



**U.S. Department of Energy (DOE)**  
**Office of Fossil Energy and Carbon Management**

**Bipartisan Infrastructure Law (BIL)**  
**Critical Materials Innovation, Efficiency, and Alternatives**

**Funding Opportunity Announcement (FOA) Number: DE-FOA-0003105**  
**FOA Type: Initial**

FOA Issue Date:	09/6/2023
<b>Submission Deadline for Full Applications:</b>	<b>11/10/2023</b> 5:00 p.m. ET
Expected Date for DOE Selection Notifications:	May 2024
Expected Timeframe for Award Negotiations:	May 2024 – September 2024

- To apply to this FOA, applicants must register with and submit application materials through Grants.gov at <https://www.grants.gov/>.
- Applicants must designate primary and backup points-of-contact with whom DOE 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.

## Registration Requirements

There are several one-time actions that must be completed before submitting an application in response to this Funding Opportunity Announcement (FOA) (e.g., register with the System for Award Management (SAM), obtain a Unique Entity Identifier (UEI) number, register with Grants.gov, and register with FedConnect.net to submit questions). 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 an applicant's ability to apply to this FOA.

- **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) register in the SAM at <https://www.sam.gov> before



submitting an application; (2) provide a valid UEI number in the application; and (3) maintain an active SAM registration with current information when the applicant 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, 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 number 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 use the [HELP](#) feature on [SAM.gov](#). SAM.gov will address 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](#).**

**NOTE:** Subawardees/subrecipients at all tiers must also obtain an UEI from the SAM and provide the UEI to the Prime Recipient before the subaward can be issued.

**Grants.gov** – Applicants must register with Grants.gov and set up their Workspace. Applicants cannot submit an application through Grants.gov unless they are registered. Please read the registration requirements carefully and start the process immediately.

1) The Authorized Organizational Representative (AOR) must register at:  
<https://apply07.grants.gov/apply/OrcRegister>.

2) An email is sent to the E-Business (E-Biz) POC listed in SAM. The E-Biz POC must approve the AOR registration using their MPIN from their SAM registration.

More information about the registration steps for Grants.gov is provided at:  
<https://www.grants.gov/web/grants/applicants/registration.html>.

In addition:

- Add a Profile to a Grants.gov Account: A profile in Grants.gov corresponds to a single applicant organization the user represents (i.e., an applicant) or an individual applicant. If you work for or consult with multiple organizations and have a profile for each, you may log in to one Grants.gov account to access all of your grant applications. To add an organizational profile to your Grants.gov account, enter the UEI for the organization in the UEI field while adding a profile. For more detailed instructions about creating a profile on Grants.gov, refer to: <https://www.grants.gov/web/grants/applicants/registration/add-profile.html>.



- E-Biz POC Authorized Profile Roles: After you register with Grants.gov and create an Organization Applicant Profile, the Organization Applicant's request for Grants.gov roles and access is sent to the E-Biz POC. The E-Biz POC will then log in to Grants.gov and authorize the appropriate roles, which may include the AOR role, thereby giving you permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been assigned the AOR role.

**NOTE:** When applications are submitted through Grants.gov, the name of the organization (applicant) with the AOR role that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The E-Biz POC **must** authorize people who are able to make legally binding commitments on behalf of the organization as a user with the AOR role—**this step is often missed and it is crucial for valid and timely submissions.**

For more detailed instructions about creating a profile on Grants.gov, refer to:  
<https://www.grants.gov/web/grants/applicants/registration/authorize-roles.html>.

To track your role request, refer to:  
<https://www.grants.gov/web/grants/applicants/registration/track-role-status.html>.

Questions relating to the **registration process, system requirements, or how an application form works** must be directed to Grants.gov at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov).

- **FedConnect.net** – Applicants must register with FedConnect to submit questions. FedConnect website: <https://www.fedconnect.net/>.

See Section IV for Application and Submission Information (including how to create a Workspace).

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## I. Funding Opportunity Description

### A. Background and Context

The Office of Fossil Energy and Carbon Management (FECM) is issuing this Funding Opportunity Announcement (FOA). Awards made under this FOA will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act,<sup>1</sup> more commonly known as the Bipartisan Infrastructure Law (BIL).

The BIL is a once-in-a-generation investment in modernizing and upgrading American infrastructure to enhance U.S. competitiveness, drive the creation of good-paying union jobs, tackle the climate crisis, and ensure strong access to economic, environmental, and other benefits for disadvantaged communities.<sup>2</sup> The BIL appropriated more than \$62 billion to the U.S. Department of Energy (DOE)<sup>3</sup> 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.

DOE's BIL investments will support efforts to build a clean and equitable energy economy that achieves a carbon pollution-free electricity sector by 2035, and to put the United States on a path to achieve net-zero emissions economy-wide by no later than 2050<sup>4</sup> to benefit all Americans.

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<sup>1</sup> 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](#).

<sup>2</sup> Pursuant to Executive Order (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 M-23-09 (whitehouse.gov), DOE recognizes disadvantaged communities as defined and identified by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST), 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>.

<sup>3</sup> 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>

<sup>4</sup> [Executive Order \(OE\) 14057](#), "Executive Order on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability," December 8, 2021.



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BIL section 41003 (c) calls for investing appropriations of \$600 million for the Critical Material Innovation, Efficiency, and Alternatives research, development, and demonstration program to:

- (A) develop alternatives to critical materials that do not occur in significant abundance in the United States;
- (B) promote the efficient production, use, and recycling of critical materials, with special consideration for domestic critical materials, throughout the supply chain;
- (C) ensure the long-term, secure, and sustainable supply of critical materials; and
- (D) prioritize work in areas that the private sector by itself is not likely to undertake due to financial or technical limitations.

This FOA builds on prior DOE, other government agency, and private sector investment, and implements section 7002(g) of the Energy Act of 2020 and BIL section 41003(c) through the program's research and development activities by the creation of innovative methods and technologies for the efficient and sustainable provision of critical materials to the domestic economy and the expected activities under the program to mitigate the environmental and health impacts of the extraction, processing, manufacturing, use, recovery, and recycling of critical materials. Also, section 41003 (c) of the BIL and section 7002 (g) of the Energy Act of 2020 directs the establishment of a program of research, development, demonstration, and commercialization. This includes a broad range of RD&D for:

- (A) alternative materials;
- (B) alternative energy technologies or alternative designs of existing energy technologies;
- (C) technologies or process improvements that minimize the use and content, or lead to more efficient use, of critical materials;
- (D) innovative technologies and practices to diversify commercially viable and sustainable domestic sources of critical materials, including technologies for recovery from waste streams;
- (E) technologies, process improvements, or design optimizations that facilitate the recycling of critical materials, and options for improving the rates of collection of products and scrap containing critical materials from post-consumer, industrial, or other waste streams;
- (F) advanced critical material extraction, production, separation, alloying, or processing technologies that decrease the energy consumption, environmental impact, and costs of those activities, including—
  - (i) efficient water and wastewater management strategies
  - (ii) technologies and management strategies to control the environmental impacts of radionuclides in ore tailings;
  - (iii) technologies for separation and processing; and
  - (iv) technologies for increasing the recovery rates of coproducts and byproducts from host metal ores.

The activities to be funded under this FOA also support the broader government-wide approach to upgrading and modernizing infrastructure, including by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis, empower workers, and advance environmental justice. This approach ensures consideration of:

- Creating and retaining good-paying jobs, where workers are properly classified as employees, free from discrimination and harassment, with a free and fair choice to join, form, or assist a union.
- Supporting inclusive and supportive workforce development efforts to strengthen America's competitive advantage based on innovation, efficiency, and a skilled and diverse workforce up and down the supply chain.
- Rebuilding the U.S. leadership role in economically viable, environmentally benign extraction, separation, and processing technologies that support the generation of sustainable U.S. domestic supply chains for onshore production of critical minerals and materials (CMMs) for commercial commodities, clean energy, and national defense industries.
- Enhancing national security by reducing the reliance of the United States on foreign competitors for critical materials and technologies.

As part of this whole-of-government approach, 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 consultations with Tribal nations<sup>5</sup> Consistent with Executive Order 14008,<sup>6</sup> this FOA is designed to help meet the goal that 40% of the overall economic, environmental, and other benefits of certain federal investments flow to disadvantaged communities, and to drive the creation of accessible, good-paying jobs with the free and fair chance for workers to join a union.

#### **i. Program Purpose**

Critical minerals and materials (CMM)<sup>7</sup> are necessary for most clean energy technologies, defense applications, and most modern technologies. Currently, more than 80% of our nation's supply of critical minerals comes from foreign sources. The United States currently imports more than half its consumption of 43 of the 50 most critical minerals and metals, with no domestic production for

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<sup>5</sup> 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. [Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships | The White House](#). DOE Order 144.1 governs DOE engagement in Tribal consultation.

<sup>6</sup> EO 14008, "Tackling the Climate Crisis at Home and Abroad," January 27, 2021.

<sup>7</sup> <https://www.energy.gov/cmm/what-are-critical-materials-and-critical-minerals>

at least 14 of these critical minerals.<sup>8</sup> Additionally, in many cases, foreign supply chains may have poor environmental, labor, or human rights standards. By developing a strong domestic supply of critical minerals, we will reduce U.S. dependence on other countries, create high-wage American manufacturing jobs with the free and fair chance to join a union, support communities across the country that have long depended on mining and energy production, and build responsible critical material supply chains. Similarly, as evidenced by multiple Executive Orders,<sup>9,10</sup> the recent **BIL that was enacted on November 15, 2021**,<sup>11</sup> DOE's first-ever strategy on securing America's energy supply chains,<sup>12</sup> and the Inflation Reduction Act,<sup>13</sup> transitioning the production of these CMM and their associated supply chains back to the United States is a strategic priority. This FOA is designed to generate research, development and demonstration (RD&D) that will support the building of robust, responsible, domestic critical mineral and material supply chain for clean energy technologies and to address national security needs.

## ii. **DOE Critical Materials RD&D**

DOE is working to develop reliable, resilient, affordable, diverse, sustainable, and secure domestic critical mineral and materials supply chains. **DOE's primary science and technology pillars in this space are to diversify and expand supply, develop alternatives (materials and manufactured products), improve efficiencies along the supply chain, and enable a circular economy for critical materials that includes recycling and waste minimization.**

Since long before the BIL was passed, many offices within the DOE, such as FECM, the Advanced Manufacturing Office (now the Advanced Materials and Manufacturing Technology Office (AMMTO)), the Vehicle Technology Office (VTO), the Geothermal Technology Office (GTO), the Office of Science (SC), and the Advanced Research Projects Agency-Energy (ARPA-E), have made large investments in fundamental materials science, geoscience, and new technologies for extracting, processing, refining, manufacturing, and recycling critical materials. Additional RD&D has focused on the development of novel materials or manufactured products that rely on less scarce resources, or at least ones that are not as susceptible to supply chain disruptions. In many cases, these efforts

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<sup>8</sup> U.S. Geological Survey, Department of the Interior, Mineral Commodity Summaries 2022 (January 31, 2022). <https://pubs.usgs.gov/periodicals/mcs2022/mcs2022.pdf>

<sup>9</sup> **Executive Order 13817**, A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals (December 20, 2017). *See also* U.S. Department of the Interior, Final List of Critical Minerals 2018, 83 Fed. Reg 23295 (May 18, 2018).

<sup>10</sup> **Executive Order 14017**, America's Supply Chain (February 24, 2021).

<sup>11</sup> BIL, *supra* note 1.

<sup>12</sup> <https://www.energy.gov/policy/securing-americas-clean-energy-supply-chain>

<sup>13</sup> Inflation Reduction Act, Public Law 117-169 (August 16, 2022). <https://www.congress.gov/bill/117th-congress/house-bill/5376/>

have led to the development of new concepts and early-stage technology development, as well as technologies that have made their way into the marketplace. For example, the Critical Materials Institute (CMI) has been active for almost a decade, performing R&D for early-stage technologies needed for magnets, batteries, and other clean energy technologies. A key to all of these investments has been to develop responsible technologies to help establish the U.S. as the gold standard for mineral extraction, processing, refining, and manufacturing in the world.

This funding opportunity builds on a number of related CMM funding opportunities through DOE. With the BIL, the Office of Manufacturing and Energy Supply Chains (MESCC) has funded nearly \$2.8B worth of demonstration and commercial scale facilities for battery materials processing and manufacturing. And FECM has initiated Front End Engineering Design (FEED) studies for a Rare Earth Element (REE) Demonstration using mine wastes as feedstocks.

The DOE seeks to achieve these goals in conjunction with other federal agencies, such as the United States Geologic Survey (USGS) with its Critical Minerals List and the Department of Defense with Title III of the Defense Production Act. These and other near-term planned private sector investments will help establish the first domestic midstream processing capabilities for a number of CMMs in the United States in several decades. Together, these public and private sector investments form a nationwide effort that can help provide a firm foundation for resilient, sustainable, and responsible CMM supply chains.

### iii. **Technology Space and Strategic Goals**

Section 41003 (c) of the BIL and section 7002(g) of the Energy Act of 2020 (codified at 30 U.S.C. 1606 (g)) direct the establishment of a program of research, development, demonstration, and commercialization—

(A) to develop alternatives to critical materials that do not occur in significant abundance in the United States;

(B) to promote the efficient production, use, and recycling of critical materials, with special consideration for domestic critical materials, throughout the supply chain;

(C) to ensure the long-term, secure, and sustainable supply of critical materials; and

(D) to prioritize work in areas that the private sector by itself is not likely to undertake due to financial or technical limitations.

This FOA supports the Administration's goals laid out above by seeking applications from industry, academic institutions, national laboratories, and others that produce CMMs from domestic resources. Detailed technical descriptions of the specific topic areas are provided in the sections that follow.

The objective of this FOA is to competitively select and award high impact applied RD&D bench and pilot scale projects. This funding opportunity is looking to develop bench scale concepts in the technical readiness level (TRL) 0 to 4 range and to demonstrate processes on a continuous/semicontinuous bench scale before scaling up to pilot scale (TRL 6), see Appendix E.

This effort is NOT focused on rebuilding the mineral supply chains of decades ago, but rather is designed to catalyze a U.S. leadership role in economically viable, environmentally responsible extraction, separation, processing, refining, and recycling of CMM technologies in a way that creates good jobs. This supports the generation of sustainable, globally competitive U.S. domestic supply chains for onshore production of CMMs for commercial commodities, clean energy, and national defense industries, and supports the Administration's goal to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050. Priority will be placed on materials from the USGS Critical Minerals List<sup>14</sup> and the DOE Critical Materials Assessment<sup>15</sup>, or the development of alternative materials or designs that use fewer CMM and support more robust supply chains. DOE intends that the RD&D performed in this FOA will reduce resource use (e.g., energy, water, chemicals), negative environmental impacts (e.g., CO<sub>2</sub>, air, and water emissions), and costs, compared to currently used technologies. The FOA will require projects to track and report on results related to environmental impacts, environmental justice, labor and community engagement, community engaged siting, equity, and workforce development. Where appropriate, proposers are encouraged to engage communities as early within a project lifecycle as possible. Additionally, where appropriate, projects will complete the National Environmental Policy Act (NEPA) review prior to commencement of any construction activity.

#### iv. **Teaming Partner List**

Applicants are encouraged to form multidisciplinary and multiorganizational teams, especially for higher TRL proposals, due to the complex nature of the RD&D that is needed. DOE is compiling a Teaming Partner List to facilitate the formation of project teams for this FOA. The Teaming Partner List allows organizations that may wish to participate on a project to express their interest to other applicants and explore potential partnerships.

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<sup>14</sup> U.S. Department of the Interior, U.S. Geological Survey, 2022 Final List of Critical Minerals, 87 Fed. Reg. 10381 (Feb. 24, 2022).

<sup>15</sup> <https://www.energy.gov/eere/ammto/request-information-critical-materials-assessment-proposed-determination>

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The **Teaming Partner List** will be available on the FedConnect website in the message center for this opportunity and will be regularly updated to reflect new teaming partners who provide their organization's information.

**SUBMISSION INSTRUCTIONS:** Any organization that would like to be included on this list should submit the following information: Investigator Name, Organization Name, Organization Type, Topic Area, Background and Capabilities, Website, Contact Address, Contact Email Address, and Contact Phone Number. Interested parties shall use the Excel file titled "DOE-FOA-0003105 Teaming Partner List," provided as an Attachment to this announcement. Submit the completed Excel sheet to (insert email address) with the subject line "Teaming Partner Information."

**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 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.

## **B. Topic Areas**

### **Bench and Pilot Scale RD&D –**

DOE's Office of Fossil Energy and Carbon Management (FECM) intends to fund high impact applied RD&D bench and pilot scale projects with this FOA. This funding opportunity is looking to take bench scale concepts in the TRL 0 to 4 range and allow the awardees to demonstrate their processes on a continuous/semicontinuous bench scale before scaling up to pilot scale (TRL 6).

Projects funded under this FOA must strive to decrease the energy consumption, environmental impact, and costs associated with extraction, production, separation, alloying, or processing technologies compared to conventional technologies. In addition, efficient water and wastewater management strategies, technologies and management strategies to control the environmental impacts of radionuclides in ore tailings, technologies for separation and processing, and technologies for increasing the recovery rates of coproducts and byproducts from host metal ores should be addressed.

The FOA will consist of five Areas of Interest (AOI).

### **AOI 1: CMM Supply Chain**

Multiphase opportunity to develop technologies or process improvements along the CMM supply chain that minimize the use and content, or lead to more efficient use, of critical materials across the full supply chain.

AOI 1A Phase I – RD&D to develop a complete representative bench scale facility to produce CMMs from waste streams, impoundments, and conventional ore bodies that contain CMMs. The process or concept can be at any level of development but must be able to be demonstrated on a continuous/semicontinuous basis by the end of Phase I (12 to 24-month duration).

AOI 1B Phase II – Pilot scale facility development and construction. Pilot scale facility must be scaled up from a bench scale process(es) that has been demonstrated on a continuous/semicontinuous basis.

The purpose of Phase I is to develop and demonstrate a complete process on a bench scale that can then lead to the design and construction of a pilot scale facility under Phase II. Demonstrating the feasibility on a continuous bench scale will increase the likelihood of success at a pilot scale. If the proposed process has not been demonstrated on a continuous bench scale basis, it is not eligible to apply for Phase II of this AOI.

Feedstocks of particular interest include but are not limited to:

- Alumina (red mud) tailings
- Black mass (recycled batteries)
- CMM containing ore
- E-waste
- Geothermal
- Hardrock acid mine drainage (AMD)
- Manufacturing scrap
- Mining tailings
- Placer sand waste from mineral sands
- Phosphor mining waste
- Produced waters
- Manufacturing scrap

Products of particular interest:

- Separated and/or REEs
- Graphite
- Lithium

- Cobalt
- Nickel
- Gallium
- High purity CMMs needed in semiconductors and microchips (feed for CHIPS and Science Act projects).

**AOI 2: Value Added Products**

Multiphase opportunity to develop value added products from a feedstock containing CMM.

AOI 2A Phase I - RD&D to develop a complete bench scale facility to produce value added products from waste streams, recycled materials, impoundments, and conventional ore bodies that contain CMM. The process or concept can be at any level of development but must be able to be demonstrated on a continuous/semicontinuous basis by the end of Phase I (12-to-24-month duration).

AOI 2B Phase II – Pilot scale facility development and construction. Pilot scale facility must be built off a bench scale process that has been demonstrated on a continuous/semicontinuous basis.

Purpose – Development of RD&D to upgrade non-CMM components and minor concentration CMMs that come from any feedstock containing viable levels of CMMs. The focus of this RD&D will be to produce “value added products or co-products” that could help improve the economics of a given project that plans to produce CMMs. Many CMMs are produced commercially as byproducts from other mining operations. This AOI will focus on upgrading the “value added products” that increase the number of saleable products from proposed CMM production processes to potentially improve the project economics and lessen the impact that market price fluctuations for a single product can have on the project’s economic feasibility.

Possible value-added products could include but are not limited to:

- High value alloys
- High value co-products
- Graphite
- Building/infrastructure materials
- Platinum group metals (PGM)
- Minor metals production



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**AOI 3: Next Generation Technologies**

Bench scale development of novel, “next generation” technologies based on fundamental science discoveries that can be utilized in the production of critical materials.

These technologies should focus on the optimization of cost, environmental emissions, and resource usage or intensity within extraction, production, separation, processing refining, alloying, manufacturing, or recycling technologies. This AOI is looking to revolutionize the production of CMMs from domestic sources by getting away from traditional methods that have a large environmental impact and would prove challenging to stand up domestically, and instead developing “disruptive technologies” that could revolutionize steps along the current supply chain. The goal of this AOI is to develop innovative technologies and practices to diversify commercially viable and sustainable domestic sources of critical materials, including technologies for recovery from waste streams.

This AOI focuses on the development of technologies in the TRL 0-4 range and excludes marginal improvements to existing technologies.

**AOI 4: Alternative Materials**

Potential multiphase opportunity to develop CMM alternatives and substitutes.

AOI 4A Phase I: Bench scale development of CMM alternatives or substitutes (excluding magnets and battery technologies) to increase robustness of domestic supply chains. Bench scale development of magnet and battery alternatives and substitutes is excluded from this funding opportunity because AMMTO and VTO both have funding programs that focus on these areas.

AOI 4B Phase II: Pilot scale development of CMM alternatives or substitutes to reduce reliance on foreign supply chains. Particularly materials that are available in abundance within the U.S. and not subject to potential supply restrictions, that lessen the need for critical materials. Technologies need to be demonstrated on a bench scale basis to apply for pilot phase. No technology exclusions. TRL 6.

**AOI 5: Alternative Products**

Potential multiphase opportunity to develop alternative energy technologies or improved designs of existing energy technologies, particularly technologies or designs that use materials that are abundant in the U.S. and/or not subject to supply restrictions. This AOI focuses on the development of the “next” high

performance battery technology, along with improvements to current battery recycling technologies and other alternative energy technologies that have chemistries able to be predominantly sourced domestically and from friendly countries.

The purpose of this AOI is to target TRL or technology gaps that are not currently covered under other BIL and Inflation Reduction Act (IRA) funding streams and to develop advanced alternative energy and recycling technologies not currently deployed on a commercial or demonstration scale. It is expected that proposed projects will be at the bench scale but established bench scale projects looking to move to a pilot scale will also be evaluated.

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

### **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).
- Applications for work that is duplicative of existing work currently funded by the DOE or another federal agency.

### **D. Community Benefits Plan: Job Quality and Equity**

To support the goal of building a clean and equitable energy economy, BIL-funded projects with higher TRL levels (>5) are expected to (1) support meaningful community and labor engagement; (2) invest in America's workforce; (3) advance diversity, equity, inclusion, and accessibility (DEIA); 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).<sup>16</sup> To ensure these goals are met, applications that are submitted to AOIs 1B, 2B, and 4B must include a Community Benefits Plan that describes how the proposed project would incorporate the four objectives stated above.

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<sup>16</sup> The Justice40 initiative, established by E.O. 14008, defined M-23-09 and CEJST, sets a goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities. [https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09\\_Signed\\_CEQ\\_CPO.pdf](https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf) and [Explore the map - Climate & Economic Justice Screening Tool \(geoplatform.gov\)](#).

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 details on how to ensure the delivery of measurable community and jobs benefits, ideally using 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.E.xvii. for the Community Benefits Plan content requirements.

## **E. R&D Community Benefits Plan**

For projects at lower TRL levels (AOIs 1A, 2A, 3, 4A, 5) funded under this BIL FOA are expected to (1) advance 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 Plan)<sup>17</sup> that addresses the three objectives stated above. See Section IV.E.xvii. and Appendix G for more information on the R&D Community Benefits Plan content requirements.

## **F. Authorizing Statutes**

The programmatic authorizing statute is Public Law (P.L.) 95-91, DOE Organization Act, as amended.

Section 41003 (c) of the BIL (codified at 30 U.S.C. § 1606 (g)).

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;

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<sup>17</sup> 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.

- 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 United States;
- 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.

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

DOE expects to make a total of up to \$150 million in federal funding available for new awards under this FOA, subject to the availability of appropriated funds. DOE anticipates making approximately 25-30 awards under this FOA. DOE may issue one, multiple, or no awards. Individual awards may vary between \$500,000 and \$30,000,000.

DOE 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 (Federal Share)	Anticipated Maximum Award Size for Any One Individual Award (Federal Share)	Approximate Total Federal Funding Available for All Awards	Anticipated Period of Performance (Months)
1A	CMM Supply Chain (Phase I)	Up to 10	Up to \$500K/80%	Up to \$3M/80%	\$20M	12-24

1B	CMM Supply Chain (Phase II)	Up to 4	Up to \$10M/50%	Up to \$30M/50%	\$50M	18-36
2A	Value Added Products (Phase I)	Up to 5	Up to \$500K/80%	Up to \$2M/80%	\$10M	12-24
2B	Value Added Products (Phase II)	Up to 2	Up to \$5M/50%	Up to \$10M/50%	\$20M	18-36
3	Next Generation Technologies	Up to 10	Up to \$500K/80%	Up to \$1M/80%	\$10M	12-24
4A	Alternative Materials (Phase I)	Up to 10	Up to \$500K/80%	Up to \$1M/80%	\$10M	12-24
4B	Alternative Materials (Phase II)	Up to 2	Up to \$5M/50%	Up to \$10M/50%	\$20M	18-36
5	Alternatives Products	Up to 10	Up to \$500K/80%	Up to \$1M/80%	\$10M	12-24

**APPLICATIONS THAT EXCEED THE “Maximum DOE Share for Any One Individual Award (Federal Share)” SPECIFIED ABOVE WILL BE CONSIDERED NONCOMPLIANT (SEE SECTION III COMPLIANCE CRITERIA). DOE WILL NOT REVIEW OR CONSIDER NONCOMPLIANT APPLICATIONS.**

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 Go/No-Go decision among different recipients and provide additional funding only to a subset of recipients.

**ii. Period of Performance**

DOE anticipates making awards that will result in cooperative agreements with a 12-24 month project period for bench scale and 18-36 months for pilot scale projects, comprised of one or more budget periods. Project continuation will be contingent upon several elements, including satisfactory performance. For applicable projects, continuation into Phase II will be governed by a Go/No-Go decision. For a complete list and more information on the Go/No-Go review, see Section VI.B.xv.

**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.x. of the FOA for more information on what substantial involvement may include.

**ii. Funding Agreements with Federally Funded Research and Development Center (FFRDCs)<sup>18</sup>**

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.ii.

**iii. Other Transactions Authority Agreements**

If determined necessary to better achieve the program mission, DOE will consider issuing an award using its Other Transactions Authority (OTA). OTA agreements may not be subject to the requirements of 2 CFR Part 200 as amended by 2 CFR Part 910.

In an OTA agreement, DOE may modify the standard government terms and conditions, including but not limited to:

- **Intellectual Property Provisions:** DOE may negotiate special arrangements with recipients to modify existing intellectual property rights or facilitate the commercial deployment of inventions conceived or first actually reduced to practice under the DOE funding agreement.
- **Accounting Provisions:** DOE may authorize the use of Generally Accepted Accounting Principles (GAAP), where recipients do not have accounting systems that comply with government recordkeeping and reporting requirements.

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<sup>18</sup> FFRDCs are public-private partnerships that conduct research for the U.S. government. A listing of FFRDCs can be found at <http://www.nsf.gov/statistics/ffrdclist/>.

An applicant may request an OTA agreement if it believes using an OTA, such as a Technology Investment Agreement, could benefit the research, development, and demonstration (RD&D) objectives of the program and can document these benefits. If an applicant is seeking to negotiate an OTA, the applicant must include an explicit request in its Full Application. After an applicant is selected for award negotiation, the Contracting Officer will determine if awarding an OTA would benefit the RD&D objectives of the program in ways that likely would not happen if another type of assistance agreement is used (e.g., cooperative agreement subject to the requirements of 2 CFR Part 200 as amended by 2 CFR Part 910).

### **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) must be domestic entities. 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. Nonprofit entities; and
4. State and local governmental entities and 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 United States; have majority domestic ownership and control; and have a physical place of business in the United States.

DOE/NNSA FFRDCs are eligible to apply for funding as a prime recipient or subrecipient.

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

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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.

Nonprofit 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 C 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.

The cost share must be at least 20% of the total project costs<sup>19</sup> for research and development projects and 50% of the total project costs for demonstration and commercial application projects.<sup>20</sup> Cost sharing is not required for institutions of higher education and nonprofit organizations. This waiver is granted per Section 10725 of the Research and Development, Competition, and Innovation Act, P.L. 117-167, 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 R&D activities. The exemption is available for the two-year period beginning on

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<sup>19</sup> Total project costs are the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

<sup>20</sup> 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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August 9, 2022. Codified at 42 U.S.C. 16352. The cost share must come from non-federal sources unless otherwise allowed by law.

**Phase I Cost Share**

The cost share must be at least 20% of the total project costs<sup>21</sup> for research and development projects (i.e., those funded under AOI 1A, 2A,3,4A and 5).<sup>22</sup> The cost share must come from non-federal sources unless otherwise allowed by law.

**Phase II Cost Share**

The cost share must be at least 50% of the total project costs<sup>23</sup> for demonstration projects.<sup>24</sup> The cost share must come from non-federal sources unless otherwise allowed by law.

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 and B 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

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<sup>21</sup> Total project costs are the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

<sup>22</sup> Energy Policy Act of 2005, Public Law 109-58, Sec. 988. Also see 2 CFR 200.306 and 2 CFR 910.130 for additional cost sharing requirements.

<sup>23</sup> Total project costs are the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

<sup>24</sup> Energy Policy Act of 2005, Public Law 109-58, Sec. 988. Also see 2 CFR 200.306 and 2 CFR 910.130 for additional cost sharing requirements.

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project team members may vary, as long as the cost share requirement for the entire project 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.K.i. 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. A DOE Loan Guarantee cannot be leveraged by applicants to provide the required cost share or otherwise support the same scope that is proposed under a project.

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 the 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 federal government did not provide the funding to the state or local government.

The recipient may not use any of the following sources to meet cost share obligations:

- 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.

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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 and other Federal Agencies**

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. Unless otherwise authorized by law, Federal funds contributed by other federal agencies and instrumentalities may not be accounted for as part of the non-federal cost share.

**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 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.

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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**

Full Applications are deemed compliant if:

- The Full Application complies with the maximum DOE share of the individual award size in Section II.A. of the FOA;
- The Full Application complies with the content and form requirements in Section IV. of the FOA; and
- The applicant successfully uploaded all required documents and clicked the “Submit” button in Grants.gov by the deadline stated in the FOA.

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

**Applicants are strongly encouraged to submit their 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 before the submission deadline), applicants should allow at least one hour to submit a Full Application or Reply to Reviewer Comments. Once the Full Application, or Reply to Reviewer Comments is submitted in Grants.gov, 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 Full Application or Reply to Reviewer Comments before the applicable deadline. DOE will not extend the submission deadline for applicants that fail to submit required information by the applicable deadline due to server/connection congestion.

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**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. Other Eligibility Requirements****i. Requirements for DOE/NNSA FFRDCs Listed as the Applicant**

A DOE/NNSA FFRDC is eligible to apply for funding under this FOA if its cognizant Contracting Officer provides written authorization and this authorization is submitted with the application.

The following wording is acceptable for the authorization:

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

If a DOE/NNSA FFRDC is selected for award negotiation, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's Management and Operating (M&O) contract.

**ii. Requirements for DOE/NNSA and Non-DOE/NNSA FFRDCs Included as a Subrecipient**

DOE/NNSA and non-DOE/NNSA FFRDCs may be proposed as a subrecipient on another entity's application subject to the following guidelines:

**a. Authorization for non-DOE/NNSA FFRDCs**

The federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the application. The use of a FFRDC must be consistent with its authority under its award.

**b. Authorization for DOE/NNSA FFRDCs**

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

Authorization is granted for the Laboratory to participate in the proposed project. The work proposed for the Laboratory is consistent with or complementary to the missions of the

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Laboratory and will not adversely impact execution of the DOE assigned programs at the Laboratory.

c. Funding, Cost Share, and Subaward with FFRDCs

The value of and funding for the FFRDC portion of the work will not be normally included in the award. DOE/NNSA FFRDCs participating as a subrecipient on a project will be funded directly through the DOE field work proposal (WP) process. Non-DOE/NNSA FFRDCs participating as a subrecipient will be funded through an interagency agreement with the sponsoring agency.

Although the FFRDC portion of the work is excluded from the award, the applicant's cost share requirement will be based on the total cost of the project, including the applicant's, the subrecipient's, and the FFRDC's portions of the project.

Unless instructed otherwise by the DOE Contracting Officer for the DOE award, all FFRDCs are required to enter into a Cooperative Research and Development Agreement<sup>25</sup> (CRADA) or, if the role of the DOE/NNSA FFRDC is limited to technical assistance and intellectual property is not anticipated to be generated from the DOE/NNSA FFRDC's work, a Technical Assistance Agreement (TAA), with at least the prime recipient before any project work begins. Any questions regarding the use of a CRADA or TAA should be directed to the cognizant DOE field intellectual property (IP) counsel.

The CRADA or TAA is used to ensure accountability for project work and provide the appropriate management of IP, e.g., data protection and background IP. The CRADA or TAA must be agreed upon by all parties and submitted to DOE or other sponsoring agency, when applicable, for approval, or submitted to DOE for notice under the Master Scope of Work process, when applicable, using any DOE or other sponsoring agency approved CRADA or TAA template without substantive changes by the time the award is made to the prime recipient.

d. Responsibility

The prime recipient will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues,

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<sup>25</sup> A cooperative research and development agreement is a contractual agreement between a national laboratory contractor and a private company or university to work together on research and development. For more information, see <https://www.energy.gov/gc/downloads/doe-cooperative-research-and-development-agreements>

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including but not limited to disputes and claims arising out of any agreement between the prime recipient and the FFRDC.

## 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 apply in response to this FOA lies solely with the applicant.

# IV. Application and Submission Information

## A. Application Process

DOE performs an initial eligibility review of the applicant submissions to determine whether they meet the eligibility requirements of Section III of the FOA. DOE will not review or consider submissions that do not meet the eligibility requirements of Section III. All submissions must conform to the following form and content requirements, including maximum page lengths (described below) and must be submitted via Grants.gov at <https://www.grants.gov/>, unless specifically stated otherwise in the FOA. **DOE will not review or consider submissions submitted through means other than specifically stated in the FOA, submissions submitted after the applicable deadline, or incomplete submissions.** DOE will not extend deadlines for applicants who fail to submit required information and documents due to server/connection congestion.

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 Grants.gov 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.

Applicants are responsible for meeting each submission deadline. **Applicants are strongly encouraged to submit their Full Applications 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 Full Application. Once a Full Application is submitted as specifically stated in the FOA, 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 Full Application before the applicable deadline.

DOE urges applicants to carefully review their Full Applications to allow sufficient time for the submission of required information and documents. Full Applications that pass the initial eligibility review will undergo comprehensive technical merit review according to the criteria identified in Section V of the FOA.

## **B. Application Forms**

To access application forms and instructions available on Grants.gov at <https://www.grants.gov/> and select the appropriate funding opportunity number.

Note: The maximum file size that can be uploaded to the Grants.gov website is 10MB. Files larger than 10MB cannot be uploaded and hence cannot be submitted for review. If a file is larger than 10MB 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 10MB.**

## **C. Content and Form of the Full Application**

Applicants must submit a Full Application by the specified due date and time to be considered for funding under this FOA. Applicants must complete the



following application forms found on the Grants.gov website at <https://www.grants.gov/> in accordance with the instructions.

**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. If Applicants exceed the maximum page lengths indicated below, DOE will review only the authorized number of pages and disregard any additional pages.

Component	File Format	Page Limit	File Name
Technical Volume	PDF	25 pages	ControlNumber_LeadOrganization TechnicalVolume.pdf
Resumes	PDF	3 pages each	ControlNumber_LeadOrganization Resumes.pdf
Letters of Commitment	PDF	1 page each	LOC.pdf "LOC.FILL IN TEAM MEMBER.pdf" if more than one letter is submitted)
Community Partnership Documentation	PDF	10 pages	ControlNumber_LeadOrganization_PartnerDocs
Statement of Project Objectives	MS Word	15 pages	ControlNumber_LeadOrganization SOPO.doc or docx
SF-424: Application for Federal Assistance	PDF	n/a	ControlNumber_LeadOrganization_App424
Budget Justification Workbook	MS Excel	n/a	Recipeint_Budget_Justification.xls orxlsx
Summary/Abstract for Public Release	PDF	1 page	ControlNumber_LeadOrganization Summary.pdf
Summary Slide	MS PowerPoint	1page	ControlNumber_LeadOrganization_Slide.ppt or pptx
Subrecipient Budget Justification	MS Excel	n/a	Subrecipient_Budget_Justification.xls orxlsx
DOE Work Proposal for FFRDC, if applicable (see DOE O 412.1A, Attachment 2)	PDF	n/a	ControlNumber_LeadOrganization_WP
Authorization from cognizant Contracting Officer for FFRDC	PDF	n/a	ControlNumber_LeadOrganization FFRDCAuth.pdf
SF-LLL Disclosure of Lobbying Activities	PDF	n/a	N/A
Foreign Entity Waiver Requests and Foreign Work Waiver Requests	PDF	n/a	ControlNumber_LeadOrganization_Waiver
Community Benefits Plan: Job Quality and Equity	PDF	12 pages	ControlNumber_LeadOrganization_CBP
Community Benefits Plan Budget Justification	MS Excel	n/a	ControlNumber_CBP_Budget_Justification

R&D Community Benefits Plan	PDF	5 pages	ControlNumber_LeadOrganization_CBP
Current and Pending Support	PDF	n/a	CPS.pdf
Intellectual Property Management Plan	PDF	n/a	ControlNumber_LeadOrganization_IPMP
Location(s) of Work	Excel	n/a	ControlNumber_LeadOrganization_LOW
Environmental Considerations Summary	PDF	n/a	ControlNumber_LeadOrganization_EnvSum
Transparency of Foreign Connections	PDF	n/a	BusinessSensitive_ControlNumber_LeadOrganization_TFC
Potentially Duplicative Funding Notice	PDF	n/a	ControlNumber_LeadOrganization_PDFN
Technology Maturation Plan	PDF	15 pages	ControlNumber_LeadOrganization_TMP.pdf
Project Management Plan	PDF	15 pages	ControlNumber_LeadOrganization_PMP.pdf

**Note:** The maximum file size that can be uploaded to the Grants.gov website is 10MB. See Section IV.B above. Files in excess of 10MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10MB but is still within the maximum page limit specified in the FOA it must be broken into parts and denoted to that effect. 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 10MB.**

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

## ii. **Technical Volume**

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 25 pages, including the cover page, table of contents, and all citations, charts, graphs,

maps, photos, or other graphics, and must include all 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.

<b>Technical Volume Content Requirements</b>	
<b>SECTION/PAGE LIMIT</b>	<b>DESCRIPTION</b>
<b>Cover Page</b>	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.
<b>Project Overview</b> (Approximately 10% of the Technical Volume)	<p>The Project Overview should contain the following information:</p> <ul style="list-style-type: none"> <li>• <b>Background:</b> The applicant should discuss the background of its 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.</li> <li>• <b>Project Goal:</b> The applicant should explicitly identify the targeted improvements to the baseline technology and the critical success factors in achieving that goal.</li> <li>• <b>DOE Impact:</b> 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.</li> </ul>
<b>Technical Description, Innovation, and Impact</b> (Approximately 30% of the Technical Volume)	<p>The Technical Description should contain the following information:</p> <ul style="list-style-type: none"> <li>• <b>Relevance and Outcomes:</b> The applicant should provide a detailed description of the technology or focus area, including the scientific and other principles and objectives that will be pursued during the project. This section should describe 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. The Applicant should clearly specify the expected outcomes of the project.</li> <li>• <b>Feasibility:</b> The Applicant should demonstrate the technical feasibility of the proposed technology and capability of achieving the anticipated performance targets, including a description of previous work done and prior results. This section should also address the project’s access to necessary infrastructure (e.g., transportation, water, electricity</li> </ul>

	<p>transmission), including any use of existing infrastructure, as well as to a skilled workforce.</p> <ul style="list-style-type: none"> <li>• Innovation and Impacts: The applicant should describe the current state-of-the-art in the applicable field, the specific innovation of the proposed technology or 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.</li> </ul>
<p><b>Workplan</b> (Approximately 40% of the Technical Volume)</p>	<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 SOPO is separately requested. The Workplan should contain the following information:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Technical Scope Summary: The applicant should provide a summary description of the overall work scope and approach to achieve the objective(s). Proposed Pilot facilities must include demonstrated initial feedstock resource estimates that will allow for 5-years of operations. 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.</li> <li>• 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 contain a more detailed description of the WBS and tasks.</li> <li>• 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 Specific, Measurable, Attainable, Realistic, and Timely (SMART) technical milestone. SMART milestones 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</li> </ul>

	<p>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.</p> <ul style="list-style-type: none"> <li>• Go/No-Go Decision Points (See Section VI.B.xv. 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.xv. 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Buy America Requirements for Infrastructure Projects: Within the first two pages of the Workplan, include a short statement on whether the project will involve the construction, alteration, and/or repair of infrastructure in the United States. See Appendix D for applicable definitions and other information to inform this statement.</li> <li>• Project Management: The applicant should discuss the project team’s proposed management plan, including the following:             <ul style="list-style-type: none"> <li>○ The overall approach to and organization for managing the work;</li> <li>○ The roles of each project team member;</li> <li>○ Any critical handoffs/interdependencies among project team members;</li> <li>○ The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices;</li> <li>○ 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;</li> <li>○ A description of how project changes will be handled;</li> </ul> </li> </ul>
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	<ul style="list-style-type: none"> <li>○ If applicable, the approach to Quality Assurance/Control;</li> <li>○ How communications will be maintained among the project team members.</li> <li>● Market Transformation Plan: The applicant should provide a market transformation plan, including the following:             <ul style="list-style-type: none"> <li>○ Identification of target market, competitors, and distribution channels for proposed technology along with known or perceived barriers to market penetration, including a mitigation plan;</li> <li>○ Identification of a product development and/or service plan, commercialization timeline, financing, product marketing, legal/regulatory considerations including intellectual property, infrastructure requirements, data dissemination, and product distribution.</li> </ul> </li> </ul>
<p><b>Technical Qualifications and Resources</b> (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"> <li>● A description of the project team’s unique qualifications and expertise, including those of key subrecipients;</li> <li>● A description of 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;</li> <li>● Relevant, previous work efforts, demonstrated innovations, and how these enable the Applicant to achieve the project objectives;</li> <li>● The time commitment of the key team members to support the project;</li> <li>● A description of the technical services to be provided by DOE/NNSA FFRDCs, if applicable;</li> <li>● The skills, certifications, or other credentials of the construction and ongoing operations workforce;</li> <li>● For multi-organizational projects, describe succinctly:             <ul style="list-style-type: none"> <li>○ The roles and the work to be performed by the project manager and senior/key personnel at the prime and sub levels;</li> <li>○ Business agreements between the applicant and subrecipient;</li> <li>○ How the various efforts will be integrated and managed;</li> <li>○ Process for making decisions on technical direction;</li> <li>○ Publication arrangements;</li> <li>○ Intellectual property issues; and</li> <li>○ Communication plans.</li> </ul> </li> </ul>

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**iii. Resumes**

A resume provides information reviewers can use to evaluate an 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 (PI) or Lead Project Manager (LPM) and senior/key Personnel that includes the following:

1. Contact information;
2. Education and training: Provide name of 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 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 10 years or since age 18, whichever 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/>, 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."

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**iv. Letters of Commitment**

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 of commitment must not exceed one 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 will not be accepted.

**v. Community Partnership Documentation**

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. Examples of such entities include organizations that carry out workforce development programs, labor unions, Tribal organizations, and community-based organizations that work with disadvantaged communities. The partnership documentation can be a letter on a partner's letterhead outlining the planned partnership and signed by an officer of the entity, a Memorandum of Understanding (MOU), or another 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, they should include letters from proposed partners. Each letter must not exceed one 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)**

Applicants must complete a SOPO. 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."



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**vii. SF-424: Application for Federal Assistance**

Applicants must complete the SF-424: Application for Federal Assistance. Complete all required fields in accordance with the instructions on the form. The list of certifications and assurances in Field 21 can be found at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>, under Certifications and Assurances. Note: The dates and dollar amounts on the SF-424 are for the complete project period and not just the first 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**

Applicants must complete the Budget Justification. This workbook is included as an attachment to this announcement. Applicants must complete each tab of the Budget Justification Workbook for the project, 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 convention for the title: "ControlNumber\_LeadOrganization\_Budget\_Justification."

**ix. Summary for Public Release**

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 business-sensitive information, as DOE may make it available to the public after selections are made. The summary must not exceed one 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."

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**x. Summary Slide**

Applicants must provide a single slide summarizing the proposed project. The Summary Slide template requires 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, PI/LPM, 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**

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% 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 file using the following convention for the title:

"ControlNumber\_LeadOrganization\_Subrecipient\_Budget\_Justification."

**xii. Budget for DOE/NNSA FFRDC**

If a DOE/NNSA FFRDC is to perform a portion of the work, the applicant must provide a DOE work proposal (WP) in accordance with the requirements in DOE Order 412.1A, Work Authorization System, Attachment 2, available at:

<https://www.directives.doe.gov/directives-documents/400-series/0412.1-BOrder-a-chg1-AdmChg>. Save the WP in a single PDF file using the following

convention for the title: "ControlNumber\_LeadOrganization\_WP."

**xiii. Authorization for Non-DOE/NNSA or DOE/NNSA FFRDCs**

The federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the application. The use of a FFRDC must be consistent with the contractor's authority under its award. Save the Authorization in a single PDF file using the following convention for the title:

"ControlNumber\_LeadOrganization\_FFRDCAuth."

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**xiv. SF-LLL: Disclosure of Lobbying Activities**

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.”

**xv. 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.A. 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.”

**xvi. Community Benefits Plan: Job Quality and Equity**

The Community Benefits Plan: Job Quality and Equity (Community Benefits Plan or Plan) must set forth the Applicant’s approach to ensuring that federal

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investments advance 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 sections below include the requirements for each goal. 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.

For your convenience, a Community Benefits Plan template is available at: [About Community Benefits Plans](#). Applicants are strongly encouraged to use the template to complete their specific Plan. If the template is not used, the Plan must address all of the elements described below, and as outlined in the template.

The Applicant's Community Benefits Plan must include at least one Specific, Measurable, Attainable, Realistic and Timely (SMART) milestone per budget period to measure progress on the proposed actions. The 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 when carrying out its project. Public transparency around the plan and SMART commitments ensure accountability. In addition, DOE will evaluate the recipient's progress during the award period of performance, 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\_CBP." 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 [About Community Benefits Plans](#).

The Community Benefits Plan must address the following:

**1. Community and Labor Engagement:** The Community Benefits Plan must describe the applicant's actions to date and plans to engage with community partners, such as local and/or 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 stalls or slowdowns, litigation, and other risks associated with project implementation.

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Community and labor engagement should lay the groundwork for the 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 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 the 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.

As the 1935 National Labor Relations Act states, employees' ability to organize, bargain collectively, and participate, through labor organizations of their choosing, in decisions that affect them contributes 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.

The Plan must include:

- A) A summary of the applicant's plan to attract, train, and retain a skilled and well-qualified workforce for 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

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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 the policy of the United States 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. Applicants 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 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 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:

- A) Commit to partnering with minority business enterprises, minority-owned businesses, women-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 underrepresented communities and those facing systemic barriers to quality employment, such as those with disabilities, women, returning citizens, opportunity youth, and veterans;
- C) Provide workers with 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. The Justice40 Initiative section must include:

- A. Identification of applicable disadvantaged communities to which the anticipated project benefits will flow.
- B. 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. Applicants should also discuss how the project will maximize all the benefits listed in number 4 above.

- C. A description of how and when anticipated benefits are expected to flow to disadvantaged communities. For example, whether the benefits will be provided directly within the disadvantaged community identified in the Justice40 Initiative section or in another way; whether the benefits will flow during project development or after project completion; and how the applicant will track benefits delivered.
- D. A discussion of anticipated negative and cumulative environmental impacts on disadvantaged communities. Applicants should discuss any anticipated negative or positive environmental impacts associated with the project, and how they will 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](#).

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

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**xvii. Community Benefits Plan Budget Justification**

Applicants must provide a separate budget justification identifying the Community Benefit Plan costs included in the “Budget Justification Workbook.” This Community Benefits Plan Budget Justification must include the same justification information described in the “Budget Justification Workbook” section above but should only include Community Benefits Plan costs. Save the Community Benefits Plan Budget Justification in a Microsoft Excel file using the following convention for the title: “ControlNumber\_CBP\_Budget\_Justification.”

**xviii. R&D Community Benefits Plan**

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

The Applicant’s R&D Community Benefits Plan must include at least one Specific, Measurable, Attainable, Realistic, 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 a project is selected, FECM will incorporate the R&D Community Benefits Plan into the award and the recipient must implement its R&D Community Benefits Plan when carrying out its project. FECM will evaluate the recipient’s progress throughout the life of the award, 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 I, applicants are encouraged to leverage promising practices and develop a plan tailored to their project.

The R&D Community Benefits Plan must not exceed five pages. It must be submitted in PDF format using the following convention name for the title: “ControlNumber\_LeadOrganization\_CBP.” This Plan must address the technical review criterion titled “R&D Community Benefits Plan.” See Section V. of the



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FOA.

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

**1) Diversity, Equity, Inclusion, and Accessibility:**

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 take that integrates 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 if the innovation is successful. Like cost reductions and commercialization plans, the R&D Community Benefits Plan requires description of the equity implications of the innovation.

**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 if the innovation is successful.

See Appendix I for more guidance.

**xix. Intellectual Property Management Plan**

Applicants must submit an executed Intellectual Property Management Plan (IPMP) between the members of the consortia or project team.

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.

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The following is a list of examples of items 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 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 project team; and
- The handling of disputes related to intellectual property between the members.

Save the Intellectual Property Management Plan in a single PDF file using the following convention for the title: “ControlNumber\_LeadOrganization\_IPMP.”

**xx. Locations of Work**

Applicants must complete the Locations of Work Documentation, available on Grants.gov. The applicant must complete the supplied template by listing the city, state, and zip code + 4 digits for each location where project work will be performed by the prime recipient or subrecipient(s). Save the completed template as a Microsoft Excel file using the following convention for the title: “Control Number\_LeadOrganization\_LOW.”

**xxi. Transparency of Foreign Connections**

Applicants must provide the following 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 mailing 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;
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 5%;
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."

**xxii. Potentially Duplicative Funding Notice**

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."

**D. 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 list of examples of information that may be required:

- Personnel proposed to work on the project and collaborating organizations (See Section VI.B.xx. Participants and Collaborating Organizations);
- Current and Pending Support (See Sections IV.E.xx. and VI.B.xxi. Current and Pending Support);
- 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.xxiv.;



- 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.

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## **E. 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) Register in the SAM at <https://www.sam.gov> before submitting an application; (2) provide a valid UEI in the application; and (3) maintain an active SAM registration with current information when the applicant 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. If an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, 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 use 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](#).

## **F. Submission Dates and Times**

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

## **G. Intergovernmental Review**

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

## **H. 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 costs 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 review process. 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 its 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 recipient elects to undertake activities that are not authorized for federal

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funding by the Contracting Officer in advance of DOE completing a NEPA review process, 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 United States (Foreign Work Waiver)**

#### **1. Requirement**

All work performed under awards issued under this FOA must be performed in the United States. 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 United States requirement, DOE may deny reimbursement for the work conducted outside the United States 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 United States, 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 C 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 United States, the cost of which is supported under this award, to be performed by or under a cost-sharing arrangement with a United States 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. Build America Buy America Requirements for Infrastructure Projects**

Pursuant to the Build America Buy America Act, subtitle IX of 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 United States; and
- All construction materials used in the infrastructure work are manufactured in the United States.

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 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 D 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

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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 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, Tribe, Institution of Higher Education, or nonprofit 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 to: (1) fulfill the commitments made in its application regarding the procurement of U.S.-produced products and (2) fulfill the commitments made in its application regarding the procurement of other key component metals and domestically manufactured products 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 D and the terms and conditions of an award.

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

### **viii. Davis-Bacon Act Requirements**

Projects awarded under this FOA will be funded under Division D of BIL. 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 Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code commonly referred to as the Davis-Bacon Act (DBA).

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Applicants shall provide written assurance acknowledging the DBA requirements above, 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, United States Code (Davis-Bacon Act).

Applicants acknowledge that they will comply with all 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 three years after the completion of the project and making those payrolls available to 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 DOE;
- (7) Cooperating with any authorized representative of DOL in its 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; and

(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 maintain competency in Davis-Bacon Act compliance. The Contracting Officer will notify the recipient of any DOE-sponsored Davis-Bacon Act compliance trainings. 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 it is unable or limited in its ability to use or access. Applicants should indicate if they will seek a waiver.

**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.

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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 threats to United States research, technology, and economic security from undue foreign government influence

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when 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 the Davis-Bacon Act and electronic submittals of certified payroll reports;
- Invoices/receipts for all travel, equipment, supplies, contractual, and other costs;
- Uniform Commercial Code (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 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 United States 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.

DOL's Office of Federal Contractor Compliance Programs (OFCCP) uses a neutral process to schedule compliance evaluations. Consult OFCCP's Technical Assistance Guide<sup>26</sup> 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 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,

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<sup>26</sup> 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/rtc.jsp>



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. Full Applications

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

#### **Criterion 1: Technical Merit, Innovation, and Impact (50%)**

This criterion involves consideration of the following factors:

##### Technical Merit and Innovation

- Extent to which the proposed technology, process, or project is innovative and meets the goals of the Area of Interest (AOI);
- Degree to which the current state of the technology and the proposed advancement over state of the art (SOTA) technology 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 with technology described in the proposal;
- 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, and/or connecting links within the supply chain, to ensure success;
- Degree to which key manufacturing and supply chain challenges are considered, as applicable, for viable scale-up to a future pilot or demonstration-scale facility;
- Degree to which siting and environmental constraints are considered for deployment;
- Extent to which project has the potential to reduce emissions over SOTA and provide clean energy acceleration benefits for a community or region; and
- Sufficiency of existing infrastructure to support addition of the proposed project.

##### Impact of Technology Advancement

- Ability of the project to advance industry adoption;

- Extent to which the project supports the AOI 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 the applicant demonstrates stakeholder engagement from both upstream and downstream links within the relevant supply chain.
- **AOI 2 only** – Likelihood that the value-added products will improve the economics of the overall critical minerals and materials (CMM) project.
- **AOI 3 only** – Extent to which the proposed technology could act as a disruptive technology for current supply chains that lie offshore.
- **AOI 4 only** – Extent to which the applicant demonstrates need to develop CMM alternatives or substitutes for the existing supply chain.
- **AOI 5 only** – Extent to which applicant demonstrates advantages of advanced energy technologies over state-of-the-art (SOTA).

#### 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 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, where applicable.

#### **Criterion 2: Project Demonstration and Market Transformation Plan (20%)**

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.
- For Phase II pilot scale facilities proposals, demonstrate that an initial feedstock resource estimate allows for 5-years of operations.

#### Identification of Technical Risks

- Discussion and demonstrated understanding of the key 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.

#### Market Transformation Plan

- Identification of target market, competitors, and distribution channels for proposed technology along with known or perceived barriers to market penetration, including mitigation plan; and
- Comprehensiveness of market transformation plan including but not limited to product development and/or service plan, commercialization timeline, financing, product marketing, legal/regulatory considerations including intellectual property, infrastructure requirements, Open-source Software Distribution Plan, etc., and product distribution.

#### Industry Adoption Plan

- Identification of the interest and extent of potential industry adoption of the technology/process.

### **Criterion 3: Team and Resources (10%)**

This criterion involves consideration of the following factors:

- Capability of the 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;
- Diversity of expertise and perspectives of the proposed team and the inclusion of industry partners that will amplify impact;
- Sufficiency of the facilities to support the work;

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- Degree to which the proposed consortia/project team demonstrates the ability to facilitate and expedite further scaleup, demonstration, development and commercial deployment of the proposed technologies;
  - Level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan; and
  - Reasonableness of the budget and the spend plan for the proposed project and objectives.

**Criterion 4: Community Benefits Plan (20%)**

This criterion involves consideration of the following factors:

**Community and Labor Engagement**

Projects proposed at or above TRL 6

- 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 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.

Projects proposed below TRL 6

- Extent to which the applicant demonstrates the ability to develop a community and labor engagement that will result in support for the proposed project;
- Extent to which the applicant demonstrates the potential to develop a robust plan to engage—ideally through a clear commitment to negotiate 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 the potential accountability to affected workers and community stakeholders, including those most vulnerable to project activities, with the ability to develop a plan to publicly share SMART Community Benefits Plan commitments; and
- Extent to which the applicant demonstrates the potential that community and labor engagement will lead to the delivery of high-quality jobs, minimal

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environmental impact, and allocation of project benefits to disadvantaged communities.

Job Quality and Workforce Continuity

- Quality and manner in which the proposed project demonstrates the potential to 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 will provide 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.

**ii. 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.

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## **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 FECM'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 United States;
- The degree to which the proposed project will accelerate transformational technological 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, or group of projects, represent a desired geographic distribution (considering past awards and current applications);
- 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 Institutions); and partnerships with minority business enterprises, minority-owned businesses, woman-owned businesses, veteran-owned businesses, or Tribes;
- The degree to which the proposed project collectively represents a diversity of applicant types and sizes of applicant organizations;
- 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 supports complementary efforts or projects, which, when taken together, will best achieve the research goals and objectives;
- The degree to which the proposed project, when compared to the existing DOE project portfolio and other projects to be selected from the subject FOA, contributes to the total portfolio meeting the goals reflected in the Community Benefits Plan criteria; and
- 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 avoids duplication/overlap with other publicly or privately funded work;
- 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; and
- The degree to which the project promotes increased coordination with nongovernmental entities for demonstration of technologies and research applications to facilitate technology transfer.

## **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.iii. 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

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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://www.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**

FECM 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 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 Grants.gov. 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. 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 Grants.gov. 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.

**iii. 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 takes approximately 60 days. Applicants must designate a primary and a backup point-of-contact in Grants.gov 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.ii. of the FOA for guidance on pre-award costs.

**iv. 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, which means 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.

**v. 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 required one-time actions applicants must take before applying to this FOA. Some of these actions may take several weeks, so it is vital applicants build in enough time to complete them. Failure to complete these actions could interfere with application or negotiation deadlines or the ability to receive an award if selected. These requirements are as follows:

**1. System for Award Management**

Register in SAM (<https://www.sam.gov>). Designating an Electronic Business Point of Contact (E-Biz POC) and obtaining a special password called a

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Marketing Partner ID Number (MPIN) are important steps in SAM registration. Please update your SAM registration annually.

**2. 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](https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf).

**3. Grants.gov**

Register in Grants.gov (<http://www.grants.gov>) to receive automatic updates when Amendments to this FOA are posted. Please note that Letters of Intent, Concept Papers, and Full Applications will **not** be accepted through Grants.gov.

**4. 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 Grants.gov and FedConnect, constitute 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 United States 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 a 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.

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**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 review process (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 review 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. 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 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 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, a corporation is any for-profit or nonprofit entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations].

### 3. Nondisclosure and Confidentiality Agreements Representations

In submitting an application 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:

*“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 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.”*

- (1) 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.

- (2) 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 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 during 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 U.S. Department of Justice, that are essential to reporting a substantial violation of law.

**viii. 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.

**ix. 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. 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.

**Recipient's Responsibilities.** The Recipient is responsible for:

- Performing the activities supported by this award in accordance with the Project Management Plan, including providing the required personnel, facilities, equipment, supplies and services;
- Managing and controlling project activities in accordance with established processes and procedures to ensure tasks and subtasks are completed within schedule and budget constraints defined by the current Project Management Plan;
- Implementing an approach to identify, analyze, and respond to project risks that is commensurate with the complexity of the project;
- Defining and revising approaches and plans, submitting the plans to DOE for review, and incorporating DOE comments;
- Coordinating related project activities with subrecipients and external suppliers, including contractors, to ensure effective integration of all work elements;
- Attending annual project review meetings and reporting project status;
- Participating in peer review evaluations of the project, or peer review evaluations of the program that their project supports;
- Submitting technical reports and publicly releasable documents that incorporate DOE comments;
- Presenting the project results at appropriate technical conferences or meetings as directed by the DOE Project Officer;
- Submitting sample materials to DOE-NETL of REE and CMM products produced during conduct of this FOA (if generated); and
- Submitting materials characterization information to DOE-NETL for public release in NETL's Energy Data eXchange (EDX) website.

**DOE Responsibilities.** DOE is responsible for:

- Reviewing in a timely manner project plans, including project management, testing and technology transfer plans, and recommending alternate approaches, if the plans do not address critical programmatic issues;
- Participating in project management planning activities, including risk analysis, to ensure DOE's program requirements or limitations are considered in performance of the work elements;
- Conducting annual project review meetings to ensure adequate progress and that the work accomplishes the program and project objectives. Recommending alternate approaches or shifting work emphasis, if needed;



- Providing substantial involvement to ensure that project results address critical system and programmatic goals established by the DOE Office of Fossil Energy and Carbon Management, in coordination with DOE's Critical Minerals Sustainability program;
- Promoting and facilitating technology transfer activities, including disseminating program results through presentations and publications;
- Serving as scientific/technical liaison between awardees and other program or industry staff; and
- Reviewing and concurring with ongoing technical performance to ensure that adequate progress has been obtained.

### **Critical Materials Collaborative (CMC)**

All selected projects will be required to participate as a member of the Critical Materials Collaborative, which is a coalition of DOE offices, federal agencies & federally-funded R&D programs to:

- Align the DOE research portfolio to achieve climate goals and crosscutting S&T objectives;
- Advance crosscutting applied RD&D related to critical minerals and materials
- Accelerate the adoption and deployment of innovation;
- Nurture and expand the innovation ecosystem; and
- Facilitate scientific and technical exchange and discussion.

The Recipient's Principal investigators (PIs) or a member of their research team are expected to participate in coordination efforts including, but not limited to, an in-person annual symposium, virtual coordination meetings, and periodically give a presentation on research progress. There are no fees associated with this participation in the CMC.

NETL will provide award Recipients access to an Excel spreadsheet template for entry of all analytical characterization data and information generated. NETL intends to make this information publicly available through inclusion of the Recipient's spreadsheet in NETL's Energy Data eXchange (EDX) database platform which can be found by accessing the following URL link: <https://edx.netl.doe.gov/ree-cmm>.

### **x. Intellectual Property Management Plan (IPMP)**

Within 30 days of selection applicants must submit an executed IPMP between the members of the consortia or project team.

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



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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 list of examples of items 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 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 project team; and
- The handling of disputes related to intellectual property between the members.

**xi. 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 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 its 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.

**xii. 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>.

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**xiii. Reporting**

Reporting requirements are identified on the Federal Assistance Reporting Checklist, attached to the award agreement. A sample checklist is available at: <https://www.netl.doe.gov/sites/default/files/netl-file/4600.2-FE.pdf>.

Additional reporting requirements apply to BIL-funded projects. DOE may require specific data collection to track 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. 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
  - Workforce demographics, including local hires
  - Efforts to minimize risks of labor disputes and disruptions
  - Contributions to training; employee certificates and training credentials; 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 subcontractors for bids on supplies, services, and equipment
  - Value, number, and type of partnerships with Minority Serving Institutions (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 generation and utilization

**xiv. 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 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 continuation application;<sup>27</sup> 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.

#### **xv. 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

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<sup>27</sup> 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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General), of the date, location, and number of employees attending such conference.

**xvi. 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 the federal share of the financial assistance agreement is more than \$1 million 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.

**xvii. 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 awards under this FOA, the recipients 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 Contracting 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 when 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

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disposition requirements are set forth in 2 CFR 910.360. Property disposition requirements for other non-federal entities are set forth in 2 CFR 200.310 – 200.316.

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

States, local governments, and other public entities may not condition subawards in a manner that would discriminate against or otherwise disadvantage subrecipients based on their religious character.

**xix. 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.

**xx. 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.xx.

**xxi. 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 United States 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 United States 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

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<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, subawardee, or subrecipient.

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 United States manufacturing plan. The statement or plan would contain specific and enforceable commitments that would be beneficial to the United States economy and competitiveness. Examples of such commitments could include manufacturing specific products in the United States, making a specific investment in a new or existing United States manufacturing facility, keeping certain activities based in the United States or supporting a certain number of jobs in the United States related to the technology. DOE may, in its sole discretion, determine that the proposed modification or waiver promotes commercialization and provides substantial United States 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.

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**xxii. Interim Conflict of Interest Policy for Financial Assistance**

The DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy)<sup>28</sup> 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 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 its 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.

**xxiii. Data Management Plan**

Each applicant whose Full Application is selected for award negotiations will be required to submit a Data Management Plan (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 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.

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<sup>28</sup> 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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**xxiv. 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.

**xxv. 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 \(SC\) \(osti.gov\)](#).



### **C. Program Go/No-Go Decision**

In addition to the Go/No-Go Reviews required for each project, FECM intends to conduct a competitive project review (down-selection process) upon the completion of Phase I. 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:

Phase I Recipients that have successfully completed all Phase I activities and requirements will be afforded the opportunity to submit a renewal application for Phases II for consideration under the Go/No-Go process outlined in this FOA. In addition to the Go/No-Go Reviews required for each project, 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.

For successful Phase I awardees intending to participate in the Phase II process, a Renewal Application will be required to be submitted. Renewal Applications are requests for additional funding for a period subsequent to that provided by a current award. DOE will evaluate the Renewal Applications against established criteria as part of a competitive process. Detailed information on the Renewal Application requirements, submission procedure, and evaluation criteria will be provided in the cooperative agreement for the Phase I awards.

Upon completion of the competitive project review (Go/No-Go review), DOE intends to select awards to receive federal funding beyond Phase I. As a result of this Go/No-Go process, certain projects will not receive federal funding beyond Phase I even if the project is meeting the pre-defined metrics.

NOTE: For Phase I awardees not selected by DOE for a Phase II award, all Phase I and final deliverables will be due at the end of Phase I in accordance with the instructions in the award's Reporting Requirements Checklist and Statement of Project Objectives.

## **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 described below. Questions regarding this FOA must be submitted to FedConnect portal no later than three (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 the FedConnect portal at: <https://www.FedConnect.net>. **You must first select the FOA Number to view the questions and answers specific to this FOA.** FECM will attempt to respond to a question within three (3) business days unless a similar question and answer has already been posted on the website.

Questions related to the registration process system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE/NNSA cannot answer these questions.

## VIII. Other Information

### A. FOA Modifications

Amendments to this FOA will be posted on Grants.gov system and the FedConnect portal. 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. DOE recommends that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any amendments or other 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 trade secrets or business-sensitive, 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 trade secrets or business-sensitive, proprietary, or otherwise confidential information, it is furnished to the federal government in confidence with the understanding that the information shall be used or

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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 federal government's right to use the information if it is obtained from another source.

If an applicant chooses to submit trade secrets or business-sensitive, 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 trade secrets or business-sensitive, 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 federal 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 trade secrets or business-sensitive, proprietary, or otherwise confidential information:

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

Pages [list applicable pages] of this document may contain trade secrets or business-sensitive, 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 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 trade secrets or business-sensitive, proprietary, or otherwise confidential information must be marked as follows: "Contains Business Sensitive Information, Trade Secrets, or 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.

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**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 that 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.

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## 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: Under 42 U.S.C. § 5908, title to subject inventions vests in the U.S. government and large businesses and foreign entities do not have the automatic right to elect to retain title to subject inventions. However, DOE may issue “class patent waivers” under which large businesses and foreign entities that meet certain stated requirements may elect to retain title to their subject inventions.
- Advance and Identified Waivers: Applicants not covered by a Class Patent Waiver or the Bayh-Dole Act 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.
- 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 subawards, under this FOA shall include the U.S. Competitiveness Provision in accordance with Section VI.B.xxi. 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 nonprofit 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 further DEC’s on the website above prior to the issuance of awards under this FOA. DOE may require additional submissions or requirements as authorized by any applicable DEC.

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## **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 United States 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;
- The owner has not met public use requirements specified by federal statutes in a reasonably satisfied manner; or
- The United States 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

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progress and evaluate the potential of proposed technologies to reach specific technical and cost metrics.

Government Rights in Technical Data Produced Under Awards: The U.S. 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.

For this FOA, the funding program has determined that an extended period of protection (more than 5 years and not to exceed 30 years) is reasonably required for commercialization and will apply to certain categories of data first produced under the resulting awards in accordance with 15 U.S.C. § 3710a(c)(7)(B)(ii) and the Energy Policy Acts of 1992 and 2005, or 42 U.S.C. § 7256(g)(5) for OTAs, if applicable. Information regarding the categories of data and period of protection will be provided during the negotiation process.

## **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 United States government regulates the transfer of information, commodities, technology, and software considered to be strategically important to the United States 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 United States Export Control laws and regulations relating to any work performed under a resulting award.

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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 use 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. "PII" refers to information that can be used to distinguish or trace an individual's identity, such as their name, Social Security number, or biometric records, alone or combined with other personal or identifying information linked or linkable to a specific individual, such as date and place of birth or 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 email addresses. **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, nonprofit 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, 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.

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## 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 terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses “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 million 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 two 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, it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, 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 they are generally the same for all types of entities. The specific rules applicable to:

- FAR Part 31 for For-Profit entities, (48 CFR Part 31); and

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- 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

In addition to the above regulations, other factors may come into play, such as timing of donations and length of the project period. For example, the value of 10 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, or equipment for their company with organizational resources. If the cost of the item or service is reimbursed, 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, and 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. Consult your DOE contact if you have questions 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 incur only 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 nonprofit 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 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 – SAMPLE COST SHARE CALCULATION FOR BLENDED COST SHARE PERCENTAGE

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

Task	Proposed Federal Share	Federal Share %	Recipient Share %
Task 1 (R&D)	\$1,000,000	80%	20%
Task 2 (R&D)	\$500,000	80%	20%
Task 3 (Demonstration)	\$400,000	50%	50%
Task 4 (Outreach)	\$100,000	100%	0%

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

Each task must be calculated individually as follows:

Task 1

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

Task 1 Cost minus federal share = non-federal share

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

Task 2

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

Task 2 Cost minus federal share = non-federal share

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

Task 3

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

Task 3 Cost minus federal share = non-federal share

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

Task 4

Federal share = \$100,000

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

The calculation may then be completed as follows:

Tasks	\$ Federal Share	% Federal Share	\$ Non-Federal Share	% Non-Federal Share	Total Project Cost
Task 1	\$1,000,000	80%	\$250,000	20%	\$1,250,000
Task 2	\$500,000	80%	\$125,000	20%	\$625,000
Task 3	\$400,000	50%	\$400,000	50%	\$800,000
Task 4	\$100,000	100%	\$0	0%	\$100,000
Totals	\$2,000,000		\$775,000		\$2,775,000

Blended Cost Share %

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

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



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## APPENDIX C – 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 economic security.<sup>29</sup> 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 United States Competitiveness Provision (see Section VI.B.xxii.); 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, 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 ownership/control by foreign entities, foreign shareholders, foreign state, or foreign individuals;

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<sup>29</sup> See [Critical and Emerging Technologies List Update \(whitehouse.gov\)](https://www.whitehouse.gov/critical-emerging-technologies/).

- 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 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 United States (Foreign Work Waiver)**

As set forth in Section IV.K.iii., all work funded 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



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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 U.S. 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 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.

DOE may require additional information before considering the waiver request.

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

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## APPENDIX D – 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** include 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 additives<sup>30</sup>—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 United States, 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.

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<sup>30</sup> BIL, § 70917(c)(1).

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 United States.

**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 United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;

(2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States 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 materials<sup>31</sup> are produced in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

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

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<sup>31</sup> Excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

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prime recipient is a for-profit entity; the requirements only apply to projects whose prime recipient is a State, local government, Tribe, Institution of Higher Education, or nonprofit 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 domestically manufactured products 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 United States 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 United States will increase the cost of the overall project by more than 25%.

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

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- 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.

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## APPENDIX E – 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 F – LIST OF ACRONYMS

BIL	Bipartisan Infrastructure Law
CETs	Critical and Emerging Technologies
CEJST	Climate and Economic Justice Screening Tool
COI	Conflict of Interest
CMM	Critical Minerals and Materials
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
FCOI	Financial Conflicts of Interest
FECM	Fossil Energy and Carbon Management
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
IPMP	Intellectual Property Management Plan
IRB	Institutional Review Board
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
NSF	National Science Foundation
OFCCP	Office of Federal Contractor Compliance Programs
OIG	Office of Inspector General
OMB	Office of Management and Budget
OSS	Open-Source Software
OSTI	Office of Scientific and Technical Information
OTA	Other Transactions Authority



PII	Personally Identifiable Information
RD&D	Research, Development, and Demonstration
REE	Rare Earth Elements
RFI	Request for Information
RFP	Request for Proposal
SAM	System for Award Management
SciENCv	Science Experts Network Curriculum Vita
SMART	Specific, Measurable, Attainable, Realistic, 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

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## APPENDIX G – R&D COMMUNITY BENEFITS PLAN GUIDANCE

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 justice<sup>32</sup> 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),<sup>33</sup> it is important to consider the impacts of the successful commercial deployment of any innovations resulting from this FOA on the current and future workforce.

The goal of the 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 American people and lead to broadly shared prosperity, including for workers and disadvantaged communities.<sup>34</sup> The three sections of the R&D Community Benefits Plans are considered together because there may be significant overlap among 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 activities that best fit their research goals, institutional environment, team composition, and other factors. Creativity is encouraged.

### **Diversity, Equity, Inclusion, and Accessibility (DEIA)**

DOE strongly encourages Applicants to involve individuals and entities from disadvantaged communities. Tapping all the available talent requires intentional approaches and yields broad benefits.

Equity extends beyond diversity to equitable treatment. Equitable access to

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<sup>32</sup> DOE defines 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 definition, this document refers to “energy equity” to encompass energy justice and DOE’s efforts related to Justice40. <https://www.energy.gov/diversity/articles/how-energy-justice-presidential-initiatives-and-executive-orders-shape-equity>

<sup>33</sup> <https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad>

<sup>34</sup> See footnote 2 for guidance on the definition and tools to locate and identify disadvantaged communities.



opportunity for members of the project team is paramount. This includes ensuring 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:<sup>35</sup>

- 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 also 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 to promote DEIA, justice, and workforce participation. Minority serving institutions, minority business enterprises, minority-owned businesses, disability-owned businesses, 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.

When crafting the DEIA section of the Plan, applicants should describe how they will act to promote each of the four DEIA efforts above into their

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<sup>35</sup> <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>



investigation. It is important to note that diversity, equity, inclusion, and accessibility are four different but related concepts that should not be conflated. For instance, 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 do not hinder 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.

FECM 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 MSIs;
- 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; and
  - 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 cite 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 burden);<sup>36</sup> 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;
- Describing how the proposed research strategy and methodology was informed by input from a wide variety of stakeholders; and
- Creating 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 its 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 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.

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<sup>36</sup> 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>

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 BIL-funded demonstration and deployment projects, may be useful for R&D projects.

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 United States;
- 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 workforce training to address needs for successful innovation;
- Voluntary recognition of a union and informing employees of their rights, regardless of its classification; and
- Creating a plan to evaluate how a successful innovation will result in potential workforce shifts between industries or geographies.

#### **Inclusion of SMART milestones**

FECM requires that the applicant's R&D Community Benefits Plan include one Specific, Measurable, Achievable, Realistic and Timely (SMART) milestone for each budget period. An exemplary 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?