



# Funding Opportunities

## October 24, 2022

*Department of Energy, Office of Cyber Security, Energy Security and Emergency Response*  
**(RFI) Improving Cybersecurity Posture of Rural and Municipal Utilities**

**Responses Due: December 19, 2022**

**Summary:** The goal of the RMUC Program is to enhance the security posture of rural, municipal, and small investor-owned electric utilities through investments in operational capabilities, services, technology deployments, and increased participation in threat intelligence information sharing programs. The intent of this RFI is to obtain public input to inform the scope and priorities of the RMUC Program, and to enable DOE to design opportunities that improve an eligible utility's cybersecurity posture.

For this RFI, DOE is requesting input on four categories. You are not required to answer questions in every category, and you may answer as few or as many of the questions within each category as you would like. The topic categories are:

1. Key Challenges and Opportunities Facing Eligible Utilities
2. Key Challenges and Opportunities for Utilities Serving Military Installations
3. Partnerships with Manufacturers, Vendors, Service Providers, Public Agencies, Labor Unions, and Other Stakeholders
4. Equity, Environmental and Energy Justice (EEEJ) in Identification of Potential Applicants, Application Process, Criteria for Selection, and Stakeholder Engagement

**Additional Information:** [DE-FOA-0002877](https://www.doe.gov/foia/0002877)

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*Department of Energy, Water Power Technologies Office*

**Water Power Projects: Stakeholder Insight into Hydropower R&D Issues**

**Full Application Due: November 18, 2022**

**Summary:** This FOA seeks applications to address the future of hydropower by bringing

together representatives from across the hydropower industry including, but not limited to, representatives from Tribal Nations, hydropower developers, owners/operators of hydropower facilities, research institutions, hydropower industry representatives, non-governmental organizations (NGOs), non-profit organizations, resource agencies, among others to discuss issues and find paths forward regarding the modernization of our Nation's hydropower fleet, the sustainability of hydropower systems, and the impact of hydropower facilities on the environment.

This FOA has one Topic Area which is titled, Stakeholder Insights into Hydropower R&D Issues. The topic area seeks to support the efforts of a diverse group of hydropower stakeholders to work together to discuss and address issues regarding the modernization of the U.S. hydropower fleet, the sustainability of hydropower systems, and the impact of hydropower facilities on the environment. These efforts will enhance and inform the current and future needs of R&D for hydropower technologies and environmental mitigation efforts at DOE and in industry.

The selected recipient will actively convene, engage, and facilitate discussions among a diverse group of hydropower stakeholders including but not limited to representatives from Tribal Nations, hydropower developers, owners/operators of hydropower facilities, research institutions, hydropower industry representatives, NGOs, non-profit organizations, resource agencies, other interested parties, etc.

**Estimate Funding:** DOE anticipates making approximately 1 award under this FOA. Individual awards may vary between \$3,000,000 and \$4,000,000.

**Information Webinar:** October 27, 2022

**Additional Information:** [DE-FOA-002800](https://www.energy.gov/foia/foia-002800)

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*Department of Energy, Water Power Technologies Office*

**Water Power Projects: Innovative Technologies to Enable Low Impact Hydropower and Pumped Storage Hydropower Growth**

**Concept Paper: Dec 1, 2022 | Full Application: March 5, 2023**

**Summary:** This FOA seeks applications to address innovative solutions to retrofit non-powered dams with environmentally sustainable hydropower at a reasonable cost; applications to address development and testing technologies that mitigate challenges to pumped storage hydropower deployment, including market and revenue uncertainty, development costs and financing, long development timelines, permitting challenges, construction risks, and environmental impacts; and applications to address and encourage emerging organizations to support hydropower development. WPTO expects the amount of

funding available for projects under this FOA will be approximately \$14.5 million and cover the following topic areas:

1. Hydropower Retrofits for Non-Powered Dams;
2. Innovative Pumped Storage Hydropower Technologies; and
3. Hydropower R&D by Emerging Organizations.

**Estimate Funding:** DOE anticipates making approximately up to 13 awards under this FOA. DOE may issue one, multiple, or no awards. Individual awards may vary from up to \$200,000 to \$4,000,000.

**Information Webinar:** November 1, 2022

**Additional Information:** [DE-FOA-002731](#)

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*Department of Energy, Water Power Technologies Office*

## **Pumped Storage Hydropower Wind and Solar Integration and System Reliability Initiative**

**Letter of Intent: November 17, 2022 | Full Application: December 15, 2022**

**Summary:** Through this FOA, DOE will invest \$10 million to carry out project design, transmission studies, power market assessments, and permitting for a pumped storage hydropower (PSH) project to facilitate the long-duration storage of intermittent renewable electricity. Eligibility for this FOA is limited to projects that have received a FERC preliminary permit, and are working toward licensing a PSH project with at least 1000 MW capacity that can participate in multiple markets and store intermittent renewable energy generated on tribal lands.

This FOA, supporting new PSH deployment, will enable increased integration of clean energy resources such as wind and solar, and support power system decarbonization while improving grid reliability. Activities under this FOA also support the broader government-wide approach to create jobs for communities in the U.S. if the proposed PSH projects, supported by this funding, progress toward construction and commissioning. These activities will help to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis, empower workers, and advance environmental justice.

**Estimate Funding:** DOE anticipates making one (1) award under this FOA. Individual award amounts may vary between \$2M and \$10M.

**Additional Information:** [DE-FOA-002802](#)

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*Environmental Protection Agency*

## **Understanding and Control of Municipal Solid Waste Landfill Air Emissions**

**Full Application: December 21, 2022**

**Summary:** The U.S. Environmental Protection Agency (EPA) Office of Research and Development (ORD), as part of the Science to Achieve Results (STAR) program and in collaboration with the Air, Climate, and Energy (ACE) research program, is seeking applications proposing research on municipal solid waste landfill air emissions. Specifically, this request for applications (RFA) is soliciting research that addresses the following research priorities:

- How can cost effective stationary, mobile, aerial, and remote sensing technologies be combined to more easily and accurately quantify landfill methane emissions, hazardous air pollutants (HAPs), and other air pollutant emissions from municipal solid waste (MSW) landfills?
- How can cost effective stationary, mobile, aerial, and remote sensing measurements be used to increase ease of use and evaluate mitigation strategies and technologies to identify best landfill management practices?

The Science to Achieve Results (STAR) Program's goal is to stimulate and support scientific and engineering research that advances EPA's mission to protect human health and the environment. It is a competitive, peer-reviewed, extramural research program that provides access to the nation's best scientists and engineers in academic and other nonprofit research institutions.

**Estimate Funding:** The EPA anticipates funding approximately 4 (2 regular and 2 early career) awards under this RFA. Requests for amounts in excess of a total of \$1,000,000 per regular award and in excess of a total of \$600,000 per early career award, including direct and indirect costs, will not be considered. The total project period requested in an application submitted for this RFA may not exceed three years.

**Additional Information:** [EPA-G2023-STAR-B1](#)

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*Environmental Protection Agency*

## **Early Career: Understanding and Control of Municipal Solid Waste Landfill Air Emissions**

**Full Application: December 21, 2022**

**Summary:** The U.S. Environmental Protection Agency (EPA) Office of Research and Development (ORD), as part of the Science to Achieve Results (STAR) program and in collaboration with the Air, Climate, and Energy (ACE) research program, is seeking

applications proposing research on municipal solid waste landfill air emissions. Specifically, this request for applications (RFA) is soliciting research that addresses the following research priorities:

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**Additional Information:** [EPA-G2023-STAR-B2](#)

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*Environmental Protection Agency*

## **Developing and Demonstrating Nanosensor Technology to Detect, Monitor, and Degrade Pollutants**

**Full Application: December 7, 2022**

**Summary:** This RFA is soliciting research to develop and demonstrate nanosensor technology with functionalized catalysts that have potential to degrade selected contaminants in addition to detecting and monitoring pollutants.

EPA is interested in a holistic approach for detecting, monitoring, and degrading environmental pollutants. Nanosensors to detect and monitor pollutants should be integrated with a nanotechnology-based treatment or remediation process. Projects should make a case for a sensing solution as well as a decontamination solution.

The class of contaminants (e.g., pesticides, heavy metals, pathogens, PFAS, halogenated

compounds) is not limited by this RFA. The type of nanomaterial (e.g., carbon-based, metal oxides, quantum dots), recognition element (e.g., antibodies, enzymes, DNA), and signal transduction method (e.g., optical, electrochemical, magnetic) that make up the nanosensor are also at the discretion of the applicant. Projects may use different nanoparticles for the detection/monitoring and degradation portions of the project but should focus on the same contaminant.

**Estimate Funding:** The EPA anticipates funding approximately 1 award under this RFA. Requests for amounts in excess of a total of \$1,500,000 per award, including direct and indirect costs, will not be considered. The total project period requested in an application submitted for this RFA may not exceed three years.

**Additional Information:** [EPA-G2023-STAR-A1](#)

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*Department of Energy, Office of Science*

## **Research Opportunities in High Energy Physics**

**Letter of Intent: November 16, 2022 | Full Application: December 21, 2022**

**Summary:** The DOE SC program in High Energy Physics (HEP) hereby announces its interest in new and renewal grant applications for support of research programs in high energy physics.

The HEP program focuses on three (3) experimental scientific frontiers:

- The Energy Frontier - where powerful accelerators are used to create new particles, reveal their interactions, and investigate fundamental forces using highly sensitive experimental detectors;
- The Intensity Frontier - where intense particle beams and highly sensitive detectors are used to pursue alternate pathways to investigate fundamental forces and particle interactions by studying events that occur rarely in nature, and to provide precision measurements of these phenomena; and
- The Cosmic Frontier - where data from the universe are used to probe fundamental physics questions and offer new insight about the nature of dark matter, cosmic acceleration in the forms of dark energy and inflation in the early universe, neutrino properties, and other phenomena.

Together, these three interrelated and complementary discovery frontiers offer the opportunity to answer some of the most basic questions about the world around us. Also integral to the mission of HEP are crosscutting research areas that enable new scientific opportunities by developing the necessary tools and methods for discoveries:

- Theoretical High Energy Physics, where the vision and mathematical framework for understanding and extending the knowledge of particles, forces, space-time, and the universe are developed;
- Accelerator Science and Technology Research and Development, where the technologies and basic science needed to design, build, and operate the accelerator facilities essential for making new discoveries are developed; and
- Detector Research and Development, where the basic science and technologies needed to design and build high energy physics detectors essential for making new discoveries are developed.

**Estimated Funding:** The award size will depend on the number of meritorious applications and the availability of appropriated funds. The ceiling (\$5,000,000/year) and floor (\$20,000/year) described in this FOA represent the expected range of award sizes. Approximately 10 to 100 awards are expected.

**Additional Information:** [DE-FOA-0002832](https://www.energy.gov/foia/foia-0002832)

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*Department of Energy, Wind Energy Technologies Office*  
**(NOI) FOA to Address Key Deployment Challenges for Offshore, Land-Based, and Distributed Wind**

**Summary:** The U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Wind Energy Technologies Office (WETO), a Funding Opportunity Announcement (FOA) entitled “Bipartisan Infrastructure Law FOA to Address Key Deployment Challenges for Offshore, Land-Based, and Distributed Wind.”

It is anticipated that the FOA may include the following Topic Areas:

1. High-Voltage Direct Current (HVDC) for Offshore Wind
2. Advancing Deployment of Distributed Wind (ADD)
3. Wind Energy Social Science Research
4. Bat Deterrent Technology Development

EERE plans to issue the FOA on or about November 2022

**Estimated Funding:** Anticipated maximum individual awards by topic area vary from \$500K – \$3.0M with 2 – 8 awards expected per topic/sub-topic area.

**Additional Information:** [DE-FOA-0002840](#)

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*Department of Energy, Wind Technologies Office*  
**(RFI) Floating Offshore Wind Energy Mooring and Anchoring**  
**Responses Due: December 19, 2022**

**Summary:** This is a Request for Information issued by the U.S. Department of Energy's (DOE) Wind Energy Technologies Office (WETO), on behalf of the Office of Energy Efficiency and Renewable Energy (EERE).

Specifically, this RFI seeks input on:

- Priority Mooring and Anchoring Research Questions and Data Needs
- Mooring and Anchoring Technology Development
- Mooring and Anchoring Supply Chain Development
- Potential Solicitation Process and Funding Opportunity Structure
- Equity, Environmental and Energy Justice (EEEJ) Priorities
- Market Adoption and Industry/Sector Sustainability

**Additional Information:** [DE-FOA-0002819](#)

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*Department of Energy, Water Power Technologies Office*  
**(NOI) Tidal Energy Advancement**

**Summary:** To support the development of tidal and current energy systems in the United States, and move the state of these technologies, DOE will provide the first large scale investment for the development of a tidal Research, Development and Demonstration (RD&D) site. This FOA will provide \$35 million in total funding supporting Section 41006(a)(2) to fund a tidal or river current site development, preferably led by a project/site developer in the U.S., and fund in-water demonstration of at least one tidal energy system.

The overall goals of this FOA are to:

- Build upon state clean energy strategies with local partners;
- Attract competitive tidal/current developers for technology site integration;
- Improve tidal/current Research and Development (R&D);
- Build site infrastructure and supply chains, with increased participation at the state level, including local agency, tribal and university research participation; and
- Establish a working business model covering site development to commercial scale.



DOE is compiling a "teaming" partner list to facilitate widespread participation in this FOA. This list allows organizations with expertise in the topics to express their interest to potential applicants and to explore potential partnerships. Please see the Teaming List section of the NOI document for more information.

EERE plans to issue the FOA on or about March 2023.

**Estimated Funding:** Phase 1: \$6M Total: Up to 2 Awards at up to \$3M each, two Budget Periods. Down-Select to one (1) award at the end of first (1) budget period. Phase 2 (Year 2), \$4M / Phase 3 (Years 3&4), \$10M / Phase 4 (Years 5&6), \$15M

**Additional Information:** [DE-FOA-0002847](https://www.de-foia.gov/record/DE-FOA-0002847)

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*National Science Foundation*

## **Experiential Learning for Emerging and Novel Technologies**

**Full Proposal: March 2, 2023**

**Summary:** Through this new initiative, the Directorate for Education and Human Resources (EHR) and the newly established Directorate for Technology, Innovation and Partnerships (TIP) seek to support experiential learning opportunities for individuals from diverse professional and educational backgrounds that will increase access to, and interest in, career pathways in emerging technology fields (e.g., advanced manufacturing, advanced wireless, artificial intelligence, biotechnology, quantum information science, semiconductors, and microelectronics). As NSF seeks to support the development of technologies in such fields, similar support will be needed to foster and grow a diverse science, technology, engineering, and mathematics (STEM) workforce to contribute to such innovation.

The ExLENT program will support inclusive experiential learning opportunities designed to provide cohorts of diverse learners with the crucial skills needed to succeed in emerging technology fields and prepare them to enter the workforce ready to solve our Nation's most pressing scientific and societal challenges. Furthermore, the ExLENT program will directly support NSF's priority to build a diverse workforce<sup>1</sup> in emerging technologies to assure the Nation's competitiveness in STEM.

Key goals of the program are to (1) expand access to career-enhancing experiential learning opportunities for a broader, more diverse population, including adult learners interested in re-skilling and/or upskilling (e.g., those who face or who have faced significant barriers to accessing a formal STEM education); (2) promote cross sector partnerships between organizations in emerging technology fields and those with expertise in workforce development; and (3) develop a workforce aligned with regional economies based on

emerging technologies across the Nation, in alignment with the mission of the TIP Directorate.

**Estimate Funding:** ExLENT awards are expected to be up to three (3) years in duration with a total budget up to \$1,000,000. 25 to 35 awards are expected.

**Additional Information:** [NSF-23-507](#)

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*Department of Energy, Office of Clean Energy Demonstrations*  
**(RFI) Energy Improvements in Rural or Remote Areas (ERA)**  
**Responses Due: November 28, 2022**

**Summary:** The Department of Energy is seeking input on a new program to improve energy systems in areas with Fewer than 10,000 People. The Office of Clean Energy Demonstrations will manage the ERA program and is charged with identifying and demonstrating innovative solutions to make energy systems in rural or remote communities more resilient to the worst effects of climate change, while also supporting new economic opportunities and creating high-quality jobs.

The ERA program will provide federal support to rural or remote communities to:

- Improve the overall cost-effectiveness of energy generation, transmission, or distribution systems;
- Site or upgrade transmission and distribution lines;
- Reduce greenhouse gas emissions from energy generation by rural or remote areas;
- Provide or modernize electric generation facilities;
- Develop microgrids; and
- Increase energy efficiency.

DOE welcomes public input from a wide range of stakeholders, including energy project developers, utilities, community organizations, environmental justice organizations, as well as state, local and Tribal governments to shape this program. To help inform implementation of the ERA program, the RFI seeks input on the types of energy demonstration projects, programmatic design considerations, equity, environmental and energy justice, and workforce and transfer of knowledge gained through ERA demonstrations to ensure that the projects selected are scalable and replicable.

DOE expects to announce a funding opportunity to solicit project proposals in 2023.

**Additional Information:** [DE-FOA-0002841](#)

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*Department of Energy, Advanced Research Projects Agency*

**(RFI) Enabling Technologies for Improving Fusion Power Plant Performance and Availability**

**Responses Due: November 21, 2022**

**Summary:** The purpose of this RFI is to solicit input for a potential future ARPA-E-funded research program focused on two overarching themes: (A) Improving fusion power plant performance and (B) Increasing fusion power plant availability.

While power plant performance and availability are intertwined in determining the cost of electricity, theme (A) includes technologies targeting the efficiency of plasma heating schemes, and advanced laser driver technologies, as well as economic and high-gain targets for inertial fusion energy (IFE). Theme (B) focuses on “designer” materials for plasma-facing and structural components. Candidate materials (solid and self-healing) should include, but not be limited to, the following features: minimized half-lives of materials, reduced dust formation, minimized fuel retention (e.g., hydrogen), minimized displacement per atom due to neutron irradiations, and high heat resistance (> 600 °C). Specifically, this RFI focuses on three technology areas for developing this pathway towards economically competitive fusion energy. The areas are:

- Efficient and low-cost drivers for plasma heating and assembly
- Novel first-wall and structural materials
- Low-cost, high-performance targets for inertial fusion energy (IFE)
- The Advanced Research Projects Agency-Energy (ARPA-E) of the US Department of Energy seeks information that could inform ARPA-E's potential research and development (R&D) funding for these three areas.

**Additional Information:** [DE-FOA-0002874](https://www.de.gov/foia/0002874)