieve certification. The plan should also include letters of commitment or intent to use the proposed site from proposed technology developers. As part of this work, the awardee must describe the estimated performance of their technology and the methodologies and tools used to generate the estimates.
- **Preliminary Site Market Transformation Plan:** Includes the project mission, strategy, marketing, research, operations, and business cash flow model for project development; data to cover the initial 6 years but include a forecast out to 10 years after period of performance of active award. The plan also incorporates the NREL System Advisory Model (SAM)³⁵ tool for estimating the value of energy produced (Levelized cost of energy (LCOE)) by the facility considering technical, environmental, geographic, and market factors. The plan will demonstrate baseline potential revenue generation, description of Intellectual Property (IP), funding received to date, and potential additional funding incentives such as Inflation Reduction Act (IRA) tax incentives or other federal funding mechanisms like loans.
- **Health and Safety (H&S) Management Plan:** Includes identification and recording of all project H&S hazards using the NREL risk management register as described under the risk management plan. It is required the site developer appoint a H&S competent coordinator to manage, advise and assist H&S regulations³⁶ for the site ready to be reviewed by DOE H&S operations manager during all phases of the project.

³⁵ **Levelized cost of energy (LCOE)** calculated using the NREL System Advisory Model (SAM) (<https://sam.nrel.gov/>).

³⁶ Occupational Safety and Health Administration (OSHA) <https://www.osha.gov/maritime>

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- **Preliminary Procurement Plan:** Describe what resources outside of the site developer organization will be needed for the development of the project. This involves identification of all procurement needs and what are the expected requirements associated with those needs (i.e., long lead time items) this will also identify any procurement risks critical paths³⁷ that should be recorded in the NREL risk register as described above. A procurement schedule will be included and referenced back in the **site and technology** market transformation plan with associated initial procurement costs.
- **FERC draft Hydrokinetic Pilot Project License and Notice of Intent, or USACE permit.**
- **Contingency Reserve:** Applicants must demonstrate their financial readiness to proceed into Phase 2. This includes demonstrating the ability to provide all required cost share and contingency reserve (see below) prior to entering into Phase 2 of the project. Throughout the award life cycle, DOE will review and monitor the financial capability of the recipient and other key organizations within the project team, such as parent companies or cost share providers. DOE may also conduct pre-award accounting system audits, financial capability reviews, or reviews of financial or compliance audits.

Down-Select Process and Criteria:

WPTO intends to conduct a competitive project review (down-selection process) upon the completion of BP1 technical scope. TA1 awardees will present their projects to WPTO individually (not to other Awardees). Subject matter experts from academia, national laboratories, and industry may be used as reviewers, subject to conflict of interest and non-disclosure considerations. WPTO will down-select to one project to proceed into BP2. If neither awards meet down-select requirements, DOE reserves the right to select no projects for funding beyond BP1.

BP1 (10 months)	BP2 through BP4
Up to 2 Awards (\$3M each)	1 Award

Down-Select Timeline:

At the end of Month 10, BP1 awardees will submit final BP1 deliverables to WPTO Project Officer. These reports will be used by WPTO team to conduct a down-select review against the criteria listed below. At the beginning of Month 11, BP1 awardees will give a presentation to WPTO team.

Down-Select Criteria:

Projects will be evaluated based on the following criteria:

³⁷ See Appendix C – Required Use of American Iron, Steel, Manufactured Products, and Construction Materials. Buy America Requirements for Infrastructure Projects

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1. 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.
2. 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.
3. Demonstration of how Phase 1 work addressed environmental, siting, and other regulatory requirements for the project and soundness of plan for future Phases.
4. Extent to which project demonstrates buy-in from needed stakeholders to ensure success to continue the project to Phase 2 and beyond.
5. 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.
6. 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.
7. 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).
8. 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.
9. Technology baseline LCOE and quality of costs incorporated into the SAM tool will be evaluated.
10. 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. If neither awards meet down-select

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requirements, DOE reserves the right to select no projects for funding beyond BP1.

PHASE 2: DETAILED SITE CHARACTERIZATION (BP2)

Schedule: Total 24 months in BP2: (M13-M36); GNG to and negotiation of BP3: 2 months (M34-M36). Note: Once the continuation application is submitted, a bridge task may be proposed to continue efforts on some non-essential work. Examples of work allowed in the bridge task: completing BP2 activities; preparing for BP3 activities; participation in the go/no-go activities; and negotiating BP3 after a successful Go decision. Note that no BP3 tasks will be allowed to take place in this bridge task.

*If the project is pursuing a FERC license, below is a suggested timeline for Phase 2.

PHASE 2: Detailed Site Characterization												
BUDGET PERIOD 2, YEAR 2												
MONTH	13	14	15	16	17	18	19	20	21	22	23	24
MILESTONE						FERC FLA						MPD
MILESTONE						EA START						
BUDGET PERIOD 2, YEAR 3												
MONTH	25	26	27	28	29	30	31	32	33	34	35	36
MILESTONE										FERC License	GNG	
MILESTONE										EA NEPA Completed		

Acronyms:

FERC FLA: Final License Application (FLA) Start.

EA START: Environmental Assessment (EA) submission milestone.

FERC License: Receipt of FERC License estimated data milestone.

EA NEPA Completed: EA estimated end date milestone.

D: Deliverables due.

GNG: Go/No-Go Process/ Submission of associated deliverables.

Budget: Total \$4M. One (1) award.

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Scope: The site developer tasks in this phase are on the continuation of the design and development efforts for the site as planned in Phase 1. The tidal and/or current site concept moves into the detailed final design ready for implementation or build out after successfully securing either the USACE permit or FERC hydrokinetic pilot project license. A priority of this phase is the attraction and promotion of supply chain industry and strong stakeholder engagement activities such as community consultations. A Site Innovation Hub plan will support all stakeholder activities and be the physical location for tidal and/or current site development progress. At the end of Phase 2 it is expected the site will have completed regulatory licensing and all permits are in place. Concurrently the contractual activities with utilities, or power generation end users, technology developers and supply chain should have preliminary contracts in place. The detailed site design will be reviewed and refined with DOE at the end of Phase 2.

Deliverables:

The following plans are deliverables due in Month 24 (M24) for DOE review, feedback, and approval:

- **Preliminary Infrastructure Plan:** (M24): Must include graphics (architectural preliminary drawings at scale) for the whole energy system build out and connections to the electrical grid if required. The plan to identify site specifications, sizing and capacity planning to inform the onshore and offshore infrastructure design. The plan must include a schedule with build out tasks and milestones. The plan should also include who the key participants will be (roles and responsibilities) and how the monitoring, control and communications of the plan will be executed.
- **Preliminary Technology Manufacturing Plan:** (M24): Includes technology developer / supply chain signed contracts. This plan will inform serial technology production through standardization of components or subsystems and use of manufacturing processes that will leverage or improve the local supply chain capabilities. The manufacturing plan will outline key specifications for the fabrication of the technology, including materials (specifying if sourced domestically). The manufacturing plan will be informed by the procurement plan from Phase 1. Requirements that have long lead times need to be identified in the manufacturing bill of materials list (BOM) as part of the manufacturing plan. The plan needs to include a technology integration description that informs both the infrastructure, connection and Installation, Operations, and Maintenance (IO&M) plans. The plan should also describe the approach for final assembly and outline the factory acceptance testing (FAT) necessary prior to deployment at the tidal and/or current site.
- **Preliminary Connection, IO&M Plan:** (M24) Describes how the technology will be connected to either the local grid network or non-grid end user. A

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graphical task description such as story boarding must be used to inform the IO&M hazard identification and risk assessment (HIRA). The risks identified will be listed in the NREL technical risk register. The installation plan will incorporate transportation, handling and lifting of the tidal and/or current device and subsystems (anchoring/moorings) tasks with incorporated H&S reviews necessary during the full deployment. The full costs of potential weather delays are likely to be difficult to insure, and potential program delays and additional cost contingencies have to be mitigated at the earliest time possible with the DOE. The IO&M plan includes information about the following topics: Roles and Responsibilities; Operational Risk Management; Certification, Training, Competency and Manning; Operational Communications (emergency response) and Meetings; Operational Best Practices; Collision Risk Management; Logistics and Handling; Anchor/Foundation Handling; Project Support Operations; and Change Order Management. The H&S management plan delivered in Phase 1 will inform planning for the Connection IO&M plans.

The following deliverables will be due at the end of Phase 2:

- **Continuation Application:**³⁸ Should include Final Infrastructure, Technology Manufacturing, and Connection, IO&M plans noted above, the FERC license, EA NEPA requirements completed, and a discussion of BP2 accomplishments, budget, and schedule. The report will include finalized Phase 1 deliverables. The Continuation report will include:
- **Final Technology Selection and Qualification Plan to include:**
 - **Technology Design Certification Report:** includes a design basis evaluation and design assessment conformity statements as delivered by a certification body. The design evaluations and assessments includes the following information: Computer Aided Design (CAD) drawings of the tidal and/or current energy converter system; Detailed schematics of the device, incl. list of components, sensors and instrumentation; Design loads estimates; Structural analysis; Performance estimates for the full operational range of the device

³⁸ A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least ninety (90) days before the end of each budget period, the recipient must submit its continuation application, which includes the following information:

- i. A progress report on the project objectives, including significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.
- ii. A detailed budget and supporting justification if there are changes to the negotiated budget, or a budget for the upcoming budget period was not approved at the time of award.
- iii. A description of any planned changes from the SOPO and/or Milestone Summary Table.

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(power curve, e.g. using computational fluid dynamics (CFD) modeling); Velocity duration curve, power duration curve, velocity distribution curves (when appropriate); AEP for the intended deployment site.

- **Site Innovation Hub Plan:** Either a physical center located at the site and/or a virtual (website) for the project site information. The Site Innovation Hub will be publicly available for updates to the site development, will include links for project data, maps and links for public access to the PRIMRE (See Appendix D) data repository. The site will hold stakeholder engagement activity updates and information on events. The Site Innovation Hub will engage local supply chain to advertise products/services for the site. Infographics on community benefits will also be published at or on the Innovation Hub.
- **Updated Community Benefits Plan:** If necessary, updated Community Benefits Plan to show updates to initial plan and demonstrate investment in America's workforce and supported labor engagement, advanced DEIA, and directed material benefits to local or disadvantaged community. (See Appendix E and Section IV.D. for the Community Benefits Plan content requirements.)
- **Final Market and Transformation Plan:** Updated from Phase 1 and including insurance required to cover all activities in Phase 3-5. Update the NREL SAM model for LCOE estimation. Insurance costs should be updated in the cash flow model.
- **Final Stakeholder Engagement and Community Benefit Plans:** Include updates from Phase 1. Includes how the project is supporting and facilitating meaningful community engagement; and advancing DEIA (See Appendix E and Section IV.D. for the Community Benefits Plan content requirements).
- **Final H&S Plan:** Updated from Phase 1.
- **Final Procurement Plan:** Include quotes and contractual engagements with component suppliers, fabricators, and marine operations suppliers. Identification of long lead items that may require budget reallocations between budget periods.
- **Final Environmental Management Plan:** Updated from Phase 1.
- **Final Risk Management and Risk Register Plans:** Updated from Phase 1.

Go/NO-GO Decision Point:

WPTO intends to conduct a Go/No-Go review upon the completion of BP2. For More information about Go/No-Go process, see Section VI.B of this FOA. TA1 Awardee will present the site development activities to WPTO. Subject matter experts from academia, national laboratories, and industry may be used as reviewers, subject to conflict of interest and non-disclosure considerations.

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Go/No-Go Criteria:

1. Extent to which the Phase 2 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 2 deliverables, including but not limited to site information, analysis of social, economic and environmental impacts of the proposed project.
2. 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.
3. Demonstration of how Phase 2 work addressed environmental, siting, and other regulatory requirements for the project and soundness of plan for future Phases.
4. Extent to which project has buy-in from needed stakeholders to ensure success for the project and to continue the project into next Phase. This should include but not be limited to demonstrating future commercial need for the proposed site by confirming interest from technology developers.
5. 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.
6. Sufficiency of project technical and administrative detail in the Continuation Application to assess completeness and quality of data, and site information used in Phase 2 plans that enables the DOE 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.
7. Secured FERC license and EA NEPA requirements.
8. Completeness of the Technology Selection and Qualification Plan and conformity statements as delivered. Quality of the performance estimates (power curves) for the full operational range of the device.
9. The Stakeholder Engagement and Community Benefits Plan will demonstrate how the project supports the BIL objectives through the collection and reporting of measurable metrics (see Appendix E and Section IV.D. for the Community Benefits Plan content requirements).
10. All other plans will demonstrate the completeness and quality of information required to properly assess the project risks and progress the proposed site to Phase 3.

PHASE 3: SITE MOBILIZATION (BP3)

Schedule: Total 12 months BP3: 12 months (M37-M48) GNG and negotiations of BP4: 2 months (47-48). Note: Once the continuation application is submitted, a

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bridge task may be proposed to continue efforts on some non-essential work. Examples of work allowed in the bridge task: completing BP3 activities; preparing for BP4 activities; participation in the go/no-go activities; and negotiating BP4 after a successful Go decision. Note that no BP4 tasks will be allowed to take place in this bridge task.

PHASE 3: Site mobilization												
BUDGET PERIOD 3, YEAR 4												
MONTH	37	38	39	40	41	42	43	44	45	46	47	48
MILESTONE											GNG	

GNG: Go/No-Go Process/ Submission of associated deliverables.

Budget: Total \$10M. One (1) award.

Scope: The activities in this phase focus 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 ready for Phase 4 activities. All onshore and offshore infrastructure installations will be ready for commissioning in Phase 4 when the tidal and/or current technology is integrated and installed at the site. Stakeholder and Community activities and events are important during this Phase for the launch of the tidal and/or current Site Innovation Hub.

Deliverables:

1. **Continuation Application:** will include all Phase 3 deliverables below and a summary of project accomplishments to-date. The continuation application must include documentation showing that the recipient has access to the minimum 10% required contingency of Budget Period 4 (of the \$15M) to ensure the project is ready for Phase 5.
- **Site Mobilization Report:** summarizes all build out activities for the site onshore and offshore as described in the Final Infrastructure plan as delivered in Phase 2. Review of site infrastructure costs to date and any contingencies to delays identified and mitigated. This Phase is 12 months to deliver the build out. The infrastructure plan activities and H&S activities should be reviewed monthly with DOE. The Site Mobilization Report include updates to all Phase 1 and Phase 2 deliverables and specifically:
 - **Reporting of H&S activities:** quality management review of H&S policies, training of staff and emergency procedures completed. H&S audits will be undertaken at the end of Phase 3.
 - **IO&M Standard Operating Procedures (SOPs):** The SOPs as identified in the plans should be completed for the site-specific requirements, roles, and responsibilities for implementation.

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- **Technology Certification Report:** includes manufacturing evaluation and type testing requirements and test plan for the technologies, and a conformity statement delivered by a certification body. The draft test plan will follow the IEC standards TS62600-200 or TS6200-300 power performance testing.
- **Updated Technology Manufacturing Plan:** as informed by the manufacturing evaluation.
- **Full System Technology Integration and Acceptance Testing Plan:** includes an electrical connection study for grid connections and or electrical interfacing with non-grid connection systems.
- **Updated Environmental Management Reporting:** includes publication in Marine Hydro Kinetic-Data Repository (MHKDR).
- **Updated Site Innovation Hub:** Launch of the physical Site Innovation Hub, with stakeholders and community participation. Updates to Site Innovation Hub website and infographics demonstrating key metrics as defined in the BIL community benefits.
- **Updated technology and project baseline LCOE costs** incorporated into the SAM tool.

Go/No-Go Decision Point:

WPTO intends to conduct a Go/No-Go review upon the completion of BP3. For More information about Go/No-Go process, see Section VI.B of this FOA. TA1 Awardee will present the site development activities to WPTO. Subject matter experts from academia, national laboratories, and industry may be used as reviewers, subject to conflict of interest and non-disclosure considerations.

Go/No-Go Criteria:

1. Extent to which the Phase 3 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 3 deliverables, including but not limited to successful buildout or mobilization of site, the onshore and offshore infrastructure development, finalization of the tidal and/or current technology manufacturing and fabrication acceptance tests.
2. Sufficiency of project technical and administrative detail in the Continuation Application to assess completeness and quality of data, and site information used in Phase 3 plans that enables the DOE 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.
3. Discussion and demonstrated understanding of the project risks and the quality of the mitigation strategies to address them. This should include but

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not be limited to labor and community support, opposition or disputes, and timely and appropriate strategies for mitigation and resolution; and any Stakeholder and Community activities and events are important during this Phase for the launch of the tidal and/or current Site Innovation Hub.

4. Extent to which project has buy-in from needed stakeholders to ensure success for the project and to continue the project into next Phase. This should include but not be limited to demonstrating future commercial need for the proposed site.
5. 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.
6. The Stakeholder Engagement and Community Benefits Plan will demonstrate how the project supports the BIL objectives through the collection and reporting of measurable metrics (See Appendix E and Section IV.D for the Community Benefits Plan content requirements).
7. Quality and completeness of Technology Manufacturing Plan including detailed fabrication costs and mitigation of long lead time items.
8. Quality and completeness of Technology Design Certification reporting and conformity statements.
9. Quality and completeness of Connection, IO&M plans and SOPs, Full System Technology Integration and Acceptance Testing Plan and electrical connection study.
10. All other plans will demonstrate the completeness and quality of information required to properly assess the project risks and progress the proposed site to Phase 4.
11. Awardee must demonstrate their financial readiness to proceed into Phase 4.
12. Awardee must demonstrate that it meet the financial needs of their project. The continuation application must include documentation showing that the recipient has access to the minimum 10% required contingency.

PHASE 4: SITE COMMISSIONING AND TECHNOLOGY FABRICATION (BP4)

Schedule: Total 12 months BP4: (49-60)

PHASE 4: Site Commissioning and Technology Fabrication												
	BUDGET PERIOD 4, YEAR 5											
MONTH	49	50	51	52	53	54	55	56	57	58	59	60
MILESTONE												C

Acronym:

C: Commissioned

Budget: Total \$15M between Phase 4 and Phase 5. One (1) award.

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Scope: Tidal and/or current technology fabrication, mobilization, installation, and connection activities will commence in Phase 4. Adherence to BIL manufacturing/fabrication requirements will be validated. Updated SAM model completed. Ongoing stakeholder engagement activities with the end of the phase a completed fully commissioned (M60) site ready for testing and operations in Phase 5.

Deliverables:

- **Site Commissioning Report:** should include all BP4 deliverables noted below, a discussion of BP4 accomplishments, budget, and schedule. The Site Commissioning Report will update reporting on activities as defined in the Stakeholder Engagement Plan and Communities Benefit Plans. The Site Commissioning Report will also include reporting on:
 - **Final Site Infrastructure Report:** provide updates to any modifications or changes from Phase 3 to Phase 4 on the site physical build out and costs. The site developer will provide a commissioning review and continuation to Phase 5 testing and operations of the site with DOE attendance (M60).
- **Technology Certification Report:** to include a description of the deviations between the fabricated technology and the original design from Phase 3. Report on all integration and factory acceptance tests as defined in the Final Technology Manufacturing plan delivered in Phase 3. Include delivery of Final technology power performance test plan as described by the IEC TS62600-200 or TS62600-300 standards.
- **Connection IO&M Report:** summary of connection and installation activities. Review of H&S reporting on all marine operations including HIRA's and review of the risk register and risk mitigations. Lessons learned reporting on all connection, and installation activities.
- **The Final Site Market Transformation Plan:** should comprehensively carry out the planned methodology that delivers revenues as planned in the site business model covering continued operational costs and expected revenues. If grid connected site, associated Power Purchase Agreements (PPAs) will be detailed. If non-grid connected sites other revenue streams will be detailed in this plan. This plan identifies all site continuation risks, and impacts to the business model, along with a description of commercialization and scale up opportunities and challenges in the short and long-term for the site from end of Phase 5 plus 10 years.
- **License and Environmental Report:** status of planned license extension or application for commercial license. Update on environmental monitoring activities, data collected, and reporting to MHKDR.

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Continuation to BP5: Proceeding from Phase 4 (BP4) to Phase 5 (BP5) where technology begins testing and operations, site must reach completion of commissioning and receive DOE approval.

PHASE 5: TESTING AND OPERATIONS (BP5)

Schedule: Total 6 months (M61-M66) to include IEC testing and a minimum of 3 months operations.

PHASE 5: Testing and Operations						
BUDGET PERIOD 5, YEAR 6						
MONTH	61	62	63	64	65	66
MILESTONE						

Budget: Total \$15M between Phase 4 and Phase 5. One (1) award.

Scope: Tidal and/or current turbines ready for power performance testing. Then site developer moves to full operations. In M60 the site developer will submit a Site Test and Operational report that includes all results from testing, operations and technology certification. The technology developer/partner must submit a technology market transformation plan. The project aim is not to decommission the site at the end of Phase 5. The site developer must submit a Site business sustainability plan including an O&M continuation plan in the Site Sustainability Report. The Site business sustainability plan must address site longevity with plan for long-term permitting and licensing.

Deliverables:

- **Site Test and Operational Report:** should include all BP5 deliverables noted below, a discussion of BP5 accomplishments, budget, and schedule. The Site Test and Operation Report will report on final success of the grid or non-grid technology integration, testing and operations at the site. The report will include reporting on the results of the technology testing and data collection (technology performance, efficiency, reliability & availability, environmental performance, etc.). The operational reporting will focus on H&S and O&M activities during Phase 5. Including specific reporting on:
 - **Technology Acoustic Signature Report:** To follow the IEC TC114 TS 62600-40 for acoustic characterization.
 - **Final LCOE:** includes analysis and results.
 - **Final Tidal and/or Current Power Performance Assessment and Test Report:** performed by a third party accredited or IECRE designated provider. Power Performance Assessment Test to follow IEC TC114 62600-200 or TC114 62600 – 300. Summarize and compare the

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technology design parameters and measured parameters, include structural/mechanical loads, current velocity, AEP, and lessons learned from the IEC TS implementation.

- **Type Certification:** The last step in the certification process. Achievement of the type certification provides additional confidence in the installed technology at the site and along with the proven performance of the technology. The type certification certificate is signed and completed by a certification body.
- **Technology Market Transformation Plan:** This plan is focused on the technology developer commercialization plans, where as the site market transformation plan is based on the specific site and commercial sustainability of the site. The Technology Market Transformation plan will target future business growth opportunities in US and internationally, plan for securing follow-on grants, private equity, loans, and or other financial mechanisms, including discussion for the technology developer IP.
- **BIL Compliance Report:** Documents how site developer invested in America's workforce and supported labor engagement, advanced DEIA, and directed material benefits to local or disadvantaged community.
- **Site Sustainability Report:** Includes a targeted array scale up to >5MW for 10 years, estimate the projected revenue, determine ongoing OPEX, estimate total useful life of deployment, secure site access and include:
 - **Permitting and licensing update:**
 - For grid-connected sites that have a FERC hydrokinetic pilot project license, the site developer must provide proof of filing a notice of intent and pre-application document, which will include a process plan and schedule for licensing the commercial build-out³⁹.
 - For non-grid connected sites, consultation with FERC for either a jurisdictional determination⁴⁰ or Declaratory Order⁴¹, also known as the Verdant Exception. If a sovereign Tribal Nation⁴² is a project partner and the proposed site is on Tribal land, the site developer must show proof of meeting with FERC's Tribal liaison⁴³.
 - For non-grid-connected sites that plan to obtain a FERC license, provide proof of submission of FERC draft license application, and associated filings⁴⁴.

³⁹ Federal Energy Regulatory Commission Licensing Hydrokinetic Pilot Projects

https://www.ferc.gov/sites/default/files/2020-04/white_paper.pdf

⁴⁰ FERC Jurisdiction Determination <https://www.ferc.gov/industries-data/hydropower/administration-and-compliance/jurisdiction-determination>

⁴¹ Verdant Power LLC, 111 FERC ¶ 61,024 (2005) and Maine Maritime Academy 130 FERC ¶ 62,234 (2010) [p-12771.pdf \(ferc.gov\)](https://www.ferc.gov/industries-data/hydropower/licensing/licensing-processes/p-12771.pdf)

⁴² Tribal Governance <https://www.ncai.org/policy-issues/tribal-governance>

⁴³ FERC Tribal Relations <https://www.ferc.gov/tribalrelations>

⁴⁴ FERC Licensing Process <https://www.ferc.gov/industries-data/hydropower/licensing/licensing-processes>

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- **Operations and Maintenance Continuation Plan:** will identify changes to the operational structure at the site, updates to emergency procedures, updates to O&M cost estimates over the additional 10 years, specification of subcontracted marine support, and electrical services and associated contractual arrangements, logistics and associated contingency, planning and implementation of preventative maintenance, management of unplanned maintenance, spare parts/components management, communications between operations site, site developer and technology developer, and updates to adequate insurance coverage for the additional 10 years.
- **Environmental Management Continuation Plan:** review, monitoring and auditing of environmental performance over the life of the site to ensure compliance with regulations.
- **Final Social and Economic Impact Assessment:** with estimates for continued future economic benefits and community opportunities as site reaches full commercialization.

TA1 Required Measurement and Data Reporting

A central part of TA1 projects is ensuring the technology system performance is comprehensively characterized during open water testing. Applicants should make the measurements necessary to comply with the IEC and IEEE standards and technical specifications identified in the Technology Qualification and Certification plans must be made during open-water testing. Further, applicants will be required to make all necessary measurements to quantify device performance and to validate design methods and numerical models that were used to design the tidal and/or current system. These measurements will include, but are not limited to, measurements of device motions, mechanical loads, electrical loads, mooring and anchoring loads, environmental measurements, system reliability, loads during installation, loads during operational sea states, and loads during extreme sea states.

In the Technology Qualification and Certification Plan, applicants should present a detailed description of the measurement that will be made during the course of the project. At the completion of the project, these data must be submitted to the appropriate Marine Energy Data Repository (See Appendix D) as agreed to by the applicant during the DOE award negotiations. Note that marine energy technical data should not be confused with the Data Management Plan required in Section IV.D.

Marine energy technical data gathered by TA1 applicants that pertains to the tidal and/or current development site and its environmental characteristics must be made immediately open-sourced.

Topic Area 2: Community-Led Tidal and/or Current Energy Planning and Project Execution

\$10M in Federal Funds, 0% Cost Share requirement for non-profit organizations and institutions of higher education; 20% Cost Share requirement for for-profit organizations.

Up to 2 Awards, 3 Budget Periods.

Down-select from 2 awards to 1 award at the end of Budget Period 1.

TA2 projects must formulate a community-led tidal and/or current energy plan with TRL 6-8 (See Appendix F) for in-water testing and validation, installing up to 500 kW of capacity that meets current local, state, and federal regulatory requirements. TA2 is separated into four (4) development phases:

- PHASE 1: Team formation and desktop analysis for R&D site.
- PHASE 2: Detailed Tidal and/or Current Site R&D.
- PHASE 3: Technology Fabrication, Infrastructure Development, and Site Mobilization.
- PHASE 4: Technology Installation and Operation and Community Energy Transition.

Each phase will have a schedule, budget, scope, set of deliverables, and programmatic objectives and metrics that applicants must deliver to as summarized in the text below. Community team formation and partnership with a Community Representative Project Manager(s)⁴⁵ representing community priorities is a key focus of Phase 1 and will set the foundation for Phases 2-4.

WPTO expects prime applicants to TA2 will be entities representing specific communities, with a Community Representative Project Manager as the primary awardee, facilitator, and manager. A tidal and/or current energy in-water test requires a phased approach that will capture the needs and priorities identified by community members so that the resulting technology design and integration strategy is representative of the community it will serve. In addition to a strong community, Community Representative Project Manager, and technology developer partnership, a tidal and/or current energy test will require resource data collection and site characterization, stakeholder engagement and outreach, identification and leverage of local economies and workforce, community-informed technology development and fabrication, and tidal and/or current device installation.

⁴⁵ Note that technology developers are not equivalent to Community Representative Project Manager(s). It is strongly discouraged that technology developers apply in as the Community Representative Project Manager(s) (See Section I.C. Application Specifically Not of Interest).

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WPTO prefers applicants to pursue projects that are not grid connected, or in areas lacking access to interconnected electrical grids, such as national or regional transmission grids, and where the cost of electricity is significant. This is especially relevant to permitting timelines and award budgets, where projects meeting the following three conditions: (1) technology is experimental in design (2) operated for a short period of time (typically less than 18 months); and (3) have no effect on interstate commerce (not connected to the grid) - the project may be eligible for a FERC Declaratory Order, known as the "Verdant Exception"⁴⁶ A "Verdant Exception" allows for testing under a USACE permit (general or nationwide permit depending on the USACE district) and other relevant state and local permits, significantly speeding project delivery to in-water testing and validation. However, pursuing grid connected projects are allowable and open to applicants prepared to deliver these projects while meeting FOA requirements, timelines, and budgets.

TA2 goals

- Understand the design constraints and opportunities to be considered with smaller, community-led tidal and/or river current demonstrations up to 500 kW.
- Identify and design a tidal and/or river current project to minimize the cost drivers of tidal and/or river current demonstrations up to 500kW, including supply chain, capacity to operate and maintain a tidal and/or river current system, and integration with other renewables, storage, or a local grid.
- Optimize the partnership and engagement model for community-driven tidal and/or current demonstration projects, which encompasses community representatives, project developers, technology developers, utility representatives, state, local, or Tribal government, and permitting bodies, among others.
- Design and develop one community-scale tidal and/or current project in the US, which creates a template or replicable guide for other communities across the US and territories.
- Advance and optimize community-scale tidal and/or current energy devices up to 500kW.

TA2 Applications Requirements:

While there will be opportunity within Budget Period 1 to focus on project team formation and education, it is expected that the Application proposal team that has already been established prior to Application submission has the community engagement and support needed to undertake a tidal and/or current energy device in-water testing over the period indicated in the topic area description.

⁴⁶ Verdant Power, 111 FERC ¶ 61,024, clarified at, 112 FERC ¶ 61,143 (2005)

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TA2 Applications should follow below outline for a Community-led Tidal and/or Current Development Plan and Technology Implementation Plan (See Section IV.D, TA2 Technical Volume Content Requirements, for additional information):

Community-led Tidal and/or Current Development Plan

The community and project objectives should be clearly defined and will inform the decision to progress with the development of the proposed tidal and/or current energy site. The development plan should include:

- Identification of the community-led partnership including all integral team members, making a clear distinction between the Community Representative Project Manager(s) and the technology developer. Note that these roles represent different needs and thus cannot be performed by the same entity.
- A plan for developing and sustaining partnerships with local, union, regulatory, and state stakeholders and Tribal entities to continuously include input which will inform the in-water testing and validation effort, as well as ancillary and embedded activities, e.g., education and outreach, training, and workforce development, among others.
- Demonstration of benefits to community stakeholders, project consortium, and technology developers.⁴⁷
- Outlined process for community representation and collaboration as part of the project development team. Clearly link actions with community benefits.
- Identification within the technology development process of areas of expected community input and decision making, including how the community will inform technology design, siting, technology maintenance, technology operations, equipment operation, and decommissioning.
- Documentation for how the community is drawing resources to participate and identify where additional community capacity is needed and how that capacity will be addressed throughout the project.
- A climate resilience strategy that accounts for climate impacts and extreme weather patterns such as high winds (tornadoes and hurricanes), heat and freezing temperatures, drought, wildfire, and floods, and incorporates resilience or adaptation plans⁴⁸. The strategy should also illustrate how this project informs community resilience

⁴⁷ Community benefits plans are focused on four BIL policy priorities, investing in America's workforce, engaging communities and labor; advancing diversity, equity, inclusion and accessibility; and implementing Justice 40 policies. The community benefits plan will incorporate the BIL compliance metrics.

⁴⁸ Existing climate resilience strategies can be leveraged and adapted for the purposes of the Community-led Tidal/Current Development Plan.

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goals, with specific attention applied to energy resilience in a community.

- Letters of Intent, Letters of Support, and Letters of Commitment from a wide variety of stakeholders. At a minimum:
 - Letters of support from: community representatives - regional/state/local/coastal and Tribal communities - with an emphasis on groups in the community that actively make a living from the water body or site under consideration.
 - Letters of Support from: state and local entities, local utility/utilities or relevant tidal and/or current power end users.
 - Letters of Commitment or Intent from: supply chain representatives, supporting contractual team members, labor groups including unions, and Technology developers who are interested in installing and operating at the proposed site.
 - See Section IV.D.iv.

Technology Implementation Plan: Detail a plan for a tidal and/or current energy demonstration in state waters⁴⁹ within 5 years that would install up to 500 kW of tidal and/or current installation(s).

- Include in the implementation plan a description of the proposed testing site in respect to state policy, federal permitting, state permitting, local permitting, environmental monitoring, and resource characterization status (with associated schedules), goals and requirements.
- Include in the implementation plan a description of the necessary infrastructure proposed for the site, both onshore and offshore infrastructure requirements.
- Applicant must perform due diligence to ensure the proposed site does not have an existing FERC preliminary permit for an entity not listed on project partner list.
- Describe how the project will operate the turbines for a minimum of 3 months and maximum of 18 months.
- Describe how the project will perform environmental monitoring as prescribed by regulators to ensure understanding of the potential impact of the tidal and/or current energy in water testing and validation.

⁴⁹ Defined in [Submerged Lands Act](#), and [BOEM/FERC Guidelines on Regulation of Marine Hydrokinetic Energy Projects on the OCS](#)

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Table 4: Topic Area 2, Community-Led Tidal and/or current R&D – Budget by Phase, Administrative Milestones, and Schedule.

Phase #: Award #	BP#	Federal Share	Cost Share	Total Project Costs (sum of Federal Share and Cost Share)	Anticipated Schedule and Administrative Milestones
Phase 1: Team Formation and Desktop Analysis for R&D Site - 2 Awards	BP1	\$500,000	\$0	\$500,000	Phase 1= BP1 = 12 months: BP1 Technical Scope: 10 months (M1-M10), Down-Select (DS) 2 Awards to 1 at the end of BP1: 2 months (M11-M12) includes negotiation of, and administrative time needed to closeout BP1 or proceed to BP2
		\$500,000	\$0	\$500,000	
Phase 2: Detailed Tidal and/or Current Site Research & Development – 1 Award	BP2*	\$4,000,000	\$0	\$4,000,000	Phase 2 = First 24 months of BP2: 100% Critical Design Review (CDR) at end of Phase2: 1 month (M35-M36) between phases
Phase 3: Technology Fabrication, Infrastructure Development, and Site Mobilization - 1 Award		\$3,000,000	\$0	\$3,000,000	Phase 3 = Last 12 months of BP2: Go/No-Go at the end of BP2 and negotiation of BP3: 2 months (M47-M48)
Phase 4: Technology Installation and Operation and Community Energy Transition	BP3	\$2,000,000	\$0	\$2,000,000	Phase 4 = 12 months Site operations start (M49) and decommissioning of site *(M 58-60)

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subject line.

- 1 Award					
Totals		\$10,000,000		\$10,000,000	

*BP2 allows for a total maximum budget of \$7M over Phases 2 and 3. The amount allocated for each phase is flexible, but the total amount shall not exceed \$7M.

** Decommissioning should be accounted for in the budgeting in BP3. If the community would like to extend the period of in-water testing through the permit allowance, that is allowable, and a no cost time extension can be executed, but the budget needs to be accounted for in BP3 planning.

Figure 3: TA2 suggested at-a-glance timeline.

PHASE 1: TEAM FORMATION AND DESKTOP ANALYSIS FOR R&D SITE												
YEAR	YEAR 1											
MONTH	1	2	3	4	5	6	7	8	9	10	11	12
MILESTONE											DOWN-SELECT	
BUDGET PERIOD	1											

PHASE 2: DETAILED TIDAL/CURRENT SITE RESEARCH & DEVELOPMENT												
YEAR	YEAR 2											
MONTH	13	14	15	16	17	18	19	20	21	22	23	24
MILESTONE				CRITICAL DESIGN REVIEW 50%								
MILESTONE				PERMIT START								
MILESTONE				ENVIRONMENTAL ASSESSMENT START								
BUDGET PERIOD	2											

PHASE 2: DETAILED TIDAL/CURRENT SITE RESEARCH & DEVELOPMENT												
YEAR	YEAR 3											
MONTH	25	26	27	28	29	30	31	32	33	34	35	36
MILESTONE												CRITICAL DESIGN REVIEW 100%
MILESTONE	PERMIT END											
MILESTONE	ENVIRONMENTAL ASSESSMENT END											
BUDGET PERIOD	2											

PHASE 3: TECHNOLOGY FABRICATION, INFRASTRUCTURE DEVELOPMENT, AND SITE MOBILIZATION												
YEAR	YEAR 4											
MONTH	37	38	39	40	41	42	43	44	45	46	47	48
MILESTONE											GO/NO-GO	
BUDGET PERIOD	2											

PHASE 4: TECHNOLOGY INSTALLATION, OPERATION, AND COMMUNITY ENERGY TRANSITION												
	YEAR 5											
MONTH	49	50	51	52	53	54	55	56	57	58	59	60
MILESTONE		DEVICE OPERATION START									DECOMMISSIONING	
BUDGET PERIOD	3											

While Phase 1 is a competitive budget period with a firm timeline, starting in Phase 2, Awardees will be able to move through phases faster than the suggested schedule and budget, provided they show completion of milestones and deliverables associated with each Phase that meet DOE's approval.

PHASE 1: TEAM FORMATION AND DESKTOP ANALYSIS FOR R&D SITE

Schedule: Total 12 months (M1-M12); 10 Months for team formation and desktop analysis (M1-M10), 2 months for down-select (M11-M12).

PHASE 1: TEAM FORMATION AND DESKTOP ANALYSIS FOR R&D SITE												
YEAR	YEAR 1											
MONTH	1	2	3	4	5	6	7	8	9	10	11	12
MILESTONE											DOWN-SELECT	
BUDGET PERIOD	1											

Budget: Total \$1M, \$500k for each of up to 2 awardees.

Scope: Team formation and community education. Desktop data collection and analysis, planning for resource, infrastructure requirements, and community engagement plans. Begin technology design vetting and selection process with integrated community role. Consultation with relevant regulatory agencies for a non-grid connected test.

The community must provide proof of consultation with FERC for either a jurisdictional determination⁵⁰ or Declaratory Order⁵¹, also known as the “Verdant Exception”. If the community is a sovereign Tribal Nation⁵², and the proposed site is on Tribal land, the community must show proof of meeting with FERC’s Tribal liaison⁵³.

Deliverables:

- **Community-led Tidal and/or Current Development Plan:** This should be the guiding document to understand the community role and effective decision points in the project, as well as the primary document outlining integration of a community-led process with standard models of project delivery and technology development. The community and project objectives should be clearly defined and will inform the decision to progress with the development of the proposed tidal and/or current energy in-water testing and validation effort. The development plan should include:
 - Demonstration of benefits to community stakeholders, project consortium, and technology developers.⁵⁴
 - Outlined process for community representation and collaboration as part of the project development team. Clearly link actions with community benefits.
 - Identification within the technology development process of areas of expected community input and decision making, including how the community will inform technology design, siting, installation, maintenance, equipment operation, and decommissioning.
 - Documentation for how the community is drawing resources to participate and identify where additional community capacity is

⁵⁰ Federal Energy Regulatory Commission Jurisdictional Determination <https://www.ferc.gov/industries-data/hydropower/administration-and-compliance/jurisdiction-determination>

⁵¹ Verdant Power LLC, 111 FERC ¶ 61,024 (2005) and Maine Maritime Academy 130 FERC ¶ 62,234 (2010) [p-12771.pdf \(ferc.gov\)](https://www.ferc.gov/12771.pdf)

⁵² Tribal Governance <https://www.ncai.org/policy-issues/tribal-governance>

⁵³ FERC Tribal Relations <https://www.ferc.gov/tribalrelations>

⁵⁴ Community benefits plans are focused on four DOE policy priorities, investing in America’s workforce, engaging communities and labor; advancing diversity, equity, inclusion and accessibility; and implementing Justice40 policies. The community benefits plan will incorporate compliance metrics.

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- needed and how that capacity will be addressed throughout the project.
- A climate resilience strategy that accounts for climate impacts and extreme weather patterns such as high winds (tornadoes and hurricanes), heat and freezing temperatures, drought, wildfire, and floods, and incorporates resilience or adaptation plans⁵⁵. The strategy should also illustrate how this project informs community resilience goals, with specific attention applied to energy resilience in a community.
 - **Technology Selection, Evaluation, and Engineering design:** WPTO expects project and design delivery will be unique to any specific community and project team, but generally expects and advises a linear set of progress points for review of analysis, synthesis, and technology evaluation and selection. This specific deliverable focuses on the engineering design of a tidal and/or river current device, where documentation such as design documents, digital representations, simulations, modeling, or other representations accurately convey a technology and its expected performance. In addition, development of functional requirements, innovation methods, or other important analyses and criteria should be included. This is also advised as a formal community engagement between technology developer and the community as a project review point. Integration of engineering design with other services, analyses, and infrastructure matters is also encouraged.
 - The Technology selection, evaluation, and engineering design should focus on the project development process. Data, information, and related documents will cover (1) technology, (2) performance projections, (3) engineering, design, supply chain, and procurement (4) cost estimates, (5) execution schedules, and (6) marine operations and decommissioning.
 - Documentation of permitting progress and environmental monitoring
 - Describe what resources outside of the community will be needed for the development of the project.
 - **Project Management Plan:** describes how the site in-water testing and validation project will be executed and by whom, how it will be monitored, controlled and reported to the stakeholders including the DOE. It will include the Statement of Project Objectives (SOPO⁵⁶), risk register as defined below, and project schedule. This updated deliverable from the application submission will be due in month 1 of the project and is expected to be

⁵⁵ Existing climate resilience strategies can be leveraged and adapted for the purposes of the Community-led Tidal/Current Development Plan.

⁵⁶ For information about the SOPO, see Section IV.D. of this FOA.

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updated on a regular basis. A risk register, including mitigation plans, and change management tracker are required components of the Project Management Plan.

- Risk Register and mitigation strategy to include the following risks at minimum:
 - Community at proposed site;
 - Project development at site;
 - Site accessibility, feasibility, sustainability;
 - Health and safety; and
 - Environmental risk.
- **Draft Data Collection, Accessibility, and Transparency Plan:** provide marine energy technical data that pertains to proposed test sites and their environmental characteristics and how data will be shared with community. Consult with DOE and supporting national laboratories around technical assistance for data collection and instrumentation (See Section I.B.i National Laboratory Technical Assistance).
- **Draft Site Characterization Plan:** Identifies publicly available data and data gaps for the following topics in the proposed project area:
 - Geology;
 - Water velocity;
 - Geomorphology;
 - Shipping routes;
 - Commercial vessel activity;
 - Critical habitat areas;
 - Rare, threatened and endangered species;
 - Commercial fisheries; and
 - Subsistence fishing

Down-Select Review and Criteria:

WPTO intends to conduct a competitive down-select review (down-selection process) upon the completion of BP1. TA2 awardees will present their projects to WPTO individually (not to other Awardees). Subject matter experts from community-based organizations, academia, national laboratories, and industry may be used as reviewers, subject to conflict of interest and non-disclosure considerations. WPTO will down-select to one project to proceed into BP2.

BP1 (10 months)

Up to 2 Awards (\$500k each)

BP2 through BP3

1 Award

Down-Select Timeline:

At the end of Month 10 (M10), BP1 awardees will submit final BP1 deliverables to the WPTO Project Officer. These reports will be used by WPTO team to

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conduct a project review against the criteria listed below. At the beginning of M11, BP1 awardees will give a presentation addressing the criteria listed below to the WPTO team as part of their competitive project review.

Down-Select Criteria:

Projects will be evaluated based on the following criteria:

1. Completeness and quality of the Community-led Tidal and/or Current Development Plan. This should include but not be limited to a strong proposal for a community-led partnership, proposed costs, social, environmental impacts, and demonstrated understanding of the project risks as well as quality mitigation strategies. In addition, a complete and beneficial description for how the community partnership model will inform and integrate with the project delivery and technology development process.
2. Demonstration of how Phase 1 work addressed environmental, siting, permitting and other regulatory requirements, community and data collection performance and progress towards stated project objectives and soundness of plan for future Phases.
3. The Community Benefits Plan will demonstrate how the project supports the BIL objectives through the collection and reporting of measurable metrics (see Appendix E and Section IV.D.xvi. for the Community Benefits Plan content requirements).
4. Demonstrate the completeness and quality of information in Down-Select Application required to properly assess the project risks, accomplishments, and potential for future development.
5. A 20% preliminary design review that includes siting and environmental constraints to support proposed technology test. In addition, the extent to which technical documentation and/or results provides evidence of a potentially successful and replicable community-scale tidal and/or river current project in the US and territories.

Upon completion of this competitive project review (down-selection process), WPTO will select which TA2 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.

PHASE 2: DETAILED TIDAL and/or CURRENT SITE RESEARCH & DEVELOPMENT

Schedule: Total 24 months (M13-M36); 3 Months to organize and prepare for permits, NEPA review, and a minimum 50% Critical Design Review (CDR) for use in permitting documents (M13-M15), 12 months for permitting, NEPA review, and environmental monitoring (M16-M29), 6 months for 100% CDR completion incorporating environmental assessment (M30-M36).

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PHASE 2: DETAILED TIDAL/CURRENT SITE RESEARCH & DEVELOPMENT												
YEAR	YEAR 2											
MONTH	13	14	15	16	17	18	19	20	21	22	23	24
				CRITICAL DESIGN REVIEW 50%								
MILESTONE				PERMIT START								
MILESTONE				ENVIRONMENTAL ASSESSMENT START								
BUDGET PERIOD	2											

PHASE 2: DETAILED TIDAL/CURRENT SITE RESEARCH & DEVELOPMENT												
YEAR	YEAR 3											
MONTH	25	26	27	28	29	30	31	32	33	34	35	36
												CRITICAL DESIGN REVIEW 100%
MILESTONE												
MILESTONE	PERMIT END											
MILESTONE	ENVIRONMENTAL ASSESSMENT END											
BUDGET PERIOD	2											

Budget: Total \$4M. One (1) award.

Scope: Full characterization of the tidal and/or current site, physical and desktop data collection, site permitting and environmental monitoring data collection. Complete DOE NEPA review. Engagement and educational opportunities for the local workforce pipeline and potential operators of the proposed system. 50% and 100% critical design reviews.

Deliverables:

- Updates or planned adaptations, as needed, to:
 - The Community-led Tidal and/or Current Energy Demonstration Plan to specifically highlight modifications to the demonstration of benefits to community stakeholders, project consortium, and technology developers,
 - the Technology Selection, Evaluation, and Engineering Design to specifically highlight modifications to the procurement and supply chain planning, and
 - the Project Management Plan.
- **Updated Data Collection, Accessibility, and Transparency Plan:** provide updated marine energy technical data that pertains to proposed test sites and their environmental characteristics and how data will be shared with community.
- **Final Site Characterization Plan:** provide desktop and in-water collected data about the following:
 - Geology;
 - Water velocity;
 - Geomorphology;
 - Shipping routes;

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- Commercial vessel activity;
 - Critical habitat areas;
 - Rare, threatened and endangered species;
 - Commercial fisheries; and
 - Subsistence fishing
- **Updated Technology Selection, Evaluation, and Engineering Design (50%):**
Aligned with 50% Critical Design Review (CDR)
- **Final Technology Selection, Evaluation, and Engineering Design (100%):**
Aligned with 100% Critical Design Review (CDR)

PHASE 3: TECHNOLOGY FABRICATION, INFRASTRUCTURE DEVELOPMENT, AND SITE MOBILIZATION

Schedule: Total 12 months (M37-M48); 10 months for technology fabrication, infrastructure development, and site mobilization (M37-M46), 2 months for Go/No-go review (M47-M48).

PHASE 3: TECHNOLOGY FABRICATION, INFRASTRUCTURE DEVELOPMENT, AND SITE MOBILIZATION												
YEAR	YEAR 4											
MONTH	37	38	39	40	41	42	43	44	45	46	47	48
MILESTONE											GO/NO-GO	
BUDGET PERIOD	2											

Budget: Total \$3M. One (1) award.

Scope: Component and full system testing and validation, final tidal and/or current device assembly, and shipment to site. Infrastructure siting and preparation, including cable-laying if applicable, and technology integration planning. Community education and engagement opportunities.

Deliverables:

- **Marine Operations Plan⁵⁷:** Includes information about the following topics: Introduction; Abbreviations and Definitions; Roles and Responsibilities; Operational Risk Management; Certification, Training, Competency and Manning; Operational Communications and Meetings; Operational Best Practices; Collision Risk Management; Logistics and Cargo Handling; Anchor Handling; Project Support Operations; Emergencies; and Change Order Management.
- **Updated Data Collection, Accessibility, and Transparency Plan:** Provide updated marine energy technical data that pertains to proposed test sites and their environmental characteristics and how data will be shared with community.

⁵⁷ An example for a marine operations plan can be found here: <http://omtc.ua/images/courses/dp/GOMO.pdf>

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- **Draft Installation, Operations, Maintenance, and Decommissioning (IOM&D) Standard Operating Procedures (SOPs):** The SOPs as identified in the plans should be completed for the site-specific requirements, roles and responsibilities for implementation.
- **Updated Tidal and/or Current Energy Demonstration Implementation Plan**
 - Detail a plan for a tidal and/or current energy demonstration in state waters⁵⁸ within 5 years that would install up to 500 kW of tidal and/or current installation(s).

PHASE 4: TECHNOLOGY INSTALLATION, OPERATION, AND COMMUNITY ENERGY TRANSITION

Schedule: Total 12 months (M49-M60); 2 months to get technology operating in water (M49-M50), 3-8 months for in-water operation, data capture, and analysis (M51-M58), 2 months for site decommissioning (M59-60).

PHASE 4: TECHNOLOGY INSTALLATION, OPERATION, AND COMMUNITY ENERGY TRANSITION											
YEAR 5											
MONTH	49	50	51	52	53	54	55	56	57	58	59 60
MILESTONE		DEVICE OPERATION START									DECOMMISSIONING
BUDGET PERIOD	3										

Budget: Total \$2M. One (1) award. Decommissioning should be accounted for in the budgeting in BP3. If the community would like to extend the period of in-water testing through the permit allowance, that is allowable, and a no cost time extension can be executed, but the budget needs to be accounted for in BP3 planning.

Scope: Hold community energy transition and future planning/prioritization discussions. Tidal and/or current device mobilization, installation, and connection activities completed. Power performance testing and environmental monitoring completed. Decommissioning activities commenced and completed. Community education and engagement opportunities communicated as part of understanding long-term project equity for the community and relevant stakeholders.

Deliverables:

- **Final Installation, Operations, Management, and Decommissioning (IOM&D) Standard Operating Procedures (SOPs):** The SOPs as identified in the plans should be completed for the site-specific requirements, roles and responsibilities for implementation.

⁵⁸ Defined in [Submerged Lands Act](#), and [BOEM/FERC Guidelines on Regulation of Marine Hydrokinetic Energy Projects on the OCS](#)

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- **Final Data Collection, Accessibility, and Transparency Plan:** List marine energy technical data gathered to include formats, resolution, and accessibility which enables easy access and consumption by potential end users.
- **Final Tidal and/or Current Energy Demonstration Implementation Plan:** Detail a plan for a tidal and/or current energy demonstration in state waters⁵⁹ within 5 years that would install up to 500kW of tidal and/or current installation(s).
- **Final Project Synthesis Workshop and Written Summary:** host a project synthesis workshop aligned with the decommissioning phase of the in-water testing and validation to include the project team, technology developer, national laboratory staff that supported the project, and DOE technology managers. Develop a written report summarizing lessons learned and follow-on activities.

TA2 Data Access, Transparency, and Collection

Ensuring robust data collection, acquisition, transparency, accessibility, and quality process is vital to guaranteeing long-term equity and value for community-led tidal and/or river current projects. Any award made under TA2 should assume all technical, economic and community-specific data will be effectively owned by the prime applicant and available for a community's long-term planning. Strong preference will be given to applicants where real-time data access and availability are connected to the community benefits plan as well as long-term community data needs. Applicants are encouraged to address how data sharing is important to project success and community priorities either in the Community-led Tidal and/or Current Development Plan or the Data Access, Transparency, and Collection Plan.

The Community Representative Project Manager must have real-time access to project data, and steps should be taken to ensure appropriate formats and translation as necessary. To aid local decision-making and equitable outcomes, especially important for disadvantaged communities, prime applicants will need assistance from technology developers in developing capacity to leverage and access data. Where data aids in community decision-making or planning, data should be shareable among community leaders and representatives, residents, other community members, and other potential stakeholders. A key outcome will be leveraging the integrated community/technology developer project team to perform analysis using the local data to support near-term and long-term energy transitions, economic

⁵⁹ Defined in [Submerged Lands Act](#), and [BOEM/FERC Guidelines on Regulation of Marine Hydrokinetic Energy Projects on the OCS](#)

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development, and local and state governance. Some suggested efforts to deliver these outcomes are:

- Open data formats;
- Data protection for communities;
- Cultural/heritage perspectives;
- Data ownership and intellectual property rights identification;
- Leveraging technical assistance (and WPTO services) for statistical, data science, and other evaluative services where appropriate; and
- Institutional capacity and partnership to expand engagement and address data limitations.

Data also serves important purposes in advancing the programmatic mission of the WPTO as well as the BIL. A key endeavor is to improve technical assistance delivery and the quality of research and development to broadly advance the marine energy industry. Understanding and validating processes of strategic energy planning and community prioritization of their energy transition and how DOE and WPTO evaluate vital opportunities for R&D and future testing and validation efforts will be critical to delivering a pipeline of future opportunities. It is vital for government services and delivery to adequately analyze and synthesize project data to help drive innovation and commercialization of technologies.

TA2 projects will need to ensure technology system performance is comprehensively characterized during open water testing. Further, applicants will be required to make all necessary measurements to quantify device performance and to validate design methods and numerical models that were used in system design. These measurements will include, but are not limited to, measurements of device motions, mechanical loads, electrical loads, mooring and anchoring loads, environmental measurements, system reliability, loads during installation, loads during operational sea states, and loads during extreme sea states. In their FOA application, applicants should present a detailed data collection plan including a description of the measurements as well as how these measurements will be used to further the technology development. Included in this plan should be a description of any redundant measurements or how measurements will complement each other.

Additionally, the data and measurement plan should also include the ability to adequately measure system level performance such as extracted power, system conversion efficiency, reliability, etc. At the completion of the project, these data must be submitted to the appropriate PRIMRE knowledge hub (See Appendix D) as agreed to by the applicant during the DOE award negotiations. Note that marine energy technical data should not be confused with the Data Management Plan required in Section VI.B. Awardees will be encouraged to

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work with National Laboratories (See section “National Laboratory Technical Assistance for TA1 and TA2” below) and work with TA team on data processing, quality assurance, quality control, and archiving, as described in the National Laboratory Support / Partnership section. Awardees are also encouraged to work with National Laboratories (See section “National Laboratory Technical Assistance” below) on leveraging community technical assistance as it relates to data and community energy planning.

All work for projects selected under this FOA must be performed in the U.S. See Section IV.J. and Appendix B.

i. National Laboratory Technical Assistance for TA1 and TA2

Collaboration with National Renewable Energy Laboratory (NREL), Pacific Northwest National Laboratory (PNNL), and Sandia National Laboratories (SNL), is encouraged. DOE has allocated funding outside of this FOA for NREL, PNNL, and SNL to support FOA applicants. Accordingly, applicants do not need to budget to pay for this support out of their project budget.

Applicants are not permitted to communicate with NREL, PNNL, and SNL staff about laboratory support on this FOA before FOA awards are made. Instead, applicants should identify the areas in which they would benefit from NREL, PNNL, and SNL support in their application. The types of support that are available is described below. For awarded projects, the details and scope of the support that will be provided will be finalized during award negotiations between the applicant, DOE, and the institution/s providing support.

Questions regarding NREL, PNNL, or SNL should be submitted to the FOA mailbox. It is important to note that the institutions that will provide the requested support may be different from what Applicants request, depending on capabilities, staff availability, and facility availability. Applicants are strongly encouraged to leverage the capabilities of NREL, PNNL, and SNL in the following areas:

- **Measurement Systems, Instrumentation, Data Acquisition and Control Systems** – NREL and SNL can support deployments to ensure that the instrumentation, data acquisition, and control systems will operate robustly and accurately during a deployment. This can include support on real-time control, data acquisition systems (e.g., Modular Ocean Data Acquisition: MODAQ), instrumentation, mechanical load measurements (e.g., fiber optic strain, acceleration and pressure measurements) and integration thereof.
- **Data Quality Assurance/Quality Control (QA/QC), analysis conforming to IEC Technical Specifications and data format standardization for PRIMRE Knowledge Hub** –SNL, PNNL, and NREL can provide data QA/QC and metric

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analysis using Marine and Hydrokinetic Toolkit (MHKiT) and custom code request for data analysis, including analyses that follow the IEC Technical Specifications, e.g. – 200, -201, -300, -301. PNNL, NREL, and SNL can also process data to standardized format using the ME Data Pipeline for upload to the appropriate PRIMRE Knowledge Hub.

- **Accredited Measurements** – Applicants are encouraged to work with NREL to leverage NREL’s International Organization for Standardization (ISO) /IEC 17025 accreditation⁶⁰ to perform accredited testing to IEC TC 114 standards. Accredited test results can be used for device certification and to demonstrate system viability to project financiers and insurance companies. The ISO/IEC 17025 accreditation confirms that NREL has the quality assurance procedures in place and the expertise to provide high-quality testing more broadly. This is essential for the industry to attract private funding in the future.
- **Environmental Monitoring** – PNNL’s expertise in environmental monitoring around marine energy converters can be leveraged for technical assistance and monitoring support for measurements and assessment of several device interactions including underwater noise to the IEC TC 114 -40 technical specification, collision risk for marine fauna including fish, seabirds and marine mammals, electromagnetic fields, and changes in pelagic and benthic habitats defined in the OES-E 2020 State of the Science Report⁶¹.
- **Community Technical Assistance** – Technical assistance can include direct advice on issues or goals, tools and maps, and training. This assistance can offer support for addressing strategic energy planning, policy, financing, data management, and technologies to help implement successful renewable energy projects.

In addition, applicants can request R&D support from NREL, PNNL, and SNL in areas where each institution has expertise, as identified on the institutions’ websites:

- NREL: <https://www.nrel.gov/water/marine-energy.html>, https://openei.org/wiki/PRIMRE/Telesto/National_Labs_Testing_Capabilities, <https://www.nrel.gov/state-local-tribal/>
- PNNL: <https://www.pnnl.gov/marine-energy>, <https://www.pnnl.gov/marine-and-coastal-research-laboratory>

⁶⁰ NREL is accredited by the American Association for Laboratory Accreditation to International Organization for Standardization (ISO) [17025 standards](#) for power performance, power quality, and mechanical loads testing of wave and tidal technologies following International Electrotechnical Commission (IEC) standards for marine energy.

⁶¹ Copping, A.E. and Hemery, L.G., editors. 2020. OES-Environmental 2020 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World. Report for Ocean Energy Systems (OES). DOI: 10.2172/1632878.

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- SNL: <https://energy.sandia.gov/programs/renewable-energy/water-power/>

Other areas in which applicants are encouraged to work with NREL, PNNL, and SNL include:

- Tidal and/or current resource modeling;
- Tidal and/or current measurements and site characterization;
- Scouring, erosion, sedimentation analysis and measurements;
- Support designing and fabricating to IEC Technical Specifications;
- Geotechnical laboratory testing, measurements and modeling;
- Mooring system design and analysis;
- Component and material reliability analysis and testing;
- Development and implementation of risk management strategy;
- Open water and laboratory testing support;
- System performance and loads modeling;
- Regulatory support;
- Community strategic energy planning;
- Extreme event modeling;
- Structural design support;
- Low- and high- fidelity modeling, such as BEM, computational fluid dynamics (CFD) and finite element analysis (FEA);
- System performance modeling;
- System design optimization;
- LCOE modeling and analysis;
- Control systems engineering consultation; and
- IOM&D planning and execution.

NREL, PNNL, and SNL support cannot be leveraged to procure or fabricate the tidal and/or current energy system, system components (e.g., moorings and anchors), or to pay for IOM&D activities. NREL, PNNL, and SNL support can be leveraged to procure, fabricate, and deploy data acquisition systems, testing instrumentation, and environmental monitoring systems.

If Applicants would like to request technical assistance from a different DOE lab, this request may be accommodated during Award negotiations depending on national laboratory capabilities, staff availability, and facility availability.

ii. Teaming Partner List

DOE is compiling a “Teaming Partner List” to facilitate the formation of new project teams for this FOA. The Teaming Partner List allows organizations who

may wish to participate on an application to express their interest to other applicants and to explore potential partnerships.

Updates to the Teaming Partner List will be available in the EERE eXCHANGE website. The Teaming Partner List will be regularly updated to reflect new teaming partners who provide their organization's information.

SUBMISSION INSTRUCTIONS: Users will see a new section, "Teaming Partners", within the left-hand navigation in eXCHANGE. This page allows users to view published Teaming Partner Lists and any interested party that would like to be included on this list should submit a request within eXCHANGE to join the teaming partner list. Select the appropriate Teaming Partner List from the dropdown and fill in the following information: Investigator Name, Organization Name, Organization Type, Topic Area, Background and Capabilities, Website, Contact Address, Contact Email, and Contact Phone.

DISCLAIMER: By submitting a request to be included on the Teaming Partner List, the requesting organization consents to the publication of the above-referenced information. By facilitating the Teaming Partner List, DOE is not endorsing, sponsoring, or otherwise evaluating the qualifications of the individuals and organizations that are self-identifying themselves for placement on this Teaming Partner List. DOE will not pay for the provision of any information, nor will it compensate any applicants or requesting organizations for the development of such information.

C. Applications Specifically Not of Interest

The following types of applications will be deemed nonresponsive and will not be reviewed or considered (See Section III.D. of the FOA):

- Applications that fall outside the technical parameters specified in Sections I.A. and I.B. of the FOA.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics or negatively impacts environmental criteria identified by relevant regulators.
- TA1 Applications where the site developer project manager role is assigned to the technology developer.
- TA1 Applications proposing work in federal waters⁶².
- TA1 single Applications proposing multiple, geographically different sites.

⁶² <https://www.boem.gov/oil-gas-energy/leasing/federal-offshore-lands>

- TA1 Applications proposing work with TRL less than TRL7⁶³.
- TA2 Applications proposing work with TRL less than TRL6.
- TA2 Applications where the Community Representative Project Manager role is assigned to the technology developer.

D. TA1 Community Benefits Plan: Job Quality and Equity

To support the goal of building a clean and equitable energy economy, the BIL-funded projects are expected to (1) support meaningful community and labor engagement; (2) invest in America's workforce; (3) advance diversity, equity, inclusion, and accessibility; and (4) contribute to the President's goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities (the Justice40 Initiative)⁶⁴. To ensure these goals are met, applications must include a Community Benefits Plan that describes how the proposed project would incorporate the four objectives stated above.

Applicants are encouraged to submit Community and Labor Partnership Documentation from established labor and community-based organizations that demonstrate the applicant's ability to achieve the above goals as outlined in the Community Benefits Plan. Within the Community Benefits Plan, the applicant is encouraged to provide specific detail on how to ensure the delivery of measurable community and jobs benefits, ideally through the use of negotiated agreements between the applicant and the community, and/or the applicant and labor unions referred to collectively here as "Workforce and Community Agreements." These include good neighbor agreements, community benefits agreements, community workforce agreements, project labor agreements, and other collective bargaining agreements. See Section IV.D for the Community Benefits Plan content requirements.

E. TA2 R&D Community Benefits Plan

DOE is committed to investing in research and development (R&D) innovations that deliver benefits to the American public and leads to commercialization of technologies and products that foster sustainable, resilient, and equitable access to clean energy. Further, DOE is committed to supporting the development of more diverse, equitable, inclusive, and accessible workplaces to help maintain the nation's leadership in science and technology.

⁶³ TRL Definitions available in Appendix F.

⁶⁴ The Justice40 initiative, established by E.O. 14008, sets a goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities. The Justice40 Interim Guidance provides a broad definition of disadvantaged communities (Page 2): <https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf>.

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To support the goal of building a clean and equitable energy economy, projects funded under this BIL FOA are expected to (1) advance diversity, equity, inclusion and accessibility (DEIA); (2) contribute to energy equity; and (3) invest in America's workforce. To ensure these objectives are met, applications must include a Research and Development Community Benefits Plan (R&D Community Benefits Plan⁶⁵) that addresses the three objectives stated above. See Section IV.D and Appendix H for the more information on the R&D Community Benefits Plan content requirements.

F. Authorizing Statutes

The programmatic authorizing statute is Section 635 of the Energy Independence and Security Act of 2007, Public Law 110-140. Codified at 42 U.S.C 17214. Marine energy, research, development and demonstration.

Section 41006(a)(2) of the BIL, Public Law 117-58 (11/15/2021).

Awards made under this announcement will fall under the purview of 2 CFR Part 200 as amended by 2 CFR Part 910.

G. Notice of Bipartisan Infrastructure Law-Specific Requirements

Be advised that special terms and conditions apply to projects funded by the BIL relating to:

- Reporting, tracking and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the Internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Requiring all of the iron, steel, manufactured goods, and construction materials used in the infrastructure activities of applicable projects are produced in the U.S.;
- Ensuring laborers and mechanics employed by contractors or subcontractors on BIL-funded projects are paid wages equivalent to prevailing wages on similar projects in the area;
- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and Registration.

⁶⁵ Most DOE BIL FOAs focused on demonstration and deployment (D&D) also require a Community Benefits Plan; however, the plan content requirements for R&D-focused FOAs vary from the D&D Community Benefits Plan content requirements.

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Recipients of funding appropriated by the BIL must comply with requirements of all applicable federal, state, and local laws, regulations, DOE policy and guidance, and instructions in this FOA. Recipients must flow down the requirements to subrecipients to ensure the recipient's compliance with the requirements.

II. Award Information

A. Award Overview

i. Estimated Funding

EERE expects to make a total of approximately \$45M of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. EERE anticipates making approximately 2-4 awards under this FOA. EERE may issue one, multiple, or no awards. Individual awards may vary between \$3M and \$32M.

EERE may issue awards in one, multiple, or none of the following topic areas:

Topic Area Number	Topic Area Title	Anticipated Number of Awards	Anticipated Minimum Award Size for Any One Individual Award (Fed Share)	Anticipated Maximum Award Size for Any One Individual Award (Fed Share)	Approximate Total Federal Funding Available for All Awards	Anticipated Period of Performance (months)	Anticipated Budget Period number
Topic Area 1	Topic 1: Advancing Tidal and/or Current Site Development	1-2	\$3,000,000	\$32,000,000	\$35,000,000	12-66	4
Topic Area 2	Topic 2: Community-led Tidal and/or Current Energy Planning and Development	1-2	\$500,000	\$10,000,000	\$10,000,000	12-60	3

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DOE may establish more than one budget period for each award and fund only the initial budget period(s). Funding for all budget periods, including the initial budget period, is not guaranteed. Before the expiration of the initial budget period(s), DOE may perform a down-select among different recipients and provide additional funding only to a subset of recipients.

ii. Period of Performance

DOE anticipates making awards that will run from 1 year up to 6 years in length, comprised of one or more budget periods. Project continuation will be contingent upon several elements, including satisfactory performance and DOE's Go/No-Go decision. For a complete list and more information on the Go/No-Go review, see Section VI.B.

iii. New Applications Only

DOE will accept only new applications under this FOA. DOE will not consider applications for renewals of existing DOE-funded awards through this FOA.

B. DOE Funding Agreements

Through cooperative agreements and other similar agreements, DOE provides financial and other support to projects that have the potential to realize the FOA objectives. DOE does not use such agreements to acquire property or services for the direct benefit or use of the U.S. government.

i. Cooperative Agreements

DOE generally uses cooperative agreements to provide financial and other support to prime recipients.

Through cooperative agreements, DOE provides financial or other support to accomplish a public purpose of support or stimulation authorized by federal statute. Under cooperative agreements, the government and prime recipients share responsibility for the direction of projects.

DOE has substantial involvement in all projects funded via cooperative agreement. See Section VI.B. of the FOA for more information on what substantial involvement may involve.

ii. Funding Agreements with Federally Funded Research and Development Center (FFRDCs)⁶⁶

In most cases, FFRDCs are funded independently of the remainder of the project team. The FFRDC then executes an agreement with any non-FFRDC project team members to arrange work structure, project execution, and any other matters. Regardless of these arrangements, the entity that applied as the prime recipient for the project will remain the prime recipient for the project. See Section III.E.

III. Eligibility Information

To be considered for substantive evaluation, an applicant's submission must meet the criteria set forth below. If the application does not meet these eligibility requirements, it will be considered ineligible and removed from further evaluation.

A. Eligible Applicants

i. Domestic Entities

The proposed prime recipient and subrecipient(s) may be a domestic or foreign entity. Foreign entities are eligible to apply in limited circumstances, subject to the requirements of Section III.A.ii. The following types of domestic entities are eligible to participate as a prime recipient or subrecipient of this FOA:

1. Institutions of higher education;
2. For-profit entities;
3. Non-profit entities; and
4. State and local governmental entities, and Indian Tribes.

To qualify as a domestic entity, the entity must be organized, chartered or incorporated (or otherwise formed) under the laws of a particular state or territory of the U.S.; have majority domestic ownership and control; and have a physical place of business in the U.S..

DOE/NNSA FFRDCs are not eligible to apply as either a prime recipient or subrecipient.

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

⁶⁶ Federally Funded Research and Development Centers (FFRDC) - FFRDCs are public-private partnerships which conduct research for the United States government. A listing of FFRDCs can be found at <http://www.nsf.gov/statistics/ffrdclist/>.

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

Entities banned from doing business with the U.S. government such as entities debarred, suspended, or otherwise excluded from or ineligible for participating in Federal programs are not eligible.

Non-profit 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.

ii. Foreign Entities

In limited circumstances, DOE may approve a waiver to allow a foreign entity to participate as a prime recipient or subrecipient. A foreign entity may submit a Full Application to this FOA, but the Full Application must be accompanied by an explicit written waiver request. Likewise, if the applicant seeks to include a foreign entity as a subrecipient, the applicant must submit a separate explicit written waiver request in the Full Application for each proposed foreign subrecipient.

Appendix B lists the information that must be included in a foreign entity waiver request. The applicant does not have the right to appeal DOE's decision concerning a waiver request.

B. Cost Sharing

Applicants are bound by the cost share proposed in their Full Applications if selected for award negotiations.

Topic Area 1: Cost Share 20%

The cost share must be at least 20% of the total project costs for research and development projects. The cost share must come from non-federal sources unless otherwise allowed by law.

Topic Area 2: Cost Share 20%

The cost share must be at least 20% of the total project costs⁶⁷ for research and development projects.⁶⁸ Cost sharing is not required for institutions of higher

⁶⁷ Total project costs is the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

⁶⁸ Energy Policy Act of 2005, Pub.L. 109-58, sec. 988. Also see 2 CFR 200.306 and 2 CFR 910.130 for additional cost sharing requirements.

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education and nonprofit organizations. This waiver is granted per Section 10725 of the Research and Development, Competition, and Innovation Act, P.L. 117-167 (Aug. 9, 2022), which extends the cost share waiver pilot program enacted by Section 108 of the Department of Energy Research and Innovation Act, Public Law 115-246 (Innovation Act) and provides an exemption for institutions of higher education and nonprofit organizations from the 20% cost share requirement for Research and Development activities. The exemption is available for the two-year period beginning on August 9, 2022. Codified at 42 U.S.C. 16352. The cost share must come from non-federal sources unless otherwise allowed by law.

- **Special Cost Share Waiver for Domestic Institutions of Higher Education, Domestic Non-profit Entities, FFRDCs, or U.S. state, local, or Tribal government entity**

The Assistant Secretary for EERE has issued a Cost Share Reduction determination pursuant to Section 988(b)(3) of the Energy Policy Act of 2005 that is applicable to certain entities applying under this FOA. Specifically, recipient cost share requirement for applied research and development activities projects is reduced from 20% to 10% where:

1. The prime recipient is a domestic institution of higher education; domestic non-profit entity; non-DOE/NNSA FFRDC; state or local government, or Indian Tribe; and
2. The prime recipient performs more than 50% of the project work, as measured by the Total Project Cost.

Applicants who believe their project qualifies for the reduced recipient cost share must be able to provide verification that the above requirements are satisfied.

To assist applicants in calculating proper cost share amounts, DOE has included a cost share information sheet and sample cost share calculation as Appendices A to this FOA.

i. Legal Responsibility

Although the cost share requirement applies to the project as a whole, including work performed by members of the project team other than the prime recipient, the prime recipient is legally responsible for paying the entire cost share. If the funding agreement is terminated prior to the end of the project period, the prime recipient is required to contribute at least the cost share percentage of total expenditures incurred through the date of termination.

The prime recipient is solely responsible for managing cost share contributions by the project team and enforcing cost share obligation assumed by project team members in subawards or related agreements.

ii. Cost Share Allocation

Each project team is free to determine how best to allocate the cost share requirement among the team members. The amount contributed by individual project team members may vary, as long as the cost share requirement for the project as a whole is met.

iii. Cost Share Types and Allowability

Every cost share contribution must be allowable under the applicable federal cost principles, as described in Section IV.J. of the FOA. In addition, cost share must be verifiable upon submission of the Full Application. Cost share may be provided in the form of cash or cash equivalents, or in-kind contributions. Cost share must come from non-federal sources (unless otherwise allowed by law) such as project participants, state or local governments, or other third-party financing. Federal financing, such as DOE Loan Guarantee, cannot be leveraged by applicants to provide the required cost share or to otherwise support the same scope that is proposed under a project.

Project teams may provide cost share in the form of cash or in-kind contributions. Cost share may be provided by the prime recipient, subrecipients, or third parties (entities that do not have a role in performing the scope of work). Vendors/contractors may not provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.

Cash contributions include, but are not limited to: personnel costs, fringe costs, supply and equipment costs, indirect costs and other direct costs.

In-kind contributions are those where a value of the contribution can be readily determined, verified and justified but where no actual cash is transacted in securing the good or service comprising the contribution. Allowable in-kind contributions include, but are not limited to: the donation of volunteer time or the donation of space or use of equipment.

Project teams may use funding or property received from state or local governments to meet the cost share requirement, so long as the funding was not provided to the state or local government by the federal government.

The recipient may not use the following sources to meet its cost share obligations including, but not limited to:

- Revenues or royalties from the prospective operation of an activity beyond the project period;
- Proceeds from the prospective sale of an asset of an activity;
- Federal funding or property (e.g., federal grants, equipment owned by the federal government); or
- Expenditures that were reimbursed under a separate federal program.

Project teams may not use the same cash or in-kind contributions to meet cost share requirements for more than one project or program.

Cost share contributions must be specified in the project budget, verifiable from the prime recipient's records, and necessary and reasonable for proper and efficient accomplishment of the project. As all sources of cost share are considered part of total project cost, the cost share dollars will be scrutinized under the same federal regulations as federal dollars to the project. Every cost share contribution must be reviewed and approved in advance by the Contracting Officer and incorporated into the project budget before the expenditures are incurred.

Applicants are encouraged to refer to 2 CFR 200.306 and 2 CFR 910.130 for additional cost sharing requirements.

iv. Cost Share Contributions by FFRDCs

Because FFRDCs are funded by the federal government, costs incurred by FFRDCs generally may not be used to meet the cost share requirement. FFRDCs may contribute cost share only if the contributions are paid directly from the contractor's Management Fee or another non-federal source.

v. Cost Share Verification

Applicants are required to provide written assurance of their proposed cost share contributions in their Full Applications.

Upon selection for award negotiations, applicants are required to provide additional information and documentation regarding their cost share contributions. Please refer to Appendix A of the FOA.

vi. Cost Share Payment

DOE requires prime recipients to contribute the cost share amount incrementally over the life of the award. Specifically, the prime recipient's cost share for each billing period must always reflect the overall cost share ratio negotiated by the parties (i.e., the total amount of cost sharing on each invoice when considered cumulatively with previous invoices must reflect, at a minimum, the cost sharing

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percentage negotiated). As FFRDC funding will be provided directly to the FFRDC(s) by DOE, prime recipients will be required to provide project cost share at a percentage commensurate with the FFRDC costs, on a budget period basis, resulting in a higher interim invoicing cost share ratio than the total award ratio.

In limited circumstances, and where it is in the government's interest, the DOE Contracting Officer may approve a request by the prime recipient to meet its cost share requirements on a less frequent basis, such as monthly or quarterly. Regardless of the interval requested, the prime recipient must be up-to-date on cost share at each interval. Such requests must be sent to the Contracting Officer during award negotiations and include the following information: (1) a detailed justification for the request; (2) a proposed schedule of payments, including amounts and dates; (3) a written commitment to meet that schedule; and (4) such evidence as necessary to demonstrate that the prime recipient has complied with its cost share obligations to date. The Contracting Officer must approve all such requests before they go into effect.

C. Compliance Criteria

All applicant submissions must:

- comply with the applicable content and form requirements listed in Section IV. of the FOA;
- include all required documents;
- be successfully uploaded in EERE eXCHANGE <https://eere-eXCHANGE.energy.gov>, including clicking the "Submit" button; and
- be submitted by the deadline stated in the FOA.

DOE will not review or consider submissions submitted through means other than EERE eXCHANGE, submissions submitted after the applicable deadline, or incomplete submissions.

Applicants are strongly encouraged to submit their Letters of Intent, Concept Papers, Full Applications, and Replies to Reviewer Comments at least 48 hours in advance of the submission deadline. Under normal conditions (i.e., at least 48 hours in advance of the submission deadline), applicants should allow at least 1 hour to submit a Letter of Intent, Concept Paper, Full Application, or Reply to Reviewer Comments. Once the Letter of Intent, Concept Paper, Full Application, or Reply to Reviewer Comments is submitted in EERE eXCHANGE, applicants may revise or update that submission until the expiration of the applicable deadline. If changes are made to any of these documents, the applicant must resubmit the Letter of Intent, Concept Paper, Full Application, or Reply to Reviewer Comments before the applicable deadline. DOE will not extend the submission deadline for

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applicants that fail to submit required information by the applicable deadline due to server/connection congestion.

D. Responsiveness Criteria

All “Applications Specifically Not of Interest,” as described in Section I.C. of the FOA, are deemed nonresponsive and are not reviewed or considered.

E. Limitation on Number of Concept Papers and Full Applications Eligible for Review

An entity may submit more than one Concept Paper and Full Application to this FOA, provided that each application describes a unique, scientifically distinct project and provided that an eligible Concept Paper was submitted for each Full Application.

F. 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.

IV. Application and Submission Information

A. Application Process

The application process includes multiple phases: a Letters of Intent phase, a Concept Paper phase, and a Full Application phase. **Only applicants who have submitted an eligible Concept Paper will be eligible to submit a Full Application.**

All submissions must conform to the form and content requirements described below, including maximum page lengths.

- Each must be submitted in Adobe PDF format unless stated otherwise;
- Each must be written in English;
- All pages must be formatted to fit on 8.5” x 11” paper with margins not less than one inch on every side. Use Calibri typeface, a black font color, and a font size of 12-point or larger (except in figures or tables, which may be 10-point font). A symbol font may be used to insert Greek letters or special characters, but the font size requirement still applies. References must be included as footnotes or endnotes in a font size of 10 or larger. Footnotes and endnotes are counted toward the maximum page requirement;

- A **control number** will be issued when an applicant begins the EERE eXCHANGE application process. The control number must be included with all application documents. Specifically, the control number must be prominently displayed on the upper right corner of the header of every page and included in the file name (i.e., *Control Number_Applicant Name_Full Application*);
- Page numbers must be included in the footer of every page; and
- Each submission must not exceed the specified maximum page limit, including cover page, charts, graphs, maps, and photographs when printed using the formatting requirements set forth above and single spaced. If applicants exceed the maximum page lengths indicated below, DOE will review only the authorized number of pages and disregard any additional pages.

i. Additional Information on EERE eXCHANGE

EERE eXCHANGE is designed to enforce the deadlines specified in this FOA. The “Apply” and “Submit” buttons will automatically disable at the defined submission deadlines. Should applicants experience problems with EERE eXCHANGE, the following information may be helpful.

Applicants that experience issues with submission PRIOR to the FOA deadline: In the event that an applicant experiences technical difficulties with a submission, the applicant should contact the EERE eXCHANGE helpdesk for assistance (EERE-eXCHANGESupport@hq.doe.gov). The EERE eXCHANGE helpdesk and/or the EERE eXCHANGE system administrators will assist applicants in resolving issues.

B. 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 50MB. Files in excess of 50MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 50MB but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect. For example:

TechnicalVolume_Part_1
TechnicalVolume_Part_2

DOE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 50MB.

C. Content and Form of the Concept Paper

Each Concept Paper must be limited to a single concept or technology. The Concept Paper must conform to the requirements listed below, including the stated page limits.

Section	Page Limit	Description
Cover Page	1 page maximum	<p>TA1 specific information to include:</p> <ul style="list-style-type: none"> • Project Title, TA1 indication; • Technical and business points of contact; • Project site organizational chart that shows all project partners and key stakeholders (by name), including location indications of all project participants, responsible, accountable, consulted and informed (RACI) matrix if available; and roles of each partner; • Project site name and location of proposed site; • Statements regarding confidentiality. • Self-certification that the site proposed meets the following requirements: <ul style="list-style-type: none"> • Site proposed in state waters. • Proposal includes 1 site per Application. • The proposed site does not have an existing FERC preliminary permit for an entity not listed on project partner list. • The project is considering technologies that are TRL 7 and above (See Appendix F), and are close to commercialization available for the scale and type of development envisaged. <p>TA2: The cover page should include the project title, TA2 indication, both the technical and business points of contact, names of all team member organizations, the project location(s), and any statements regarding confidentiality.</p>
TA1 Specific: Site Development Description	2 pages maximum	<p>TA1 specific information to include:</p> <ul style="list-style-type: none"> • Site baseline characteristics for the proposed site at the time of the Concept Paper. This includes resource, environmental and physical description of site, licensing and permitting status, workforce (supply chain) and community considerations.

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		<ul style="list-style-type: none"> Specify which tidal and/or current technologies will be targeted in the full application. Summary of site development plan to include information on how site will install between 1-5MW of tidal and/or current installation(s) in line with proposed state requirements. Clarify and describe if the site proposed is for grid or non-grid connected technologies. Summarize current state of community support for site development and plan for community engagement. Describe how the proposed location of the proposed project site will support technology development and long-term success. Identify highest known risks to the proposed project. The impact that this BIL EERE funding would have on the proposed development site.
TA2 Specific: Community-led tidal and/or current development proposal	2 page maximum	TA2 specific information to include: <ul style="list-style-type: none"> Proposed community-led tidal and/or development planning process description, including process for community representation and collaboration as part of the project development team, and identification within the technology development process of areas of expected community input and decision-making. Approach to data measurement, collection, access, and transparency. Previous planning and site characterization efforts. Description of proposed technology, site, and implementation process, including how proposed technology fits within community priorities and strategic energy planning. The potential impact that EERE funding and the proposed project would have on remote coastal and island community energy systems and the advancement of the tidal and/or current energy industry. The key technical risks/issues associated with the proposed technology development plan.
Community Benefits Plan (TA1 and TA2)	Optional, 1page maximum	Applicants are required to describe succinctly the approach to be taken with the Community Benefits Plan, addressing the four core elements:

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		<ul style="list-style-type: none">• community and labor engagement leading to negotiated agreements;• investing in job quality and workforce continuity;• advancing diversity, equity, inclusion, and accessibility; and• (TA1) contributing to the Justice40 Initiative goal that 40% of the overall benefits of climate and clean energy investments flow to disadvantaged communities.
Addendum (TA1 and TA2)	2 pages maximum	<p>TA1 specific information to include:</p> <p>Applicants are required to describe succinctly the qualifications, experience, and capabilities of the proposed Project Team, including:</p> <ul style="list-style-type: none">• Demonstration that the Lead Site Project Manager (LSPM) and Project Team have the skill and expertise needed to successfully execute the project plan;• Describe the planned organizational framework and team management structure to execute the steps toward achieving successful site development, supply chain development, and technology integration.• List key team members and/or organizations and summarize their relevant experience and role on the team. Show that the team has expertise that encompasses project site development, manufacturing, supply chain management, workforce development, and tidal and/or current technology development.• Whether the applicant has worked together with its teaming partners on prior projects or programs;• Whether the applicant has adequate access to equipment and facilities necessary to accomplish the effort and/or clearly explain how it intends to obtain access to the necessary equipment and facilities; and• Applicants may provide necessary maps of the proposed site, graphs, charts, or other data to supplement their Site Development Description.

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		<p>TA2 specific information to include:</p> <p>Applicants are required to describe succinctly the qualifications, experience, and capabilities of the proposed Project Team, including:</p> <ul style="list-style-type: none"> • Whether the Community Representative Project Manager and Project Team have the skill and expertise needed to successfully execute the project plan; • Description of the community partnership model and how it is integrated with community and site decision-makers and stakeholders; • Whether the applicant has prior experience which demonstrates an ability to perform tasks of similar risk and complexity; • Whether the applicant has worked together with its teaming partners on prior projects or programs; • Whether the applicant has adequate access to equipment and facilities necessary to accomplish the effort and/or clearly explain how it intends to obtain access to the necessary equipment and facilities; and • Applicants may provide necessary maps of the proposed site, graphs, charts, or other data to supplement their Technology Description.
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DOE makes an independent assessment of each Concept Paper based on the criteria in Section V. of the FOA. DOE will encourage a subset of applicants to submit Full Applications. Other applicants will be discouraged from submitting a Full Application. See Section VI.A.

D. Content and Form of the Full Application

Applicants must complete the following application forms found on the EERE eXCHANGE website at <https://eere-eXCHANGE.energy.gov/>.

Applicants will have approximately 30 days from receipt of the Concept Paper Encourage/Discourage notification on EERE eXCHANGE to prepare and submit a Full Application. Regardless of the date the applicant receives the Encourage/Discourage notification, the submission deadline for the Full Application remains the date and time stated on the FOA cover page.

All Full Application documents must be marked with the control number issued to the applicant.

i. Full Application Content Requirements

Each Full Application must be limited to a single concept. Full Applications must conform to the following requirements, and must not exceed the stated page limits.

Component	File Format	Page Limit	File Name
Technical Volume	PDF	30	ControlNumber_LeadOrganization_TechnicalVolume
Resumes	PDF	3 pages each	ControlNumber_LeadOrganization_Resumes
Letters of Commitment	PDF	1 page each	ControlNumber_LeadOrganization_LOCs
Community Partnership Documentation	PDF	10	ControlNumber_LeadOrganization_PartnerDocs
Statement of Project Objectives	MS Word	5-15	ControlNumber_LeadOrganization_SOPO
SF-424: Application for Federal Assistance	PDF	n/a	ControlNumber_LeadOrganization_App424
Budget Justification Workbook	MS Excel	n/a	ControlNumber_LeadOrganization_Budget_Justification
Summary/Abstract for Public Release	PDF	1	ControlNumber_LeadOrganization_Summary
Summary Slide	MS Power Point	1	ControlNumber_LeadOrganization_Slide
Subrecipient Budget Justification	MS Excel	n/a	ControlNumber_LeadOrganization_Subrecipient_Budget_Justification
SF-LLL Disclosure of Lobbying Activities	PDF	n/a	ControlNumber_LeadOrganization_SF-LLL
Foreign Entity Waiver Requests and Foreign Work Waiver Requests	PDF	n/a	ControlNumber_LeadOrganization_Waiver
TA1: Community Benefits Plan: Job Quality and Equity	PDF	12	ControlNumber_LeadOrganization_CBenefits
TA2: R&D Community Benefits Plan	PDF	5	ControlNumber_LeadOrganization_CBP
Current and Pending Support	PDF	n/a	ControlNumber_LeadOrganization_CPS
Location(s) of Work	MS Excel	n/a	ControlNumber_LeadOrganization_LOW
Transparency of Foreign Connections	PDF	n/a	ControlNumber_LeadOrganization_TFP

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Potentially Duplicative Funding Notice	PDF	n/a	ControlNumber_LeadOrganization_PDFN
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Note: The maximum file size that can be uploaded to the EERE eXCHANGE website is 50MB. See Section IV.B.

DOE provides detailed guidance on the content and form of each component below.

ii. Technical Volume (Required)

The Technical Volume must conform to the following content and form requirements. This volume must address the technical review criteria as discussed in Section V. of the FOA. Save the Technical Volume in a single PDF file using the following convention for the title “ControlNumber_LeadOrganization_TechnicalVolume”.

Applicants must provide sufficient citations and references to the primary research literature to justify the claims and approaches made in the Technical Volume. However, DOE and reviewers are under no obligation to review cited sources.

The Technical Volume to the Full Application may not be more than 30 pages, including the cover page, table of contents, and all citations, charts, graphs, maps, photos, or other graphics, and must include all of the information in the table below. The applicant should consider the weighting of each of the technical review criteria (see Section V. of the FOA) when preparing the Technical Volume.

The Technical Volume should clearly describe and expand upon information provided in the Concept Paper.

TA1 Technical Volume Content Requirements	
SECTION/PAGE LIMIT	DESCRIPTION
Cover Page	<ul style="list-style-type: none"> Project Title, TA1 indication; Technical and business points of contact; Project site organizational chart that shows all project partners and key stakeholders (by name), including location indications of all project participants, RACI matrix if available; Project site name and location of proposed site; Statements regarding confidentiality.

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<p>Project Overview (Approximately 10% of the Technical Volume)</p>	<p>The Project Overview should contain the following information:</p> <ul style="list-style-type: none"> • Background: The applicant should discuss the background of their organization, including the history, successes, and current research and development status (i.e., the technical baseline) relevant to the technical topic being addressed in the Full Application. • Project Goal: The applicant should explicitly describe how the proposed development approach in which the proposed project location and related infrastructure, skilled workforce, community benefits, etc. will contribute to the success of the overall project. • DOE/WPTO impact: The applicant should discuss the impact of the proposed project as it relates to the following TA project goals listed in Section B. • Identify any potential long-term constraints project will have on community's access to natural resources (e.g., water) and Tribal cultural resources. If applicable, describe a long-term cleanup strategy that ensures communities and neighborhoods remain healthy and safe and not burdened with cleanup costs and waste. • The applicant should outline a climate resilience strategy that accounts for climate impacts and extreme weather patterns such as high winds (tornadoes and hurricanes), heat and freezing temperatures, drought, wildfire, and floods.
<p>Site Development Description Impact (Approximately 45% of the Technical Volume)</p>	<p>The Site Development Description and Impact should follow the following outline and contain the following sections (See TA1 Applications Requirements in Section B for additional information):</p> <ol style="list-style-type: none"> 1. Tidal and/or Current Site Identification, Characterization, and Implementation Description 2. Stakeholder/Community Description 3. Project and Business Model Description and Organizational Structure 4. Technology Identification Description <p>Within the sections identified above, the applicant should address the following considerations:</p>

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	<ul style="list-style-type: none"> • Relevance and Outcomes: applicant should provide a detailed description the proposed site, turbine technology, other supporting infrastructure and technologies (e.g., cables, grid connection). Other scientific and research objectives that will be pursued during the project should also be thoroughly described. The relevance of the proposed project to the goals and objectives of the FOA, including the potential to meet specific DOE technical targets or other relevant performance targets, as defined in the WPTO MYPP69. The applicant should clearly specify the expected outcomes of the project. • Feasibility: The applicant should demonstrate the infrastructure necessary (e.g., transportation, water, electricity transmission), including any use of existing infrastructure, and skilled workforce needs required to successfully complete the project. Existing relationship with community partners and/or access to resources to build planned relationships necessary for completing proposed project should be described. The applicant must describe the feasibility of the proposed technology and broader project and demonstrate the ability of achieving the performance targets. This section should include a description of previous work and prior results. • Innovation and Impact: The applicant should address the project's impact and innovative aspects of the proposed work. The applicant should describe the current state-of-the-art in the applicable field, the specific innovation of the focus area, the advantages of proposed technology over current and emerging technologies, and the overall impact on advancing the state-of-the-art/technical baseline if the project is successful.
Workplan (Approximately 25% of the Technical Volume)	<p>The Workplan should include a summary of the Project Objectives, Technical Scope, Work Breakdown Structure (WBS), Milestones, Go/No-Go decision points, and Project Schedule. A detailed Statement of Project Objectives (SOPO) is separately requested. The Workplan should contain the following information:</p> <ul style="list-style-type: none"> • WBS and Task Description Summary: The Workplan should describe the work to be accomplished and

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	<p>how the applicant will achieve the milestones, will accomplish the final project goal(s), and will produce all deliverables. The Workplan is to be structured with a hierarchy of performance period (approximately annual), task and subtasks, which is typical of a standard WBS for any project. The Workplan shall contain a concise description of the specific activities to be conducted over the life of the project. The description shall be a full explanation and disclosure of the project being proposed (i.e., a statement such as “we will then complete a proprietary process” is unacceptable). It is the applicant’s responsibility to prepare an adequately detailed task plan to describe the proposed project and the plan for addressing the objectives of this FOA. The summary provided should be consistent with the SOPO. The SOPO will contain a more detailed description of the WBS and tasks.</p> <ul style="list-style-type: none"> • Milestone Summary: The applicant should provide a summary of appropriate milestones throughout the project to demonstrate success. A milestone may be either a progress measure (which can be activity based) or a SMART technical milestone. SMART milestones should be Specific, Measurable, Achievable, Relevant, and Timely, and must demonstrate a technical achievement rather than simply completing a task. Unless otherwise specified in the FOA, the minimum requirement is that each project must have at least one milestone per quarter for the duration of the project with at least one SMART technical milestone per year (depending on the project, more milestones may be necessary to comprehensively demonstrate progress). The applicant should also provide the means by which the milestone will be verified. The summary provided should be consistent with the Milestone Summary Table in the SOPO. • Go/No-Go Decision Points (See Section VI.B. for more information on the Go/No-Go Review): The applicant should provide a summary of project-wide Go/No-Go decision points at appropriate points in the Workplan. At a minimum, each project must have at least one project-wide Go/No-Go decision point for each budget period (12 to 18-month period) of the project. See Section VI.B. The
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	<p>applicant should also provide the specific technical and community benefits plan criteria to be used to evaluate the project at the Go/No-Go decision point. The summary provided should be consistent with the SOPO. Go/No-Go decision points are considered “SMART” and can fulfill the requirement for an annual SMART milestone.</p> <ul style="list-style-type: none"> • Project Schedule (Gantt Chart or similar): The applicant should provide a schedule for the entire project, including task and subtask durations, milestones, and Go/No-Go decision points. • Risk Register and mitigation strategy should at a minimum include risks associated with the following: <ul style="list-style-type: none"> ○ Community engagement, ○ Site development, ○ Site accessibility, feasibility, sustainability, ○ Health and safety, and ○ Environmental risk • Buy America Requirements for Infrastructure Projects: Within the first 2 pages of the Workplan, include a short statement on whether the project will involve the construction, alteration, and/or repair of infrastructure in the U.S.. See Appendix C for applicable definitions and other information to inform this statement. • Project Management: The applicant should discuss the team’s proposed management plan, including the following: <ul style="list-style-type: none"> ○ Project Management and Execution Plan: Describe the planned organizational framework and team management structure to execute the necessary steps in achieving successful product manufacturing, commercialization, and supply chain development, and how the project and associated federal funding will further overall progress in U.S. manufacturing for offshore wind. ○ The overall approach to and organization for managing the work. ○ The roles of each project team member.
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	<ul style="list-style-type: none"> ○ Any critical handoffs/interdependencies among project team members. ○ The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices. ○ The approach to project risk management, including a plan for securing a qualified workforce and mitigating risks to project performance including but not limited to community or labor disputes. ○ A description of how project changes will be handled. ○ If applicable, the approach to Quality Assurance/Control. ○ How communications will be maintained among project team members. ○ Team Qualifications: Provide a summary of the credentials and experience of the applicants and other organizations within the team, whether confirmed or in roles that remain to be filled. ● Contingency Reserve: A contingency reserve is required for 10%. Awardees must demonstrate that they can meet the financial needs of their project when submitting a continuation application.
<p>Technical Qualifications and Resources (Approximately 20% of the Technical Volume)</p>	<p>The Technical Qualifications and Resources should contain the following information:</p> <ul style="list-style-type: none"> ● Describe the project team’s unique qualifications and expertise, including those of key subrecipients. ● Describe the project team’s existing equipment and facilities, or equipment or facilities already in place on the proposed project site, that will facilitate the successful completion of the proposed project; include a justification of any new equipment or facilities requested as part of the project. ● This section should also include relevant, previous work efforts, demonstrated

	<p>innovations, and how these enable the applicant to achieve the project objectives.</p> <ul style="list-style-type: none"> • Describe the time commitment of the key team members to support the project. • Describe the technical services to be provided by DOE/NNSA FFRDCs, if applicable. • Describe the skills, certifications, or other credentials of the construction and ongoing operations workforce. • For multi-organizational projects, describe succinctly: <ul style="list-style-type: none"> ○ The roles and the work to be performed by the Site Lead Project Manager and senior/key personnel at the prime and sub levels; ○ Business agreements between the applicant and sub; ○ How the various efforts will be integrated and managed; ○ Process for making decisions on technical direction; ○ Publication arrangements; ○ Intellectual Property issues; and ○ Communication plans.
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TA2 Technical Volume Content Requirements	
SECTION/PAGE LIMIT	DESCRIPTION
Cover Page	The cover page should include the project title, the specific FOA Topic Area being addressed (if applicable), both the technical and business points of contact, names of all team member organizations, names of project managers, senior/key personnel and their organizations, the project location(s), and any statements regarding confidentiality.
Project Overview	The Project Overview should contain the following information:

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<p>(Approximately 10% of the Technical Volume)</p>	<ul style="list-style-type: none"> • Background: The applicant should discuss the background of their organization or community, including the history, successes relevant to the technical topic being addressed in the Full Application. • Project and Approach: The applicant should describe their proposed community-led tidal and/or current development project, organizational structure, and approach, including the ways in which the proposed project location and related infrastructure, skilled workforce, community benefits, etc. will contribute to the success of the overall project. • DOE Impact: The applicant should discuss the impact that DOE funding would have on the proposed project. Applicants should specifically explain how DOE funding, relative to prior, current, or anticipated funding from other public and private sources, is necessary to achieve the project objectives. • Identify any potential long-term constraints project will have on community's access to natural resources (e.g., water) and Tribal cultural resources. If applicable, describe a long-term cleanup strategy that ensures communities and neighborhoods remain healthy and safe and not burdened with cleanup costs and waste. • The applicant should outline a climate resilience strategy that accounts for climate impacts and extreme weather patterns such as high winds (tornadoes and hurricanes), heat and freezing temperatures, drought, wildfire, and floods.
<p>Project Development Plan (Approximately 40% of the Technical Volume)</p>	<ul style="list-style-type: none"> • Community-led Tidal and/or Current Development Plan: the community and project objectives should be clearly defined and will inform the decision to progress with the development of the proposed tidal and/or current energy site. The development plan should include a(n): <ul style="list-style-type: none"> ○ Identify the community-led partnership including all integral team members. Include a clear distinction between the Community Representative Project Manager(s) and the technology developer. Note that these roles represent different

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	<p>needs and thus cannot be performed by the same entity.</p> <ul style="list-style-type: none"> ○ Demonstration of benefits to community stakeholders, project consortium, and technology developers. ○ Outlined process for community representation and collaboration as part of the project development team. Clearly link actions with community benefits. ○ Identification within the technology development process of areas of expected community input and decision making, including how the community will inform technology design, siting, technology maintenance, technology operations, equipment operation, and decommissioning. ○ Documentation for how the community is drawing resources to participate and identify where additional community capacity is needed and how that capacity will be addressed throughout the project. ○ A climate resilience strategy that accounts for climate impacts and extreme weather patterns such as high winds (tornadoes and hurricanes), heat and freezing temperatures, drought, wildfire, and floods, and incorporates resilience or adaptation plans. The strategy should also illustrate how this project informs community resilience goals, with specific attention applied to energy resilience in a community. ○ Description of the design constraints and opportunities to be considered with small to community scale tidal/or demonstrations. ○ Description of how the proposed tidal/or current project will minimize the cost drivers of a community-scale demonstration, including supply chain, capacity to operate and maintain a tidal/or current system, and integration with other renewables, storage, or a local grid. ○ Description of how your community-scale tidal and/or current project in the US may
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	<p>create a template or replicable guide for other communities across the US and territories.</p> <ul style="list-style-type: none"> • Tidal and/or Current Energy Technology Plan: detail a plan for a tidal and/or current energy project development, such as site characterization, permitting and environmental monitoring, and data collection and analysis, to test in state waters within 5 years that would install up to 500 kW of tidal and/or current installation(s). <ul style="list-style-type: none"> ○ Include in the implementation plan a description of the proposed testing site in respect to state policy, federal permitting, state permitting, local permitting, environmental monitoring, and resource characterization status (with associated schedules), goals and requirements. ○ Include in the implementation plan a description of the necessary infrastructure proposed for the site, both onshore and offshore infrastructure requirements. ○ Applicant must perform due diligence to ensure the proposed site does not have an existing FERC preliminary permit for an entity not listed on project partner list. ○ Applicant should describe the specific innovation and advantages of their proposed partnership and stakeholder engagement model for community-driven tidal and/or current demonstration projects, which should encompass multiple stakeholders including community representatives, project developers, technology developers, utility representatives, state, local, or Tribal government, and permitting bodies, among others. ○ Describe how the project will operate the turbines for a minimum of 3 months and maximum of 18 months ○ Describe how the project will perform environmental monitoring as prescribed by regulators to ensure understanding of the potential impact of the tidal and/or current energy in water testing and validation.
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Workplan Approximately 30% of the Technical Volume)	<p>The Workplan should include a summary of the Project Objectives, Technical Scope, Work Breakdown Structure (WBS), Milestones, Go/No-Go decision points, and Project Schedule. A detailed Statement of Project Objectives (SOPO) is separately requested. The Workplan should contain the following information:</p> <ul style="list-style-type: none">• Project Objectives: The applicant should provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcomes.• Technical Scope Summary: The applicant should provide a summary description of the overall work scope and approach to achieve the objective(s). The overall work scope is to be divided by performance periods that are separated by discrete, approximately annual decision points (see below for more information on Go/No-Go decision points). The applicant should describe the specific expected end result of each performance period, including milestones in the Community Benefits Plan.• WBS and Task Description Summary: The Workplan should describe the work to be accomplished and how the applicant will achieve the milestones, will accomplish the final project goal(s), and will produce all deliverables. The Workplan is to be structured with a hierarchy of performance period (approximately annual), task and subtasks, which is typical of a standard WBS for any project. The Workplan shall contain a concise description of the specific activities to be conducted over the life of the project. The description shall be a full explanation and disclosure of the project being proposed (i.e., a statement such as “we will then complete a proprietary process” is unacceptable). It is the applicant’s responsibility to prepare an adequately detailed task plan to describe the proposed project and the plan for addressing the objectives of this FOA. The summary provided should be consistent with the SOPO. The SOPO will

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	<p>contain a more detailed description of the WBS and tasks.</p> <ul style="list-style-type: none"> • Milestone Summary: The applicant should provide a summary of appropriate milestones throughout the project to demonstrate success. A milestone may be either a progress measure (which can be activity based) or a SMART technical milestone. SMART milestones should be Specific, Measurable, Achievable, Relevant, and Timely, and must demonstrate a technical achievement rather than simply completing a task. Unless otherwise specified in the FOA, the minimum requirement is that each project must have at least one milestone per quarter for the duration of the project with at least one SMART technical milestone per year (depending on the project, more milestones may be necessary to comprehensively demonstrate progress). The applicant should also provide the means by which the milestone will be verified. The summary provided should be consistent with the Milestone Summary Table in the SOPO. • Go/No-Go Decision Points (See Section VI.B. for more information on the Go/No-Go Review): The applicant should provide a summary of project-wide Go/No-Go decision points at appropriate points in the Workplan. At a minimum, each project must have at least one project-wide Go/No-Go decision point for each budget period (12 to 18-month period) of the project. See Section VI.B. The applicant should also provide the specific technical and community benefits plan criteria to be used to evaluate the project at the Go/No-Go decision point. The summary provided should be consistent with the SOPO. Go/No-Go decision points are considered “SMART” and can fulfill the requirement for an annual SMART milestone. • End of Project Goal: The applicant should provide a summary of the end of project goal(s). At a minimum, each project must have one SMART end of project goal. The summary provided should be consistent with the SOPO. • Project Schedule (Gantt Chart or similar): The applicant should provide a schedule for the entire
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	<p>project, including task and subtask durations, milestones, and Go/No-Go decision points.</p> <ul style="list-style-type: none"> • Risk Register and mitigation strategy to include the following risks at minimum: <ul style="list-style-type: none"> ○ Community at proposed site, ○ Project development at site, ○ Site accessibility, feasibility, sustainability, ○ Health and safety, and ○ Environmental risk • Buy America Requirements for Infrastructure Projects: Within the first 2 pages of the Workplan, include a short statement on whether the project will involve the construction, alteration, and/or repair of infrastructure in the U.S.. See Appendix C for applicable definitions and other information to inform this statement. • Project Management and Execution Plan: Describe the planned organizational framework and team management structure to execute the necessary steps in achieving project success. This plan should include the following: <ul style="list-style-type: none"> ○ Description of critical handoffs and interdependencies among project team members. ○ Description of the change management process to be utilized during the project. ○ Approach to quality assurance and control. ○ Communications coordination and planning among project team members.
<p>Technical Qualifications and Resources (Approximately 20% of the Technical Volume)</p>	<p>The Technical Qualifications and Resources should contain the following information:</p> <ul style="list-style-type: none"> • Describe the project team’s unique qualifications and expertise, including those of key subrecipients. • Describe the project team’s existing equipment and facilities, or equipment or facilities already in place on the proposed project site, that will facilitate the successful completion of the proposed project; include a justification of any new equipment or facilities requested as part of the project.

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	<ul style="list-style-type: none">• This section should also include relevant, previous work efforts, demonstrated innovations, and how these enable the applicant to achieve the project objectives.• Describe the time commitment of the key team members to support the project.• Describe the technical services to be provided by DOE/NNSA FFRDCs, if applicable.• Describe the skills, certifications, or other credentials of the construction and ongoing operations workforce.• For multi-organizational projects, describe succinctly:<ul style="list-style-type: none">○ The roles and the work to be performed by the Project Manager and senior/key personnel at the prime and sub levels;○ Business agreements between the applicant and sub;○ How the various efforts will be integrated and managed;○ Process for making decisions on technical direction;○ Publication arrangements;○ Intellectual Property issues; and○ Communication plans.
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iii. Resumes (required)

A resume provides information that can be used by reviewers to evaluate the individual's skills, experience, and potential for leadership within the scientific community. Applicants must submit a resume (limited to three pages) for each Principal Investigator or Lead Project Manager and Senior/Key Personnel that include the following:

1. Contact Information;
2. Education and training: Provide institution, major/area, degree, and year for undergraduate, graduate, and postdoctoral training;
3. Research and Professional Experience: Beginning with the current position, list professional/academic positions in chronological order with

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a brief description. List all current academic, professional, or institutional appointments, foreign or domestic, at the applicant institution or elsewhere, whether or not remuneration is received, and, whether full-time, part-time, or voluntary;

4. Awards and honors;
5. 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. An abbreviated style such as the Physical Review Letters (PRL) convention for citations (list only the first author) may be used for publications with more than 10 authors;
6. Synergistic Activities: List up to five professional and scholarly activities related to the proposed effort; and
7. There should be no lapses in time over the past ten years or since age 18, whichever time period is shorter.

As an alternative to a resume, it is acceptable to use the biographical sketch format approved by the National Science Foundation (NSF). The biographical sketch format may be generated by the Science Experts Network Curriculum Vita (SciENCv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://nsf.gov/bfa/dias/policy/nsfapprovedformats/biosketch.pdf>. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats.

Save the resumes in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_Resumes".

iv. Letters of Commitment (TA2 required)

Topic Area 1 (if applicable)

Submit letters of commitment from all subrecipient and third-party cost share providers. If applicable, the letter must state that the third party is committed to providing a specific minimum dollar amount or value of in-kind contributions allocated to cost sharing. The following information for each third party contributing to cost sharing should be identified: (1) the name of the organization; (2) the proposed dollar amount to be provided; and (3) the proposed cost sharing type – (cash-or in-kind contributions). Each letter must not

exceed 1 page. Save the letters of commitment in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_LOCs".

Letters of support or endorsement for the project from entities that do not have a substantive role in the project are not accepted.

Topic Area 2 (required)

Submit letters of commitment, support, and intent from all entities substantially contributing to the proposed project, all subrecipients, and all third-party cost share providers. An entity is considered substantial if its involvement is critical for project success.

If contributing cost share, the letter must state that the party is committed to providing a specific minimum dollar amount or value of in-kind contributions allocated to cost sharing.

The following information for each third party contributing to cost sharing should be identified: (1) the name of the organization; (2) the proposed dollar amount to be provided; and (3) the proposed cost sharing type – (cash or in-kind contributions). Each letter must not exceed 1 page.

If not contributing cost share, the letter must state that the organization is committed to perform the work as outlined in the application.

Save the letters of commitment in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_LOCs".

Letters of support or endorsement for the project from entities that do not have a substantive role in the project are not accepted.

v. Community Partnership Documentation (if applicable)

In support of the Community Benefits Plan, applicants may submit documentation to demonstrate existing or planned partnerships with community entities, such as, organizations that work with local stakeholders most vulnerable to or affected by the project, organizations that carry out workforce development programs, labor unions, Tribal organizations, and community-based organizations that work with disadvantaged communities. The partnership documentation could be in the form of a letter on the partner's letterhead outlining the planned partnership signed by an officer of the entity, a Memorandum of Understanding, or other similar agreement. Such letters must state the specific nature of the partnership and must not be general letters of support. If the applicant intends to enter into Workforce and Community Agreements as part of the Community Benefits Plan, please include letters from

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proposed partners as appropriate. Each letter must not exceed 1 page. In total, the partnership documentation must not exceed 10 pages. Save the partnership documentation in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_PartnerDoc".

vi. Statement of Project Objectives (SOPO) (required)

Applicants must complete a SOPO. A SOPO template is available on EERE eXCHANGE at <https://eere-eXCHANGE.energy.gov/>. The SOPO, including the Milestone Table, must not exceed 15 pages when printed using standard 8.5" x 11" paper with 1" margins (top, bottom, left, and right) with font not smaller than 12-point (except in figures or tables, which may be 10-point font). Save the SOPO in a single Microsoft Word file using the following convention for the title "ControlNumber_LeadOrganization_SOPO".

vii. SF-424: Application for Federal Assistance (required)

Applicants must complete the SF-424 Application for Federal Assistance, which is available on EERE eXCHANGE at <https://eere-eXCHANGE.energy.gov/>. 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 project year, first phase or other subset of the project period. Save the SF-424 in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_424".

viii. Budget Justification Workbook (required)

Applicants must complete the Budget Justification Workbook, which is available on EERE eXCHANGE at <https://eere-eXCHANGE.energy.gov/>. Applicants must complete each tab of the Budget Justification Workbook for the project as a whole, including all work to be performed by the prime recipient and its subrecipients and contractors. Applicants should include costs associated with implementing the various BIL-specific requirements (e.g., Buy America requirements for infrastructure projects, Davis Bacon, Community Benefits Plan, reporting, oversight) and with required annual audits and incurred cost proposals in their proposed budget documents. Such costs may be reimbursed as a direct or indirect cost. The "Instructions and Summary" included with the Budget Justification Workbook will auto-populate as the applicant enters information into the Workbook. Applicants must carefully read the "Instructions and Summary" tab provided within the Budget Justification Workbook. Save the Budget Justification Workbook in a single Microsoft Excel file using the following

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convention for the title

“ControlNumber_LeadOrganization_Budget_Justification”.

ix. Summary/Abstract for Public Release (required)

Applicants must submit a one-page summary of their project that is suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the lead project manager/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 (e.g., benefits, outcomes), major participants (for collaborative projects), and the project’s commitments and goals described in the Community Benefits Plan. This document must not include any proprietary or sensitive business information as DOE may make it available to the public after selections are made. The summary must not exceed 1 page when printed using standard 8.5” x 11” paper with 1” margins (top, bottom, left, and right) with font not smaller than 12-point. Save the Summary for Public Release in a single PDF file using the following naming convention “ControlNumber_LeadOrganization_Summary”.

x. Summary Slide (required)

Applicants must provide a single slide summarizing the proposed project. The Summary Slide template must include the following information:

- A technology summary;
- A description of the technology’s impact;
- Proposed project goals;
- Any key graphics (illustrations, charts and/or tables);
- The project’s key idea/takeaway;
- Topline community benefits;
- Project title, prime recipient, Lead Site Project Manager or Principal Investigator (Community Representative Project Manager) depending on the Topic Area, and senior/key personnel information; and
- Requested DOE funds and proposed applicant cost share.

Save the Summary Slide in a single Microsoft PowerPoint file using the following convention for the title “ControlNumber_LeadOrganization_Slide”.

xi. Subrecipient Budget Justification (if applicable)

Applicants must provide a separate budget justification for each subrecipient that is expected to perform work estimated to be more than \$250,000 or 25 percent of the total work effort (whichever is less). The budget justification must include the same justification information described in the “Budget Justification” section above. Save each subrecipient budget justification in a Microsoft Excel

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file using the following convention for the title
“ControlNumber_LeadOrganization_Subrecipient_Budget_Justification”.

xii. SF-LLL: Disclosure of Lobbying Activities (required)

Recipients and subrecipients may not use any federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

Recipients and subrecipients are required to complete and submit SF-LLL, “Disclosure of Lobbying Activities”

(<https://www.grants.gov/web/grants/forms/sf-424-individual-family.html>) to ensure that non-federal funds have not been paid and will not be paid to any person for influencing or attempting to influence any of the following in connection with the application:

- An officer or employee of any federal agency;
- A member of Congress;
- An officer or employee of Congress; or
- An employee of a member of Congress.

Save the SF-LLL in a single PDF file using the following convention for the title
“ControlNumber_LeadOrganization_SF-LLL”.

xiii. Waiver Requests (if applicable)

Foreign Entity Participation

For projects selected under this FOA, all recipients and subrecipients must qualify as domestic entities. See Section III. To request a waiver of this requirement, the applicant must submit an explicit waiver request in the Full Application. Appendix C lists the information that must be included in a waiver request.

Foreign Work Waiver Request

As set forth in Section IV.K.iii., all work for projects selected under this FOA must be performed in the United States. To request a waiver of this requirement, the applicant must submit an explicit waiver request in the Full Application. Appendix C lists the information that must be included in a foreign work waiver request.

Save the Waivers in a single PDF file using the following convention for the title
“ControlNumber_LeadOrganization_Waiver”.

xiv. Topic Area 1: Community Benefits Plan: Job Quality and Equity (required)

The Community Benefits Plan: Job Quality and Equity (Community Benefits Plan or Plan) must set forth the applicant's approach to ensuring that federal investments advance the following four goals: 1) community and labor engagement; 2) investing in job quality and workforce continuity 3) advancing diversity, equity, inclusion, and accessibility (DEIA); and 4) contributing to the Justice40 Initiative. The below sections set forth the Plan requirements for each of the foregoing goals. At this stage of the application process, the Community Benefits Plan should indicate the applicant's intention to engage meaningfully with labor and community stakeholders on these goals, including the potential of entering into formal Workforce and Community Agreements. Given project complexity and sensitivities, applicants should consider pursuing multiple agreements.

The applicant's Community Benefits Plan must include at least one Specific, Measurable, Achievable, Relevant, and Timely (SMART) milestone per budget period in order to measure progress on the proposed actions. The Community Benefits Plan will be evaluated as part of the technical review process. If DOE selects a project, DOE will incorporate the Community Benefits Plan into the award and the recipient must implement its Community Benefits Plan as part of carrying out its project. Public transparency around the plan and SMART commitments is necessary for ensuring accountability. In addition, during the life of the DOE award, DOE will evaluate the recipient's progress, including as part of the Go/No-Go review process.

The Community Benefits Plan must not exceed 12 pages. It must be submitted in PDF format using the following convention name for the title: "Control Number_LeadOrganization_CBenefits." This Plan must address the technical review criterion titled, "Community Benefits Plan: Job Quality & Equity." See Section V. of the FOA.

For additional information, see [Community Benefits Plan Frequently Asked Questions \(FAQs\)](#).

1. Community and Labor Engagement: The Community Benefits Plan must describe the applicant's actions to date and future plans to engage with community partners – such as local governments, Tribal governments, labor unions and community-based organizations that support or work with underserved communities, including Disadvantaged Communities as defined for purposes of the Justice40 Initiative. By facilitating community input, social buy-in, and accountability, such engagement can substantially reduce or eliminate

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stalls or slowdowns, litigation, and other risks associated with project implementation.

Community and labor engagement should ideally lay the groundwork for the eventual negotiation of Workforce and Community Agreements, which could take the form of one or more kinds of negotiated agreements with communities, labor unions, or, ideally, both. Registered apprenticeship programs, labor-management training partnerships, quality pre-apprenticeship programs, a union card check provision, and local and targeted hiring goals are all examples of provisions that Workforce and Community Agreements could cover that would increase the success of a DOE-funded project.

Applicants should also provide Community and Labor Partnership Documentation from representative organizations reflecting substantive engagement and feedback on applicant's approach to community benefits including job quality and workforce continuity; diversity, equity, inclusion, and accessibility; and the Justice40 Initiative detailed below.

2. Investing in Job Quality and Workforce Continuity: A well-qualified, skilled, and trained workforce is necessary to ensure project stability, continuity, and success, and to meet program goals. High-quality jobs are critical to attracting and retaining the qualified workforce required.

The Plan must describe the applicant's approach to investing in workforce education and training of both new and incumbent workers and ensuring jobs are of sufficient quality to attract and retain skilled workers in the industry.

Specific components of the Plan must include:

- A) A summary of the applicant's plan to attract, train, and retain a skilled and well-qualified workforce for both construction *and* ongoing operations/production activities. A collective bargaining agreement, labor-management partnership, or other similar agreement would provide evidence of such a plan. Alternatively, applicants may describe:
 - i. wages, benefits, and other worker supports to be provided benchmarking against prevailing wages for construction and local median wages for other occupations;
 - ii. commitments to invest in workforce education and training, including measures to reduce attrition, increase productivity from a committed and engaged workforce, and support the development of a resilient, skilled, and stable workforce for the project; and

iii. efforts to engage employees in the design and execution of workplace safety and health plans.

- B) It is declared to be the policy of the U.S. to eliminate the causes of certain substantial obstructions to the free flow of commerce by encouraging the practice and procedure of collective bargaining and by protecting the exercise by workers of full freedom of association. Applicant should provide a description of how and if they plan to affirmatively support worker organizing and collective bargaining. This might include a commitment to negotiate pre-hire project labor agreements for construction activity, a pledge to remain neutral during any union organizing campaigns, intention or willingness to permit union recognition through card check (as opposed to requiring union elections), intention or willingness to enter into binding arbitration to settle first contracts, a pledge to allow union organizers access to appropriate onsite non-work places (e.g., lunch rooms), a pledge to refrain from holding captive audience meetings, and other supportive commitments or pledges.

3. DEIA: The Community Benefits Plan must include a section describing how diversity, equity, inclusion, and accessibility (DEIA) objectives will be incorporated into the project. The section should detail how the applicant will partner with underrepresented businesses, educational institutions, and training organizations that serve workers who face barriers to accessing quality jobs, and/or other project partners to help address DEIA.

The following is a non-exhaustive list of potential DEIA actions that could be included in a Plan. This list is offered to provide guidance to applicants and is not intended to be comprehensive or mandatory.

- A) Commitment to partner with Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, and Veteran Owned Businesses for contractor support needs;
- B) To fill open positions for the DOE-funded project, partner with workforce training organizations serving under-represented communities and those facing systemic barriers to quality employment such as those with disabilities, returning citizens, opportunity youth, and veterans; In addition, applicant should consider providing comprehensive support services, such as childcare and transportation, to increase representation and access in project's construction and operations jobs.

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4. Justice40 Initiative: Applicants must provide an overview of benefits to disadvantaged communities that the project can deliver, supported by measurable milestones.

Specifically, the Justice40 Initiative section must include:

1. *Identification of applicable disadvantaged communities to which the anticipated project benefits will flow.*
2. *Identification of applicable benefits that are quantifiable, measurable, and trackable, including, at a minimum, a discussion of the relevance of each of the eight DOE Justice40 Initiative benefits outlined below.*

Benefits include (but are not limited to) measurable direct or indirect investments or positive project outcomes that achieve or contribute to the following in disadvantaged communities: (1) a decrease in energy burden; (2) a decrease in environmental exposure and burdens; (3) an increase in access to low-cost capital; (4) an increase in high-quality job creation, the clean energy job pipeline, and job training for individuals; (5) increases in clean energy enterprise creation and contracting (e.g., minority-owned or disadvantaged business enterprises); (6) increases in energy democracy, including community ownership; (7) increased parity in clean energy technology access and adoption; and (8) an increase in energy resilience. In addition, applicants should also discuss how the project will maximize all of the benefits listed in #4.

3. *A description of how and when anticipated benefits are expected to flow to disadvantaged communities.* For example, will the benefits be provided directly within the disadvantaged community identified in the Justice40 Initiative section, or are the benefits expected to flow in another way? Further, will the benefits flow during project development or after project completion, and how will applicant track benefits delivered?
4. *A discussion of anticipated negative and cumulative environmental impacts on disadvantaged communities.* Are there anticipated negative or positive environmental impacts associated with the project, and how will the applicant mitigate any negative impacts? Within the context of cumulative impacts created by the project, applicants should use Environmental Protection Agency's EJSCREEN tool to quantitatively discuss existing environmental impacts in the project area. See [EJScreen: Environmental Justice Screening and Mapping Tool](#).

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For projects funded under this FOA, DOE will provide specific reporting guidance for the benefits described above.

xv. Topic Area 2: R&D Community Benefits Plan (required)

The R&D Community Benefits Plan must set forth the applicant's approach to ensuring the federal investments advance the following three objectives: (1) advance diversity, equity, inclusion and accessibility (DEIA); (2) contribute to energy equity; and (3) invest in America's workforce. The below sections set forth the content requirements for the R&D Community Benefits Plan, which addresses each of the foregoing objectives. Applicants must address all three sections.

The applicant's R&D Community Benefits Plan must include at least one Specific, Measurable, Achievable, Relevant, and Timely (SMART) milestone per budget period to measure progress on the proposed actions. The R&D Community Benefits Plan will be evaluated as part of the technical review process. If EERE selects a project, EERE will incorporate the R&D Community Benefits Plan into the award and the recipient must implement its R&D Community Benefits Plan as part of carrying out its project. During the life of the EERE award, EERE will evaluate the recipient's progress, including as part of the Go/No-Go review process.

The plan should be specific to the proposed project and not a restatement of an organization's policies. Applicants should describe the future implications or a milestone-based plan for identifying future implications of their research on energy equity, including, but not limited to, benefits for the U.S. workforce. These impacts may be uncertain, occur over a long period of time, and/or have many factors within and outside the specific proposed research. Applicants are encouraged to describe the influencing factors and the most likely workforce and energy equity implications of the proposed research if the research is successful. While some guidance and example activities are provided in Appendix H, applicants are encouraged to leverage promising practices and develop a plan that is tailored for their project.

The R&D Community Benefits Plan must not exceed 5 pages. It must be submitted in PDF format using the following convention name for the title: "Control Number_LeadOrganization_CBP." This Plan must address the technical review criterion titled, "R&D Community Benefits Plan." See Section V. of the FOA.

The applicant's R&D Community Benefits Plan must address the following three sections:

1) Diversity, Equity, Inclusion, and Accessibility:

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To build a clean and equitable energy economy, it is important that there are opportunities for people of all racial, ethnic, socioeconomic and geographic backgrounds, sexual orientation, gender identity, persons with disabilities, and those re-entering the workforce from incarceration. This section of the plan must demonstrate how DEIA is incorporated in the technical project objectives. The plan must identify the specific action the applicant would undertake that integrated into the research goals and project teams. Submitting an institutional DEIA plan without specific integration into the project will be deemed insufficient.

2) Energy Equity:

This section must articulate the applicant's consideration of long-term equity implications of the research. It must identify how the specific project integrates equity considerations into the project design to support equitable outcomes should the innovation be successful. Like cost reductions and commercialization plans, the R&D Community Benefits Plan requires description of the equity implications of the innovation if successful.

3) Workforce Implications:

This section must articulate the applicant's consideration of long-term workforce impacts and opportunities of the research. It must identify how the project is designed and executed to include an understanding of the future workforce needs should the resulting innovation be successful.

See Appendix H for more guidance.

xvi. Current and Pending Support (required)

Current and pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. As part of the application, the principal investigator or lead project manager and all senior/key personnel at the applicant and subrecipient level must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All connections with foreign government-sponsored talent recruitment programs must be identified in current and pending support.

For every activity, list the following items:

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-
- The sponsor of the activity or the source of funding;
 - The award or other identifying number;
 - The title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research;
 - The total cost or value of the award or activity, including direct and indirect costs and cost share. For pending proposals, provide the total amount of requested funding;
 - The award period (start date – end date); and
 - The person-months of effort per year being dedicated to the award or activity.

To identify overlap, duplication of effort, or synergistic efforts, append a description of the other award or activity to the current and pending support.

Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided on request to either the applicant institution or DOE. Supporting documents of any identified source of support must be provided to DOE on request, including certified translations of any document.

PIs and senior/key personnel must provide a separate disclosure statement listing the required information above regarding current and pending support. Each individual must sign and date their respective disclosure statement and include the following certification statement:

I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete, and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. §§ 3729-3733 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

The information may be provided in the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts

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Network Curriculum Vita (SciENCv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://www.nsf.gov/bfa/dias/policy/nsfapprovedformats/cps.pdf>. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats. If the NSF format is used, the individual must still include a signature, date, and a certification statement using the language included in the paragraph above.

Save the Current and Pending Support in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_CPS".

Definitions:

Current and pending support – (a) All resources made available, or expected to be made available, to an individual in support of the individual's RD&D efforts, regardless of (i) whether the source is foreign or domestic; (ii) whether the resource is made available through the entity applying for an award or directly to the individual; or (iii) whether the resource has monetary value; and (b) includes in-kind contributions requiring a commitment of time and directly supporting the individual's RD&D efforts, such as the provision of office or laboratory space, equipment, supplies, employees, or students. This term has the same meaning as the term Other Support as applied to researchers in NSPM-33: For researchers, Other Support includes all resources made available to a researcher in support of and/or related to all of their professional RD&D efforts, including resources provided directly to the individual or through the organization, and regardless of whether or not they have monetary value (e.g., even if the support received is only in-kind, such as office/laboratory space, equipment, supplies, or employees). This includes resource and/or financial support from all foreign and domestic entities, including but not limited to, gifts provided with terms or conditions, financial support for laboratory personnel, and participation of student and visiting researchers supported by other sources of funding.

Foreign Government-Sponsored Talent Recruitment Program – An effort directly or indirectly organized, managed, or funded by a foreign government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to relocate physically to the foreign state for the above purpose. Some

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programs allow for or encourage continued employment at U.S. research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.

Senior/key personnel – an individual who contributes in a substantive, meaningful way to the scientific development or execution of a research, development and demonstration (RD&D) project proposed to be carried out with DOE award.⁷⁰

xvii. Locations of Work (required)

The applicant must complete the supplied template by listing the city, state, and zip code + 4 for each location where project work will be performed by the prime recipient or subrecipient(s). Save the completed template as a MS Excel file using the following convention for the title “Control Number_LeadOrganization_LOW.”

xviii. Transparency of Foreign Connections (required)

Applicants must provide the following information as it relates to the proposed recipient and subrecipients. Include a separate disclosure for the applicant and each proposed subrecipient. U.S. National Laboratories, domestic government entities, and institutions of higher education are only required to respond to items 1, 2 and 9, and if applying as to serve as the prime recipient, must provide complete responses for project team members that are not U.S. National Laboratories, domestic government entities, or institutions of higher education.

1. Entity name, website address and physical address;
2. The identity of all owners, principal investigators, project managers, and senior/key personnel who are a party to any *Foreign Government-Sponsored Talent Recruitment Program* of a foreign country of risk (i.e., China, Iran, North Korea, and Russia);
3. The existence of any joint venture or subsidiary that is based in, funded by, or has a foreign affiliation with any foreign country of risk, including the People's Republic of China;

⁷⁰ Typically, these individuals have doctoral or other professional degrees, although individuals at the masters or baccalaureate level may be considered senior/key personnel if their involvement meets this definition. Consultants, graduate students, and those with a postdoctoral role also may be considered senior/key personnel if they meet this definition.

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4. Any current or pending contractual or financial obligation or other agreement specific to a business arrangement, or joint venture-like arrangement with an enterprise owned by a foreign state or any foreign entity;
5. Percentage, if any, that the proposed recipient or subrecipient has foreign ownership or control;
6. Percentage, if any, that the proposed recipient or subrecipient is wholly or partially owned by an entity in a foreign country of risk;
7. Percentage, if any, of venture capital or institutional investment by an entity that has a general partner or individual holding a leadership role in such entity who has a foreign affiliation with any foreign country of risk;
8. Any technology licensing or intellectual property sales to a foreign country of risk, during the 5-year period preceding submission of the proposal;
9. Any foreign business entity, offshore entity, or entity outside the United States related to the proposed recipient or subrecipient;
10. Complete list of all directors (and board observers), including their full name, citizenship and shareholder affiliation, date of appointment, duration of term, as well as a description of observer rights as applicable;
11. Complete capitalization table for your entity, including all equity interests (including LLC and partnership interests, as well as derivative securities). Include both the number of shares issued to each equity holder, as well as the percentage of that series and all equity on a fully diluted basis. Identify the principal place of incorporation (or organization) for each equity holder. If the equity holder is a natural person, identify the citizenship(s). If the recipient or subrecipient is a publicly traded company, provide the above information for shareholders with an interest greater than five percent;
12. A summary table identifying all rounds of financing, the purchase dates, the investors for each round, and all the associated governance and information rights obtained by investors during each round of financing; and
13. An organization chart to illustrate the relationship between your entity and the immediate parent, ultimate parent, and any intermediate parent, as well as any subsidiary or affiliates. Identify where each entity is incorporated.

DOE reserves the right to request additional or clarifying information based on the information submitted.

Save the Transparency of Foreign Connections information in a single PDF file using the following convention for the title
"ControlNumber_LeadOrganization_TFC".

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xix. Potentially Duplicative Funding Notice (if applicable)

If the applicant or project team member has other active awards of federal funds, the applicant must determine whether the activities of those awards potentially overlap with the activities set forth in its application to this FOA. If there is a potential overlap, the applicant must notify DOE in writing of the potential overlap and state how it will ensure any project funds (i.e., recipient cost share and federal funds) will not be used for identical cost items under multiple awards. Likewise, for projects that receive funding under this FOA, if a recipient or project team member receives any other award of federal funds for activities that potentially overlap with the activities funded under the DOE award, the recipient must promptly notify DOE in writing of the potential overlap and state whether project funds from any of those other federal awards have been, are being, or are to be used (in whole or in part) for one or more of the identical cost items under the DOE award. If there are identical cost items, the recipient must promptly notify the DOE Contracting Officer in writing of the potential duplication and eliminate any inappropriate duplication of funding.

Save the Potentially Duplicative Funding Notice in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_PDFN."

E. Content and Form of Replies to Reviewer Comments

DOE will provide applicants with reviewer comments following the evaluation of all eligible Full Applications. Applicants have a brief opportunity to prepare a short Reply to Reviewer Comments (Reply). The Reply must not exceed three (3) pages. If a Reply is more than three (3) pages in length, DOE will review only the first three (3) pages and disregard any additional pages. Applicants may use the Reply to respond to one or more comments or to supplement their Full Application. The Reply may include text, graphs, charts, or data.

DOE will post the reviewer comments in EERE eXCHANGE. The expected submission deadline is on the cover page of the FOA; however, it is the applicant's responsibility to monitor EERE eXCHANGE in the event that the expected date changes. The deadline will not be extended for applicants who are unable to timely submit their Reply due to failure to check EERE eXCHANGE or relying on the expected date alone. Applicants should anticipate having approximately three (3) business days to submit a Reply.

Applicants are not required to submit a Reply to Reviewer Comments. DOE will review and consider each eligible Full Application, even if no Reply is submitted or if the Reply is found to be ineligible.

F. Post Selection Information Requests

If selected for award negotiations, DOE reserves the right to require that selected applicants provide additional or clarifying information regarding the application submissions, the project, the project team, the award requirements, and any other matters related to anticipated award. The following is a non-exhaustive list of examples of information that may be required:

- Personnel proposed to work on the project and collaborating organizations (See Section VI.B. Participants and Collaborating Organizations);
- Current and Pending Support (See Sections IV.E. and VI.B. Current and Pending Support);
- An Intellectual Property Management Plan (if applicable) describing how the project team/consortia members will handle intellectual property rights and issues between themselves while ensuring compliance with federal intellectual property laws, regulations, and policies in accordance with Section VI.B. Intellectual Property Management Plan;
- A Data Management Plan (if applicable) describing how all research data displayed in publications resulting from the proposed work will be digitally accessible at the time of publications, in accordance with Section VI.B.;
- Indirect cost information;
- Other budget information;
- Letters of Commitment 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);
- Information for the DOE Office of Civil Rights to process assurance reviews under 10 CFR 1040;
- Representation of Limited Rights Data and Restricted Software, if applicable;
- Information related to Davis-Bacon Act Requirements;
- Information related to any proposed Workforce and Community Agreement, as defined above in “Community Benefits Plan: Job Quality and Equity,” that applicants may have made with the relevant community;
- Any proposed or required Project Labor Agreements; and
- Environmental Questionnaire.

G. Unique Entity Identifier (UEI) and System for Award Management (SAM)

Each applicant (unless the applicant is an individual or federal awarding agency that is excepted from those requirements under 2 CFR 25.110(b) or (c), or has an exception approved by the federal awarding agency under 2 CFR 25.110(d)) is required to: (1) Be registered in the SAM at <https://www.sam.gov> before submitting its application; (2) provide a valid UEI in its application; and (3) continue to maintain an active SAM registration with current information at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency. DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, the DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process they should utilize the [HELP](#) feature on [SAM.gov](#). SAM.gov will work entity service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue. Additional entity validation resources can be found here: [GSAFSD Tier 0 Knowledge Base - Validating your Entity](#).

H. Submission Dates and Times

All required submissions must be submitted in EERE eXCHANGE no later than 5 p.m. ET on the dates provided on the cover page of this FOA.

I. Intergovernmental Review

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

J. Funding Restrictions

i. Allowable Costs

All expenditures must be allowable, allocable, and reasonable in accordance with the applicable federal cost principles. Pursuant to 2 CFR 910.352, the cost principles in the Federal Acquisition Regulations (48 CFR 31.2) apply to for-profit

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entities. The cost principles contained in 2 CFR Part 200, Subpart E apply to all entities other than for-profits.

ii. Pre-Award Costs

Applicants selected for award negotiations (selectee) must request prior written approval to charge pre-award costs. Pre-award costs are those incurred prior to the effective date of the federal award directly pursuant to the negotiation and in anticipation of the federal award where such costs are necessary for efficient and timely performance of the scope of work. Such costs are allowable only to the extent that they would have been allowable if incurred after the date of the federal award and **only** with the written approval of the federal awarding agency, through the DOE Contracting Officer.

Pre-award costs cannot be incurred prior to the Selection Official signing the Selection Statement and Analysis.

Pre-award expenditures are made at the selectee's risk. DOE is not obligated to reimburse costs: (1) in the absence of appropriations; (2) if an award is not made; or (3) if an award is made for a lesser amount than the selectee anticipated.

1. National Environmental Policy Act (NEPA) Requirements Related to Pre-Award Costs

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 DOE completing the NEPA review process.

DOE does not guarantee or assume any obligation to reimburse pre-award costs incurred prior to receiving written authorization from the Contracting Officer. If the applicant elects to undertake activities that DOE determines 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 for their project 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 overrides the requirement 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. Likewise, if an application is selected for negotiation of award, and the prime

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recipient elects to undertake activities that are not authorized for federal funding by the Contracting Officer in advance of DOE completing a NEPA review, the prime recipient is doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

iii. Performance of Work in the U.S. (Foreign Work Waiver)

1. Requirement

All work performed under awards issued under this FOA must be performed in the U.S.. The prime recipient must flow down this requirement to its subrecipients.

2. Failure to Comply

If the prime recipient fails to comply with the Performance of Work in the U.S. requirement, DOE may deny reimbursement for the work conducted outside the U.S. and such costs may not be recognized as allowable recipient cost share. The prime recipient is responsible should any work under this award be performed outside the U.S., absent a waiver, regardless of whether the work is performed by the prime recipient, subrecipients, contractors or other project partners.

3. Waiver

To seek a foreign work waiver, the applicant must submit a written waiver request to DOE. Appendix B lists the information that must be included in a request for a foreign work waiver.

Save the waiver request(s) in a single PDF file. The applicant does not have the right to appeal DOE's decision concerning a waiver request.

iv. Construction

Recipients are required to obtain written authorization from the Contracting Officer before incurring any major construction costs.

DOE strongly encourages the use of project labor agreements (PLAs) in connection with construction projects. A PLA is a pre-hire agreement between a private entity (or entities) and a labor organization (or organizations) representing individuals who will be working on the construction project. Applicants that commit to using best-practice project labor agreements will generally be likely to produce a construction workforce plan that meets the criteria in this FOA. By contrast, applicants that do not commit to using a PLA will

be required to submit workforce continuity plans and show that they have taken other measures to reduce the risk of delays in project delivery.

For large construction projects, DOE may require a PLA. Assessment of applicability will be conducted on a case-by-case basis.

v. Foreign Travel

If international travel is proposed for your project, please note that your organization must comply with the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. § 40118), commonly referred to as the “Fly America Act,” and implementing regulations at 41 CFR 301-10.131 through 301-10.143. The law and regulations require air transport of people or property to, from, between, or within a country other than the U.S., the cost of which is supported under this award, to be performed by or under a cost-sharing arrangement with a U.S. flag carrier, if service is available. Foreign travel costs are allowable only with the written prior approval of the Contracting Officer assigned to the award.

vi. Equipment and Supplies

Property disposition may be required at the end of a project if the current fair market value of property exceeds \$5,000. For-profit entity disposition requirements are set forth at 2 CFR 910.360. Property disposition requirements for other non-federal entities are set forth in 2 CFR 200.310 – 200.316.

vii. Buy America Requirements for Infrastructure Projects

Pursuant to the Build America Buy America Act, subtitle IX of the BIL (Buy America, or “BABA”), federally assisted projects that involve infrastructure work, undertaken by applicable recipient types, require that:

- All iron, steel, and manufactured products used in the infrastructure work are produced in the U.S.; and
- All construction materials used in the infrastructure work are manufactured in the U.S..

Whether a given project must apply this requirement is project-specific and dependent on several factors, such as the recipient’s entity type, whether the work involves “infrastructure,” as that term is defined in Section 70914 of the BIL, and whether the infrastructure in question is publicly owned or serves a public function.

Applicants are strongly encouraged to consult Appendix C of this FOA to determine whether their project may have to apply this requirement, both to make an early determination as to the need of a waiver, as well as to determine what impact, if any, this requirement may have on the proposed project's budget.

Please note that, based on implementation guidance from the Office of Management and Budget (OMB) issued on April 18, 2022, the Buy America requirements of the BIL do not apply to DOE projects in which the prime recipient is a for-profit entity; the requirements only apply to projects whose prime recipient is a "non-federal entity," e.g., a State, local government, Indian Tribe, Institution of Higher Education, or non-profit organization. Subawards should conform to the terms of the prime award from which they flow; in other words, for-profit prime recipients are not required to flow down these Buy America requirements to subrecipients, even if those subrecipients are non-federal entities as defined above. Conversely, prime recipients which are non-federal entities must flow the Buy America requirements down to all subrecipients, even if those subrecipients are for-profit entities. Finally, for all applicants—both non-Federal entities and for-profit entities—DOE is including a Program Policy Factor that the Selection Official may consider in determining which Full Applications to select for award negotiations that considers whether the applicant has made a commitment to procure U.S. iron, steel, manufactured products, and construction materials in its project.

The DOE financial assistance agreement will require each recipient: (1) to fulfill the commitments made in its application regarding the procurement of U.S.-produced products and (2) to fulfill the commitments made in its application regarding the procurement of other key component metals and manufactured products domestically that are deemed available in sufficient and reasonably available quantities or of a satisfactory quality at the time of award negotiation. Applicants may seek waivers of these requirements in very limited circumstances and for good cause shown. Further details on requesting a waiver can be found in Appendix C and the terms and conditions of an award.

Applicants are strongly encouraged to consult Appendix C for more information.

viii. Davis-Bacon Act Requirements

Projects awarded under this FOA will be funded under Division D of the Bipartisan Infrastructure Law. Accordingly, per Section 41101 of that law, all laborers and mechanics employed by the recipient, subrecipients, contractors or subcontractors in the performance of construction, alteration, or repair work funded in whole or in part under this FOA shall be paid wages at rates not less than those prevailing on similar projects in the locality, as determined by the

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Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, U.S. Code commonly referred to as the “Davis-Bacon Act” (DBA).

Applicants shall provide written assurance acknowledging the DBA requirements above, and confirming that the laborers and mechanics performing construction, alteration, or repair work on projects funded in whole or in part by awards made as a result of this FOA are paid or will be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by subchapter IV of Chapter 31 of Title 40, U.S. Code (Davis-Bacon Act).

Applicants acknowledge that they will comply with all of the Davis-Bacon Act requirements, including but not limited to:

- (1) ensuring that the wage determination(s) and appropriate Davis-Bacon clauses and requirements are flowed down to and incorporated into any applicable subcontracts or subrecipient awards.
- (2) ensuring that if wage determination(s) and appropriate Davis-Bacon clauses and requirements are improperly omitted from contracts and subrecipient awards, the applicable wage determination(s) and clauses are retroactively incorporated to the start of performance.
- (3) being responsible for compliance by any subcontractor or subrecipient with the Davis-Bacon labor standards.
- (4) receiving and reviewing certified weekly payrolls submitted by all subcontractors and subrecipients for accuracy and to identify potential compliance issues.
- (5) maintaining original certified weekly payrolls for 3 years after the completion of the project and must make those payrolls available to the DOE or the U.S. Department of Labor (DOL) upon request, as required by 29 CFR 5.6(a)(2).
- (6) conducting payroll and job-site reviews for construction work, including interviews with employees, with such frequency as may be necessary to assure compliance by its subcontractors and subrecipients and as requested or directed by the DOE.
- (7) cooperating with any authorized representative of the DOL in their inspection of records, interviews with employees, and other actions undertaken as part of a DOL investigation.

(8) posting in a prominent and accessible place the wage determination(s) and DOL Publication: WH-1321, Notice to Employees Working on Federal or Federally Assisted Construction Projects.

(9) notifying the Contracting Officer of all labor standards issues, including all complaints regarding incorrect payment of prevailing wages and/or fringe benefits, received from the recipient, subrecipient, contractor, or subcontractor employees; significant labor standards violations, as defined in 29 CFR 5.7; disputes concerning labor standards pursuant to 29 CFR Parts 4, 6, and 8 and as defined in FAR 52.222-14; disputed labor standards determinations; DOL investigations; or legal or judicial proceedings related to the labor standards under this Contract, a subcontract, or subrecipient award.

(10) preparing and submitting to the Contracting Officer, the Office of Management and Budget Control Number 1910-5165, Davis Bacon Semi-Annual Labor Compliance Report, by April 21 and October 21 of each year. Form submittal will be administered through the iBenefits system (<https://doeibenefits2.energy.gov>), its successor system, or other manner of compliance as directed by the Contracting Officer.

Recipients of funding under this FOA will also be required to undergo Davis-Bacon Act compliance training and to maintain competency in Davis-Bacon Act compliance. The Contracting Officer will notify the recipient of any DOE sponsored Davis-Bacon Act compliance trainings. The DOL offers free Prevailing Wage Seminars several times a year that meet this requirement, at <https://www.dol.gov/agencies/whd/government-contracts/construction/seminars/events>.

For additional guidance on how to comply with the Davis-Bacon provisions and clauses, see <https://www.dol.gov/agencies/whd/government-contracts/construction> and <https://www.dol.gov/agencies/whd/government-contracts/protections-for-workers-in-construction>.

DOE anticipates contracting with a third party for a Davis-Bacon Act electronic payroll compliance software application. Recipients of funding under this FOA must ensure the timely electronic submission of weekly certified payrolls through this software as part of its compliance with the Davis-Bacon Act unless a waiver is granted to a particular contractor or subcontractor because they are unable or limited in their ability to use or access. Applicants should indicate if a waiver will be sought.

ix. Lobbying

Recipients and subrecipients may not use any federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

Recipients and subrecipients are required to complete and submit SF-LLL, "Disclosure of Lobbying Activities" (<https://www.grants.gov/web/grants/forms/sf-424-individual-family.html>) to ensure that non-federal funds have not been paid and will not be paid to any person for influencing or attempting to influence any of the following in connection with the application:

- An officer or employee of any federal agency;
- A Member of Congress;
- An officer or employee of Congress; or
- An employee of a Member of Congress.

x. Risk Assessment

Pursuant to 2 CFR 200.206, DOE will conduct an additional review of the risk posed by applications submitted under this FOA. Such risk assessment will consider:

1. Financial stability;
2. Quality of management systems and ability to meet the management standards prescribed in 2 CFR 200 as amended and adopted by 2 CFR 910;
3. History of performance;
4. Audit reports and findings; and
5. The applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-federal entities.

DOE may make use of other publicly available information and the history of an applicant's performance under DOE or other federal agency awards.

Depending on the severity of the findings and whether the findings were resolved, DOE may elect not to fund the applicant.

In addition to this review, DOE must comply with the guidelines on government-wide suspension and debarment in 2 CFR 180, and must require non-federal entities to comply with these provisions. These provisions restrict federal awards, subawards and contracts with certain parties that are debarred,

suspended or otherwise excluded from or ineligible for participation in federal programs or activities.

Further, as DOE invests in critical infrastructure and funds critical and emerging technology areas, DOE also considers possible vectors of undue foreign influence in evaluating risk. If high risks are identified and cannot be sufficiently mitigated, DOE may elect to not fund the applicant.

xi. Invoice Review and Approval

DOE employs a risk-based approach to determine the level of supporting documentation required for approving invoice payments. Recipients may be required to provide some or all of the following items with their requests for reimbursement:

- Summary of costs by cost categories;
- Timesheets or personnel hours report;
- Proof of compliance with Davis-Bacon and electronic submittals of certified payroll reports;
- Invoices/receipts for all travel, equipment, supplies, contractual, and other costs;
- UCC filing proof for equipment acquired with project funds by for-profit recipients and subrecipients;
- Explanation of cost share for invoicing period;
- Analogous information for some subrecipients; and
- Other items as required by DOE.

xii. Prohibition Related to Foreign Government-Sponsored Talent Recruitment Programs

a. Prohibition

Persons participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk* are prohibited from participating in projects selected for federal funding under this FOA. Should an award result from this FOA, the recipient must exercise ongoing due diligence to reasonably ensure that no individuals participating on the DOE-funded project are participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk*. Consequences for violations of this prohibition will be determined according to applicable law, regulations, and policy. Further, the recipient must notify DOE within five (5) business days upon learning that an individual on the project team is or is believed to be participating in a foreign government talent recruitment

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program of a foreign country of risk. DOE may modify and add requirements related to this prohibition to the extent required by law.

b. Definitions

- 1. Foreign Government-Sponsored Talent Recruitment Program.** An effort directly or indirectly organized, managed, or funded by a foreign government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to relocate physically to the foreign state for the above purpose. Some programs allow for or encourage continued employment at U.S. research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.
- 2. Foreign Country of Risk.** DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

xiii. Affirmative Action and Pay Transparency Requirements

All applicants must comply with all applicable federal labor and employment laws, including but not limited to Title VII of the Civil Rights Act of 1964, the Fair Labor Standards Act, the Occupational Safety and Health Act, and the National Labor Relations Act, which protects employees' right to bargain collectively and engage in concerted activities for the purpose of workers' mutual aid or protection.

All federally assisted construction contracts exceeding \$10,000 annually will be subject to the requirements of Executive Order 11246 Equal Employment Opportunity:

(1) Recipients, subrecipients, contractors and subcontractors are prohibited from discriminating in employment decisions on the basis of race, color, religion, sex, sexual orientation, gender identity or national origin.

(2) Recipients and contractors are required to take affirmative action to ensure that equal opportunity is provided in all aspects of their employment. This includes flowing down the appropriate language to all subrecipients, contractors and subcontractors.

(3) Recipients, subrecipients, contractors and subcontractors are prohibited from taking adverse employment actions against applicants and employees for asking about, discussing, or sharing information about their pay or, under certain circumstances, the pay of their co-workers.

The Department of Labor's (DOL) Office of Federal Contractor Compliance Programs (OFCCP) uses a neutral process to schedule compliance evaluations. OFCCP's Technical Assistance Guide⁷¹ should be consulted to gain an understanding of the requirements and possible actions the recipients, subrecipients, contractors and subcontractors must take. Additional guidance may also be found in the National Policy Assurances, produced by DOE.

xiv. Foreign Collaboration Considerations

- a. Consideration of new collaborations with foreign entities and governments. The recipient will be required to provide DOE with advanced written notification of any potential collaboration with foreign entities or governments in connection with its DOE-funded award scope. The recipient will then be required to await further guidance from DOE prior to contacting the proposed foreign entity or government regarding the potential collaboration or negotiating the terms of any potential agreement.
- b. Existing collaborations with foreign entities and governments. The recipient will be required to provide DOE with a written list of all existing foreign collaborations in which has entered in connection with its DOE-funded award scope.
- c. Description of collaborations that should be reported: In general, a collaboration will involve some provision of a thing of value to, or from, the recipient. A thing of value includes but may not be limited to all resources made available to, or from, the recipient in support of and/or related to the DOE award, regardless of

⁷¹ See OFCCP's Technical Assistance Guide at:

<https://www.dol.gov/sites/dolgov/files/ofccp/Construction/files/ConstructionTAG.pdf?msclkid=9e397d68c4b111ec9d8e6fecb6c710ec> Also see the National Policy Assurances <http://www.nsf.gov/awards/managing/rtr.jsp>

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whether or not they have monetary value. Things of value also may include in-kind contributions (such as office/laboratory space, data, equipment, supplies, employees, students). In-kind contributions not intended for direct use on the DOE award but resulting in provision of a thing of value from or to the DOE award must also be reported. Collaborations do not include routine workshops, conferences, use of the recipient's services and facilities by foreign investigators resulting from its standard published process for evaluating requests for access, or the routine use of foreign facilities by awardee staff in accordance with the recipient's standard policies and procedures.

V. Application Review Information

A. Technical Review Criteria

i. Concept Papers

Concept Papers are evaluated based on consideration the following factors. All sub-criteria are of equal weight.

Topic Area 1

Concept Paper Criterion: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)

This criterion involves consideration of the following factors:

- Clear description of the proposed site and potential for technology integration, process, or project;
- How the site and technology integration, process, or project is unique and innovative, and how the site and technology integration, the technology, process, or project will advance the current state-of-the-art;
- Identification of risks and challenges of the site regulatory, technology, and financial aspects of the proposal including possible mitigation strategies, and has shown the impact that EERE funding and the proposed project would have on the relevant field and application;
- Description of community and labor engagement in the project;
- Detail on how the applicant's qualifications, experience, capabilities and other resources necessary to complete the proposed project; and
- The proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA.

Topic Area 2

Concept Paper Criterion 1: Community Led Tidal and/or Current Development, Technical Innovation, and Project Impact (Weight: 60%)

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- Description of a community led-tidal and/or current development process that effectively integrates community representatives and priorities with a technology development and testing R&D process.
- Proposed technology, site, process, or project, how the technology, site, process, or project is unique and innovative, and how the technology, process, or project will advance the current state-of-the-art;

Concept Paper Criterion 2: Overall FOA Responsiveness and Viability of the Project (Weight: 40%)

- Identified risks and challenges of the technology, regulatory, and financial aspects of the proposal including possible mitigation strategies, and articulation of the impact that EERE funding and the proposed project would have on the relevant field and application;
- Description of community and labor engagement in the project;
- Qualifications, experience, capabilities and other resources necessary to complete the proposed project of the applicant; and
- How the proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA.

ii. Full Applications

Applications will be evaluated against the technical review criteria shown below. All sub-criteria are of equal weight.

Topic Area 1

Criterion 1: Site Implementation and Market Transformation Plan (50%)

This criterion involves consideration of the following factors:

Demonstration Approach, Workplan and SOPO

- Degree to which the approach and critical path have been clearly described and thoughtfully considered; and
- Degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan and SOPO will succeed in meeting the project goals.

Identification of Site and Technical Risks

- Discussion and demonstrated understanding of the key site, technical risk areas involved in the proposed work and the quality of the mitigation strategies to address them.

Baseline, Metrics, and Deliverables

- Level of clarity in the definition of the baseline, metrics, and milestones; and

- Relative to a clearly defined project baseline, the strength of the quantifiable metrics, milestones, and mid-point deliverables defined in the application, such that meaningful interim progress will be made.

Site Market Transformation Plan

- Identification of target market, competitors (such as other renewables) and distribution channels for proposed site along with known or perceived barriers to market penetration, including mitigation plan; and
- Comprehensiveness of site market transformation plan including but not limited to technology integration, technology marketing, technology distribution, technology development and/or service plan, commercialization timeline, financing, legal/regulatory considerations including intellectual property, infrastructure requirements, fossil fuel displacement).

Industry Adoption Plan

- Identification of the interest and extent of industry adoption of the technology/process including stakeholder support of the commercialization plan for the site, and how the business model incorporates stakeholder renewable energy targets and policy goals.

Criterion 2: Technical Merit, Innovation, and Impact (20%)

This criterion involves consideration of the following factors:

Technical Merit and Innovation

- Extent to which the proposed technology Integration, process, or project is innovative or replicable;
- Degree to which the current state of the technology or science and the proposed advancement to demonstration and commercialization are clearly described;
- Extent to which the application specifically and convincingly demonstrates how the applicant will move the state-of-the-art to the proposed advancement to demonstration and commercialization;
- Sufficiency of technical detail in the application to assess whether the proposed work is scientifically meritorious and revolutionary, including relevant data, calculations and discussion of prior work with analyses that support the viability of the proposed work;
- Extent to which project has buy-in from needed stakeholders to ensure success of the project; Degree to which key manufacturing and supply chain challenges are considered, as applicable, for viable scale-up in this and future demonstrations;
- Degree to which siting and environmental constraints are considered for site development and technology integration;

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- Extent to which project has the potential to reduce emissions and provide clean energy acceleration benefits for a community or region;
- Sufficiency of existing infrastructure to support addition of proposed demonstration; and
- Robustness of validation of models and tools (if applicable).

Impact of Technology Integration

- Ability of the project to advance market adoption;
- Extent to which the project supports the topic area objectives and target specifications and metrics;
- Potential impact of the project on advancing the state-of-the-art;
- Extent to which demonstration/ deployment is replicable and may lead to future demonstrations;
- Extent to which the project facilitates stakeholder relationships across new or existing stakeholders to gain technical buy-in and increase potential for future deployments; and
- Extent to which results dissemination will maximize project impact.

Project Management

- Adequacy of proposed project management systems including the ability to track scope, cost, and schedule progress and changes;
- Reasonableness of budget and spend plan as detailed in the budget justification workbook for proposed project and objectives;
- Adequacy of contingency funding based on quality of cost estimate and identified risks;
- Adequacy, reasonableness, and soundness of the project schedule, as well as periodic Go/No-Go decisions prior to further funds disbursement, interim milestones, and metrics to track process;
- Adequacy, reasonableness, and soundness of the project schedule, as well as annual Go/No-Go decisions prior to a budget period continuation application, interim milestones, and metrics to track process;
- Adequacy of the identification of risks, including labor and community opposition or disputes, and “timely” and appropriate strategies for mitigation and resolution; and
- Soundness of a plan to expeditiously address environmental, siting, and other regulatory requirements for the project, including evaluation of resilience to climate change.

Criterion 3: Team and Resources (10%)

This criterion involves consideration of the following factors:

- How the site will be managed, the entities that make up the core team, and how diversity and inclusion will be assured.

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- Capability of the Lead Site Project Manager(s) and the proposed team to address all aspects of the proposed work with a high probability of success. The qualifications, relevant expertise, and time commitment of the individuals on the team;
- Degree to which team and partnerships are organizationally separated between site developer and technology developer;
- Degree to which proposed site business model demonstrates sustainability of the site;
- Degree of diversity, equity, and inclusion plan demonstrating the actions the team will take to foster an inclusive work environment and promote diversity throughout the organization and supply chain.
- The diversity of expertise and perspectives of the team and the inclusion of industry partners that will amplify impact;
- Sufficiency of the facilities to support the work;
- Degree to which the proposed consortia/team demonstrates the ability to facilitate and expedite further demonstration, development and commercial deployment of the proposed technologies including supporting evidence of past successful technology installations and/or site development;
- Level of participation by project participants as evidenced by letter(s) of commitment, memorandums of understanding, or memorandums of agreement; and how well they are integrated into the Workplan; and
- Reasonableness of the budget and spend plan for the proposed project and objectives.

Criterion 4: Community Benefits Plan (20%)Community and Labor Engagement

- Extent to which the applicant demonstrates community and labor engagement to date that results in support for the proposed project;
- Extent to which the applicant has a clear and appropriately robust plan to engage—ideally through a clear commitment to negotiate an enforceable Workforce & Community Agreements—with labor unions, Tribal entities, and community-based organizations that support or work with disadvantaged communities and other affected stakeholders;
- Extent to which the applicant has considered accountability to affected workers and community stakeholders, including those most vulnerable to project activities with a plan to publicly share SMART community benefits plan commitments; and
- Extent to which the applicant demonstrates that community and labor engagement will lead to the delivery of high-quality jobs, minimal environmental impact, and allocation of project benefits to disadvantaged communities.

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Job Quality and Workforce Continuity

- Quality and manner in which the proposed project will create and/or retain high quality, good-paying jobs with employer-sponsored benefits for all classifications and phases of work;
- Extent to which the project provides employees with the ability to organize, bargain collectively, and participate, through labor organizations of their choosing, in decisions that affect them and that contribute to the effective conduct of business and facilitates amicable settlements of any potential disputes between employees and employers, providing assurances of project efficiency, continuity, and multiple public benefits; and
- Extent to which applicant demonstrates that they are a responsible employer, with ready access to a sufficient supply of appropriately skilled labor, and an effective plan to minimize the risk of labor disputes or disruptions.

Diversity, Equity, Inclusion, and Accessibility

- Extent to which the Community Benefits Plan includes specific and high-quality actions to meet DEIA goals, which may include DEIA recruitment procedures, supplier diversity plans, and other DEIA initiatives; and
- Quality of any partnerships and agreements with apprenticeship readiness programs, or community-based workforce training and support organizations serving workers facing systematic barriers to employment to facilitate participation in the project's construction and operations.

Justice40 Initiative

- Extent to which the Community Benefits Plan identifies: specific, measurable benefits for disadvantaged communities, how the benefits will flow to disadvantaged communities, and how negative environmental impacts affecting disadvantaged communities would be mitigated; and
- Extent to which the project would contribute to meeting the objective that 40% of the overall benefits of climate and clean energy investments flow to disadvantaged communities.

Topic Area 2**Criterion 1: Community Led Tidal and/or Current Development, Innovation, and Impact (40%)**

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This criterion involves consideration of the following factors:

- Degree to which community strategic planning, decarbonization and energy goals, climate resilience strategies, climate adaptation plans inform community adoptions and technology development;
- Degree to which the community-led development process integrates community priorities and technology development;
- Capability of the identified Community Representative Project Manager(s) and the proposed team to address all aspects of the proposed work with a high probability of success. The qualifications, relevant expertise, and time commitment of the individuals on the team;
- Degree to which Community Representative Project Manager is embedded or proximal to community; (emphasize degree of local knowledge)
- The diversity of expertise and perspectives of the team and the inclusion of industry and community partners that will amplify impact;
- Degree to which areas of expected community input and decision making, including how the community will inform technology design, siting, technology maintenance, technology operations, and equipment operation are identified;
- Degree to which the community is drawing resources to participate and identify where additional community capacity is needed and how that capacity will be addressed throughout the project; and
- Extent to which other stakeholders are engaged and included within a community-led process, such as commercial fishing, sport fishing, regulators and local officials, etc.

Criterion 2: Technical Innovation, Testing, and Impact (30%)

This criterion involves consideration of the following factors:

Technical Merit and Innovation

- Extent to which the proposed technology, process, or project is innovative or replicable, as in the proposed technology could be deployed in similar communities and locations;
- Degree to which the current state of the technology or science and the proposed advancement are clearly described;
- Extent to which the application specifically and convincingly demonstrates how the applicant will pursue R&D testing in-water to advance solutions for community-driven clean energy transitions;
- Sufficiency of technical detail in the application to assess whether the proposed work is scientifically meritorious, including relevant data, calculations and discussion of prior work with analyses that support the viability of the proposed work;
- Degree to which key manufacturing and local supply chain challenges are considered,

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- Degree to which siting and environmental constraints are considered for deployment;
- Extent to which the project has the potential to advance energy and community resilience goals;
- Sufficiency of existing infrastructure to support addition of proposed demonstration;
- Extent to which the project supports the topic area objectives, target specifications, and metrics; and
- Extent to which results dissemination will maximize project impact.

Criterion 3: Project Management (15%)

This criterion involves consideration of the following factors:

Project Approach, Workplan and SOPO

- Degree to which the approach and critical path have been clearly described and thoughtfully considered; and
- Degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan and SOPO will succeed in meeting the project goals.
- Extent to which a change management process is discussed and considered as part of the project tasks and integrated into the project lifecycle.

Identification of Project Risks

- Discussion and demonstrated understanding of the key risk areas involved in the proposed work and the quality of the mitigation strategies to address them, as well as a proposed tracking method and cadence through the project lifecycle.

Baseline, Metrics, and Deliverables

- Level of clarity in the definition of the baseline, metrics, and milestones; and
- Relative to a clearly defined project baseline, the strength of the quantifiable and qualitative metrics, milestones, and mid-point deliverables defined in the application, such that meaningful interim progress will be made.

Criterion 4: Community Benefits Plan (15%)

This criterion involves consideration of the following factors:

Diversity, Equity, Inclusion, and Accessibility (DEIA)

- Clear articulation of the project's goals related to diversity, equity, inclusion, and accessibility; these are four different, but related, concepts that should not be conflated and each are necessary for higher scores.

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- Quality of the project's DEIA goals, as measured by the goals' depth, breadth, likelihood of success, inclusion of appropriate and relevant SMART milestones, and overall project integration;
- Degree of commitment and ability to track progress towards meeting each of the diversity, equity, inclusion, and accessibility goals; and
- Extent of engagement of organizations that represent disadvantaged communities as a core element of their mission, including MSIs, Minority Business Entities, and non-profit or community-based organizations.

Energy Equity

- Clear workplan tasks, staffing, research, and timeline for engaging energy equity stakeholders and/or evaluating the possible near and long-term implications of the project for the benefit of the American public, including, but not limited to, the public health and public prosperity benefits;
- Approach, methodology, and expertise articulated in the plan for addressing energy equity and justice issues associated with the technology innovation; and
- Likelihood that the plan will result in improved understanding of distributional public benefits and costs, both for the general public and disadvantaged communities, related to the innovation if successful.

Workforce Implications

- Clear and comprehensive workplan tasks, staffing, research, and timeline for engaging workforce stakeholders and/or evaluating the possible near- and long-term implications of the project for the U.S. workforce;
- Approach to document the knowledge, skills, and abilities of the workforce required for successful commercial deployment of innovations resulting from this research; and
- Likelihood that the plan will result in improved understanding of the workforce implications related to the innovation if successful.

iii. Criteria for Replies to Reviewer Comments

DOE has not established separate criteria to evaluate Replies to Reviewer Comments. Instead, Replies to Reviewer Comments are attached to the original applications and evaluated as an extension of the Full Application.

B. Standards for Application Evaluation

Applications that are determined to be eligible will be evaluated in accordance with this FOA, by the standards set forth in EERE's Notice of Objective Merit Review Procedure (76 Fed. Reg. 17846, March 31, 2011) and the guidance provided in the "DOE Merit Review Guide for Financial Assistance," effective September 2020, which is available at:

<https://energy.gov/management/downloads/merit-review-guide-financial-assistance-and-unsolicited-proposals-current>.

C. Other Selection Factors

i. Program Policy Factors

In addition to the above criteria, the Selection Official may consider the following program policy factors in determining which Full Applications to select for award negotiations:

- The degree to which the proposed project exhibits technological diversity when compared to the existing DOE project portfolio and other projects selected from the subject FOA;
- The degree to which the proposed project, including proposed cost share, optimizes the use of available DOE funding to achieve programmatic objectives;
- The level of industry involvement and demonstrated ability to accelerate demonstration and commercialization and overcome key market barriers;
- The degree to which the proposed project is likely to lead to increased high-quality employment and manufacturing in the U.S. ;
- The degree to which the proposed project will accelerate transformational market advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty;
- The degree to which the proposed project incorporates applicant or team members from Minority Serving Institutions (e.g., Historically Black Colleges and Universities (HBCUs)/Other Minority Serving Institutions); and partnerships with Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, Veteran Owned Businesses, or Tribal Nations;
- The degree to which the proposed project will employ procurement of U.S. iron, steel, manufactured products, and construction materials.
- The degree to which the proposed project has broad public support from the communities most directly impacted by the project.
- The degree to which the proposed project enables new and expanding market segments.
- The degree to which the project's solution or strategy will maximize deployment or replication.

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- The degree to which the project promotes increased coordination with nongovernmental entities for demonstration of technologies and research applications to facilitate technology transfer.
- The degree to which data access and availability supports community-led energy transitions, equity, and long-term priorities.

D. Evaluation and Selection Process

i. Overview

The evaluation process consists of multiple phases; each includes an initial eligibility review and a thorough technical review. Rigorous technical reviews of eligible submissions are conducted by reviewers that are experts in the subject matter of the FOA. Ultimately, the Selection Official considers the recommendations of the reviewers, along with other considerations such as program policy factors, in determining which applications to select.

ii. Pre-Selection Interviews

As part of the evaluation and selection process, DOE may invite one or more applicants to participate in pre-selection interviews. Pre-selection interviews are distinct from and more formal than pre-selection clarifications (See Section V.D. of the FOA). The invited applicant(s) will meet with DOE representatives to provide clarification on the contents of the Full Applications and to provide DOE an opportunity to ask questions regarding the proposed project. The information provided by applicants to DOE through pre-selection interviews contributes to DOE's selection decisions.

DOE will arrange to meet with the invited applicants in person at DOE's offices or a mutually agreed upon location. DOE may also arrange site visits at certain applicants' facilities. In the alternative, DOE may invite certain applicants to participate in a one-on-one conference with DOE via webinar, videoconference, or conference call.

DOE will not reimburse applicants for travel and other expenses relating to the pre-selection interviews, nor will these costs be eligible for reimbursement as pre-award costs.

Participation in pre-selection interviews with DOE does not signify that applicants have been selected for award negotiations.

iii. Pre-Selection Clarification

DOE may determine that pre-selection clarifications are necessary from one or more applicants. Pre-selection clarifications are distinct from and less formal

than pre-selection interviews. These pre-selection clarifications will solely be for the purposes of clarifying the application. The pre-selection clarifications may occur before, during or after the merit review evaluation process. Information provided by an applicant that is not necessary to address the pre-selection clarification question will not be reviewed or considered. Typically, a pre-selection clarification will be carried out through either written responses to DOE's written clarification questions or video or conference calls with DOE representatives.

The information provided by applicants to DOE through pre-selection clarifications is incorporated in their applications and contributes to the merit review evaluation and DOE's selection decisions. If DOE contacts an applicant for pre-selection clarification purposes, it does not signify that the applicant has been selected for negotiation of award or that the applicant is among the top ranked applications.

DOE will not reimburse applicants for expenses relating to the pre-selection clarifications, nor will these costs be eligible for reimbursement as pre-award costs.

iv. Recipient Responsibility and Qualifications

DOE, prior to making a federal award with a total amount of federal share greater than the simplified acquisition threshold, is required to review and consider any responsibility and qualification information about the applicant that is in the entity information domain in [SAM.gov](https://sam.gov) (see 41 U.S.C. § 2313).

The applicant, at its option, may review information in the entity information domain in [SAM.gov](https://sam.gov) and comment on any information about itself that a federal awarding agency previously entered and is currently in the entity information domain in [SAM.gov](https://sam.gov).

DOE will consider any written comments by the applicant, in addition to the other information in the entity information domain in [SAM.gov](https://sam.gov), in making a judgment about the applicant's integrity, business ethics, and record of performance under federal awards when completing the review of risk posed by applicants as described in 2 CFR 200.206.

v. Selection

The Selection Official may consider the technical merit, the Federal Consensus Board's recommendations, program policy factors, and the amount of funds available in arriving at selections for this FOA.

E. Anticipated Notice of Selection and Award Negotiation Dates

EERE anticipates notifying applicants selected for negotiation of award and negotiating awards by the dates provided on the cover page of this FOA.

VI. Award Administration Information

A. Award Notices

i. Ineligible Submissions

Ineligible Concept Papers and Full Applications will not be further reviewed or considered for award. The Contracting Officer will send a notification letter by email to the technical and administrative points of contact designated by the applicant in EERE eXCHANGE. The notification letter will state the basis upon which the Concept Paper or the Full Application is ineligible and not considered for further review.

ii. Concept Paper Notifications

DOE will notify applicants of its determination to encourage or discourage the submission of a Full Application. DOE will post these notifications to EERE eXCHANGE. DOE may include general comments provided from reviewers on an applicant's Concept Paper in the encourage/discourage notifications.

Applicants may submit a Full Application even if they receive a notification discouraging them from doing so. By discouraging the submission of a Full Application, DOE intends to convey its lack of programmatic interest in the proposed project. Such assessments do not necessarily reflect judgments on the merits of the proposed project. The purpose of the Concept Paper phase is to save applicants the considerable time and expense of preparing a Full Application that is unlikely to be selected for award negotiations.

iii. Full Application Notifications

DOE will notify applicants of its determination via a notification letter by email to the technical and administrative points of contact designated by the applicant in EERE eXCHANGE. The notification letter will inform the applicant whether or not its Full Application was selected for award negotiations. Alternatively, DOE may notify one or more applicants that a final selection determination on particular Full Applications will be made at a later date, subject to the availability of funds or other factors.

iv. Applicants Selected for Award Negotiations

Successful applicants will receive written notification that they have been selected for award negotiations. Receipt of a notification letter selecting a Full Application for award negotiations does not authorize the applicant to commence performance of the project. If an application is selected for award negotiations, it is not a commitment by DOE to issue an award nor is it a guarantee of Federal Government funding. Applicants do not receive an award unless and until award negotiations are complete and the Contracting Officer executes the funding agreement, accessible by the prime recipient in FedConnect.

The award negotiation process will take approximately 60 days. Applicants must designate a primary and a backup point-of-contact in EERE eXCHANGE with whom DOE will communicate to conduct award negotiations. The applicant must be responsive during award negotiations (i.e., provide requested documentation) and meet the negotiation deadlines. If the applicant fails to do so or if award negotiations are otherwise unsuccessful, DOE will cancel the award negotiations and rescind the Selection. DOE reserves the right to terminate award negotiations at any time for any reason.

Please refer to Section IV.K. of the FOA for guidance on pre-award costs.

v. Alternate Selection Determinations

In some instances, an applicant may receive a notification that its application was not selected for award and DOE designated the application to be an alternate. As an alternate, DOE may consider the Full Application for federal funding in the future. A notification letter stating the Full Application is designated as an alternate does not authorize the applicant to commence performance of the project. DOE may ultimately determine to select or not select the Full Application for award negotiations.

vi. Unsuccessful Applicants

DOE shall promptly notify in writing each applicant whose application has not been selected for award or whose application cannot be funded because of the unavailability of appropriated funds.

B. Administrative and National Policy Requirements

i. Registration Requirements

There are several one-time actions before submitting an application in response to this FOA, and it is vital that applicants address these items as soon as possible. Some may take several weeks, and failure to complete them could interfere with

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an applicant's ability to apply to this FOA, or to meet the negotiation deadlines and receive an award if the application is selected. These requirements are as follows:

1. EERE Funding Opportunity Exchange (eXCHANGE)

Register and create an account on EERE eXCHANGE at <https://eere-eXCHANGE.energy.gov>. This account will allow the user to apply to any open EERE FOAs that are currently in EERE eXCHANGE.

To access [EERE eXCHANGE](#), potential applicants are required to have a [Login.gov](#) account. As part of the eXCHANGE registration process, new users will be directed to create an account in Login.gov. Please note that the email address associated with Login.gov must match the email address associated with the eXCHANGE account. For more information, refer to the eXCHANGE Multi-Factor Authentication (MFA) Quick Guide in the [Manuals section](#) of 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. Applicants should also designate backup points of contact so they may be easily contacted if deemed necessary. **This step is required to apply to this FOA.** The eXCHANGE registration does not have a delay; however, **the remaining registration requirements below could take several weeks to process and are necessary for a potential applicant to receive an award under this FOA.**

2. System for Award Management

Register in SAM (<https://www.sam.gov>). Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called a Marketing Partner ID Number (MPIN) are important steps in SAM registration. Please update your SAM registration annually.

3. FedConnect

Register in FedConnect (<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/Marketing/Documents/FedConnect_Ready_Set_Go.pdf.

4. Grants.gov

Register in Grants.gov (<http://www.grants.gov>) to receive automatic updates when Amendments to this FOA are posted. However, please note that

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Letters of Intent, Concept Papers, and Full Applications will not be accepted through Grants.gov.

5. Electronic Authorization of Applications and Award Documents

Submission of an application and supplemental information under this FOA through electronic systems used by the DOE, including EERE eXCHANGE and FedConnect, constitutes the authorized representative's approval and electronic signature.

ii. Award Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR Part 200 as amended by 2 CFR Part 910.

iii. Foreign National Participation

All applicants selected for an award under this FOA and project participants (including subrecipients and contractors) who anticipate involving foreign nationals in the performance of an award, may be required to provide DOE with specific information about each foreign national to satisfy requirements for foreign national participation. A "foreign national" is defined as any person who is not a U.S. citizen by birth or naturalization. The volume and type of information collected may depend on various factors associated with the award. DOE concurrence may be required before a foreign national can participate in the performance of any work under an award.

DOE may elect to deny foreign national's participation in the award. Likewise, DOE may elect to deny a foreign national's access to a DOE site, information, technologies, equipment, programs or personnel.

iv. 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. Prime recipients must register with the new FFATA Subaward Reporting System database and report the required data on their first tier subrecipients. Prime recipients must report the executive compensation for their own executives as part of their registration profile in SAM.

v. National Policy Requirements

The National Policy Assurances that are incorporated as a term and condition of award are located at: <http://www.nsf.gov/awards/managing/rtc.jsp>.

vi. Environmental Review in Accordance with National Environmental Policy Act (NEPA)

DOE's decision whether and how to distribute federal funds under this FOA is subject to NEPA (42 U.S.C. § 4321, *et seq.*). NEPA requires federal agencies to integrate environmental values into their decision-making processes by considering the potential environmental impacts of their proposed actions. For additional background on NEPA, please see DOE's NEPA website, at <https://www.energy.gov/nepa>.

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all recipients 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. If DOE determines certain records must be prepared to complete the NEPA review process (e.g., biological evaluations or environmental assessments), the recipient may be required to prepare the records and the costs to prepare the necessary records may be included as part of the project costs.

vii. Flood Resilience

Applications should indicate whether the proposed project location(s) is within a floodplain, how the floodplain was defined, and how future flooding will factor into the project's design. The base floodplain long used for planning has been the 100-year floodplain, that is, a floodplain with a 1.0 percent chance of flooding in any given year. As directed by Executive Order 13690, establishing a federal flood risk management standard and a process for Further Soliciting and Considering Stakeholder Input (2015), Federal agencies, including DOE, continue to avoid development in a floodplain to the extent possible. When doing so is not possible, Federal agencies are directed to "expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended." The higher flood elevation is based on one of three approaches: climate-informed science (preferred), freeboard value, or 0.2 percent annual flood change (500-year floodplain). EO 13690 and related information is available at <https://www.energy.gov/nepa/articles/eo-13690-establishing-federal-flood-risk-management-standard-and-process-further>.

viii. Applicant Representations and Certifications**1. Lobbying Restrictions**

By accepting funds under this award, the prime recipient agrees that none of the funds obligated on the award shall be expended, directly or indirectly, to

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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.

2. Corporate Felony Conviction and Federal Tax Liability Representations

In submitting an application in response to this FOA, the applicant represents that:

- a. It is **not** a corporation that has been convicted of a felony criminal violation under any federal law within the preceding 24 months; and
- b. 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 U.S. [but not foreign corporations]. It includes both for-profit and non-profit organizations.

3. Nondisclosure and Confidentiality Agreements Representations

In submitting an application in response to this FOA the applicant represents that:

- a. It **does not and will not** require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contractors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a federal department or agency authorized to receive such information.
- b. It **does not and will not** use any federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:

(1) *“These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive Order relating to (1) classified*

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information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive Orders and statutory provisions are incorporated into this agreement and are controlling.”

- (2) The limitation above shall not contravene requirements applicable to Standard Form 312 Classified Information Nondisclosure Agreement (<https://fas.org/sgp/othergov/sf312.pdf>), Form 4414 Sensitive Compartmented Information Disclosure Agreement (<https://fas.org/sgp/othergov/intel/sf4414.pdf>), or any other form issued by a federal department or agency governing the nondisclosure of classified information.
- (3) Notwithstanding the provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the U.S. government, may contain provisions appropriate to the particular activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received in the course of such activity unless specifically authorized to do so by the U.S. government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the Department of Justice, that are essential to reporting a substantial violation of law.

ix. Statement of Federal Stewardship

DOE will exercise normal federal stewardship in overseeing the project activities performed under DOE awards. Stewardship Activities include, but are not limited to, conducting site visits; reviewing performance and financial reports; providing assistance and/or temporary intervention in unusual circumstances to correct deficiencies that develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the project objectives have been accomplished.

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x. Statement of Substantial Involvement

DOE has substantial involvement in work performed under awards made as a result of this FOA. DOE does not limit its involvement to the administrative requirements of the award. Instead, DOE has substantial involvement in the direction and redirection of the technical aspects of the project as a whole. Substantial involvement includes, but is not limited to, the following:

1. DOE shares responsibility with the recipient for the management, control, direction, and performance of the project.
2. DOE may intervene in the conduct or performance of work under this award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
3. DOE may redirect or discontinue funding the project based on the outcome of DOE's evaluation of the project at the Go/No-Go decision point(s).
4. DOE participates in major project decision-making processes.

xi. Intellectual Property Management Plan (IPMP)

If required by the DOE Contracting Officer, applicants must submit an executed IPMP between the members of the consortia or team as a Q1 milestone or at another appropriate time as determined by DOE.

The award will set forth the treatment of and obligations related to intellectual property rights between DOE and the individual members. The IPMP should describe how the members will handle intellectual property rights and issues between themselves while ensuring compliance with federal intellectual property laws, regulations, and policies (see Sections VIII.K.-VIII.N. of this FOA for more details on applicable federal intellectual property laws and regulations). Guidance regarding the contents of IPMP is available from DOE upon request.

The following is a non-exhaustive list of examples of items that the IPMP may cover:

- The treatment of confidential information between members (e.g., the use of NDAs);
- The treatment of background intellectual property (e.g., any requirements for identifying it or making it available);
- The treatment of inventions made under the award (e.g., any requirements for disclosing to the other members on an application, filing patent

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applications, paying for patent prosecution, and cross-licensing or other licensing arrangements between the members);

- The treatment of data produced, including software, under the award (e.g., any publication process or other dissemination strategies, copyrighting strategy or arrangement between members);
- Any technology transfer and commercialization requirements or arrangements between the members;
- The treatment of any intellectual property issues that may arise due to a change in membership of the consortia or team; and
- The handling of disputes related to intellectual property between the members.

xii. Subject Invention Utilization Reporting

To ensure that prime recipients and subrecipients holding title to subject inventions are taking the appropriate steps to commercialize subject inventions, DOE may require that each prime recipient holding title to a subject invention submit annual reports for ten (10) years from the date the subject invention was disclosed to DOE on the utilization of the subject invention and efforts made by prime recipient or their licensees or assignees to stimulate such utilization. The reports must include information regarding the status of development, date of first commercial sale or use, gross royalties received by the prime recipient, and such other data and information as DOE may specify.

xiii. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at <http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>.

xiv. Reporting

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

Additional reporting requirements apply to projects funded by the BIL. As part of tracking progress toward key departmental goals – ensuring justice and equity, investing in the American workforce, boosting domestic manufacturing, reducing greenhouse gas emissions, and advancing a pathway to private sector deployment – DOE may require specific data collection. Examples of data that may be collected include:

- New manufacturing production, or recycling capacity
- Jobs data, including:
 - Number and types of jobs provided, wages and benefits paid

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- Demographics of workforce including local hires
- Efforts to minimize risks of labor disputes and disruptions
- Contributions to training; certificates and training credentials received by employees; ratio of apprentice-to-journey level workers employed
- Number of trainings completed, trainees placed in full-time employment, or number of trainings with workforce partnerships involving employers, community-based organizations, or labor unions
- Justice and Equity data, including:
 - Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses and Veteran Owned Businesses acting as vendors and sub-contractors for bids on supplies, services and equipment.
 - Value, number, and type of partnerships with MSIs
 - Stakeholder engagement events, consent-based siting activities
 - Other relevant indicators from the Community Benefits Plan
- Number and type of energy efficient and clean energy equipment installed
- Funding leveraged, follow-on-funding, Intellectual Property (IP) Generation and IP Utilization

xv. Go/No-Go Review

Each project selected under this FOA will be subject to a periodic project evaluation referred to as a Go/No-Go Review. A Go/No-Go Review is a risk management tool and a project management best practice to ensure that, for the current phase or period of performance, technical success is definitively achieved and potential for success in future phases or periods of performance is evaluated, prior to actually beginning the execution of future phases. At the Go/No-Go decision points, DOE will evaluate project performance, project schedule adherence, the extent milestone objectives are met, compliance with reporting requirements, and overall contribution to the program goals and objectives. Federal funding beyond the Go/No-Go decision point (continuation funding) is contingent upon (1) availability of federal funds appropriated by Congress for the purpose of this program; (2) the availability of future-year budget authority; (3) recipient's technical progress compared to the Milestone Summary Table stated in Attachment 1 of the award; (4) recipient's submittal of required reports; (5) recipient's compliance with the terms and conditions of the award; (6) DOE's Go/No-Go decision; (7) the recipient's submission of a

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continuation application⁷²; and (8) written approval of the continuation application by the Contracting Officer.

As a result of the Go/No-Go Review, DOE may, at its discretion, authorize the following actions: (1) continue to fund the project, contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority; (2) recommend redirection of work under the project; (3) place a hold on federal funding for the project, pending further supporting data or funding; or (4) discontinue funding the project because of insufficient progress, change in strategic direction, or lack of funding.

The Go/No-Go decision is distinct from a non-compliance determination. In the event a recipient fails to comply with the requirements of an award, DOE may take appropriate action, including but not limited to, redirecting, suspending or terminating the award.

xvi. Conference Spending

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant or cooperative agreement was awarded that would defray the cost to the U.S. government of a conference held by any Executive branch department, agency, board, commission, or office for which the cost to the U.S. government would otherwise exceed \$20,000, thereby circumventing the required notification by the head of any such Executive Branch department, agency, board, commission, or office to the Inspector General (or senior ethics official for any entity without an Inspector General), of the date, location, and number of employees attending such conference.

xvii. Uniform Commercial Code (UCC) Financing Statements

Per 2 CFR 910.360 (Real Property and Equipment) when a piece of equipment is purchased by a for-profit recipient or subrecipient with federal funds, and when

⁷² A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least ninety (90) days before the end of each budget period, the recipient must submit its continuation application, which includes the following information:

- iv. A progress report on the project objectives, including significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.
- v. A detailed budget and supporting justification if there are changes to the negotiated budget, or a budget for the upcoming budget period was not approved at the time of award.
- vi. A description of any planned changes from the SOPO and/or Milestone Summary Table.

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the federal share of the financial assistance agreement is more than \$1,000,000, the recipient or subrecipient must:

Properly record, and consent to the Department's ability to properly record if the recipient fails to do so, UCC financing statement(s) for all equipment in excess of \$5,000 purchased with project funds. These financing statement(s) must be approved in writing by the Contracting Officer prior to the recording, and they shall provide notice that the recipient's title to all equipment (not real property) purchased with federal funds under the financial assistance agreement is conditional pursuant to the terms of this section, and that the government retains an undivided reversionary interest in the equipment. The UCC financing statement(s) must be filed before the Contracting Officer may reimburse the recipient for the federal share of the equipment unless otherwise provided for in the relevant financial assistance agreement. The recipient shall further make any amendments to the financing statements or additional recordings, including appropriate continuation statements, as necessary or as the Contracting Officer may direct.

xviii. Real Property and Equipment

Real property and equipment purchased with project funds (federal share and recipient cost share) are subject to the requirements at 2 CFR 200.310, 200.311, 200.313, and 200.316 (non-federal entities, except for-profit entities) and 2 CFR 910.360 (for-profit entities). For projects selected for award under this FOA, the recipient may (1) take disposition action on the real property and equipment; or (2) continue to use the real property and equipment after the conclusion of the award period of performance with Grants Officer approval. The recipient's written Request for Continued Use must identify the property and include: a summary of how the property will be used (must align with the authorized project purposes); a proposed use period, (e.g., perpetuity, until fully depreciated, or a calendar date where the recipient expects to submit disposition instructions); acknowledgement that the recipient shall not sell or encumber the property or permit any encumbrance without prior written DOE approval; current fair market value of the property; and an Estimated Useful Life or depreciation schedule for equipment.

When the property is no longer needed for authorized project purposes, the recipient must request disposition instructions from DOE. For-profit entity disposition requirements are set forth at 2 CFR 910.360. Property disposition requirements for other non-federal entities are set forth in 2 CFR 200.310 – 200.316.

xix. Implementation of Executive Order 13798, Promoting Free Speech and Religious Liberty

States, local governments, or other public entities may not condition sub-awards in a manner that would discriminate, or disadvantage sub-recipients based on their religious character.

xx. Participants and Collaborating Organizations

If selected for award negotiations, the selected applicant must submit a list of personnel who are proposed to work on the project, both at the recipient and subrecipient level and a list of proposed collaborating organizations prior to award. Recipients will have an ongoing responsibility to notify DOE of changes to the personnel and collaborating organizations, and submit updated information during the life of the award.

xxi. Current and Pending Support

If selected for award negotiations, within 30 days of the selection notice, the selectee must submit 1) current and pending support disclosures and resumes for any new PIs or senior/key personnel, and 2) updated disclosures if there have been any changes to the current and pending support submitted with the application. Throughout the life of the award, the recipient has an ongoing responsibility to submit 1) current and pending support disclosure statements and resumes for any new PI and senior/key personnel, and 2) updated disclosures if there are changes to the current and pending support previously submitted to DOE. Also see Section IV.E.

xxii. U.S. Manufacturing Commitments

A primary objective of DOE's multi-billion dollar research, development, and demonstration investments is to cultivate new research and development ecosystems, manufacturing capabilities, and supply chains for and by U.S. industry and labor. Therefore, in exchange for receiving taxpayer dollars to support an applicant's project, the applicant must agree to a U.S. Competitiveness provision requiring that any products embodying any subject invention or produced through the use of any subject invention will be manufactured substantially in the U.S. unless the recipient can show to the satisfaction of DOE that it is not commercially feasible. Award terms, including the specific U.S. Competitiveness Provision applicable to the various types of recipients and projects, are available at <https://www.energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>.

Please note that a subject invention is any invention conceived or first actually reduced to practice in performance of work under an award. An invention is

any invention or discovery which is or may be patentable. The recipient includes any awardee, recipient, sub-awardee, or sub-recipient.

As noted in the U.S. Competitiveness Provision, if an entity cannot meet the requirements of the U.S. Competitiveness Provision, the entity may request a modification or waiver of the U.S. Competitiveness Provision. For example, the entity may propose modifying the language of the U.S. Competitiveness Provision in order to change the scope of the requirements or to provide more specifics on the application of the requirements for a particular technology. As another example, the entity may request that the U.S. Competitiveness Provision be waived in lieu of a net benefits statement or U.S. manufacturing plan. The statement or plan would contain specific and enforceable commitments that would be beneficial to the U.S. economy and competitiveness. Examples of such commitments could include manufacturing specific products in the U.S., making a specific investment in a new or existing U.S. manufacturing facility, keeping certain activities based in the U.S. or supporting a certain number of jobs in the U.S. related to the technology. DOE may, in its sole discretion, determine that the proposed modification or waiver promotes commercialization and provides substantial U.S. economic benefits, and grant the request. If granted, DOE will modify the award terms and conditions for the requesting entity accordingly.

More information and guidance on the waiver and modification request process can be found in the DOE Financial Assistance Letter on this topic, available at <https://www.energy.gov/management/pf-2022-09-fal-2022-01-implementation-doe-determination-exceptional-circumstances-under>. Additional information on DOE's Commitment to Domestic Manufacturing for DOE-funded R&D is available at <https://www.energy.gov/gc/us-manufacturing>.

The U.S. Competitiveness Provision is implemented by DOE pursuant to a Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act and DOE Patent Waivers. See Section VIII.J. Title to Subject Inventions of this FOA for more information on the DEC and DOE Patent Waivers.

xxiii. Interim Conflict of Interest Policy for Financial Assistance

The DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy)⁷³ is applicable to all non-federal entities applying for, or that receive, DOE funding by means of a financial assistance award (e.g., a grant, cooperative agreement, or technology investment agreement) and, through the implementation of this policy by the entity, to each Investigator who is planning to participate in, or is participating in, the project funded wholly or in part under the DOE financial

⁷³ DOE's interim COI Policy can be found at [PF 2022-17 FAL 2022-02 Department of Energy Interim Conflict of Interest Policy Requirements for Financial Assistance](#).

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assistance award. The term “Investigator” means the PI and any other person, regardless of title or position, who is responsible for the purpose, design, conduct, or reporting of a project funded by DOE or proposed for funding by DOE. Recipients must flow down the requirements of the interim COI Policy to any subrecipient non-federal entities. Further, for DOE funded projects, the recipient must include all financial conflicts of interest (FCOI) (i.e., managed and unmanaged/ unmanageable) in their initial and ongoing FCOI reports.

It is understood that non-federal entities and individuals receiving DOE financial assistance awards will need sufficient time to come into full compliance with DOE’s interim COI Policy. To provide some flexibility, DOE allows for a staggered implementation. Specifically, prior to award, applicants selected for award negotiations must: ensure all Investigators complete their significant financial disclosures; review the disclosures; determine whether a FCOI exists; develop and implement a management plan for FCOIs; and provide DOE with an initial FCOI report that includes all FCOIs (i.e., managed and unmanaged/ unmanageable). Recipients will have 180 days from the date of the award to come into full compliance with the other requirements set forth in DOE’s interim COI Policy. Prior to award, the applicant must certify that it is, or will be within 180 days of the award, compliant with all requirements in the COI Policy.

xxiv. Data Management Plan (DMP)

Each applicant whose Full Application is selected for award negotiations will be required to submit a DMP during the award negotiations phase. A DMP explains how, when appropriate, data generated in the course of the work performed under a DOE award will be shared and preserved in order to validate the results of the proposed work or how the results could be validated if the data is not shared or preserved. The DMP must provide a plan for making all research data displayed in publications resulting from the proposed work digitally accessible at the time of publications.

xxv. Fraud, Waste and Abuse

The mission of the DOE Office of Inspector General (OIG) is to strengthen the integrity, economy and efficiency of the Department’s programs and operations including deterring and detecting fraud, waste, abuse and mismanagement. The OIG accomplishes this mission primarily through investigations, audits, and inspections of DOE activities to include grants, cooperative agreements, loans, and contracts.

The OIG maintains a Hotline for reporting allegations of fraud, waste, abuse, or mismanagement. To report such allegations, please visit <https://www.energy.gov/ig/ig-hotline>.

Additionally, recipients of DOE awards must be cognizant of the requirements of [2 CFR 200.113 Mandatory disclosures](#), which states:

The non-Federal entity or applicant for a Federal award must disclose, in a timely manner, in writing to the Federal awarding agency or pass-through entity all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Non-Federal entities that have received a Federal award including the term and condition outlined in appendix XII of 2 CFR Part 200 are required to report certain civil, criminal, or administrative proceedings to SAM.gov. Failure to make required disclosures can result in any of the remedies described in [2 CFR 200.339](#). (See also [2 CFR part 180](#), [31 U.S.C. § 3321](#), and [41 U.S.C. § 2313](#).) [[85 FR 49539](#), Aug. 13, 2020]

Applicants and subrecipients (if applicable) are encouraged to allocate sufficient costs in the project budget to cover the costs associated for personnel and data infrastructure needs to support performance management and program evaluation needs including but not limited to independent program and project audits to mitigate risks for fraud, waste, and abuse.

xxvi. Human Subjects Research

Research involving human subjects, biospecimens, or identifiable private information conducted with DOE funding is subject to the requirements of DOE Order 443.1C, Protection of Human Research Subjects, 45 CFR Part 46, Protection of Human Subjects (subpart A which is referred to as the “Common Rule”), and 10 CFR Part 745, Protection of Human Subjects. Additional information on the DOE Human Subjects Research Program can be found at: [HUMAN SUBJECTS Human Subjects Pr... | U.S. DOE Office of Science \(SC\) \(osti.gov\)](#).

xxvii. Cybersecurity Plan for (TA1 grid-connected Applications)

In accordance with BIL section 40126, applicants selected for award negotiations must submit an acceptable cybersecurity plan to DOE prior to receiving funding.⁷⁴ These plans are intended to foster a cybersecurity-by-design approach for BIL efforts. The Department will also use these plans to ensure effective integration and coordination across its research, development, and demonstration programs. **A cybersecurity plan is NOT required as part of the**

⁷⁴ 42 U.S.C. § 18725

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application submission for this FOA, but all projects selected under this FOA will be required to submit a cybersecurity plan during the award negotiation phase.

The Department recommends using open guidance and standards such as the National Institute of Standards and Technology's (NIST) Cybersecurity Framework (CSF) and the DOE Cybersecurity Capability Maturity Model (C2M2).⁷⁵ The cybersecurity plan created pursuant to BIL section 40126 should document any deviation from open standards, as well as the utilization of proprietary standards where the awardee determines that such deviation is necessary.

- Cybersecurity plans should be commensurate to the threats and vulnerabilities associated with the proposed efforts and demonstrate the cybersecurity maturity of the project.
- Cybersecurity plans may cover a range of topics relevant to the proposed project, e.g., software development lifecycle, third-party risks, and incident reporting.
- At a minimum, cybersecurity plans should address questions noted in BIL section 40126 (b) 'Contents of Cybersecurity Plan'.⁷⁶

A draft version of supplementary guidance on the cybersecurity plan requirement will be available at <https://www.energy.gov/ceser/bipartisan-infrastructure-law-implementation>.

C. Program Down-Select

In addition to the Go/No-Go Reviews required for each project, EERE intends to conduct a competitive project review (down-selection process) upon the completion of BP1. Recipients will present their projects to DOE individually (not to other recipients). 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:

⁷⁵ NERC critical infrastructure protection (CIP) standards for entities responsible for the availability and reliability of the bulk electric system. NIST IR 7628: 2 Smart grid cyber security strategy and requirements. NIST SP800-53, Recommended Security Controls for Federal Information Systems and Organizations: Catalog of security controls in 18 categories, along with profiles for low-, moderate-, and high-impact systems. NIST SP800-82, Guide to Industrial Control Systems (ICS) Security. NIST SP800-39, Integrated Enterprise-Wide Risk Management: Organization, mission, and information system view. AMI System Security Requirements: Security requirements for advanced metering infrastructure. ISO (International Organization for Standardization) 27001, Information Security Management Systems: Guidance on establishing governance and control over security activities (this document must be purchased). IEEE (Institute of Electrical and Electronics Engineers) 1686-2007, Standard for Substation Intelligent Electronic Devices (IEDs) Cyber Security Capabilities (this document must be purchased). DOE Cybersecurity Capability Maturity Model (C2M2).

⁷⁶ 42 U.S.C. § 18725

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TA1 Down-Select Criteria:

Projects will be evaluated based on the following criteria:

1. 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.
2. 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.
3. Demonstration of how Phase 1 work addressed environmental, siting, and other regulatory requirements for the project and soundness of plan for future Phases.
4. Extent to which project demonstrates buy-in from needed stakeholders to ensure success to continue the project to Phase 2 and beyond.
5. Extend 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.
6. 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.
7. 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).
8. 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.
9. Technology baseline LCOE and quality of costs incorporated into the SAM tool will be evaluated.
10. Applicants must demonstrate their financial readiness to proceed into Phase 2. Awardees must demonstrate that they can meet the financial needs of their project.

TA2 Down-Select Criteria:

Projects will be evaluated based on the following criteria:

1. 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.
2. 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.
3. Demonstration of how Phase 1 work addressed environmental, siting, and other regulatory requirements for the project and soundness of plan for future Phases.
4. Extent to which project demonstrates buy-in from needed stakeholders to ensure success to continue the project to Phase 2 and beyond.
5. Extend 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.
6. 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.
7. 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).
8. 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.
9. Technology baseline LCOE and quality of costs incorporated into the SAM tool will be evaluated.
10. Applicants must demonstrate their financial readiness to proceed into Phase 2.
11. Awardees must demonstrate that they can meet the financial needs of their project.

Upon completion of the competitive project review (down-selection process), DOE will select which projects will receive federal funding beyond BP1. Due to program considerations, only a portion of the recipients may be selected to receive funding for project continuation. As a result of this down-select process, certain projects will not receive federal funding beyond BP1 even if the project is

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meeting the pre-defined metrics. DOE reserves the right to select no projects for funding beyond BP1.

VII. Questions/Agency Contacts

Upon the issuance of a FOA, DOE personnel are prohibited from communicating (in writing or otherwise) with applicants regarding the FOA except through the established question and answer process as described below. Specifically, questions regarding this FOA must be submitted to: MarineEnergyFOA@ee.doe.gov. Questions must be submitted not later than 3 business days prior to the application due date and time. Please note, feedback on individual concepts will not be provided through Q&A.

All questions and answers related to this FOA will be posted on EERE eXCHANGE at: <https://eere-eXCHANGE.energy.gov>. **You must first select this specific FOA Number to view the questions and answers specific to this FOA.** EERE 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.

VIII. Other Information

A. FOA Modifications

Amendments to this FOA will be posted on the EERE eXCHANGE website and the Grants.gov system. However, you will only receive an email when an amendment or a FOA is posted on these sites if you register for email notifications for this FOA in Grants.gov. EERE 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 FOAs.

B. Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all applications received in response to this FOA 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 anyone other than the Contracting Officer, either express or implied, is invalid.

D. Treatment of Application Information

Applicants should not include business sensitive (e.g., commercial or financial information that is privileged or confidential), trade secrets, proprietary, or otherwise confidential information in their application unless such information is necessary to convey an understanding of the proposed project or to comply with a requirement in the FOA. Applicants are advised to not include any critically sensitive proprietary detail.

If an application includes business sensitive, trade secrets, proprietary, or otherwise confidential information, it is furnished to the federal government (government) in confidence with the understanding that the information shall be used or disclosed only for evaluation of the application. Such information will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act. Without assuming any liability for inadvertent disclosure, DOE will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the application or as otherwise authorized by law. This restriction does not limit the government's right to use the information if it is obtained from another source.

If an applicant chooses to submit business sensitive, trade secrets, proprietary, or otherwise confidential information, the applicant must provide **two copies** of the submission (e.g., Concept Paper, Full Application). The first copy should be marked, "non-confidential" with the information believed to be confidential deleted. The second copy should be marked "confidential" and must clearly and conspicuously identify the business sensitive, trade secrets, proprietary, or otherwise confidential information and 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 government is not liable for the disclosure or use of unmarked information and may use or disclose such information for any purpose as authorized by law.

The cover sheet of the Full Application, and other applicant submission must be marked as follows and identify the specific pages containing business sensitive, trade secrets, proprietary, or otherwise confidential information:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this document may contain business sensitive, trade secrets, proprietary, or otherwise confidential 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

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any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

In addition, (1) the header and footer of every page that contains business sensitive, trade secrets, proprietary, or otherwise confidential information must be marked as follows: “Contains Business Sensitive, Trade Secrets, Proprietary, or Otherwise Confidential Information Exempt from Public Disclosure,” and (2) every line or paragraph containing such information must be clearly marked with double brackets or highlighting. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

E. Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, the Go/No-Go Reviews and Peer Reviews, 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, including DOE contractors. The applicant, by submitting its application, consents to the use of non-federal reviewers/administrators. Non-federal reviewers must sign conflict of interest (COI) and non-disclosure acknowledgements (NDA) prior to reviewing an application. Non-federal personnel conducting administrative activities must sign an NDA.

F. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this FOA 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.

G. 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).

H. Requirement for Full and Complete Disclosure

Applicants are required to make a full and complete disclosure of all information requested. Any failure to make a full and complete disclosure of the requested information may result in:

- The cancellation of award negotiations;
- The modification, suspension, and/or cancellation of a funding agreement;
- The initiation of debarment proceedings, debarment, and/or a declaration of ineligibility for receipt of federal contracts, subcontracts, and financial assistance and benefits; and
- Civil and/or criminal penalties.

I. Retention of Submissions

DOE expects to retain copies of all Full Applications and other submissions. No submissions will be returned. By applying to DOE for funding, applicants consent to DOE's retention of their submissions.

J. Title to Subject Inventions

Ownership of subject inventions is governed pursuant to the authorities listed below:

- Domestic Small Businesses, Educational Institutions, and Nonprofits: Under the Bayh-Dole Act (35 U.S.C. § 200 et seq.), domestic small businesses, educational institutions, and nonprofits may elect to retain title to their subject inventions;
- All other parties: The Federal Non-Nuclear Energy Act of 1974, 42 U.S.C. § 5908, provides that the government obtains title to new inventions unless a waiver is granted (see below);
- Class Patent Waiver:

DOE has issued a class waiver that applies to this FOA. Under this class waiver, domestic large businesses may elect title to their subject inventions similar to the right provided to the domestic small businesses, educational institutions, and nonprofits by law. In order to avail itself of the class waiver, a domestic large business must agree that any products embodying or produced through the use of a subject invention first created or reduced to practice under this program will be substantially manufactured in the U.S..

- Advance and Identified Waivers: For an applicant not covered by a Class Patent Waiver or the Bayh-Dole Act, the applicant may request a patent waiver that will cover subject inventions that may be invented under the award, in advance of or within 30 days after the effective date of the award. Even if an advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver for identified inventions, i.e., individual subject inventions that are disclosed to DOE within the timeframes set forth in the award's intellectual property data terms and conditions. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

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- DEC: On June 07, 2021, DOE approved a DETERMINATION OF EXCEPTIONAL CIRCUMSTANCES (DEC) UNDER THE BAYH-DOLE ACT TO FURTHER PROMOTE DOMESTIC MANUFACTURE OF DOE SCIENCE AND ENERGY TECHNOLOGIES. In accordance with this DEC, all awards, including sub-awards, under this FOA shall include the U.S. Competitiveness Provision in accordance with Section VI.B. U.S. Manufacturing Commitments of this FOA. A copy of the DEC can be found at <https://www.energy.gov/gc/determination-exceptional-circumstances-decs>. Pursuant to 37 CFR 401.4, any non-profit organization or small business firm as defined by 35 U.S.C. § 201 affected by any DEC has the right to appeal it by providing written notice to DOE within 30 working days from the time it receives a copy of the determination.
- DOE may issue and publish on the website above further DEC's prior to the issuance of awards under this FOA. DOE may require additional submissions or requirements as authorized by any applicable DEC.

K. Government Rights in Subject Inventions

Where prime recipients and subrecipients retain title to subject inventions, the U.S. government retains certain rights.

Government Use License

The U.S. government retains a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the U.S. any subject invention throughout the world. This license extends to contractors doing work on behalf of the government.

March-In Rights

The U.S. government retains march-in rights with respect to all subject inventions. Through "march-in rights," the government may require a prime recipient or subrecipient who has elected to retain title to a subject invention (or their assignees or exclusive licensees), to grant a license for use of the invention to a third party. In addition, the government may grant licenses for use of the subject invention when a prime recipient, subrecipient, or their assignees and exclusive licensees refuse to do so.

DOE may exercise its march-in rights only if it determines that such action is necessary under any of the four following conditions:

- The owner or licensee has not taken or is not expected to take effective steps to achieve practical application of the invention within a reasonable time;
- The owner or licensee has not taken action to alleviate health or safety needs in a reasonably satisfied manner;

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- The owner has not met public use requirements specified by federal statutes in a reasonably satisfied manner; or
- The U.S. manufacturing requirement has not been met.

Any determination that march-in rights are warranted must follow a fact-finding process in which the recipient has certain rights to present evidence and witnesses, confront witnesses and appear with counsel and appeal any adverse decision. To date, DOE has never exercised its march-in rights to any subject inventions.

L. Rights in Technical Data

Data rights differ based on whether data is first produced under an award or instead was developed at private expense outside the award.

“Limited Rights Data”: The U.S. government will not normally require delivery of confidential or trade secret-type technical data developed solely at private expense prior to issuance of an award, except as necessary to monitor technical progress and evaluate the potential of proposed technologies to reach specific technical and cost metrics.

Government Rights in Technical Data Produced Under Awards: The United States government normally retains unlimited rights in technical data produced under government financial assistance awards, including the right to distribute to the public. However, pursuant to special statutory authority, certain categories of data generated under DOE awards may be protected from public disclosure for up to five years after the data is generated (“Protected Data”). For awards permitting Protected Data, the protected data must be marked as set forth in the award’s intellectual property terms and conditions and a listing of unlimited rights data (i.e., non-protected data) must be inserted into the data clause in the award. In addition, invention disclosures may be protected from public disclosure for a reasonable time in order to allow for filing a patent application.

M. Copyright

The prime recipient and subrecipients may assert copyright in copyrightable works, such as software, first produced under the award without DOE approval. When copyright is asserted, the government retains a paid-up nonexclusive, irrevocable worldwide license to reproduce, prepare derivative works, distribute copies to the public, and to perform publicly and display publicly the copyrighted work. This license extends to contractors and others doing work on behalf of the government.

N. Export Control

The U.S. government regulates the transfer of information, commodities, technology, and software considered to be strategically important to the U.S. to protect national security, foreign policy, and economic interests without imposing undue regulatory burdens on legitimate international trade. There is a network of federal agencies and regulations that govern exports that are collectively referred to as “Export Controls”. All recipients and subrecipients are responsible for ensuring compliance with all applicable U.S. Export Control laws and regulations relating to any work performed under a resulting award.

The recipient must immediately report to DOE any export control violations related to the project funded under the DOE award, at the recipient or subrecipient level, and provide the corrective action(s) to prevent future violations.

O. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment

As set forth in 2 CFR 200.216, recipients and subrecipients are prohibited from obligating or expending project funds (federal funds and recipient cost share) to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses *covered telecommunications equipment or services* as a substantial or essential component of any system, or as critical technology as part of any system. As described in Section 889 of Public Law 115-232, *covered telecommunications equipment* is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

See Public Law 115-232, Section 889, 2 CFR 200.216, and 2 CFR 200.471 for additional information.

P. Personally Identifiable Information (PII)

All information provided by the applicant must to the greatest extent possible exclude PII. The term “PII” refers to information which can be used to distinguish or trace an individual's identity, such as their name, social security number, biometric records, alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name. (See OMB Memorandum M-17-12 dated January 3, 2017)

By way of example, applicants must screen resumes to ensure that they do not contain PII such as personal addresses, personal landline/cell phone numbers,

and personal emails. **Under no circumstances should Social Security Numbers (SSNs) be included in the application.** Federal agencies are prohibited from the collecting, using, and displaying unnecessary SSNs. (See the Federal Information Security Modernization Act of 2014 (Pub. L. No. 113-283, Dec 18, 2014; 44 U.S.C. § 3551).

Q. Annual Independent Audits

If a for-profit entity is a prime recipient and has expended \$750,000 or more of DOE awards during the entity's fiscal year, an annual compliance audit performed by an independent auditor is required. For additional information, please refer to 2 CFR 910.501 and Subpart F.

If an educational institution, non-profit organization, or state/local government is a prime recipient or subrecipient and has expended \$750,000 or more of federal awards during the non-federal entity's fiscal year, then a Single or Program-Specific Audit is required. For additional information, please refer to 2 CFR 200.501 and Subpart F.

Applicants and subrecipients (if applicable) should propose sufficient costs in the project budget to cover the costs associated with the audit. DOE will share in the cost of the audit at its applicable cost share ratio.

R. Informational Webinar

DOE will conduct one informational webinar during the FOA process. It will be held after the initial FOA release but before the due date for Concept Papers.

Attendance is not mandatory and will not positively or negatively impact the overall review of any applicant submissions. As the webinar will be open to all applicants who wish to participate, applicants should refrain from asking questions or communicating information that would reveal confidential and/or proprietary information specific to their project. Specific dates for the webinar can be found on the cover page of the FOA.

APPENDIX A – 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, 2 CFR 200.306, 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 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. FFRDC costs must be included in Total Project Costs. The 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%

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:

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- FAR Part 31 for For-Profit entities, (48 CFR Part 31); and
- 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

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.

General Cost Sharing Rules on a DOE Award

1. **Cash Cost Share** – encompasses all contributions to the project made by the recipient or subrecipient(s), for costs incurred and paid for during the project. This includes when an organization pays for personnel, supplies, equipment for their own company with organizational resources. If the item or service is reimbursed for, it is cash cost share. All cost share items must be necessary to the performance of the project.
2. **In-Kind Cost Share** – encompasses all contributions to the project made by the recipient or subrecipient(s) that do not involve a payment or reimbursement and represent donated items or services. In-Kind cost share items include volunteer personnel hours, donated existing equipment, donated existing supplies. The cash value and calculations thereof for all In-Kind cost share items must be justified and explained in the Cost Share section of the project Budget Justification. All cost share items must be necessary to the performance of the project. If questions exist, consult your DOE contact before filling out the In-Kind cost share section of the Budget Justification.
3. Funds from other federal sources **MAY NOT** be counted as cost share. This prohibition includes FFRDC subrecipients. Non-federal sources include any source not originally derived from federal funds. Cost sharing commitment letters from subrecipients must be provided with the original application.
4. Fee or profit, including foregone fee or profit, are not allowable as project costs (including cost share) under any resulting award. The project may only incur those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

DOE Financial Assistance Rules 2 CFR Part 200 as amended by 2 CFR Part 910

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 prime 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 the 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 non-profit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit cost principles in 48 CFR Part 31 in the FAR, 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; and
 - b.** Other types of organizations. For all other non-federal entities, allowability of costs is determined in accordance with 2 CFR Part 200 Subpart E.
- (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

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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.

APPENDIX B – WAIVER REQUESTS FOR: 1. FOREIGN ENTITY PARTICIPATION; AND 2. FOREIGN WORK

1. Waiver for Foreign Entity Participation

Many of the technology areas DOE funds fall in the category of critical and emerging technologies (CETs). CETs are a subset of advanced technologies that are potentially significant to United States national and economy security.⁷⁷ For projects selected under this FOA, all recipients and subrecipients must be organized, chartered or incorporated (or otherwise formed) under the laws of a state or territory of the United States; have majority domestic ownership and control; and have a physical location for business operations in the United States. To request a waiver of this requirement, an applicant must submit an explicit waiver request in the Full Application.

Waiver Criteria

Foreign entities seeking to participate in a project funded under this FOA must demonstrate to the satisfaction of DOE that:

- a. Its participation is in the best interest of the United States industry and United States economic development;
- b. The project team has appropriate measures in place to control sensitive information and protect against unauthorized transfer of scientific and technical information;
- c. Adequate protocols exist between the United States subsidiary and its foreign parent organization to comply with export control laws and any obligations to protect proprietary information from the foreign parent organization;
- d. The work is conducted within the United States and the entity acknowledges and demonstrates that it has the intent and ability to comply with the U.S. Competitiveness Provision (see Section VI.B.xxi.); and
- e. The foreign entity will satisfy other conditions that may be deemed necessary by DOE to protect United States government interests.

Content for Waiver Request

A Foreign Entity waiver request must include the following:

- a. Information about the entity: name, point of contact, physical address, and proposed type of involvement in the project;
- b. Country of incorporation, the extent of the ownership/level control by foreign entities, whether the entity is state owned or controlled, a summary of the ownership breakdown of the foreign entity and the percentage of

⁷⁷ See, [Critical and Emerging Technologies List Update \(whitehouse.gov\)](https://www.whitehouse.gov/presidential-action/critical-and-emerging-technologies-list-update/).

- ownership/control by foreign entities, foreign shareholders, foreign state or foreign individuals;
- c. The rationale for proposing a foreign entity participate (must address criteria above);
 - d. A description of the project's anticipated contributions to the United States economy;
 - How the project will benefit the United States, including manufacturing, contributions to employment in the United States and growth in new markets and jobs in the United States;
 - How the project will promote manufacturing of products and/or services in the United States;
 - e. A description of how the foreign entity's participation is essential to the project;
 - f. A description of the likelihood of Intellectual Property (IP) being created from the work and the treatment of any such IP; and
 - g. Countries where the work will be performed (Note: if any work is proposed to be conducted outside the United States, the applicant must also complete a separate request foreign work waiver).

DOE may also require:

- A risk assessment with respect to IP and data protection protocols that includes the export control risk based on the data protection protocols, the technology being developed and the foreign entity and country. These submissions could be prepared by the project lead (if not the prime recipient), but the prime recipient must make a representation to DOE as to whether it believes the data protection protocols are adequate and make a representation of the risk assessment – high, medium or low risk of data leakage to a foreign entity.
- Additional language to be added to any agreement or subagreement to protect IP, mitigate risk or other related purposes.

DOE may require additional information before considering the waiver request.

DOE's decision concerning a waiver request is not appealable.

2. Waiver for Performance of Work in the U.S. (Foreign Work Waiver)

As set forth in Section IV.K.iii., all work under funding under this FOA must be performed in the United States. To seek a waiver of the Performance of Work in the United States requirement, the applicant must submit an explicit waiver request in the Full Application. A separate waiver request must be submitted for each entity proposing performance of work outside of the United States.

Overall, a waiver request must demonstrate to the satisfaction of DOE that it would further the purposes of this FOA and is otherwise in the economic interests of the

United States to perform work outside of the United States. A request for a foreign work waiver must include the following:

1. The rationale for performing the work outside the United States (“foreign work”);
2. A description of the work proposed to be performed outside the United States;
3. An explanation as to how the foreign work is essential to the project;
4. A description of the anticipated benefits to be realized by the proposed foreign work and the anticipated contributions to the United States economy;
5. The associated benefits to be realized and the contribution to the project from the foreign work;
6. How the foreign work will benefit the United States, including manufacturing, contributions to employment in the United States and growth in new markets and jobs in the United States;
7. How the foreign work will promote manufacturing of products and/or services in the United States;
8. A description of the likelihood of Intellectual Property (IP) being created from the foreign work and the treatment of any such IP;
9. The total estimated cost (DOE and recipient cost share) of the proposed foreign work;
10. The countries in which the foreign work is proposed to be performed; and
11. The name of the entity that would perform the foreign work. Information about the entity(ies) involved in the work proposed to be conducted outside the United States. (i.e., entity seek a waiver and the entity(ies) that will conduct the work).

DOE may require additional information before considering the waiver request.

DOE’s decision concerning a waiver request is not appealable.

APPENDIX C – REQUIRED USE OF AMERICAN IRON, STEEL, MANUFACTURED PRODUCTS, AND CONSTRUCTION MATERIALS BUY AMERICA REQUIREMENTS FOR INFRASTRUCTURE PROJECTS

A. Definitions

For purposes of the Buy America requirements, based both on the statute and OMB Guidance Document dated April 18, 2022, the following definitions apply:

Construction materials includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives⁷⁸—that is or consists primarily of:

- non-ferrous metals;
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- glass (including optic glass);
- lumber; or
- drywall.

Infrastructure includes, at a minimum, the structures, facilities, and equipment for, in the U.S., roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Infrastructure includes facilities that generate, transport, and distribute energy.

Moreover, according to the OMB guidance document:

When determining if a program has infrastructure expenditures, Federal agencies should interpret the term “infrastructure” broadly and consider the definition provided above as illustrative and not exhaustive. When determining if a particular construction project of a type not listed in the definition above constitutes “infrastructure,” agencies should consider whether the project will serve a public function, including whether the project is publicly owned and operated, privately operated on behalf of the public, or is a place of public accommodation, as opposed to a project that is privately owned and not open to the public. Projects with the former qualities have greater indicia of infrastructure, while projects with the latter quality have fewer. Projects consisting solely of the purchase, construction, or improvement of a private home for personal use, for example, would not constitute an infrastructure project.

⁷⁸ BIL, § 70917(c)(1).

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The Agency, not the applicant, will have the final say as to whether a given project includes infrastructure, as defined herein. Accordingly, in cases where the “public” nature of the infrastructure is unclear, but the other relevant criteria are met, DOE strongly recommends that applicants complete their full application with the assumption that Buy America requirements will apply to the proposed project.

Project means the construction, alteration, maintenance, or repair of infrastructure in the U.S..

B. Buy America Requirements for Infrastructure Projects (“Buy America” requirements)

In accordance with Section 70914 of the BIL, none of the project funds (includes federal share and recipient cost share) may be used for a project for infrastructure unless:

- (1) all iron and steel used in the project are produced in the U.S.--this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the U.S.;
- (2) all manufactured products used in the project are produced in the U.S.—this means the manufactured product was manufactured in the U.S.; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the U.S. is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and
- (3) all construction materials⁷⁹ are produced in the U.S.—this means that all manufacturing processes for the construction material occurred in the U.S..

The Buy America requirements only apply to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does the Buy America requirements apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of the structure or permanently affixed to the infrastructure project.

These requirements must flow down to all sub-awards, all contracts, subcontracts, and purchase orders for work performed under the proposed project, except where the prime recipient is a for-profit entity. Based on guidance from the Office of Management and Budget (OMB), the Buy America requirements of the BIL do not apply to DOE projects in which the prime recipient is a for-profit entity; the requirements only apply to projects whose prime

⁷⁹ Excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

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recipient is a State, local government, Indian Tribe, Institution of Higher Education, or non-profit organization.

For additional information related to the application and implementation of these Buy America requirements, please see OMB Memorandum M-22-11, issued April 18, 2022:

<https://www.whitehouse.gov/wp-content/uploads/2022/04/M-22-11.pdf>

Note that for all applicants—both non-Federal entities and for-profit entities—DOE is including a Program Policy Factor that the Selection Official may consider in determining which Full Applications to select for award negotiations that considers whether the applicant has made a commitment to procure U.S. iron, steel, manufactured products, and construction materials in its project.

C. Waivers

The DOE financial assistance agreement will require each recipient: (1) to fulfill the commitments made in its application regarding the procurement of U.S.-produced products and (2) to fulfill the commitments made in its application regarding the procurement of other key component metals and manufactured products domestically that are deemed available in sufficient and reasonably available quantities or of a satisfactory quality at the time of award negotiation.

In limited circumstances, DOE may waive the application of the Buy America requirements where DOE determines that:

- (1) applying the Buy America requirements would be inconsistent with the public interest;
- (2) the types of iron, steel, manufactured products, or construction materials are not produced in the U.S. in sufficient and reasonably available quantities or of a satisfactory quality; or
- (3) the inclusion of iron, steel, manufactured products, or construction materials produced in the U.S. will increase the cost of the overall project by more than 25 percent.

If an applicant or recipient is seeking a waiver of the Buy America requirements, it may submit a waiver request after it has been notified of its selection for award negotiations. A waiver request must include:

- A detailed justification for the use of “non-domestic” iron, steel, manufactured products, or construction materials to include an explanation as to how the non-domestic item(s) is essential to the project

-
- A certification that the applicant or recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and nonproprietary communications with potential suppliers
 - Applicant/Recipient name and Unique Entity Identifier (UEI)
 - Total estimated project cost, DOE and cost-share amounts
 - Project description and location (to the extent known)
 - List and description of iron or steel item(s), manufactured goods, and construction material(s) the applicant or recipient seeks to waive from Domestic Content Procurement Preference requirement, including name, cost, country(ies) of origin (if known), and relevant PSC and NAICS code for each
 - Waiver justification including due diligence performed (e.g., market research, industry outreach) by the applicant or recipient
 - Anticipated impact if no waiver is issued

DOE may require additional information before considering the waiver request.

Waiver requests are subject to public comment periods of no less than 15 days and must be reviewed by the Made in America Office. There may be instances where an award qualifies, in whole or in part, for an existing waiver described at [DOE Buy America Requirement Waiver Requests](#).

DOE's decision concerning a waiver request is not appealable.

Appendix D – 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 \(PMC\)](#), [DOE CODE](#), Interagency Edison ([iEdison](#)), USDOE Scientific and Technical Information management system ([OSTI elink](#)), to the relevant WPTO-funded [PRIMRE Knowledge Hubs](#) ([MHKDR](#), [Tethys](#), [Tethys Engineering](#), and [MRE 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**
 - o 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.openet.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.
 - o For more information, see the MHK Data Repository Training Video online at <https://youtube.com/openet> or access tutorials and frequently asked questions (FAQs) under "Help" at <https://mhkdr.openet.org>.
- **Tethys**
 - o 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>). All uploads are carried out by the Tethys team at PNNL.
- **Tethys Engineering**
 - o 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

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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>).

APPENDIX E - BIL COMPLIANCE REPORT EXAMPLE METRICS

Direct Community Benefits	Localized Benefits	Qualitative (Y/N)	Were benefits localized to benefit community? If so, then how?
	Tax and revenue benefits to local community	Quantitative	Taxes, fees, leasing agreements, wages, investment by awardee to local community.
	Number of community people employed/hired	Quantitative	Number of people/workers hired by the awardee.
	Energy sold to local community	Quantitative	If/when electricity is sold to customers; amount sold to local community
	Energy savings to local community	Quantitative	If/when electricity is sold to customers; possible savings (lower costs, higher reliability, increase
	Electricity beneficiary	Qualitative Category <ul style="list-style-type: none"> • IOU Utility • Co-Op Utility • Public Utility • Other (Specify) 	Category that identifies the end-beneficiary of electricity produced.
	Beneficiary-informed design	Qualitative Text	Awardee explains if/how design decisions were informed or accounted for needs and assets of end users and local community
Workforce	Domestic jobs created	Quantitative	Domestic jobs created and amount spent on those jobs.
	Number/percentage union workers in workforce	Quantitative	Number or percentage of union workers hired as part of the project.
	Workforce impact	Qualitative	Awardee explains if/how workforce implications were considered in design and commercialization strategy of project.

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Diversity, Equity, Inclusion, and Accessibility (DEIA)	Women, Minority, or Veteran Owned Companies Contracted	Qualitative (Y/N)	Were women or minority owned companies contracted by awardee?
	\$ Towards Women, Minority, or Veteran Owned Companies Contracted	Quantitative	Amount of money directed towards women/minority owned companies contracted
	Number of Women, Minority, Veteran Workers Hired	Quantitative	Number of women/minority workers hired, % of total workers hired, and total salary spending for those workers.
	Minority Serving Institutions Engaged	Qualitative (Y/N, Categories) <ul style="list-style-type: none"> Historically Black Colleges and Universities Hispanic Serving Institutions Tribal Colleges and Universities Predominantly Black Institutions 	Were minority serving institutions engaged in project? If so, which institutions were engaged?
	Number of women, minority, veteran students engaged	Quantitative	Number of minority students engaged
Materials	Domestic materials used	Quantitative	Amount of domestic materials used and amount spent on domestic materials.
	Materials recycled	Quantitative	Amount of materials recycled.

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APPENDIX F – DEFINITION OF TECHNOLOGY READINESS LEVELS

TRL 1:	Basic principles observed and reported
TRL 2:	Technology concept and/or application formulated
TRL 3:	Analytical and experimental critical function and/or characteristic proof of concept
TRL 4:	Component and/or breadboard validation in a laboratory environment
TRL 5:	Component and/or breadboard validation in a relevant environment
TRL 6:	System/subsystem model or prototype demonstration in a relevant environment
TRL 7:	System prototype demonstration in an operational environment
TRL 8:	Actual system completed and qualified through test and demonstrated
TRL 9:	Actual system proven through successful mission operations

APPENDIX G – LIST OF ACRONYMS

BIL	Bipartisan Infrastructure Law
CETs	Critical and Emerging Technologies
CEJST	Climate and Economic Justice Screening Tool
COI	Conflict of Interest
CRADA	Cooperative Research and Development Agreement
DEC	Determination of Exceptional Circumstances
DEIA	Diversity, Equity, Inclusion, and Accessibility
DMP	Data Management Plan
DOE	Department of Energy
DOI	Digital Object Identifier
DOL	Department of Labor
EERE	Energy Efficiency and Renewable Energy
FAR	Federal Acquisition Regulation
FAT	Factory Acceptance Testing
FCOI	Financial Conflicts of Interest
FFATA	Federal Funding and Transparency Act of 2006
FOA	Funding Opportunity Announcement
FOIA	Freedom of Information Act
FFRDC	Federally Funded Research and Development Center
GAAP	Generally Accepted Accounting Principles
HBCUs	Historically Black Colleges and Universities
HIRA	Hazard Identification and Risk Assessment
IPMP	Intellectual Property Management Plan
IRB	Institutional Review Board
LCOE	Levelized Cost of Energy
M&O	Management and Operating
MFA	Multi-Factor Authentication
MPIN	Marketing Partner ID Number
MSI	Minority-Serving institution
MYPP	Multi-Year Program Plan
NDA	Non-Disclosure Acknowledgement
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
NREL	National Renewable Energy Laboratory
NSF	National Science Foundation
OFCCP	Office of Federal Contractor Compliance Programs
OIG	Office of Inspector General

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OMB	Office of Management and Budget
OSS	Open-Source Software
OSTI	Office of Scientific and Technical Information
OTA	Other Transactions Authority
PII	Personal Identifiable Information
PNNL	Pacific Northwest National Laboratories
R&D	Research and Development
RD&D	Research, Development, and Demonstration
RFI	Request for Information
RFP	Request for Proposal
SAM	System for Award Management
SciENCv	Science Experts Network Curriculum Vita
SNL	Sandia National Laboratories
SMART	Specific, Measurable, Achievable, Relevant, and Timely
SOPO	Statement of Project Objectives
SPOC	Single Point of Contact
STEM	Science, Technology, Engineering, and Mathematics
TAA	Technical Assistance Agreement
TIA	Technology Investment Agreement
TRL	Technology Readiness Level
UCC	Uniform Commercial Code
UEI	Unique Entity Identifier
WBS	Work Breakdown Structure
WP	Work Proposal

APPENDIX H – R&D COMMUNITY BENEFITS PLAN GUIDANCE

The DOE is committed to pushing the frontiers of science and engineering; catalyzing high-quality domestic clean energy jobs through research, development, demonstration, and deployment; and ensuring energy equity and energy justice⁸⁰ for disadvantaged communities. Therefore, and in accordance with the Administration’s priority to empower workers and harness opportunities to create good union jobs as stated in EO 14008 (Executive Order on Tackling the Climate Crisis at Home and Abroad),⁸¹ it is important to consider the impacts of the successful commercial deployment of any innovations resulting from this FOA on current and future workforce.

The goal of the three-section R&D Community Benefits Plan is to allow the application to illustrate engagement in critical thought about implications of how the proposed work will benefit the broadest swaths of American people and lead to broadly shared prosperity, including for workers and disadvantaged communities⁸². The sections of the R&D Community Benefits Plans are considered together because there may be significant overlap between audiences considered in workforce and disadvantaged communities.

Example DEIA, Energy Equity, and Workforce Plan Elements

Outlined below are examples of activities that applicants might consider when developing their R&D Community Benefits Plan. Applicants are not required to implement any of these specific examples and should propose the Plan that best fits their research goals, institutional environment, team composition, and other factors. Creativity is encouraged.

DEIA

DOE strongly encourages applicants to involve individuals and entities from disadvantaged communities. Tapping all of the available talent requires intentional approaches and yields broad benefits.

⁸⁰ At DOE, we define energy justice as “the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system” (Initiative for Energy Justice, 2019). Aligned with that document, the remainder of this document refers to this as, ‘energy equity,’ and is meant to encompass energy justice as well as DOE’s efforts related to Justice40.

<https://www.energy.gov/diversity/articles/how-energy-justice-presidential-initiatives-and-executive-orders-shape-equity>

⁸¹ <https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad>

⁸² See footnote 2 for guidance on the definition and tools to locate and identify disadvantaged communities.

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Equity extends beyond diversity to equitable treatment. Equitable access to opportunity for members of the project team is paramount. This includes ensuring that all members of the team, including students, are paid a living wage, provided appropriate working conditions, and provided appropriate benefits. In the execution of their project plan, applicants are asked to describe efforts in diversity, equity, inclusion, and accessibility. In this context, efforts toward DEIA are defined as:⁸³

- 1) the practice of including the many communities, identities, races, ethnicities, backgrounds, abilities, cultures, and beliefs of the American people,
- 2) the consistent and systematic fair, just, and impartial treatment of all individuals, including protecting workers rights and adhering to Equal Employment Opportunity laws,
- 3) the recognition, appreciation, and use of the talents and skills of employees of all backgrounds, and
- 4) the provision of accommodations so that all people, including people with disabilities, can fully and independently access facilities, information and communication technology, programs, and services.

Successful plans will not only describe how the project team seeks to increase DEIA, but will describe the overall approaches to retention, engagement, professional development, and career advancement. Specifically, they will demonstrate clear approaches to ensure all team members' strengths are meaningfully leveraged and all members are provided opportunities and paths for career development, especially including paths for interns and trainees to secure permanent positions. Diversity should be considered at all levels of the project team, not just leveraging early career individuals to meet diversity goals.

DOE strongly encourages applicants to consider partnerships as a means of promoting diversity, equity, inclusion, accessibility, justice, and workforce participation. Minority Serving Institutions, Minority Business Enterprises, Minority Owned Businesses, Disability Owned Business, Women Owned Businesses, Native American-owned Businesses, Veteran Owned Businesses, or entities located in an underserved community that meet the eligibility requirements are encouraged to lead these partnerships as the prime applicant or participate on an application as a proposed partner to the prime applicant.

⁸³ <https://www.whitehouse.gov/wp-content/uploads/2021/11/Strategic-Plan-to-Advance-Diversity-Equity-Inclusion-and-Accessibility-in-the-Federal-Workforce-11.23.21.pdf>

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When crafting the DEIA section of the Plan, applicants should describe the ways in which they will act to promote each of the four DEIA efforts above into their investigation. It is important to note that diversity, equity, inclusion, and accessibility are four different, but related, concepts that should not be conflated. That is, you can achieve diversity without equity; all four must be addressed. Applicants could discuss how the proposed investigation could contribute to training and developing a diverse scientific workforce. Applicants could describe the efforts they plan to take, or will continue to take, to create an inclusive workplace, free from retaliation, harassment, and discrimination. Applicants could outline any barriers to creating an equitable and inclusive workplace and address the ways in which the team will work to overcome these barriers within the bounds of the specific research project. The plan could detail specific efforts to inform project team members in any capacity of their labor rights and rights under Equal Employment Opportunity laws, and their free and fair chance to join a union. Note that this inclusion of informing project team members is also incorporated into awards through the National Policy Assurances.

Equal treatment of workers, including students, is necessary but overcoming institutional bias requires intentionally reducing sometimes hidden barriers to equal opportunity. Applicants could consider measures like childcare, flexible schedules, paid parental leave, pay transparency, and other supports to ensure that societal barriers are not hindering realization of DEIA intentions. Some of these considerations may result in common approaches in different sections of the plan, and that is acceptable, as long as the submission is not a singular approach to all sections.

EERE especially encourages applicants to form partnerships with diverse and often underrepresented institutions, such as Minority Serving Institutions, labor unions, and community colleges that otherwise meet the eligibility requirements. Underrepresented institutions that meet the eligibility requirements are encouraged to lead these partnerships as the prime applicant. The DEIA section of the Plan could include engagement with underrepresented institutions to broaden the participation of disadvantaged communities and/or with local stakeholders, such as residents and businesses, entities that carry out workforce development programs, labor unions, local government, and community-based organizations that represent, support, or work with disadvantaged communities. Applicants should ensure there is transparency, accountability, and follow-through when engaging with community members and stakeholders.

Specific examples include:

- Building collaborations and partnerships with researchers and staff at Minority Serving Institutions
- Addressing barriers identified in climate surveys to remove inequities
- Providing anti-bias training and education in the project design and implementation teams
- Offering training, mentorship, education, and other support to students and early/mid-career professionals from disadvantaged communities
- Providing efforts toward improving a workplace culture of inclusion
- Developing technology and technology integration innovations to meet the needs of disadvantaged communities
- Creating partnerships with local communities, especially under-resourced and disadvantaged communities
- Voluntary recognition of a union and informing employees of their rights, regardless of their classification
- Making research products and engagement materials accessible in a greater variety of formats to increase accessibility of research outputs
- Implementing training or distributing materials to reduce stigma towards individuals with disabilities
- Designing technologies that strategically fit within the existing workforce for installation and maintenance of the potential innovation

Energy Equity

The Energy Equity section should articulate how project proposals will drive equitable access to, participation in, and distribution of the benefits produced from successful technology innovations to disadvantaged communities and groups. Intentional inclusion of energy equity requires evaluating the anticipated long-term costs and benefits that will accrue to disadvantaged groups as a result of the project, and how research questions and project plans are designed for and support historically disadvantaged communities' engagement in clean energy decisions. Similar to potential cost reductions or groundbreaking research findings resulting from the research, energy equity and justice benefits may be uncertain, occur over a long period of time, and have many factors within and outside the specific proposed research influencing them.

Applicants should describe the influencing factors, and the most likely energy equity implications of the proposed research. Applicants should describe any long-term constraints the proposed technology may pose to communities' access to natural resources and Tribal cultural resources. There may be existing equity research available to use and citation in this description or the applicant could describe milestone-based efforts toward developing that understanding through this innovation. These near and long term outcomes may include, but are not limited to: a decrease in the percent of income a household spends on energy costs (energy burden⁸⁴); an increase in access to low-cost capital; a decrease in environmental exposure and burdens; increases in clean energy enterprise creation and contracting (e.g., women or minority-owned business enterprises); increased parity in clean energy technology access and adoption; increases in energy democracy, including community ownership; and an increase in energy resilience.

Specific examples include:

- Describing how a successful innovation will support economic development in diverse geographic or demographic communities
- Creating a plan to engage equity and justice stakeholders in evaluating the broader impacts of the innovation or in the development of the research methodology
- Describe how the proposed research strategy and methodology was informed by input from a wide variety of stakeholders
- A literature review of the equity and justice implications of the outcomes of the specific research if the innovation is successful or a plan with dedicated budget and expertise (staffing or subawardee) to evaluate the potential equity implications of successful innovation outcomes.

Workforce

The Workforce section of the R&D Community Benefits Plan should articulate the future workforce implications of the innovation or a milestone-driven plan for understanding those implications. This includes documenting the skills, knowledge, and abilities that would be required of workers installing, maintaining, and operating the technology that may be derivative of the applicant's research, as well as the training pathways and their accessibility for workers to acquire the necessary skills. There may be field-specific or relevant existing research that could be cited in this section. In

⁸⁴ Energy burden is defined as the percentage of gross household income spent on energy costs:
<https://www.energy.gov/eere/slsc/low-income-community-energy-solutions>

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addition, applicants could detail the process they will use to evaluate long-term impacts on jobs, including job growth or job loss, a change in job quality, disruptions to existing industry and resulting changes to relationships between employers and employees and improvements or reductions in the ability of workers to organize for collective representation, and anything else that could result in changes to regional or national labor markets.

For additional support with developing the Workforce section of a R&D Community Benefits Plan, please refer to the DOE's Community Benefits Plan Frequently Asked Questions (FAQs) webpage

(<https://www.energy.gov/bil/community-benefits-plan-frequently-asked-questions-faqs>). This new resource, though created primarily for demonstration and deployment projects funded by the Bipartisan Infrastructure Law (BIL), may be useful for R&D projects which is the main subject of this FOA template.

Applicants will find section 2 of the FAQ ("Investing in America's Workforce") particularly helpful for understanding key federal policies, terms and concepts, as well as workforce development strategies relevant to examination of the workforce implications of applicants' proposed research.

Specific examples include:

- Outlining the challenges and opportunities for commercializing the technology in the US
- Creating a literature review of the workforce implications of the outcomes of the specific research if the innovation is successful or a plan with dedicated budget and expertise (staffing or subawardee) to evaluate the potential equity implications of successful innovation outcomes
- Creating a plan and milestones for assessing how a successful innovation will have implications for job savings or loss, either at the macroeconomic level or within specific industries
- Describing how the project will support training of workforce to address needs of successful innovation
- Voluntary recognition of a union and informing employees of their rights, regardless of their classification
- Creating a plan to evaluate how a successful innovation, will result in potential workforce shifts between industries or geographies.

Inclusion of SMART milestones

EERE requires that the applicant's R&D Community Benefits Plan include one Specific, Measurable, Achievable, Relevant and Timely (SMART) milestone for

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each budget period. An exemplar SMART milestone clearly answers the following questions:

- What needs to be accomplished?
- What measures and deliverables will be used to track progress toward accomplishment?
- What evidence suggests that the accomplishment is achievable?
- Why choose this milestone?
- When will the milestone be reached?