



# U.S. Department of Energy Office of Clean Energy Demonstrations

## Bipartisan Infrastructure Law Clean Energy Demonstration Program on Current and Former Mine Land

**Funding Opportunity Announcement Number: DE-FOA-0003009**

**Type: Initial**

**Assistance Listing Number: 81.255, Clean Energy Demonstrations**

<b>Funding Opportunity Announcement Issue Date:</b>	04/04/2023
<b>Informational Webinar:</b>	04/19/2023, 2:00 p.m. ET
<b>Submission Deadline for Concept Papers:</b>	05/11/2023, 5:00 p.m. ET
<b>Submission Deadline for Applications:</b>	08/31/2023, 5:00 p.m. ET



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## 1.0 Overview of Key Information

**Agency:** U.S. Department of Energy (DOE)

**Program Overview:** The Clean Energy Demonstration Program on Current and Former Mine Land (CEML) will provide financial investment, technical assistance, and other resources to advance replicable clean energy projects on current and former mine land across the nation. Up to five clean energy projects will be carried out in geographically diverse regions, at least two of which must be solar projects. This program was created by President Biden’s Bipartisan Infrastructure Law.

The CEML Program aims to fund projects that demonstrate:

- Replicable pathways that resolve key barriers to clean energy development on mine land.
- Preservation of natural and agricultural resources through repurposing mine land for clean energy projects.
- Benefits of integrating clean energy on mine land, including direct community benefits and the potential to achieve near net-zero mining operations.

### **Deadlines:**

- **May 11, 2023, at 5 p.m. ET:** Concept paper due
- **August 31, 2023, at 5 p.m. ET:** Application due

**Funding Overview:** \$500 million over 5 years. Up to \$450 million in funding available in this funding opportunity.

**Eligible Applicants:** Applications must propose a clean energy project on a current or former mine land site with a reasonable expectation of commercial viability, where “clean energy project” and “mine land” are defined by statute, as:

- a. The term "clean energy project" means a project that demonstrates 1 or more of the following technologies:
  1. Solar.
  2. Micro-grids.
  3. Geothermal.
  4. Direct air capture.
  5. Fossil-fueled electricity generation with carbon capture, utilization, and sequestration.
  6. Energy storage, including pumped storage hydropower and compressed air storage.
  7. Advanced nuclear technologies.

- b. The term "mine land" means-
  1. Land subject to titles IV and V of the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1231 et seq.; 30 U.S.C. 1251 et seq.); or
  2. Land that has been claimed or patented subject to sections 2319 through 2344 of the Revised Statutes (commonly known as the "Mining Law of 1872") (30 U.S.C. 22 et seq.).

The proposed applicant and subrecipient(s) must be domestic entities. The following types of entities are eligible to participate as prime recipients or subrecipients:

1. Institutions of higher education.
2. Non-profit entities.
3. For-profit entities.
4. Indian Nations (DOE Order 144.1, 7.a).
5. State and local governmental entities.
6. Incorporated Consortia.
7. Unincorporated Consortia.

#### Topics, Areas of Interest, and example projects:

This FOA has one Topic Area, which solicits proposals to demonstrate clean energy projects on current and former mine land. The award size will be **at least \$10 million and no more than \$150 million**, in federal funds. Each award is required to provide a **minimum of 50% cost share**.

This Topic Area is divided into four Areas of Interest (AOIs):

- **Area of Interest A: Solar with/without battery energy storage on current mine land**
  - Overview: This AOI includes PV solar projects with or without battery energy storage on *current* mine land. This AOI encourages projects that lead to near net-zero mining operations.
  - *Example projects:*
    - Utility scale 50MW to 150MW ground mounted PV Solar project to offset mine operations load and sell excess energy to the grid.
    - Floating PV Solar utilizing tailings and surface water reservoirs.
    - PV Solar with battery storage system to substantially support the on-going mine operations.
    - System utilizing existing infrastructure including substations, power lines and corridors, and other.
- **Area of Interest B: All technologies on current mine land**
  - Overview: This AOI includes one or more of the following technologies on *current* mine land: Solar; microgrids; geothermal; direct air capture; fossil-fueled electricity generation with carbon capture, utilization, and sequestration; energy storage; advanced nuclear technologies.

This AOI encourages projects that demonstrate how active mines can adopt clean energy technologies to reduce GHG emissions of mining operations.

- *Example projects:*
  - 100 MW geothermal power plant using geothermal resource at the mine, to power mine operations, and sells excess power to the grid.
  - Microgrid system, behind the meter, including a PV Solar and Energy Storage, to reduce energy costs and fuel use.
  - Pumped storage project, which stores energy from a clean energy source (typically solar), utilizing existing structures and topographic conditions at an active mine.
  
- **Area of Interest C: Solar PV with/without battery storage on former mine land**
  - Overview: This AOI includes PV solar projects with or without battery energy storage on *former* mine land. This AOI encourages projects that leverage former mine land to deploy solar projects that support the economic revitalization of disadvantaged communities. In addition, this AOI encourages clean energy projects that are aggregations of multiple solar projects/sites.
  - *Example projects:*
    - An aggregate of 20MW solar PV sites deployed across multiple communities that feature a community ownership business model, interconnected to the grid.
    - A single or multiple site utility scale (i.e. 100MW to 200MW) solar PV project interconnected to the grid.
  
- **Area of Interest D: All technologies on former mine land**
  - Overview: This AOI includes one or more of the following technologies on *former* mine land: Solar; microgrids; geothermal; direct air capture; fossil-fueled electricity generation with carbon capture, utilization, and sequestration (CCUS); energy storage; advanced nuclear technologies. This AOI encourage projects that leverage former mine land for clean energy projects that support the economic revitalization of disadvantaged communities.
  - *Example projects:*
    - Geothermal district heating project combined with PV Solar and storage to power reclamation activities of a former coal mine and sell excess energy to the grid.
    - Community owned and operated microgrid system, on a former hard rock mine, using PV solar, energy storage, and additional energy generation, which can be isolated from the grid, to provide resiliency to the local community.

- CCUS project near a current fossil fuel plant that creates new jobs, employs displaced fossil fuel workers, and reduces greenhouse gases in a former coal community.

**Anticipated Award Size and Funding Amount:**

Topic Area Number	Topic Area Title	Anticipated Number of Awards	Award Size (Federal Share) <sup>1</sup>	Total Anticipated Federal Share (for all Awards)	Anticipated Period of Performance (years)
1	Clean Energy Projects on Current and Former Mine Land	Up to 5	\$10M - \$150M	\$450M	4 -7

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<sup>1</sup> Federal cost-share up to 50% of Total Project Cost.

## 2.0 Funding Opportunity Description

### 2.1 Background and Context

The Department of Energy's (DOE) Office of Clean Energy Demonstrations (OCED) is issuing this Funding Opportunity Announcement (FOA) to support clean energy demonstration projects on current and/or former mine lands. Awards made under this FOA will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act, more commonly known as the Bipartisan Infrastructure Law (BIL). As part of and in addition to upgrading and modernizing infrastructure, DOE's BIL investments will support efforts to build a clean and equitable energy economy that achieves a zero-carbon electricity system by 2035, and to put the United States on a path to achieve net-zero emissions economy-wide by no later than 2050 to benefit all Americans.

OCED's mission is to deliver clean energy technology demonstration projects at scale in partnership with the private sector to accelerate deployment, market adoption, and the equitable transition to a decarbonized energy system. OCED was established in December 2021 and was first authorized and funded through the BIL. The founding of OCED builds on DOE's expertise in clean energy research and development and expands DOE's scope to fill a critical gap on the path to net-zero emissions by 2050.

The statutory authority for this FOA is BIL Section 40342 (42 U.S.C. § 18761), which authorizes appropriations of \$500 million to OCED for the five (5) year period encompassing Fiscal Years (FYs) 2022 through 2026 to establish a program that demonstrates the technical and economic viability of carrying out clean energy projects on current and former mine land, including but not limited to land used for coal mining (see [Section 4.0 Eligibility Information](#)). Eligible clean energy technologies include solar; micro-grids; geothermal; direct air capture; fossil-fueled electricity generation with carbon capture, utilization, and sequestration (CCUS); energy storage; and advanced nuclear technologies. Up to five clean energy projects will be carried out in geographically diverse regions, at least two of which will be solar projects. OCED is implementing these activities as the Clean Energy Demonstration Program on Current and Former Mine Land (CEML).

## 2.2 Clean Energy Demonstration Program on Current and Former Mine Land

### 2.2.1 Introduction

The CEML Program will advance the deployment of clean energy projects at current (operating) and former (abandoned or inactive) mine land across the nation. According to a recent EPA analysis there are approximately 1.5 million acres of mine land across the United States.<sup>2</sup> Repurposing this extensive area of land for clean energy projects could generate up to 89 GW of clean energy, enough to power millions of American households. However, only a few small-scale (<20MW) projects have been deployed to date.

Clean energy projects on mine land provide an attractive alternative to using undisturbed natural, agricultural, and other greenfield land for development. Mine land is often located near critical infrastructure that makes it suitable for clean energy development, including electric substations, transmission lines, and access roads or rail lines. Mine lands are often in communities that already house a workforce skilled in industrial trades relevant to many clean energy applications. Furthermore, mine land possesses unique attributes and conditions that can accelerate the deployment of some clean energy technologies. Some examples include the following:

- Utilizing vast expanses of flat mine lands which could be used to generate electricity from photovoltaic (PV) solar;
- Taking advantage of the spatial connection between geothermal systems and mineral deposits to accelerate development of geothermal resources for clean heat or electricity; and
- Capitalizing on the opportunity to store clean energy utilizing previously constructed reservoirs with adjacent topography from pumped hydro storage.

Clean energy projects on current and former mine land could create opportunities for direct community benefit and ownership,<sup>3</sup> resulting in economic growth. Often serving as economic anchors in areas with limited economic diversity, mines impact the livelihoods, health, wealth, and environments of adjacent communities during, and long after, closure.

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<sup>2</sup> Re-Powering America's Land Initiative: Re-Powering Mapper Fact Sheet. April 2022. Environmental Protection Agency.

<sup>3</sup> For the purposes of this FOA, community partnership and ownership refers to a wide array of energy project models in which members of nearby communities that are served or impacted by the project have some level of equity stake and/or control in the project and/or receive some level of compensation or direct financial benefit from the proposed investment. Direct benefits may include, but are not limited to, on-bill energy savings, long-term purchase agreement of low-cost power, and renewable energy certificates (RECs) produced by the project. In cases where direct ownership is either not applicable or not feasible, explicit agreements (e.g. contracted power purchase agreements or Community Benefits Agreements) between the project developer and community (e.g. through representative bodies such as local government, community-based organizations, and/or community boards) are expected to ensure proposed community benefits are formalized. The definition of community partnership and ownership for this FOA is intentionally broad to allow for greater innovation and to reflect the diversity of communities, state and local regulations, and project types.



Clean energy projects can help mitigate the impacts of mine closure by involving communities as owners, decision-makers, and beneficiaries of their local energy systems. OCED will give significant consideration to applicants that implement projects quickly, effectively, and safely while bringing economic benefit to local communities while ensuring that the community health and safety is ensured.

## 2.2.2 Program Purpose

The purpose of the CEML Program is to demonstrate replicable clean energy projects on current and former mine land that help resolve key barriers to commercial adoption of these energy systems. This program will advance place-based energy solutions that address specific community needs. We seek projects that can inspire the next generation of clean energy on mine land projects. Although DOE will fund site preparation activities including some reclamation activities as necessary to successfully deploy the clean energy project being proposed, the department will not consider projects that are primarily about reclamation of sites.

The CEML Program will demonstrate:

1. Pathways to deploy clean energy projects across the 1.5 million acres of mine land across the nation;
2. Preservation of natural and agricultural land through the development of clean energy projects on existing or reclaimed mine land;
3. Pathways for mining companies to achieve near net-zero operations;
4. Economic benefits of integrating clean energy into mining operations;
5. Community ownership, and equity inclusion models that provide new economic development, including job opportunities, for communities;
6. Repurposing of land, including existing facilities commonly found on mine land, including fossil fuel infrastructure that has been retired early.

As part of the whole-of-government approach to advance equity and encourage worker organizing and collective bargaining (consistent with Executive Orders [13985](#), [14025](#), [14052](#)) and in alignment with BIL Section 40342, this FOA and any related activities will seek to encourage meaningful engagement and participation of workforce organizations, including labor unions, as well as underserved communities and underrepresented groups, including consultation with Tribal nations ([Executive Order 13175](#)).

In addition and consistent with Executive Order [14008](#), this FOA is designed to help meet the goal that 40% of the benefits of the Administration's investments in clean energy and climate solutions be delivered to disadvantaged communities, as defined by the Department pursuant to the Executive Order and to drive the creation of good-paying jobs with the free and fair chance for workers to join a union.

## 2.3 Topic Area and Areas of Interest

This FOA has one Topic Area, which solicits proposals to demonstrate clean energy projects on current and former mine land. The award size will be at least \$10 million and no more than \$150 million, in federal funds.

Each award is required to provide a minimum of 50% non-federal cost share. DOE will fund up to five (5) projects in this Topic Area. Projects are anticipated to have a period of performance of 4-7 years.

Topic Area Number	Topic Area Title	Anticipated Number of Awards	Award Size (Federal Share) <sup>4</sup>	Total Anticipated Federal Share (for all Awards)	Anticipated Period of Performance (years)
1	Clean Energy Projects on Current and Former Mine Land	Up to 5	\$10M - \$150M	\$450M	4 -7

The Topic Area is divided into four Areas of Interest (AOIs). AOIs A and B focus on clean energy projects on current mine land, and AOIs C and D focus on clean energy projects on former mine land. Projects may include elements from more than one AOI.

### 2.3.1 Guidance across all Areas of Interest

Proposed projects must be sited within a mine land, as defined by BIL 40342 (see Section 4.0 for Eligibility Information). Applicants must be able to demonstrate proof of land control (i.e. mineral rights and surface and/or subsurface agreements evidencing control, or option to control, property rights necessary to implement the proposed project) and that the proposed site is conducive for clean energy projects, including geotechnical considerations and availability of critical project infrastructure (see [Section 5.0](#) for Application and Submission).

Applicants must describe a pathway to interconnection and to obtaining an offtake agreement, in their project application (e.g. Power Purchase Agreement with private or public off-takers). DOE encourages projects that produce energy that is used to power other aspects of the clean energy transition, such as the mining of critical minerals<sup>5</sup> like lithium, cobalt, and graphite, or the manufacturing of clean energy technologies like solar panels and wind turbines. In addition, DOE encourages projects that reuse existing facilities, including fossil fuel infrastructure that has been retired.

Applicants must also submit a Community Benefits Plan (CBP) which outlines and demonstrates how their project will create high-quality and long-term jobs, spur economic development, and

<sup>4</sup> Federal cost-share up to 50% of Total Project Cost.

<sup>5</sup> 2022 Final List of Critical Minerals. U.S. Geological Survey, Department of the Interior.

provide other direct benefits to the community, including ownership participation and local electrification.

DOE will prioritize projects that directly flow benefits to former mining and manufacturing communities, especially where there are displaced local workers from the fossil fuel and manufacturing industry, as well as other economically distressed areas.

In addition, DOE encourages projects where community members are partners and/or equity co-owners in the project and have played a key role in determining how the benefits of the project are distributed throughout the community. Applicants should consider and clearly define project ownership models, including community ownership of systems and assets.

All projects (this includes project systems and all system components) funded in this Topic Area must be at a Technical Readiness Level (TRL) of 7 or higher (definitions of TRLs can be found in the [DOE's Technology Readiness Assessment Guide](#)). All proposed project technologies must be commercially and operationally successful beyond the program's award period. Projects will use one or more of the following technologies as specified in BIL Section 40342: solar; microgrids; geothermal; direct air capture; fossil-fueled electricity generation with carbon capture, utilization, and sequestration; energy storage; advanced nuclear technologies. Please see Section 4.0 for further detail on eligibility requirements and Section 5.0 for further detail on application requirements.

### 2.3.2 Areas of Interest

Applicants should consider the Areas of Interest (AOIs) below. Projects may include elements from one or more of the AOIs. It is anticipated that relevant projects in each AOI may have different required funding levels and risk profiles. Applicants should clearly justify the need for the level of federal support requested – both total request and federal share of project costs.

### 2.3.3 Areas of Interest A and B: Clean Energy Projects on Current Mine Land

The mining sector will play an essential role in the clean energy transition by supplying these critical mineral building blocks that are used to produce batteries, electric vehicles, solar panels, and wind turbines. Demand for these critical minerals is anticipated to grow by 400-600% over the next few decades<sup>6</sup>, and therefore decarbonizing the mining sector will be critical to meeting climate goals.

#### AOI A: PV Solar with/without battery energy storage on current mine land

**This AOI includes PV solar projects with or without battery energy storage on current mine land.** Projects proposed under this AOI should demonstrate the potential to generate clean energy on reclaimed land, tailing ponds, surface water reservoirs, and/or disturbed flat areas from solar with/without energy storage, for current mining operations. DOE is particularly interested in projects that reduce GHG emissions at active mines which support other aspects

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<sup>6</sup> Fact Sheet: Securing a Made in America Supply Chain for Critical Materials. February 2022. The White House.

of the clean energy transition, including the production of lithium, cobalt, and/or copper. DOE also encourages projects that deploy innovative solutions that make mine operations more sustainable and economically viable (i.e. demand shaving, load shifting, etc.).

Examples of projects that may be proposed under AOI A include, but are not limited to:

1. Utility scale 50MW to 150MW ground mounted PV Solar project to offset mine operations load and sell excess energy to the grid.
2. Floating PV Solar utilizing tailings and surface water reservoirs.
3. PV Solar with battery storage system to substantially support the on-going mine operations.
4. System utilizing existing infrastructure including substations, power lines and corridors, and other.

#### AOI B: All technologies on current mine land

**This AOI includes one or more of the following technologies on *current* mine land:** Solar; microgrids; geothermal; direct air capture; fossil-fueled electricity generation with carbon capture, utilization, and sequestration; energy storage; advanced nuclear technologies. This includes a combination of a solar and another technology listed above. Projects under this AOI should demonstrate the potential for the use of current mine land for clean energy generation and storage. DOE encourages projects that support all aspects of the clean energy transition.

Examples of projects that may be proposed under AOI B include, but are not limited to:

1. 100 MW geothermal power plant using geothermal resource at the mine, to power mine operations, and sells excess power to the grid.
2. Microgrid system, behind the meter, including a PV Solar and Energy Storage, to reduce energy costs and fuel use.
3. Pumped storage project, which stores energy from a clean energy source (typically solar), utilizing existing structures and topographic conditions at an active mine.

### **2.3.4 AOIs C and D: Clean Energy Projects on Former Mine Land**

Leveraging former mine land for clean energy development can support the economic revitalization of former mine communities through the creation of local job and increased community revenue. For example, there are an estimated 850,000 acres<sup>7</sup> of former, un-reclaimed coal mine land across the U.S., and much of this land is in rural communities which have experienced decades of economic distress and poverty.<sup>8</sup> Many of these communities have a poverty rate higher than the national average fueled, in part, by severe job loss in the coal industry.

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<sup>7</sup> Unit is in ‘standardized acres’, using GPRA conversions.

<sup>8</sup> Repairing the Damage: Cleaning up the Land, Air, and Water Damaged by the Coal Industry before 1977. April 2021. Ohio River Valley Institute.

#### AOI C: PV Solar with/without battery energy storage on former mine land

**This AOI includes PV solar projects with or without battery energy storage on *former* mine land.** Projects under this AOI should demonstrate the potential to utilize former mine land to generate clean energy from solar with or without storage to revitalize local communities by creating jobs and revenue streams to economically distressed areas and former mining communities.

DOE is particularly interested in projects that incorporate a community ownership or equity business model, where community members can participate in and share the economic benefits of a solar energy system.

DOE encourages clean energy projects that are aggregations of multiple solar projects/sites. Aggregation refers to conducting more than one project at multiple locations in a manner that leads to a demonstrable benefit relative to conducting that project at only one location. Aggregated projects may have a common interconnection point or may be multiple small-scale projects (<20MW) within distinct communities, thereby enabling enhanced levels of community participation and ownership.

Examples of projects that may be proposed under AOI C include, but are not limited to:

1. An aggregate of 20MW solar PV sites deployed across multiple communities that feature a community ownership business model, interconnected to the grid.
2. A single or multiple site utility scale (i.e. 100MW to 200MW) solar PV project interconnected to the grid.

#### AOI D: All technologies on former mine land

**This AOI includes one or more of the following technologies on *former* mine land:** Solar; microgrids; geothermal; direct air capture; fossil-fueled electricity generation with carbon capture, utilization, and sequestration (CCUS); energy storage; advanced nuclear technologies. Projects under this AOI should utilize former mine land for clean energy generation and storage projects that create new jobs and community-focused revenue streams for economically distressed areas and former mining communities.

Examples of projects that may be proposed under AOI D include, but are not limited to:

1. Geothermal district heating project combined with PV Solar and storage to power reclamation activities of a former coal mine and sell excess energy to the grid.
2. Community owned and operated microgrid system, on a former hard rock mine, using PV solar, energy storage, and additional energy generation, which can be isolated from the grid, to provide resiliency to the local community.
3. CCUS project near a current fossil fuel plant that creates new jobs, employs displaced fossil fuel workers, and reduces greenhouse gases in a former coal community.

## 2.4 OCED Project Management Structure

OCED projects follow a structured, phased management approach. The application should describe how the project will be managed in accordance with these phases. The approach includes the following four phases:

- Phase 1 – Detailed Project Planning
- Phase 2 – Project Development, Permitting, and Financing
- Phase 3 – Installation, Integration, or Construction
- Phase 4 – Ramp-Up and Sustained Operations

Each phase includes specific activities and associated requirements, which will be tailored to the size and complexity of the proposed project during award negotiations and subsequent negotiations between phases.

	Application	Phase 1: Detailed Plan	Phase 2: Develop, Permit, Finance	Phase 3: Install, Integrate, Construct	Phase 4: Ramp-Up & Operate
<b>Topic Area 1</b> <small>Phase 1-4: Federal cost-share up to 50% of Total Project Cost</small>	<b>Pre-Award</b>	~ 6 - 18 Months	~ 1 - 3 Years	~ 2 - 4 Years	~ 2 - 4 Years
<b>Engineering, Procurement, Construction, Operations</b>	<ul style="list-style-type: none"> <li>Engineering Concept (~5%)</li> <li>TRL/MRL/CRL descriptions</li> <li>Project L1 IPS, Phase 1 L2 IPS</li> <li>Class 4/5 TPC estimate</li> </ul>	<ul style="list-style-type: none"> <li>Engineering &amp; Design (~30%)</li> <li>TRL/MRL/CRL Analysis</li> <li>Uncertainties, Risk</li> <li>Project L2 IPS, Phase 2 L3 IPS</li> <li>Class 3 TPC Estimate</li> </ul>	<ul style="list-style-type: none"> <li>Engineering &amp; Design (~90%)</li> <li>TRL/MRL/CRL Updates</li> <li>Project L3 IPS, Phase 3 L4 IPS</li> <li>Class 1 TPC Estimate</li> <li>Standard PM Tool in use</li> <li>Operations Plan</li> </ul>	<ul style="list-style-type: none"> <li>Tech Risk updates, tracking</li> <li>Progress Execution Reports</li> <li>Interim Go/No-Go reviews consistent with T/Cs</li> </ul>	<ul style="list-style-type: none"> <li>Regular operations status reporting</li> <li>Tech Risk Updates, Tracking</li> <li>Final TPC accounting</li> </ul>
<b>Business Development &amp; Management</b>	<ul style="list-style-type: none"> <li>Business Strategy</li> <li>Team Description</li> <li>Workforce Plan (SKAs)</li> <li>Finance Plan</li> <li>Market potential analysis</li> </ul>	<ul style="list-style-type: none"> <li>Project Management Plan (PMP)</li> <li>Risk Management Plan (RMP)</li> <li>Financial Model</li> <li>Updated workforce plans</li> <li>Market, feedstock, &amp; off-take LOCs</li> <li>Sites Selection</li> </ul>	<ul style="list-style-type: none"> <li>Teaming, Offtake, &amp; Feedstock Agreements</li> <li>Sites access secured</li> <li>Integrated RMP updated</li> <li>Confirmed project financing</li> <li>Labor agreements</li> </ul>	<ul style="list-style-type: none"> <li>Regular progress/status reporting for all agreements</li> <li>Regular financial status reports</li> <li>Other reporting per T/Cs</li> <li>Updated RMP covering Phases 3 and 4</li> </ul>	<ul style="list-style-type: none"> <li>Financial models updated with offtake and production data</li> <li>Revised growth plans and projections</li> <li>Updated RMP covering ramp and steady state operations</li> </ul>
<b>Permitting &amp; Safety</b>	<ul style="list-style-type: none"> <li>Safety History/Culture Description</li> <li>Permitting Timeline Overview</li> <li>Environmental Approval Overview (State &amp; Federal)</li> </ul>	<ul style="list-style-type: none"> <li>Initial Safety Plan (SP) and Site Safety Plans (SSP)</li> <li>Physical, Information, Cyber Security Plans (including PCII)</li> <li>Environmental Data Package</li> <li>Initial NEPA Documentation</li> </ul>	<ul style="list-style-type: none"> <li>Execution-ready SP &amp; SSP</li> <li>Final Physical, Information &amp; Cyber security plans</li> <li>Permits in place for Construction</li> <li>Complete Environmental Reviews/Assessments</li> </ul>	<ul style="list-style-type: none"> <li>Status reporting on required permits and environmental</li> <li>Safety &amp; security incident reporting &amp; audits</li> <li>Permits for Operations</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing permit, safety, and security reporting</li> </ul>
<b>Community Engagement &amp; Impacts</b>	<ul style="list-style-type: none"> <li>Community Benefits Plan (CBP), including Community &amp; Labor Engagement; Investing in American Workforce; DEIA; Justice 40 Initiative</li> </ul>	<ul style="list-style-type: none"> <li>Implement CBP Phase 1 Scope</li> <li>Update CBP for Phases 2 – 4 based on Phase 1 activities.</li> </ul>	<ul style="list-style-type: none"> <li>Implement CBP Phase 2 Scope</li> <li>Update CBP Phase 3-4 based on Phase 2 activities</li> </ul>	<ul style="list-style-type: none"> <li>Implement CBP Phase 3 Scope</li> <li>Update CBP for Phase 4 based on Phase 3 activities</li> </ul>	<ul style="list-style-type: none"> <li>Implement CBP Phase 4 Scope</li> <li>Update CBP based on activities and findings from ramp-up to commercial scale operation</li> </ul>
<b>Technical Data &amp; Analysis</b>	<ul style="list-style-type: none"> <li>LCA Analysis (i.e. GREET)</li> <li>TEA Analysis</li> </ul>	<ul style="list-style-type: none"> <li>Performance Model</li> <li>Updated LCA</li> <li>Updated TEA</li> </ul>	<ul style="list-style-type: none"> <li>Mature LCA, V&amp;V plans</li> <li>Mature TEA w/risk analysis</li> <li>Technical V&amp;V data and plans</li> <li>Project completion testing</li> </ul>	<ul style="list-style-type: none"> <li>Periodic TEA and LCA updates</li> <li>V&amp;V data collection &amp; analysis</li> <li>Project completion testing and performance ramp V&amp;V</li> </ul>	<ul style="list-style-type: none"> <li>Validated performance model</li> <li>LCA and TEA incorporating operational data</li> <li>Ongoing data collection and dissemination</li> </ul>

Figure 1. Summary of activities and outcomes in each phase of the projects awarded under this FOA.

### 3.0 Award Information

<b>Anticipated Type of Award:</b>	Cooperative Agreement
<b>Application Type(s) Allowed:</b>	New
<b>Estimated Number of Awards:</b>	Up to five
<b>Anticipated Funding Amount:</b>	\$450,000,000
<b>Award Budget:</b>	Application budgets are limited to a maximum of \$150M Federal funding per award.
<b>Award Project Period:</b>	The anticipated maximum project period is 7 years, and the scope of the proposed project would determine that specific project period within the maximum project period.

The applicant will establish 4 (four) phases for the proposed project. DOE will initially fund Phase 1. Subsequent funding for Phase 2-4 is dependent on Go/No-Go determinations and recipient performance.

### 4.0 Eligibility Information

To be considered for evaluation, submissions must meet the following criteria. If the application does not meet all these eligibility requirements, it will be considered ineligible and removed from further evaluation.

In accordance with BIL Section 40342, eligible projects will demonstrate a clean energy project on a current or former mine land site with a reasonable expectation of commercial viability, where “clean energy project” and “mine land” are defined by statute, as:

- a. The term "clean energy project" means a project that demonstrates 1 or more of the following technologies:
  1. Solar.
  2. Micro-grids.
  3. Geothermal.
  4. Direct air capture.
  5. Fossil-fueled electricity generation with carbon capture, utilization, and sequestration.
  6. Energy storage, including pumped storage hydropower and compressed air storage.
  7. Advanced nuclear technologies.

- b. The term "mine land" means-
1. Land subject to titles IV and V of the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1231 et seq.; 30 U.S.C. 1251 et seq.); or
  2. Land that has been claimed or patented subject to sections 2319 through 2344 of the Revised Statutes (commonly known as the "Mining Law of 1872") (30 U.S.C. 22 et seq.).

In order to be eligible, the clean energy project will need to be substantially on mine land (per the definition above). Ancillary and support systems needed to deliver the electricity, may be located on property not meeting the "mine land" definition. DOE will not make eligibility determinations for potential applicants prior to the date on which applications to this FOA must be submitted. The decision whether to submit an application in response to this FOA lies solely with the applicant.

#### Eligibility under the Surface Mining Control and Reclamation Act (SMCRA) of 1977:

Applicants to the FOA claiming eligibility through SMCRA must show that the mine or former mine is subject to either titles IV and V of SMCRA. An applicant may provide copies of a Title V permit from the applicable permitting authority or demonstrate that the application site is in the Title IV database maintained by the Office of Surface Mining Reclamation and Enforcement as indicia of eligibility under titles IV and V of SMCRA.

#### Eligibility under the Mining Law of 1872:

Applicants to the FOA claiming eligibility through the Mining Law of 1872 must show that the current or former mine land originated from a claim or patent under the Mining Law of 1872. An application based upon a patented claim should provide a title search tying the site to a patented claim under the Mining Law of 1872. Unpatented claims should produce claims filed with the appropriate body having authority to receive claims including the Bureau of Land Management and county records.

Applicants who are unable to produce the above may provide, with explanation, other indicators of eligibility under SMCRA or the Mining Law of 1872.

## ***4.1 Eligible Applicants***

### **Domestic Entities**

The proposed applicant and subrecipient(s) must be domestic entities. The following types of entities are eligible to participate as an applicant or subrecipient of this FOA.

1. Institutions of higher education.
2. Non-profit entities.
3. For-profit entities.
4. Indian Nations (DOE Order 144.1, 7.a).



5. State and local governmental entities.
6. Incorporated Consortia.
7. Unincorporated Consortia.

Federal agencies and instrumentalities (other than DOE), DOE/NNSA FFRDC, and Non-DOE/NNSA FFRDC, are eligible to participate only as a subrecipient, and are not eligible to apply as a prime recipient. The FFRDC effort, in aggregate, shall not exceed 1% of the total estimated cost of the project, including the applicant's and the FFRDC's portion of the effort.

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 the award.

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 funding for the FFRDC will flow through the prime recipient. The following wording is acceptable for this authorization: Authorization is granted for the Laboratory to participate in the proposed project. The work proposed for the Laboratory is consistent with or complementary to the missions of the Laboratory and will not adversely impact execution of the DOE assigned programs at the Laboratory.

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.

### **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 an 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 application for each proposed foreign subrecipient.

[Appendix D](#) 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.

## **Incorporated Consortia**

Domestic incorporated consortia are eligible to participate as a prime recipient or subrecipient. For consortia incorporated (or otherwise formed) under the laws of a state or territory of the United States, please refer to “Domestic Entities” above. For consortia incorporated (or otherwise formed) in a foreign country, please refer to the requirements in “Foreign Entities” above.

Each consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE Grants and Agreements Officer. If the consortium includes foreign members, the applicant must submit a separate explicit written waiver request in the application for each foreign member. See [Appendix D](#).

## **Unincorporated Consortia**

Unincorporated Consortia must designate one member of the consortium to serve as the prime recipient/consortium representative. The prime recipient/consortium representative must qualify as a domestic entity. Upon request, unincorporated consortia must provide the DOE Grants and Agreements Officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the individual consortium members together and should include the consortium’s:

1. Management structure.
2. Method of making payments to consortium members.
3. Means of ensuring and overseeing members’ efforts on the project.
4. Provisions for members’ cost sharing contributions.
5. Provisions for ownership and rights in intellectual property developed previously or under the agreement. If the consortium includes foreign members, the applicant must submit a separate explicit written waiver request in the Full Application for each foreign member. See [Appendix D](#).

## **4.2 Cost Sharing**

Applicants are bound by the cost share proposed in their Applications, if selected, for award negotiations. DOE is requiring that the non-federal cost share be at least **50% of the total project costs**<sup>9</sup> for demonstration projects.<sup>10</sup> 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 third-party financing.

Federal financing, such as DOE Loan Guarantees, cannot be leveraged by applicants to provide the required cost share or otherwise cover the same scope that is proposed in the application. A contingency reserve will also be required for all Phase 3 and 4 activities. Neither contingency funds nor any program income should be included as cost share in the applicant's budget. Each project team is free to determine how best to allocate the cost share requirement among the team members. The amount contributed by individual project team members may vary, as long as the cost share requirement for the project as a whole is met. Although the non-federal cost share requirement applies to the project as a whole, including work performed by members of the project team other than the applicant, the applicant is legally responsible for paying the entire cost share.

If the funding agreement is terminated prior to the end of the project period, the applicant is required to contribute at least the cost share percentage of total expenditures incurred through the date of termination.

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

## **4.3 Limitation on Number of Concept Papers and Applications Eligible for Review**

An entity may submit more than one Concept Paper and Application to this FOA provided that each Concept Paper and subsequent Application describes a unique, distinct concept and provided that an eligible Concept Paper was submitted for each Application. There are no limits to submissions by topic area by prime applicant.

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<sup>9</sup> Total project costs is the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

<sup>10</sup> Section 962(d)(2) of the Energy Policy Act of 2005 as amended (42 U.S.C. § 16292(d)(2)); Section 988(b) of the Energy Policy Act of 2005 as amended (42 U.S.C. § 16352(b)). *See also* 2 C.F.R. § 200.306 and 2 C.F.R. § 910.130 for additional cost sharing requirements.

DOE will notify applicants of its determination to encourage or discourage the submission of an application, potentially including reviewer comments. DOE will post these notifications to OCED eXCHANGE.

## 5.0 Application and Submission Information

### 5.1 Application Package

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

1. Each must be submitted in Adobe PDF format unless stated otherwise;
2. Each must be written in English;
3. All pages must be formatted to fit on 8.5 x 11 inch 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;
4. A **control number** will be issued when an applicant begins the OCED eXCHANGE application process. The control number must be included with all application documents.
  - a. 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\_Application*);
5. Page numbers must be included in the footer of every page; and
6. 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.

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

ProposalContent\_Part\_1  
ProposalContent\_Part\_2

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

## 5.2 Application Submission

There are several one-time actions before submitting an application in response to this FOA, and it is vital that applicants address these items as soon as possible. Some may take several weeks, and failure to complete them could interfere with an applicant's ability to apply to this FOA, or to meet the negotiation deadlines and receive an award if the application is selected. These requirements are as follows:

### 5.2.1 OCED eXCHANGE

To apply to this FOA, applicants must register with and submit application materials through OCED eXCHANGE at <https://oced-exchange.energy.gov>, OCED's online application portal. See detailed instructions at [Financial Opportunities: Manuals \(energy.gov\)](#). OCED eXCHANGE is designed to enforce the deadlines specified in this FOA. The "Apply" and "Submit" buttons will automatically disable at the defined submission deadlines. If an applicant experiences technical difficulties with a submission, the applicant should contact the OCED eXCHANGE helpdesk for assistance ([OCED-exchangeSupport@hq.doe.gov](mailto:OCED-exchangeSupport@hq.doe.gov)).

### 5.2.2 Unique Entity Identifier (UEI) and System for Award Management

Each applicant (unless the applicant is excepted from those requirements under 2 CFR 25.110) is required to: (1) Be registered in the SAM at <https://www.sam.gov> before submitting its application; (2) provide a valid UEI number in its application; and (3) continue to maintain an active SAM registration with current information at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency. DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, the DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant. Designating an Electronic Business Point of Contact and obtaining a special password called a Marketing Partner ID Number are important steps in SAM registration.

**NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process, they should utilize the HELP feature on SAM.gov. Additional entity validation resources can be found here: [GSAFSD Tier 0 Knowledge Base - Validating your Entity](#).**

### **5.2.3 FedConnect**

Register in FedConnect at <https://www.fedconnect.net>. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at [https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect\\_Ready\\_Set\\_Go.pdf](https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf).

### **5.2.4 Grants.gov**

Register in Grants.gov (<http://www.grants.gov>) to receive automatic updates when Modifications to this FOA are posted. However, please note that Concept Papers, and Applications will not be accepted through Grants.gov.

As applicable, modifications to this FOA will be posted on the OCED eXCHANGE website and the Grants.gov system. However, you will only receive an email when a modification is posted if you register for email notifications for this FOA in Grants.gov. OCED 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.

### **5.2.5 Electronic Authorization of Applications and Award Documents**

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

## ***5.3 Application Forms***

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

## ***5.4 Submission Dates and Times***

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

## ***5.5 Requirement for Full and Complete Disclosure***

1. 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:

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

## 5.6 Proposal Content

This application process includes multiple phases: Concept Paper and Application.

### 5.6.1 Concept Paper

Each Concept Paper must be limited to a single project site or an aggregated set of proposed project sites. The Concept Paper must conform to the requirements listed below and should be no more than 10 pages.

DOE makes an independent assessment of each Concept Paper based on the criteria in [Section 6.2.1](#) of the FOA. DOE will encourage a subset of applicants to submit Applications. Other applicants will be discouraged from submitting an Application. See [Section 7.1.2](#).

Each applicant must provide the following information as part of the Concept Paper:

Section and Content
<b>Cover Page</b>
The cover page must include the project title, the specific Area of Interest that the proposed project is applying to, both the technical and business points of contact, names of all team member organizations, the project location(s) (physical address including zip code or coordinates), and any statements regarding confidentiality.
<b>Demonstration Plan &amp; Project Team Description:</b>
<p>Applicants are required to describe succinctly:</p> <ol style="list-style-type: none"> <li>1. The proposed demonstration project, including the technology and systems to be developed, construction activities, and infrastructure development.</li> <li>2. A preliminary development plan and timeline, including any key risks and challenges, showing the impact that the proposed project would have on the clean energy technology.</li> <li>3. Applicants must be able to demonstrate proof of land control (i.e. mineral rights and surface and/or subsurface agreements evidencing control, or option to control, property rights necessary to implement the proposed project) and provide underlying fee owner information.</li> <li>4. The impact that DOE funding would have on the proposed project.</li> <li>5. How the proposed work, if successful, would meet the FOA objectives, including how the project will achieve long term technical and economic viability, obtain follow-on funding from the private sector, and how the project will support the clean energy transition and supports the revitalization of economically distressed communities.</li> <li>6. Explain how the proposed project is eligible to participate. Specifically, describe how that the proposed project is on an eligible mine land under this program (see Section 4.0, Eligibility Information). Include a description of the evidence you plan to provide to prove that the project is on an eligible mine land (i.e title search that ties proposed project site to Mining Law of 1872, copy of SMCRA Title V permit, etc.).</li> </ol>

7. How the proposed work will involve and provide economic development opportunities for the community, including any community ownership or equity models (if applicable).

**Community Benefits Plan:**

Applicants are required to describe succinctly the approach to be taken with addressing the four core elements:

1. Support meaningful community and labor engagement;
2. Investing in the American workforce;
3. Advancing diversity, equity, inclusion, and accessibility; and
4. Contributing to the [Justice40 Initiative](#) goal that 40% of the overall benefits of climate and clean energy investments flow to disadvantaged communities.

**Management and Organization:**

Applicants must succinctly describe the qualifications, experience, and capabilities of the proposed Project Team, including:

1. Whether the Lead Project Manager (LPM) and Project Team have the skill and expertise needed to successfully design, develop, and operate the proposed plan.
2. Whether the applicant has prior experience which demonstrates an ability to perform tasks of similar risk and complexity as the proposed project (preferably on mine land or a similar area).
3. Whether the applicant has worked together with its teaming partners on prior projects or programs.
4. Whether the applicant has adequate access to equipment and facilities necessary to accomplish the effort and/or clearly explain how it intends to obtain access to the necessary equipment and facilities.
5. A summary organization chart of the team must be provided
6. Applicants may provide other graphs, charts, or data to supplement their Demonstration plan and Project Team Descriptions.

**5.6.2 Application**

**Only applicants who have submitted an eligible Concept Paper will be eligible to submit an Application.**

Applicants will have approximately 60 days from DOE’s posting of the Concept Paper Encourage/Discourage notification on OCED eXCHANGE to prepare and submit an Application. Regardless of the date the applicant receives the Encourage/Discourage notification, the submission deadline for all Applications remains the date and time stated on the FOA cover page.

All Application documents must be marked with the control number issued to the applicant. Each Application must be limited to a single project. Applications must conform to the content and form requirements listed below and must not exceed the stated page limits. Applicants must provide sufficient citations and references to justify the claims and approaches made to DOE. However, DOE and reviewers are under no obligation to review cited sources. The application content requirements checklist is provided in [Appendix B](#).

**5.6.2.1 Application for Federal Assistance (SF-424)**

(PDF, 1 page maximum)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_App424
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The Standard Form ([SF-424](#)) represents the government-wide standard form for grant application packages, and requires basic information about the applicant (name, address, telephone number, type of applicant, etc.), including a list of sources of proposed funding and a description of the proposed project. Complete all required fields in accordance with the instructions on the form.

In Field 21 of the SF-424, the authorized representative must certify and agree with the Certification and Assurances found at [Certifications and Assurances for Use with SF-424 | Department of Energy](#)

Note: The dates and dollar amounts on the SF-424 are for the total project and total project costs. This section provides guidance for all applicants for the Topic Area.

### 5.6.2.2 Technical Volume

An application must include a Technical Volume, which includes the following components that are further detailed below: a) Cover Page; b) Project Overview; c) Business Development and Management; d) Work Plan; e) Engineering, Procurement, Construction and Operations; f) Safety and Occupational Health, Cybersecurity, Permitting, and Regulatory Requirements; g) Risk Analysis and Mitigation; h) Techno-Economic Analysis and Life Cycle Analysis Projections. The Technical Volume may not be more than 56 pages.

Applicant should consider the weighting of each of the technical review criterion (Section 6.2.2) when preparing the Technical Volume.

Section and Content	Approximate length
<b>a) Cover Page</b>	2
<p>The executive summary must include the project title, the specific Area of Interest that the proposed project is applying to, the technical and business points of contact, names of all team member organizations, senior/key personnel, and their organizations, and a high-level statement of work. It must also include the high level project objective and purpose (including impact to community), and project details, including, the clean energy project type, project size (with appropriate output units), project location(s) (by the city, state, and zip code + 4 and State for each location where project work will be performed by the prime recipient or subrecipient(s)), project status (including permitting, interconnection, PPA off-taker, financing, land lease agreement, and community involvement), and any statements regarding confidentiality.</p> <p><b>File Naming Convention:</b> ControlNumber_LeadOrganization_Cover_Page</p>	
<b>b) Project Overview</b>	3 and Eligibility File
<p>This summary must describe the overall team, scope, and objectives of the project. It must include the overall long-term vision and strategy for the project, which must include:</p> <ol style="list-style-type: none"> <li>1. Provide documentation that proves the proposed project is eligible to participate and is on an eligible mine land under this program (see Section 4.0, Eligibility Information).</li> </ol>	

2. How DOE funding, relative to prior, current, or anticipated funding from other public and private sources, including tax incentives in the Inflation Reduction Act (IRA), is necessary to achieve the project objectives.
3. How the proposal demonstrates a replicable model that can unlock follow-on funding from the private sector that will result in more clean energy projects on mine land.
4. How the proposed project will address the intent of the Area of Interest being applied to (this includes how the proposed project will support the clean energy transition and supports the revitalization of economically distressed communities).
5. Detailed plans for Phase 1 activities, and higher-level plans for Phase 2 through 4 activities along with planned partnerships and financing strategies/commitments (See Section 2.4 for Project Management Phases).
6. Rationale for preliminary site location(s), system designs, market potential, and commercial viability of the proposed project.
7. A description of the community or communities involvement in development of the project and, if applicable, how the community will be involved in the ownership of the project or benefit through other equity models.
8. A summary schematic, such as a Process Flow Diagram, that depicts the project
9. A high-level Gantt Chart for the schedule for executing on the project (Phases 1-4). *Note that the Gantt Chart should be consistent with the Integrated Project Schedule discussed in the Engineering, Procurement, Construction & Operations section below.*

If the applicant is unable to provide a detailed plan for all activities beyond Phase 1, they still must provide their strategy and status for achieving Phase 2 through Phase 4 activities (this includes obtaining the necessary partnering and financing agreements).

**File Naming Convention:** ControlNumber\_LeadOrganization\_ProjectOverview

**File Naming Convention:** ControlNumber\_LeadOrganization\_EligibilityInformation

<b>c) Business Development and Management</b>	<b>12</b>
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This section must include a Business Plan, Management Plan, and Financial Plan as necessary elements detailed below. The project’s level of development and level of detail within these plans will evolve over the life of the project.

**Business Plan**

The business plan must include key success metrics, high-level milestones, and the pathway to achieving these metrics and milestones, to be completed during each phase. This includes signing key contracts and agreements, ownership structures, securing permits, completing NEPA reviews, executing financial close, commencing site preparation and construction, achieving commercial operations (full design capacity), and evaluating/analyzing potential markets. It must also address the items listed below and any other pertinent information to understand the project business plans.

All key metrics, milestones and critical path items must be consistent and incorporated in the Integrated Project Schedule and Workplan.

Feasibility and Replication: The plan must describe how the project will benefit the community(s), its economic feasible, its ability to continue to operate and be maintained after Federal funds are expended. Describe an approach to replicating this project to benefit distressed mine land communities across the country.

Key Contracts, Permits, and Agreements: The plan must provide a detailed description, schedule, and status, of all critical path, and non-critical path, contracts, and agreements relevant to the project, encompassing permits, NEPA, regulations, design, engineering, technology licensing, financing, construction, startup, commissioning, operation, and maintenance of the project. All key critical path items must also be incorporated in the Integrated Project Schedule. Key Agreements include, but are not limited to, land lease agreements, Power Purchase Agreements, Interconnection approval and terms, easement agreements, partnership agreements, Tribal land agreements, and any additional key agreements.

Preliminary Site Selection: Applicants should provide the project location(s) (physical address including zip code, coordinates, or KMZ file) and a description of the surrounding environment (including proximity to communities). The plan must describe the rationale/criteria for selection of the project site(s) and contain evidence of control over the site(s) or the plan to establish control over the site(s). Applicants must be able to demonstrate proof of land control (i.e. mineral rights and surface and/or subsurface agreements evidencing control, or option to control, property rights necessary to implement the proposed project) and provide underlying fee owner information. Applicants must provide the appropriate agreements which satisfies these conditions or the pathway to obtaining.

Recipients are encouraged to leverage and repurpose/retrofit existing facilities and infrastructure to the greatest extent possible to minimize environmental impacts. If applicable, applicants must describe how project will access and leverage critical facilities and infrastructure, including transmission lines and roads through different phases of the project. Site selection should describe regional specific resources, supply chains, as well as climate and physical risks (e.g., fire, flood) to ensure resilience/sustainability. Applicant must provide a preliminary site drawing showing proposed project area with key system components.

Applicants should also indicate in their applications if the proposed mine site has been reclaimed, or will be reclaimed, prior to construction and how it complies with federal cleanup standards. Additionally, if applicable, the applicant must provide a plan which shows that the site selected is suitable and reclaimed, or will be reclaimed, according to the appropriate standards and land use reclamation requirements. Reclamation activities required to prepare and develop the land as part of the proposed clean energy project may be eligible for funding.

Additionally, applicants should disclose any documented information indicating the presence of critical minerals (e.g. lithium, vanadium, etc.) at the proposed project site. If documented information exists, applicants should provide a clear mitigation strategy to ensure that the proposed CEML project does not foreclose future extraction of developable critical mineral deposits. The presence of the proposed CEML project at such a site will not necessarily preclude future mineral extraction as such are allowed under all applicable laws and regulations.

Market Analysis: If applicable, the plan must include an analysis of the current and projected markets for the proposed project, to be successful. The analysis must discuss the prevailing economic and demographic trends in the target market(s), both on a macroeconomic basis and for the specific technology. It must identify the market dependencies on tax benefits or other government policies and incentives. The analysis should also describe the projected customer base. The applicant must provide a justification for revenue and cost projections (price and volume).

Supply Chain and Offtake Arrangements: The plan must provide a detailed description of plans for ensuring an adequate supply of major raw materials or supplies, as needed for successful operation of the project. The applicant must provide letters of commitment or term sheets for prospective suppliers.

The applicant should also provide letters of commitment or term sheets from prospective customers and/or offtakers (including power purchase agreements). The letters of commitment should be submitted in a separate attachment in OCED eXCHANGE (see Section 5.6.2.6. Letters of Commitment for more information). If this information is not yet available, then applicant must provide their status in obtaining letters and agreements.

Growth Plan: The plan should discuss how the proposed project will achieve follow-on private sector investments and replicate on other mine land sites.

### **Management Plan**

This plan must describe 1) the prime applicant's and project partners' organizational structure, capabilities, and operations plan; 2) the financial strength of the prime recipient and any major project partners; and 3) prior experience of the senior/key personnel in similar or related undertakings. Key personnel include the leadership/management team and other project personnel who contribute in a substantive, and meaningful way to the successful execution of the project.

Organizational Structure: As part of the management plan, the applicant must provide an organizational chart of key entities and senior/key personnel. The organizational chart and related description should show the prime recipient and any major project partners, subsidiaries, affiliates, parent organizations, or joint ventures associated with the project as well as an explanation of the legal structure (e.g., corporation, partnership, LLC). The application must describe the prime recipient and any major project partners' business relationship(s) and the various roles and responsibilities held by each organization. The applicant must also identify any foreign owned entities involved in the project. The applicant will be required to submit a waiver, if needed, prior to the award.

Management: The applicant must provide a description of the management and operations strategies to be employed in executing on the proposed plan. The application must list the names of senior/key personnel as well as their positions or titles and the percentage of their time dedicated to executing on the project. If any key management and staff are not expected to spend 100 percent of their time executing on the project, the plan must provide the percentage of time they will be spending executing project with brief description of their other responsibilities or other activities outside of the award.

Experience: The plan must describe in detail the unique capabilities and expertise of the prime recipient and any major project partners or subrecipients, debt or equity sponsors, contractors/vendors, and every other counterparty that the prime recipient believes will enable the project to be successful. In addition, the plan must summarize the prior experience of the prime recipient and any major project partners in similar undertakings (in both technical scope and financial size) and current or previous energy infrastructure projects. The plan must describe the following:

1. **Past experience developing and constructing a project, preferably on a mine land or other disturbed areas:** Examples of at least two projects, on mine land or other similar areas, and in the energy infrastructure sector similar in nature and scope to the project being proposed that have been completed (developed, financed, and managed construction) by the applicant and project partners.
2. **Past experience operating and maintaining a project on a mine land or similar areas:** Examples of at least two projects on mine land or other similar areas, and in the energy infrastructure sector for which the applicant or project partners were responsible for managing the operations and maintenance of a similar project for a minimum of five years. Note, each project example must be a project for which construction has been completed. Applicants that are not able to include examples of two projects in their description of current and previous experience in the energy

infrastructure sector should provide a detailed description of the facts that they believe are sufficient to demonstrate to DOE that they have the expertise that would be evidenced in current or previous experience in the energy infrastructure sector by including examples of two projects.

3. **Past experience developing or operating a project in the proposed power market:** Examples of at least two projects, in the energy infrastructure sector similar in nature and scope to the project being proposed that has been developed or is operating in the proposed power market or region.
4. **Past experience working with economically distressed communities, near mine land or similar areas:** Examples of at least two energy infrastructure projects where the applicant or project partners engaged and collaborated with economically distressed areas to develop, finance, and manage construction (if available). It is encouraged to include examples where communities had part ownership or directly benefited from the development and operation of the project.

Pending Investigations: The plan must provide a summary of any pending or threatened (in writing) action, suit, proceeding, or investigation, including any action or proceeding by or before any governmental authority, that relates to the senior and key personnel, and the status of any appeals.

### **Financial Plan**

The Financial Plan must include the following elements:

1. The preliminary funding plan including the total amount for funding for project development in Phases 1 and 2, and the funding for Phase 3 including medium-term financing for machinery and equipment, and longer-term financing for the site and facility including sources and uses, and any required funding beyond internal cash flow including working capital financing in Phase 4.
2. A detailed plan and schedule for achieving long-term financial viability, beyond DOE and other federal funding (this should be aligned with the Techno-Economic Analysis section).
3. The amount of expected traditional equity investments (identify participants and level of participation, if applicable).
4. The timing of expected equity contributions and/or debt funding.
5. The timing of repayment of expected debt funding.
6. Insurance and how project is addressing environmental liability, particularly associated with preexisting site conditions.

If debt is contemplated, provide a plan for managing potential interest rate risk and default risk; and if tax equity or other non-traditional equity investments are contemplated, highlight any structural requirements that might arise from such investments.

The contingency reserve including the source should also be detailed in the financial plan.

**Prime Applicant and Project Partners:** In line with the Organization Structure in the Management Plan section, the application must describe the financial relationship of the prime recipient to major project partners, including any Foreign Owned Entities, who are contributing cost share and/or performing work. It must clearly identify the name of the organization or entity that are expected to contribute debt or equity financing and any person, organization, or entity who owns or will own five percent (5%) or more of the project.

The plan must include the organization or entity name, website address, mailing address, city and state, and postal code of the prime recipient, project partners, and other debt or equity contributors.

**Financial Strength:** The plan must describe the prime recipient’s and major project partner’s financial strengths, as well as the project’s strategic significance to the prime recipient and major project partner involved.

**Other Federal Support:** Federal financing, such as grants or loan guarantees from federal agencies, cannot be leveraged by applicants to provide the required cost share or to otherwise support the same scope of the award. However, other federal support may be used for activities that fall outside of the award scope/budget.

The financial plan must identify whether the award will benefit directly or indirectly from other forms of federal support, such as grants, loan guarantees, tax credits, having federal agencies or entities as a customer or offtaker of the project’s products or services, or other federal contracts, including acquisitions, leases, and other arrangements, that may indirectly support the award.

**Non-Federal Support:** The plan must identify other non-federal governmental (including state or local) incentives or other assistance on which the proposed project relies, including grants, tax credits and loan guarantees to support the financing, construction, and operation. It must indicate the terms of such support which could result in termination or reduction of anticipated/actual non-Federal support, and whether any such incentives or assistance are subject to clawback and the circumstances under which a clawback could occur.

**File Naming Convention:** ControlNumber\_LeadOrganization\_BDM

**d) Workplan**

10

The Workplan must include the Project Objectives, Technical Scope Summary, Work Breakdown Structure (WBS) and Task Description Summary, Go/No-Go Decision Points point, End of Project Goal, and Integrated Project Schedule as necessary elements. The Workplan will form the basis of the Cooperative Agreement that will be negotiated if selected for award. **Note on Buy America Requirement for Infrastructure Projects:** Within the first 2 pages of the proposed workplan or project description, include a short statement on whether the project will involve the construction, alteration, maintenance and/or repair of public infrastructure in the United States. Refer to the Administrative and National Requirements Guidance for applicable definitions and other information regarding Infrastructure Projects and the Buy America Requirement.

**Project Objectives**

The applicant must provide a clear and concise statement of the goals and objectives of the project as well as the expected outcomes. Include the unique objectives that this project will achieve and how it ties to the appropriate Topic Area and Area of Interest objectives (reference Topic Area section).

**Technical Scope Summary**

The applicant must provide a summary description of the overall work scope and approach to achieve the objective(s). The overall work scope is to be divided by performance periods that are separated by discrete decision points (see below for more information on Go/No-Go decision points) and must align with Integrated Project Schedule. The applicant should describe the specific expected end result of each performance period, including milestones detailed in the Community Benefits Plan.

**Work Breakdown Structure (WBS) and Task Description Summary**

The Workplan must describe the work to be accomplished and how the applicant will achieve the Integrated Project Schedule, will accomplish the final project goal(s), and will produce all deliverables.

The Workplan is to be structured with a hierarchy of project objective, performance period, task and subtasks (or dependencies and sub-dependencies), 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 (including project development, construction, and operations). 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. In addition, the WBS should also contain additional details, such as, task owner, task budget, completion date, and task status.

If selected for award negotiations, the summary will be incorporated into the Work Plan which will contain a more detailed description of the WBS and tasks.

**Go/No-Go Decision Points**

Provide a summary of project-wide Go/No-Go decision points at appropriate points in the Integrated Project Schedule. Each project must have a Go/No-Go decision point at the start of each Project Phase. Additionally, Go/No-Go decision points should be no more than 12 to 18-months from each other. The applicant should also provide the specific technical criteria to be used to evaluate the project at the Go/No-Go decision point. (See the Award Guidance for more information on the Go/No-Go Review.)

**Integrated Project Schedule**

As described in Section 5.6.2 under the 'Engineering, Procurement, Construction, and Operations,' subsection, the applicant must provide a schedule for the entire project, including task and subtask durations, milestones, and Go/No-Go decision.

**End of Project Goal**

The applicant must provide a summary of the project’s end of project goal(s), including successfully demonstrating commercial operations and financial viability, providing positive community benefits, and the ability to catalyze follow-on investments beyond the award.

**File Naming Convention:** ControlNumber\_LeadOrganization\_Workplan

<b>e) Engineering, Procurement, Construction, and Operations (EPC&amp;O)</b>	12
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The application should describe high level engineering (which includes design), procurement, construction, and operation (EPC&O) data, information, and related documents cover technology; performance projections; engineering, design, and procurement; cost estimates; execution schedules; and operating and disposition plans for the project. It is expected that the initial plans submitted as part of the application will be further develop as the project move through each phase.

Applications must include initial versions of Engineering, Procurement, Construction and Operations (EPC&O) project documents described in the subsections below. These documents should meet a minimum level of maturity, as described below, but may be more advanced. During each phase, selected projects will further develop this set of documents. Within phases, recipients will report on execution status and progress to DOE and its third-party representatives. The EPC&O category of requirements focuses on the project development process.

Data, information, and related documents will cover (1) technology, (2) performance projections, (3) engineering, design, and procurement (4) cost estimates, (5) execution schedules, and (6) operating and disposition plans.

Applicants will be required to provide estimated values of key parameters that influence project performance and financial viability, including but not limited to capital costs, tax credits, operating costs, and revenue streams. The recipients will provide revised data of increasing fidelity based on the best information available at the time.

In Phase 4, DOE will require the recipients to provide detailed operational, environmental, and financial data for technology and business case validation, along with other data such as socio-economic data for Justice40 goals. DOE will specify additional details for recipients' performance validation upon successful completion of Phase 3.

### **Technology Descriptions**

As part of the application and throughout the award, the awardee will assess and evaluate the project and its technology maturity or readiness, including level of system integration and infrastructure, which DOE will in turn verify and validate. This assessment will form DOE's technical risk analysis basis. DOE expects the awardee to actively manage outstanding technology risks, including those driven by technology maturation, level of system integration, and infrastructure needs.

Applications must include at least a preliminary engineering design that is reasonably achievable and a technology development and integration plan that demonstrates technical viability of the proposed project. Definitions of TRLs can be found in the [DOE's Technology Readiness Assessment Guide](#). Through the course of the four phases, recipients will be expected to develop their concept and strategy into full-fledged and executable designs and execution plans. The project must be at a TRL 7 or higher (this includes project systems and all system components). DOE will not consider individual components with lower TRLs, as they will be considered higher risk deployments and will require corresponding mitigations which may require development activities outside of the award scope and funding. Award funding may not be used for pilot-scale or earlier activities, such as research and development. Definitions of TRLs can be found in the [DOE's Technology Readiness Assessment Guide](#).

Each application will be required to contain a technology plan that includes the following:

- Description of all non-commercial technologies and any key commercial technologies to be employed in the project, including existing equipment, facilities, and infrastructure
- Description of and path to secure required intellectual property rights (if applicable);
- Assessment of the integrated system and component level TRLs;
- Detailed analysis used to justify TRLs and commercial status if relevant;
- Description of all technology maturation needs and corresponding maturation plans, described by phase; and
- Description of technology-based risks and how they will be managed.

While DOE is not requiring its use, applicants are encouraged to review [DOE's Technology Readiness Assessment Guide](#). Applicants must ensure project and technology descriptions, TRL assessments, maturation needs, technical risks, and supporting analyses described in this section correspond to the proposed design plans, Integrated Project Schedules, and analyses required under the [Techno-Economic Analysis and Life Cycle Analysis Projections](#) section below.

Analyses and documents included in the Technology section of the application will be updated and revised as needed through each phase. Quantitative and qualitative analysis of remaining risks will inform subsequent phase negotiations including for contingency, budget, and cost share.



DOE will assess project progress utilizing the Go/No-Go decision points throughout the project management phases. Adequate progress made in advancing the project and risk management activities, as well as an overall acceptable project risk exposure will be required for the project to advance through the project management phases.

### **Performance Projections**

Understanding performance assumptions, risks, uncertainties, and variabilities is critical for individual project viability. Applications must include detailed information about performance projections and supporting information. These projections should correspond to data, information, and assumptions provided in response to requirements described in the [Business Development and Management](#) as well as the [Techno-Economic Analysis and Life Cycle Analysis Projections](#) sections of this FOA. If not already available, applicants must develop a detailed performance model in Phase 1.

The overarching performance goal of all awards is to ultimately demonstrate long-term technical and economic viability by the time the DOE funding has ended, thereby spurring market uptake.

### **Engineering, Design, and Procurement**

Engineering, design, and procurement information must be provided as part of the application. DOE expects applications will reflect a spectrum of project maturities. At a minimum, the applications should include a preliminary design that reflects initial engineering studies such as pre-FEED or FEED (Front End Engineering Design) studies. It is expected that engineering and design should be at least ~10% complete at the application stage. Preliminary designs should be consistent with information provided in response to requirements described in other sections of the application.

Engineering information submitted with the application must provide a description of the type of technology(s), system integration, and connective infrastructure needed in each step. Key facilities, systems, and technically complex components should be described in detail (this should include supplemental hardware, software and communication requirements which is needed for the overall project operations). Applicant should include preliminary design schematics, diagrams, and workflows to supplement description. Where applicable, proposed projects should also cite prior successful utilization of the proposed technologies, systems, and infrastructure in like environments (if not already described in the Business, Development, and Management section).

To the extent information is available, applications must include a detailed description of the project infrastructure in terms of major subsystems and their interconnection(s) and a description of how the project is intended to operate. Applicant is encouraged to provide specific information and status of the interconnection to the grid. If information is not available, applicant should describe plan to achieving and include any related milestones in the Integrated Project Schedule.

High-level schematic, technical specifications, equipment supplier and vendor information for all technologies, systems, and connective infrastructure should be included in the application.

Applicant must describe and include how mine land attributes will impact project designs (such as geotechnical stability) and how conditions will be accommodated. Specific mine land features that will be encountered during project development should be described in detail.

If available, equipment descriptions should include consideration of how equipment would be used within the project system. Needs for and plans to balance variable supply and demand signals, as well as resiliency aspects necessary to handle maintenance outages and external system shocks should also be described.

Engineering designs will evolve and be revised in the early phases of the project and will be monitored and reviewed as part of Go/No-Go decisions between phases.

Applications must include a description of the proposed procurement plan in accordance with 2 CFR 200.317-327 as available including, but not limited to, the following:

1. Long lead items and critical equipment and connective infrastructure;
2. Potential or planned major equipment providers;
3. Procurement timelines and/or critical path procurements; and
4. Third-party contracting plans.

The application must also describe the applicant's strategy to leverage existing U.S. manufacturing and supply chains and support the growth of these domestic capabilities consistent with U.S. job creation goals, the Build America, Buy America language in BIL, and related executive orders. In particular, applications should clearly identify any known supply chain risks and plans for timely procurement of supplies from underdeveloped supply chains. For additional information, visit DOE's [Build America, Buy America](#) webpage.

### **Cost Estimates**

Applicants will be expected to develop detailed cost estimates that meet industry standards, such as the [Association for the Advancement of Cost Engineering \(AACE\) International](#)'s standards, for the size and complexity of the proposed project. Cost estimates should be consistent with other financial data and analysis provided as part of the application, such as those elements described in the [Business Development and Management](#) and [Techno-Economic Analysis and Life Cycle Analysis Projections](#) sections of the FOA. DOE expects that recipients will employ industry standard cost estimating methodologies and tools. Cost estimates should correspond to the project design maturity and reflect appropriate uncertainties. While DOE is not requiring its use, applicants are encouraged to review [DOE's Cost Estimating Guide](#) is included in that guide and highlights examples of industry standard cost estimating approaches and use cases.

Applications must include a current total project cost (TPC) estimate that covers the entirety of the project, including construction and 5-10 years of operations (including first major scheduled maintenance). All costs falling within the project must be included, e.g., capital, labor, finance, and other cost categories, as appropriate, for individual plans. Any costs associated with Community Benefits Plan activities should also be included in the TPC estimate. Narratives accompanying cost estimates should include an explanation of the estimate class and/or maturity, a description of the methodology employed, and the uncertainty or accuracy range.

While DOE is not requiring specific escalation assumptions be used for the application TPC, cost estimate narratives should explain what assumptions were used and why they were deemed appropriate. The cost estimate for the application should be at least be a Class 4 or better (as described in [DOE's Cost Estimating Guide](#)) . Subsequent phases will require more refined estimates: Class 3 by end of Phase 1 and Class 1 by end of Phase 2. DOE may require use of standard cost estimating assumptions, including escalation assumptions in future phases.

Cost estimates should include itemized breakdowns that reflect at a minimum capital, labor, and financing costs. An overview of the project's current TPC estimate should be included in the application and supporting itemized data can be provided as part of the [Techno-Economic Analysis and Life Cycle Analysis Projections](#) section below as well as the "Budget Justification" workbook in the '[Budget and Budget Justification](#)' section. Note, during award negotiations DOE will conduct a third-party review of the TPC.

**Integrated Project Schedule**

An Integrated Project Schedule (IPS) that reflects all elements of the overall project should be included in the application as part of the Workplan. The initial IPS should include all major project activities and milestones (consistent with the overall Workplan), including engineering, design, procurement, development, construction, and Community Benefits Plan activities. A minimum Level 1 IPS for the full project and a minimum Level 2 IPS for proposed Phase 1 activities should be provided with the application.<sup>11</sup> The IPS should be provided as part of the Workplan when submitting applications.

This IPS will be revised, expanded, and updated in future phases. By the end of Phase 2 it is expected that the IPS will be execution ready and reflect comprehensive schedule risk and uncertainty analyses. During each phase, recipients will report actual progress against their IPS as part of regular project management reporting requirements.

**Operating & Maintenance (O&M) and Disposition Plans**

A high-level description of Operating & Maintenance (O&M) and Disposition plans must be included with the application. The O&M plan must describe the project’s operations after the project has been developed and throughout the project’s operating life (and well beyond the award period). It is expected that this conceptual plan will be developed into a fully implementable O&M plan, with an executed O&M agreement, prior to completion of Phase 3.

Despite full intention that projects will continue operating well beyond the award period, DOE acknowledges that unforeseen circumstances may arise that result in operations ending. Recipients must therefore develop and appropriately fund a disposition and decommissioning (D&D) plan. The application must include a high-level description of the proposed D&D approach. It is expected that this approach will be fully developed, including cost estimates, prior to completion of Phase 2 and with appropriate funding plans in place prior to completion of Phase 3. DOE expects the applicant to seek and maintain community input of the eventual site end-state.

**File Naming Convention:** ControlNumber\_LeadOrganization\_EPCO

<b>f) Safety and Occupational Health, Cybersecurity, Permitting and Regulatory Requirements</b>	<b>6</b>
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The Occupational Health and Safety, Security, and Regulatory Requirements document must include Safety, Cybersecurity, Permitting, and National Environmental Policy Act requirements detailed below. OCED will require that all current and foreseeable physical safety or containment hazards should be disclosed and addressed by the applicants in their final applications as required by existing safety standards, regulations, and laws.

**Safety**

Applications must include a detailed description of safety culture that includes a ten-year construction and operations safety performance history (including an OSHA 300A form or Experience Modification Rating) of the entities and management involved in the award.

**Cybersecurity**

While a cybersecurity plan is not required as part of the application submission for this FOA, applications must include an assessment of potential cybersecurity threats or vulnerabilities and address cybersecurity challenges in their work scope.

<sup>11</sup> For a description of IPS Levels, see the [Integrated Project Schedule Guidance](#).

If selected for award negotiations, recipients must submit an initial cybersecurity plan during the award negotiations phase (prior to the issuance of an award). Refer to the Just-in-Time document for additional information. Recipients must develop tailored cybersecurity plans outlining the specific plan to secure the project according to the unique needs of the proposed plan and its associated technologies as applicable.

### **Permitting**

Applications must include a permitting workflow plan that identifies anticipated federal, Tribal, state, and local codes, regulations, and permitting requirements applicable to siting, development, construction, and operation of the proposed project.

Additionally, the Integrated Project Schedule should clearly identify and incorporate timelines for application and expected completion, or receipt, and renewal of all required federal, state, or local permits, approvals, or reviews.

### **National Environmental Policy Act**

DOE's decision of whether and how to distribute federal funds under this FOA is subject to the National Environmental Policy Act (NEPA); 42 U.S.C. 4321, et seq., which 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 and guidance on NEPA refer to the DOE NEPA Website <sup>12</sup>.

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all recipients selected for negotiation of an award will be required to assist in the timely and effective completion of the NEPA process. If DOE determines certain records or studies must be prepared to complete the NEPA review process (e.g., a biological assessment or other environmental baseline studies), the recipient may be required to prepare the records and studies; costs required to prepare the necessary records and studies may be included as part of the project costs. Proposed projects that include new construction or significant modification of existing facilities and/or infrastructure will likely require preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS). NEPA compliance activities should be accounted for in the project scope, schedule, and budget.

Applications must include an Environmental Considerations Summary that provides the information requested in section [5.6.2.10 Environmental Considerations Summary](#). Responses to the Environmental Considerations Summary questions will be used to: (1) ensure that the environmental factors are considered in the decision-making process; (2) assess the applicant's awareness of project-related requirements, including requirements for mitigating any project-related adverse environmental risks and impacts; and (3) contribute to the evaluation and selection decision.

If an application is selected and an award is successfully negotiated, recipients will need to complete an Environmental Information Volume (EIV).

### **Other Considerations**

Applicants are encouraged to undertake a thorough review of all relevant Federal, Tribal, State, and Local statutory and regulatory authorities. Knowledge of these authorities and associated processes will aid applicants in developing their proposed projects both in the application and award phases. Relevant

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<sup>12</sup> <https://www.energy.gov/nepa>

federal statutes and authorities could include, but are not limited to: Clean Air Act, Clean Water Act, Endangered Species Act (ESA), and National Historical Preservation Act (NHPA).

DOE strongly encourages applicants to include in their applications frequent and extensive consultation with local community stakeholders with a potential interest in the proposed site(s), aligned with activities in the Community Benefits Plan. Applications should also include plans for monitoring their sites and the environmental effects of their projects from site assessment through commissioning and throughout the entire life of the project. Applicant should thoroughly describe how environmental risks are mitigated and impact to surrounding area is minimized.

**File Naming Convention:** ControlNumber\_LeadOrganization\_SafetySecurity

**g) Risk Analysis and Mitigation**

6

This section must include a Risk Management Plan. DOE expects recipients to understand and actively manage risks. The applicant must provide a comprehensive Risk Management Plan (RMP) that is accompanied by a corresponding risk register that can be used for ongoing risk management. The RMP must provide a narrative that analyzes the commercial, technical, development, construction, operational, schedule, regulatory, permitting, safety, scale-up, infrastructure, financial, management, organizational, and market related risks. Each identified risk in the RMP should be clearly described, including its probability of realization, potential impacts, and proposed mitigations. Specific mine land features and risks that will be encountered during project development should be described in detail and included in the Risk Management Plan.

As appropriate, identified risks should be incorporated into other project documentation including the Integrated Project Schedule. The Risk Management Plan will be revised and updated as needed throughout the project phases. At a minimum, they will be reviewed and assessed for accuracy and adequacy as part of each transition between phases. Where and when appropriate, quantitative risk analyses will be required and subsequently incorporated into relevant risk management plans and contingency evaluations and will be used to inform negotiations with DOE.

**File Naming Convention:** ControlNumber\_LeadOrganization\_RiskAnalysis

**h) Techno-Economic Analysis and Life Cycle Analysis Projections**

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Applicants must include a Preliminary Techno-Economic Analysis Narrative (Generally Accepted Accounting Principles analyses) and a Life Cycle Analysis Narrative. The Techno-Economic Analysis includes the project’s financial model, which contains detailed inputs and outputs which demonstrates the project’s economically viability.

Each awardee must perform Techno Economic Analysis (TEA) and Life Cycle Analysis (LCA) at an integrated systems level when the design is sufficiently advanced and then collect data to further refine and validate those analyses. In the preliminary TEA and LCA Narratives, applicants must describe their assumptions, rationale, and specific system design / boundaries. Applicants will use the TEA and LCA to estimate the cost of CO<sub>2</sub>e abated in \$/tonne of CO<sub>2</sub>e over the life cycle of the project, as well as net tons abated, preferably using GHG-100 and GHG-20 scales. Applicants should provide their preliminary TEA and LCA models as an attachment to this application.

**Preliminary Techno-Economic Analysis**

A Techno-Economic Analysis (TEA) is necessary to assess the long-term financial viability of each proposed project. Applicants should conduct their own TEA to estimate the Total Project Cost (TPC) that

informs and is consistent with the values in the Financial and Business Plans. TEA should be conducted with the best available information from prior successful utilization of the proposed technologies, systems, and infrastructure in like environments at the demonstration scale as a minimum at the time the application is submitted. Updates to the TEA will be repeated in future phases as more refined performance data and cost estimates become available. TEA within Phase 1 may leverage proprietary and published data, existing DOE tools, estimates or quotes from industry representatives, or any other sources as needed. Preferably, applicants will use an Excel multi-year Generally Accepted Accounting Principles (GAAP) financial model for the TEA, using nominal dollars for financial inputs, and should include calculations of key values (e.g., LCOE/LCOS, NPV, IRR, etc.). Additionally, applicants should provide key outputs from their TEA for DOE to verify the TEA and consistently evaluate applications.

Applicants must also provide a narrative description of their TEA and LCA analysis as part of the Project Execution Plan which provides clarifications of key assumptions, sources of energy and feedstock assumptions and financial arrangements.

Applicants will identify the appropriate operational analysis period for their project (e.g., 20-year, 35-year, etc.), but will provide justification for the period selected. Applicants should also articulate expected values of key parameters that influence financial viability, including capital costs, tax credits, operating costs, and revenue streams, that are consistent with the [Business Development and Management](#) and [Engineering, Procurement, Construction, and Operations section](#) above.

In each subsequent phase, recipients will be expected to provide higher fidelity data based on the best information available at the time. During Phase 4, DOE will require recipients to provide detailed operational and financial data for technology and business case validation. DOE will provide additional details for performance validation and data reporting requirements as part of the Phase 3 to 4 transition.

The preliminary TEA must include at least the following elements, as applicable:

1. Up-front capital investment
2. Variable operating expenses for energy, feedstock, and other recurring O&M
3. Refurbishments, capital replacements, and overhauls
4. Financing procurement and structure
5. Incentives and revenue streams
6. Taxes
7. Project net present value and internal rate of return
8. Key assumptions and parameters
9. Levelized cost of energy and/or levelized cost of storage (\$/kWh)

#### **Preliminary Emissions and Resource Consumption Life Cycle Analysis**

For projects with emissions associated with operations, applicants are required to provide a screening level, Life Cycle Analysis (LCA) that includes the sources of greenhouse-gas (GHG) emissions from the proposed project, and a contribution analysis showing at a minimum the direct impacts from energy supply, plant direct emissions and product transport and/or storage. Emissions associated with equipment manufacturing are not included in the system boundary. It is recommended that applicants use the GHGs, Regulated emissions, and Energy use in technologies ([GREET](#))<sup>13</sup> model for their LCA.

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<sup>13</sup> The GREET 1 Series (fuel cycle) model is available at <https://greet.es.anl.gov/>. The model is updated annually, primarily to reflect the latest default assumptions associated with technology cost and performance. Users may change these defaults to reflect scenario-specific assumptions (such as electricity mix, etc.), and are recommended to use the latest version of GREET online at the time that they conduct their analysis.

Should Applicants use another LCA tool or model, applicants should clearly state the estimated well-to-delivered electricity emissions and the assumptions made to derive these estimates. Assumptions should come from current DOE or National Labs sources and tools where available. Where data is not provided, DOE will use default values to evaluate the carbon intensity and criteria pollutants of the proposed project. LCA results should be normalized to 1MWh of electricity. Preferably, applicants will provide estimates of both 100-year global warming potential (GHG-100) and 20-year impacts (GHG-20). For many of the applicable technologies, e.g., solar, geothermal, etc., operational GHG emissions are effectively zero. Projects without operational emissions are not required to model emissions.

To estimate the net tons of abated CO<sub>2</sub>e, and the cost of CO<sub>2</sub>e abated in \$/tonne of CO<sub>2</sub>e over the life cycle of the project, applicants will need to leverage their Preliminary LCA, the carbon intensity of their current consumed electricity, and the results from their Preliminary TEAs. Applicants can use either the EPA’s Emissions & Generation Resource ([eGRID](#)) or the National Renewable Energy Lab’s [Cambium](#) tool for data on the current carbon intensity of the grid by region or locality.

As relevant, applicants are encouraged to describe goals or strategies on how emissions can be further reduced into the future in their LCA narratives. Similarly, where relevant, applicants should estimate freshwater consumption for energy production or storage and the full lifecycle. DOE encourages applicants to provide water consumption reduction strategies for the project, and the impact of project water consumption, including upstream consumption, on regional water resources.

DOE will evaluate the information provided by the applicants on how each project plans to avoid, reduce, or sequester GHGs or criteria pollutant emissions, and compare results against emissions of incumbent technologies. During each subsequent phase of the project, DOE will require an updated LCA with higher fidelity data using updated estimates using the best and most current information available for each component.

**File Naming Convention:** ControlNumber\_LeadOrganization\_TEA\_LCA

<b>Total Technical Volume Maximum Page Limit</b>	<b>56</b>
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### 5.6.2.3 Community Benefits Plan: Job Quality and Equity

(PDF, 25 page maximum)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_Comm_Benefits
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DOE-funded projects are expected to support meaningful community and labor engagement; invest in the American workforce; advance diversity, equity, inclusion, and accessibility; and contribute to the President’s goal that 40% of overall benefits flow to disadvantaged communities (the Justice40 Initiative).

Applications must include a Community Benefits Plan (CBP) describing how the project will incorporate these four objectives. CBP milestones and workplan descriptions should be incorporated into the project schedule, workplan, budget, and other key documents. For projects impacting multiple communities, CBPs should address all four objectives across all communities. CBPs must address the technical review criterion titled, “Community Benefits Plan: Job Quality & Equity” (see [Section 6.2.2](#)).

Applicants are encouraged to provide Community and Labor Partnership Documentation (submitted under the Community Partnership Documentation, [Section 5.6.2.4](#)) from organizations reflecting engagement and feedback on the applicant's CBP.

CBP requirements, described below, are flexible to allow project teams to respond to communities, workers, and impacted groups. In case of incomplete information, applicants should explain the reason and provide plans to address gaps.

If an applicant is unable to fully address any CBP element, they should provide a brief explanation of the support needed to formulate a full response (e.g., a site visit or virtual assistance with gathering existing data and information).

The CBP should provide the most details for Phase 1 and offer a high-level summary of proposed goals, deliverables, outcomes, and implementation strategies for Phases 2 – 4. DOE will provide feedback to awardees and require updates to CBPs during award negotiations. DOE will provide guidance to awardees on updating the CBP across project phases and incorporating outcomes and findings in final reports.

DOE or its representative(s) expect to independently evaluate recipients' implementation status and effectiveness, and incorporate independent findings into Go/No-Go reviews.

Detailed guidance on creating the CBP will be provided under the application documents section on the OCED Exchange website at <https://oced-Exchange.energy.gov>. Applicants are encouraged to read this guidance and leverage information generated in other portions of this FOA (e.g., the [Environmental Considerations Summary](#)) to support CBP development.

**Community and Labor Engagement:** This section should describe the applicant's plans to engage with community stakeholders in all impacted communities. Engagement should be responsive to the priorities of impacted groups, ensure community and labor input can affect project decisions, and support transparency and accountability.

If awarded and in conjunction with DOE, awardees will also identify federally recognized Indian Tribes, including Alaska native village or regional or village corporations (who are not project partners) whom the proposed project may impact. The awardee will provide information to support DOE's development of a Tribal engagement plan that acknowledges each Tribe's consultation policies, traditions, and expectations, and adheres to DOE Order 144.1 on Tribal consultation, so appropriate mitigation can be identified through government-to-government consultation to off-set potentially adverse impacts. DOE is and remains responsible for government-to-government consultation with federally recognized Indian Tribes, including Alaska native village or regional or village corporations.

This section should include the following elements:



**Background and Experience.** Summarize the project team’s prior and ongoing efforts to engage community stakeholders, Tribes, workforce organizations, and labor unions.

**Community History, Dynamics, and Stakeholders.** Describe the community/communities that will be impacted by the project, including their current and historical social, cultural, economic, labor, and environmental landscape(s), decision-making structures, and other relevant information. Identify key stakeholder groups and describe existing labor and community support for and/or concerns with the project. For projects impacting multiple communities, cover all impacted communities.

**Strategies, Methods, and Timeline.** Describe high-level objectives, approaches, and timelines for engaging stakeholders (including traditionally excluded stakeholders), workforce organizations, labor unions, and other impacted communities, matching engagement methods to project phases and goals. Describe how the project will incorporate input from community stakeholders impacted by the project and how engagement can impact project decisions, characteristics, or site selection.

**Workforce and Community Agreements Statement.** Describe plans to negotiate a Community Benefits Agreement, Good Neighbor Agreement, Project Labor Agreement, Community Workforce Agreement, and/or other collective bargaining agreements. Applicants should consider pursuing multiple agreements. Projects impacting multiple communities may develop agreements with each community.

**Two-way Engagement Statement.** A statement discussing how the proposed project incorporates community input and the extent to which the host community or communities have already indicated support for the project. The statement should list the points in the phases of the project where engagement can impact decisions or characteristics. A discussion of how community engagement results will impact project decisions and characteristics should be incorporated into the Application, including the IPS and Project Management Plan. This section should also include a discussion of community participation in and access to monitoring data.

**Engagement Evaluation Strategy.** The application should include a description of plans for activities to evaluate the success of stakeholder engagement, including evaluating community and labor stakeholder perceptions of the progress.

**Resource Summary.** Summarize the resources dedicated to implementing the plan including staff with relevant expertise, facilities, and budget. This could include an indication of how DOE funding would support resources for engagement.

**Investing in the American Workforce:** This section should describe plans to create and retain high-paying quality jobs and develop a skilled local workforce, which can support project stability, continuity, and success, and help meet program goals.

This section should include the following elements:

**Background and Experience.** Summarize previous or ongoing efforts to invest in the local workforce and support quality jobs, workforce development, and worker rights.

**Quality Jobs.** Describe plans to attract, train, and retain a skilled, local, and diverse workforce for construction and operations. Describe the anticipated quality of jobs.<sup>14</sup>

**Workforce Development.** Describe plans for workforce development, including workforce education, accreditation, and training for local workers and support for workers' skill acquisition and opportunities for advancement.

**Worker Rights.** Describe how workers can form and join unions of their choosing, and how they will have the opportunity to organize with the purposes of exercising collective voice in the workplace in both construction and ongoing operations.

**Strategies, Milestones, and Timelines.** Describe targeted outcomes, implementation strategies, milestones, and timelines for the proposed activities.

**Resource Summary.** Describe the resources including staff with relevant expertise, facilities, and budget dedicated to these activities. This could include an indication of how DOE funding would support these resources.

**Diversity, Equity, Inclusion, and Accessibility (DEIA):** This section should detail how DEIA objectives will be incorporated into the project and describe how the applicant will partner with underrepresented businesses, educational institutions, and training organizations that serve workers facing barriers to quality jobs, and/or other partners to help support DEIA.

Minority Serving Institutions; Minority Business Enterprises; Minority-Woman- or Veteran-Owned Businesses; Tribal Colleges and Universities; community- or faith-based organizations, or entities in underserved communities that meet eligibility requirements (see [Section 4.0](#)) are encouraged to participate on application teams. Selection Officials may consider the inclusion of these types of entities as part of the selection decision (See [Section 6.3.1](#)).

Elements of the DEIA plan should include the following:

**Background and Experience.** Describe the team's prior and ongoing DEIA efforts.

**Strategies, Milestones, and Timelines.** Describe DEIA outcomes and implementation strategies, aligned with project phases and workplans. This may include plans to provide comprehensive supportive services (to improve representation and access to jobs) and

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<sup>14</sup>[Community Benefits Plan Frequently Asked Questions \(FAQs\) | Department of Energy](#): See heading "What is a good job?" for indicators of quality jobs.

partner with Minority-, Woman-, or Veteran-Owned Businesses and/or organizations serving under-represented communities and those facing barriers to employment.

**Resource Summary.** Describe project resources dedicated to implementing DEIA activities including staff with relevant expertise, facilities, and budget. This could include an indication of how DOE funding would support resources for DEIA activities.

**Justice40 Initiative:** This section should describe the team’s plans to advance energy and environmental justice through the project. It should include an assessment of project impacts and where they flow, and an implementation strategy describing actions to maximize benefits and minimize negative impacts and measure, track, and report impacts. Specifically, the Justice40 Initiative section must include:

**Assessment of impacted communities and groups.** Describe all communities or groups that could experience impacts from the proposed project and characterize the existing burdens they face using the Climate and Economic Justice Screening Tool,<sup>15</sup> EJSCREEN,<sup>16</sup> disadvantaged community definition tools, or other analytic tools. Identify which of these are considered disadvantaged communities.<sup>17</sup>

**Assessment of project benefits.** Describe all anticipated project benefits,<sup>18</sup> enumerating:

1. project benefits and metrics that will be used to track each benefit;
2. where/to whom project benefits are expected to flow and the extent to which they flow to disadvantaged communities or overburdened, underserved groups; and
3. how benefits align with community priorities identified through engagement.

**Assessment of project negative impacts.** Describe all anticipated project negative impacts (including direct and indirect impacts),<sup>19</sup> enumerating:

1. project negative impacts and metrics that could be used to track each impact;
2. where/to whom impacts are expected to flow and the extent to which these impacts flow to disadvantaged communities or overburdened, underserved groups;
3. how project negative impacts will interact with existing cumulative burdens.

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<sup>15</sup> [Explore the map - Climate & Economic Justice Screening Tool \(geoplatform.gov\)](https://www.geoplatform.gov/cejst)

<sup>16</sup> <https://www.epa.gov/ejscreen>

<sup>17</sup> Pursuant to E.O. 14008 and the Office of Management and Budget’s Interim Justice40 Implementation Guidance M-21-28, DOE has developed a definition and tools to locate and identify disadvantaged communities. These resources can be located at <https://energyjustice.egs.anl.gov/>. DOE will also recognize disadvantaged communities as defined and identified by the White House Council on Environmental Quality’s Climate and Economic Justice Screening Tool (CEJST), which can be located at <https://screeningtool.geoplatform.gov/>.

<sup>18</sup> Benefits may include direct or indirect investments or positive outcomes that contribute to DOE Justice40 policy priorities in disadvantaged communities: decreased energy burden; decreased environmental exposure and burdens; increased access to low-cost capital; increased job creation and training; increased clean energy enterprise creation and contracting; increased energy democracy and community ownership; increased parity in clean energy access and adoption; and increased energy resilience.

<sup>19</sup> Negative impacts may include ecological (e.g., effects on natural resources and on components, structures, and functioning of ecosystems), aesthetic, historic, cultural, economic, social, or health impacts.

**Implementation Plan, Milestones, and Timelines.** Describe strategies, methods, and milestones aligned with project phases to maximize benefit, minimize negative impacts; measure, track, and report impacts; and fill information gaps. Describe accountability, feedback, and transparency mechanisms (e.g., Workforce and Community Agreements and public access to project data).

**Addressing barriers.** Describe potential barriers to realizing benefits and minimizing negative impacts and plans for mitigating those barriers.

**Resource Summary.** Describe resources dedicated to implementing the plan including staff with relevant expertise, facilities, and budget. This could include an indication of how DOE funding would support resources for Justice40 activities.

#### 5.6.2.4 Community Partnership Documentation

(PDF, each letter may not exceed 1 page)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_PartnerDoc
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In support of the Community Benefits Plan, applicants may submit letters, Memoranda of Understanding, or other similar agreements from partnering tribes, labor unions, and/or community entities specifically describing the nature of existing or planned partnerships. If the applicant intends to enter into a Workforce and Community Agreement or community ownership model, please include letters from proposed partners.

#### 5.6.2.5 Resumes

(PDF, 2 pages each)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_Resumes
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A resume must be provided for all Key Personnel and any other senior personnel involved throughout the project phases. A resume provides information that can be used by reviewers to evaluate the individual's relevant skills, experience of the key project personnel.

Applicants must submit a two-page resume for each project manager and key personnel that includes the following:

1. Contact Information, organization, title, address, phone, email;
2. Education: Include all academic institutions attended, major/area, degree;
3. Training: (e.g.,) certification or credential from a Registered Apprenticeship or Labor Management Partnership
4. Professional Experience: Beginning with the current position, list professional/academic positions in chronological order with a brief description;

5. 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.

### 5.6.2.6 Letters of Commitment

(PDF, 1 page each)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_LOCs
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Submit letters of commitment from all subrecipient and third-party cost share providers. If applicable, the letter must state that the third-party cost share provider is committed to providing a specific minimum dollar amount or value of in-kind contributions allocated to cost sharing.

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

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

### 5.6.2.7 Budget and Budget Justification

(MS Excel)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_Budget_Justification ControlNumber_LeadOrganization_Subrecipient_Budget_Justification
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The Budget and Budget Justification must include the Budget Justification Workbook, Subrecipient budget justification (if applicable), Contract budget justification (if applicable), and Budget for DOE/NNSA FFRDC (if applicable) as necessary elements.

#### **Budget Justification Workbook**

Applicants must complete the Budget Justification Workbook, which is available on OCED eXCHANGE at <https://OCED-exchange.energy.gov/>. Applicants must complete each tab of the Budget Justification Workbook for the project as a whole, including all work to be performed by the prime recipient and its subrecipients and contractors.

Applicants must 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 above File Naming Convention for the title.

#### **Subrecipient Budget Justification**

Applicants must provide a separate budget justification for each subrecipient that is expected to perform work. The budget justification must include the same justification information described in the “Budget Justification Workbook” section above. Save each subrecipient budget justification in a Microsoft Excel file using the above File Naming Convention for the title.

#### **Funding, Cost Share and Subaward with FFRDC**

DOE will NOT fund DOE/NNSA FFRDCs participating as a subrecipient through the DOE field work authorization process. DOE will NOT fund non-DOE/NNSA FFRDCs through an interagency agreement with the sponsoring agency.

Therefore, the prime recipient and FFRDC are responsible for entering into an appropriate sub agreement that will govern, among other things, the funding of the FFRDC portion of the work from the prime recipient under its DOE award. Such an agreement must be entered into before any project work begins.

The applicant must prepare the budgets utilizing rates appropriate for funding the FFRDCs through subawards. 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.

#### 5.6.2.8 Summary for Public Release

(PDF, 1 page)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_PublicRelease
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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, the project title, the objectives of the project, a description of the project (including size, location and timeline, the potential impact of the project (e.g., benefits, outcomes), major participants (for collaborative projects), and the project’s commitments and goals described in the Community Benefits Plan.

This document must not include any proprietary or sensitive business information as DOE may make it available to the public after selections are made.

#### 5.6.2.9 Summary Slides

(MS Powerpoint, 5 slide)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_Slide
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Applicants must provide a single slide summarizing the proposed project. The Summary Slide template must include the following information:

- A project summary (including how it addresses Program’s Purpose and objectives;
- Project details (including project type, size, location, timeline, and Area of Interest)
- Proposed project goals and objectives (including community involvement and benefits)
- Any key graphics (illustrations, charts and/or tables);
- Project title, prime recipient, Lead Project Manager, and senior/key personnel information; and
- Requested DOE funds and proposed applicant cost share.

#### 5.6.2.10 Environmental Considerations Summary

(PDF, 10 page maximum)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_Environmental_Considerations
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DOE’s decision whether and how to distribute federal funds under this FOA is subject to the National Environmental Policy Act (NEPA) (42 U.S.C. 4321, et seq.).

Your responses will assist DOE in determining the appropriate level of NEPA review (if your proposal is selected) and in preparing an environmental assessment (EA) or environmental impact statement (EIS), if necessary. While not all information may be available at the proposal stage, please provide as much detail and information as is currently available. Consultation with experts or advisors in your organization to assist with your responses is highly recommended.

1. **Please provide a brief summary of the proposed project.** Describe proposed activities (not goals and objectives) and specify if this project is part of a larger project or connected to another project.
2. **Is there ongoing or anticipated federal government involvement in any aspect of this project (e.g., funding, permitting, technical assistance, project located on federally administered land)?** If “yes,” please list the agency and describe the nature of the involvement.
3. **Is the project fully defined (i.e., all sites and activities are known)?** If “no”, please describe the sites and/or activities/tasks that are yet to be defined.
4. **Add a table as seen below for each location where proposed project activities would take place:**

Proposed location (physical address or coordinates)	Setting of the proposed location (e.g., urban, industrial, suburban, agricultural, university campus, manufacturing facility, etc.) and the current condition or use of the site	General description of the proposed activities	Land administration (e.g., federal [specify BLM, USFS, etc.], Tribal, state, local, private)

5. **Attach a map showing the location(s) of the proposed project, and a site layout map showing the proposed facilities and associated infrastructure.** (A GIS shapefile is preferable, if available.)
6. **Describe new facilities to be constructed, any modifications of existing facilities, and any new infrastructure or facilities necessary for the construction or operation of the proposed project.** (e.g., access roads, laydown areas, off-site parking areas, railroad links, docks, water outfalls and intakes, pipelines, electrical transmission, waste treatment facilities, etc.)
7. **Identify and describe any existing, modifications to, or new permits, licenses, or authorizations that would be required to perform project activities.** (e.g., environmental permits, operating permits, or drilling permits)



8. **Provide a brief description of the existing environmental burdens at the proposed project location(s) and surrounding areas, including those contributed to or exacerbated by existing facilities the project will leverage or modify.** Existing environmental burdens can be identified using available tools, such as DOE’s Energy Justice Dashboard (beta) (<https://www.energy.gov/diversity/energy-justicedashboard-beta>) or the U.S. Environmental Protection Agency’s EJSCREEN (<https://www.epa.gov/ejscreen>).
9. **Would any of the following have the potential to be impacted (directly or indirectly) by the proposed project?** If “yes”, provide a detailed description of: (1) the resources that could be affected, and (2) how project activities may affect those resources (including potential direct and indirect [visual, noise, etc.] impacts).
- a. Tribal lands or resources of Tribal interest and/or sensitivity
  - b. Environmental Justice (EJ) Populations (EJ populations include minority, low income, and Tribal populations)
  - c. Historic, archeological, or cultural resources (includes listed and eligible resources over 50 years old or of cultural significance)
  - d. Areas having a special designation (e.g., federal and state designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and federal wildlife refuges, and marine sanctuaries)
  - e. Threatened or endangered species (whether proposed or listed by state or Federal governments), including their habitat
  - f. Land resources (e.g., prime farmland, unique farmland, or other farmland of statewide or local importance, tundra, rainforests)
  - g. Floodplains
  - h. Wetlands
  - i. Air quality (indoor and/or outdoor)
  - j. Greenhouse gas emissions
  - k. Water quality (surface and/or ground water and/or special sources of water including sole source aquifers)
  - l. Ocean resources (e.g., coral reefs) Coastal zones
  - m. Marine mammals or essential fish habitat Land use
  - n. Socioeconomic conditions
  - o. Sensitive receptors (e.g., hospitals, schools, daycare facilities, elderly housing)
  - p. Navigable Airspace
  - q. Transportation infrastructure

10. **Please describe:**

- a. any coordination or discussions that have been initiated or the plan to coordinate with state and/or federal agencies (e.g., State Historic Preservation Office, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Nuclear Regulatory Commission, etc.)

- b. any coordination or discussions that have been initiated with any Tribal governments
- c. any issues that would generate public controversy regarding ongoing or former mining projects
- d. any studies, reviews, and/or plans that have been completed for the proposed project (e.g., environmental site assessments, waste management plans, health and safety plans, cultural resource surveys, identification of prime or unique farmland, wildlife surveys, etc.)
- e. any environmental considerations and/or mitigation strategies that have been incorporated into the proposed project (e.g., measures to reduce and/or avoid greenhouse gas emissions, and/or impacts to cultural resources, historic properties, state or federally protected species, wetlands, floodplains, traffic, ambient noise, etc.)
- f. any discussions with affected communities

#### 5.6.2.11 Transparency of Foreign Connections

(PDF)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_TransparencyFC.pdf
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Applicants must identify the following as they relate to the proposed recipient and subrecipients:

1. The identity of all owners, Principal Investigator/Lead Project Manager, and senior/key personnel, at the recipient and subrecipient level, 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).
2. 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.
3. 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.
4. Percentage, if any, that the proposed recipient or subrecipient has foreign ownership or control.
5. Percentage, if any, that the proposed recipient or subrecipient is wholly or partially owned by an entity in a foreign country of risk.
6. The 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.
7. Any technology licensing or intellectual property sales to a foreign country of risk, during the 5-year period preceding submission of the proposal.
8. Any foreign business entity, offshore entity, or entity outside the United States related to the proposed recipient or subrecipient.

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

#### 5.6.2.12 Potentially Duplicative Federal Funding

(PDF)	ControlNumber_LeadOrganization_PDFN.pdf
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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.

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.

#### 5.6.2.13 SF-LLL: Disclosure of Lobbying Activities (required)

(PDF)	<b>File Naming Convention:</b> ControlNumber_LeadOrganization_SF-LLL
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Recipients and subrecipients may not use any federal funds to influence or attempt to influence, directly or indirectly, any officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, in connection with any Federal contract, grant, loan, or cooperative agreement.

In addition, if any registrants under the Lobbying Disclosure Act of 1995 have made a lobbying contact on behalf of the applicant (including with non-federal funds) with respect to this funding opportunity, the applicant must complete and submit SF-LLL, "Disclosure of Lobbying Activities" (<https://www.grants.gov/web/grants/forms/sf-424-individual-family.html>).

## 5.7 Intergovernmental Review

This funding announcement is not subject to Executive Order 12372 - Intergovernmental Review of Federal Programs.

## 6.0 Application Review Information

### 6.1 Compliance Criteria

All applicant submissions must:

1. comply with the applicable content and form requirements listed in [Section 5.0](#) of the FOA;
2. include all required documents;
3. be successfully uploaded in OCED eXCHANGE <https://OCED-exchange.energy.gov>, including clicking the “Submit” button; and
4. be submitted by the deadline stated in the FOA.

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

### 6.2 Technical Review Criteria

#### 6.2.1 Concept Papers

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

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

This criterion involves consideration of the following factors:

- The applicant clearly describes the proposed scope of the project, including the key technologies and systems, project size, total project cost, project status (including permitting and interconnection plan), capacity factor, and how the proposed project would ultimately facilitate a transition to a clean energy system in the U.S.
- The applicant has identified a preliminary project development plan and timeline, including a finance plan, any key risks, challenges, and possible mitigation strategies, and has shown the impact that the proposed project would have on supporting decarbonization goals.
- The applicant has demonstrated proof of land control (i.e. mineral rights and surface and/or subsurface agreements evidencing control, or option to control, property rights necessary to implement the proposed project) and provide underlying fee owner information.

- The applicant and proposed team have the qualifications, experience, capabilities, and other resources necessary to design, develop, build, and operate the proposed project.
- A description of strategies to ensure meaningful community and labor engagement; any novel community ownership models; quality jobs and workforce development; EEJ and the Justice40 Initiative; and diversity, inclusion, accessibility—including methods to ensure accountability.
- The proposed work, if successfully accomplished, would meet the objectives as stated in the FOA, including how the project plans to attract follow-on investments from the private sector.
- The degree to which the proposed technologies and integrated systems are clearly described in the application and are at a TRL of 7 or higher.
- Extent to which the application highlights how the proposed project will be capable of meeting the technical objectives outlined in the FOA and in the specific AOI that the applicant is responding to.
- The degree to which the proposed project will have the shortest project time from permitting to completion.
- The degree to which the applicant has obtained, or identified a pathway to obtaining, an off-taker and interconnection.
- The degree to which applicant provides a high-level overview of financially viable business model.

## 6.2.2 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 (20%)**

This criterion involves consideration of the following factors:

- Extent to which the application specifically and convincingly demonstrates how the proposed project will be capable of meeting the technical objectives outlined in the FOA and in the specific AOI that the applicant is responding to;
- The degree to which the proposed project minimizes or reduces the net greenhouse gas emissions (CO<sub>2</sub>e) compared to current emissions;
- The degree to which the proposed technologies and integrated systems are clearly described in the application and are at a TRL of 7 or higher. This includes the sufficiency of technical detail provided in the application addressing how the proposed technologies and systems will have the greatest potential for technological innovation and commercial deployment;

- Degree to which the proposed project demonstrates an understanding of a site's requirements based on any regulation, permitting, or other environmental review requirements;
- Extent to which the application address key project dependencies, such as interconnection, permitting, regulations, and additional items that may impact delivery timelines;
- The degree to which the proposed project describes a plan for accessing and leveraging critical infrastructure, including transmission lines and roads, and the possibility of needing to upgrade transmission line size and substation size;
- Adequacy and clarity of the risk mitigation plan. A demonstrated understanding of the key technical, construction, regulatory, permitting, safety, scale-up and infrastructure integration risks involved in the proposed work, and the quality of the mitigation strategies to address them. This includes adequate and accurate assessment of project readiness.
- Degree to which the project considers and mitigates environmental risks and minimizes impact to surrounding area. This may include the strength of the decommissioning and clean-up plan.
- The degree to which risks inherent to mine lands, such as geotechnical stability, are accommodated in project design.
- The degree to which the proposed project has the potential for the shortest NEPA review timeline.
- The applicant has demonstrated proof of land control (i.e. mineral rights and surface and/or subsurface agreements evidencing control, or option to control, property rights necessary to implement the proposed project) and provide underlying fee owner information.
- The degree to which the reclamation and site preparation activities proposed in the project are reasonable to achieve the clean energy project goals.

## **Criterion 2: Financial and Market Viability (25%)**

This criterion involves consideration of the following factors:

- The degree to which the application justifies the proposed project's economic viability, sustainability, and potential growth beyond DOE funding, including achieving replicability across the market.
- The adequacy and completeness of the Techno-Economic Analysis (the financial model) and Life Cycle Analysis, including acceptable inputs and reasonableness of the overall results and the ability of the project to achieve attractive short- and long-term return on investment., including acceptable inputs and reasonableness of the overall results and the ability of the project to achieve attractive short- and long-term return on investment.
- The adequacy and justification of the proposed budget and spend plan covering both DOE funding and non-federal cost share.

- The availability, credibility, and risk/terms of non-federal cost share sources and funds necessary to meet ongoing cost share needs. This includes the ability to leverage DOE financial assistance funding from this FOA with state and local incentives and private financing.
- The financial commitment of each participating organization, including overall financial strength and capability to implement the proposed project.
- The adequacy of the business plan for developing key project agreements such as financing, offtake agreements (including power purchase agreements), supply chain, land lease agreements, and other relevant project documents. This should include status, terms, and identification of all off takers relevant to the project.
- The adequacy of the financial risk management plan. This includes a demonstrated understanding of financial and market risks involved in the proposed project, as well as the quality of the mitigation strategies.
- The degree to which the project will potentially minimize or reduce the levelized cost of energy generated or stored.
- The degree to which the costs associated with the reclamation and site preparation activities proposed in the project are reasonable to achieve the clean energy project goals.

### **Criterion 3: Workplan (15%)**

This criterion involves consideration of the following factors:

- The reasonableness and achievability of the Integrated Project Schedule, including thoroughly describing key critical path items.
- The degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan and Integrated Project Schedule will succeed in meeting the project goals.
- The degree to which the project either has an approved interconnection to the grid, is in the process of completing interconnection and in the queue, or has an interconnection with a private offtaker. If not the degree to which project the has a strong, short pathway to interconnection.
- The degree to which the proposed project defines and measures project phases and performance metrics. This includes strength and level of clarity in the definition of the project phases, metrics, Integrated Project Schedule, and Go/No-Go criteria.
- The degree to which the proposed project provides key technical, financial, regulatory, permitting, and community benefit milestones (at appropriate project Go/No Go decision points) to mitigate project risk and enable the successful design, procurement, construction, and operation of the proposed project.
- The extent to which the Community Benefits Plan is integrated into the Workplan and Integrated Project Schedule and provides mechanisms with measurable actions that enable impacts to project direction in a timely manner.

#### **Criterion 4: Management Team and Project Partners (20%)**

This criterion involves consideration of the following factors:

- The capability of the prime recipient, the proposed team, and key personnel to manage and address all aspects of the proposed project with a high probability of success.
- The qualifications and relevant experience, including number of years, demonstrated safety performance history, and specific project experience, of the key project participants. This may include experience performing similar projects and the allocation of responsibility commensurate with this experience.
- The reasonableness of time commitment from key personnel to successfully manage a project of the proposed size and complexity.
- The level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan. This includes participation and letters of support from the site owner and adjacent properties.
- The degree to which existing facilities and/or infrastructure provided by the applicant team (including off-site working location near project area) are leveraged to support the project.
- The clarity and appropriate qualifications of the team members.
- The extent to which the proposed site (or sites) are suited for the proposed project.

#### **Criterion 5: Community Benefits Plan (20%)**

##### Overall Approach

- The extent to which the plan demonstrates how the proposed project will provide direct benefits to local workers, including dislocated workers (including former coal workers), and community members.
- The extent to which the Community Benefits Plan is developed with the local community and local workforce and labor groups, through early and meaningful engagement. This includes involving communities in project planning, from the beginning, to determine which benefits will flow to the community during and beyond project development.
- The extent to which the actions outlined in the Community Benefits Plan are supported by enforceable, negotiated Workforce and Community Agreements (e.g., good neighbor agreements, workforce agreements, project labor agreements, collective bargaining agreements, and similar agreements), and/or by community ownership or equity models.
- The extent to which the team and resources—including staff, facilities, capabilities, and budget—are qualified and sufficient to implement plans outlined in the CBP.



- The extent to which the project includes plans for analysis, workforce, and/or engagement efforts that address community, labor, and workforce desires and/or concerns that go beyond regulatory compliance and technical, business, environmental, labor, and other project requirements.
- The extent to which the Community Benefits Plan is integrated throughout the project strategy and Workplan (including the Integrated Project Schedule) and other key documents and provides mechanisms, supported by measurable actions, to impact project direction in a timely manner.

#### Community and Labor Engagement

- The extent to which the project demonstrates a clear and appropriately robust plan to meaningfully engage local stakeholders, including community-based organizations that support or work with disadvantaged communities, labor unions and/or Indian Tribes, in a manner that can impact project decisions.
- The extent to which impacted communities and workforce organizations, including labor unions, are appropriately included in the project and/or affirm support.

#### Investing in the American Workforce

- The extent to which the CBP demonstrates that the jobs supported by the proposed project will be quality local jobs and provides robust and credible plan to attract, train, and retain skilled workers in the local community (e.g., through a workforce and community agreement and commitment to workers' free and fair choice to join a union or labor organization of their choosing; and/or commitments to wages above prevailing wage requirements, benefits, or other worker support).
- The extent to which the Community Benefits Plan demonstrates plans to invest in local workforce education and training, support workers' skill acquisition and opportunities for advancement, and utilize an appropriately credentialed workforce. This may include, but not be limited to, partnerships with high-quality workforce development programs with supportive services<sup>24</sup> to help train, place, and retain individuals from underrepresented and economically distressed communities in good-paying jobs or registered apprenticeships.

#### Diversity, Equity, Inclusion, and Accessibility

- The extent to which the CBP includes specific and high-quality actions to meet DEIA goals, which may include DEIA recruitment procedures; partnerships with workforce training or support organizations serving workers facing systematic barriers to employment; and other DEIA commitments.
- The extent to which the proposed project partners or contracts with Minority-Serving Institutions (MSIs), Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, Veteran Owned Businesses, and/or Indian Nations (DOE Order 144.1, 7.a).

### Justice40 Initiative

- The extent to which the CBP identifies specific and measurable benefits, how the benefits will flow, and how negative impacts would be mitigated—and specifically describes these impacts on disadvantaged communities.
- The extent to which the benefits of the project will flow to disadvantaged communities and supports the broader Justice40 Initiative.
- The extent to which the project illustrates disadvantaged community ownership and control of project assets, either by demonstration of whole or partial ownership by a community-based organization, such as a not-for-profit entity or other entity, whose sole purpose is to distribute economic and social benefits to members of a disadvantaged community.

## **6.3 Other Selection Factors**

### **6.3.1 Program Policy Factors**

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

- The degree to which the proposed project accelerates other aspects of the clean energy transition (e.g. increasing sustainability and productivity of critical mineral mining);
- The degree to which the benefits of the proposed project will flow to former coal, manufacturing communities, Tribal land, or other economically distressed areas.
- The degree to which the proposed project provides the greatest number of local jobs (direction and indirectly) during the implementation, development, or operations of the project.
- The degree to which the proposed project will have the shortest project time to operations;
- The degree to which the proposed project incorporates community partnership and ownership as evidenced through, but not limited to, community groups or governments as prime applicants, community ownership or offtake agreement with the prime applicant, a equity model, or other indicia indicating community approval, engagement, and involvement in the application and which will result, upon award, in a measurable economic growth in the community;
- The degree to which the proposed project reuses existing facilities and structures (including retired fossil fuel infrastructure);
- 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, 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 Serving Institutions); and partnerships with Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, Veteran Owned Businesses, or Indian Nation (DOE Order 144.1, 7.a);

- 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;
- The degree to which the proposed project will employ procurement of U.S. iron, steel, manufactured products, and construction materials; and
- The degree to which the project’s solution or strategy will maximize deployment or replication.

## **6.4 Evaluation and Selection Process**

### **6.4.1 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.

### **6.4.2 Pre-Selection Interviews**

As part of the evaluation and selection process, DOE may invite one or more applicants to participate in pre-selection interviews or pre-selection site visits. Pre-selection interviews are distinct from and more formal than pre-selection clarifications (See Section 6.4.3 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 not reimburse applicants for travel and other expenses relating to the pre-selection interviews or site visits, nor will these costs be eligible for reimbursement as pre-award costs. Any pre-selection interviews and site visits may also include discussions with affected stakeholders or communities potentially impacted to understand their concerns/risks.

### **6.4.3 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 response 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.

#### **6.4.4 Recipient Integrity and Performance Matters**

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 information about the applicant that is in the designated integrity and performance system accessible through SAM (currently the [Federal Awardee Performance and Integrity Information System \(FAPIIS\)](#)) (see 41 U.S.C. § 2313).

#### **6.4.5 Selection**

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

### ***6.5 Anticipated Notice of Selection and Award Negotiation Dates***

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

## **7.0 Award Administration Information**

### ***7.1 Award Notices***

#### **7.1.1 Ineligible Submissions**

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

### **7.1.2 Concept Paper Notifications**

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

Applicants may submit an Application even if they receive a notification discouraging them from doing so. By discouraging the submission of an Application, DOE intends to convey its lack of programmatic interest in the proposed project. Such assessments do not necessarily reflect judgments on the merits of the proposed project.

The purpose of the Concept Paper phase is to save applicants the considerable time and expense of preparing an Application that is unlikely to be selected for award negotiations.

### **7.1.3 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 OCED eXCHANGE. The notification letter will inform the applicant whether or not its Application was selected for award negotiations.

Alternatively, DOE may notify one or more applicants that a final selection determination on particular Applications will be made at a later date, subject to the availability of funds or other factors.

### **7.1.4 Successful Applicants**

Receipt of a notification letter selecting an 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.

Applicants do not receive an award until award negotiations are complete and the Grants and Agreements Officer executes the funding agreement, accessible by the prime recipient in FedConnect.

The award negotiation process will take approximately 60 days. Applicants must designate a primary and a backup point-of-contact in OCED eXCHANGE with whom DOE will communicate to conduct award negotiations. The applicant must be responsive during award negotiations by providing requested documentation, including Just-In-Time 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.

### **7.1.5 Alternate Selection Determinations**

In some instances, an applicant may receive a notification that its application was not selected for award and DOE designated the application to be an alternate. As an alternate, DOE may consider the Application for federal funding in the future. A notification letter stating the 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 Application for award negotiations.

### **7.1.6 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.

## **7.2 Award Conditions and Reporting**

Recipients of an award made under this FOA must comply with requirements of all applicable federal, state, and local laws, regulations, DOE policy and guidance, instructions in this FOA, and the award terms and conditions. Recipients must require subrecipients' compliance with all applicable requirements. Reporting requirements are identified on the Federal Assistance Reporting Checklist, attached to the award agreement.

## **8.0 Questions/Agency Contacts**

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

All questions and answers related to this FOA will be posted on OCED eXCHANGE at: <https://OCED-exchange.energy.gov>. **You must first select this specific FOA Number to view the questions and answers specific to this FOA.** OCED will attempt to respond to a question within 3 business days, unless a similar question and answer has already been posted on the website.

Questions related to the registration process and use of the OCED eXCHANGE website should be submitted to: [OCED-ExchangeSupport@hq.doe.gov](mailto:OCED-ExchangeSupport@hq.doe.gov). Include FOA name and number in subject line.

## APPENDIX A - ADDITIONAL INFORMATION

### A.1 Funding Restrictions

#### A.1.1 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 entities. The cost principles contained in 2 CFR Part 200, Subpart E apply to all entities other than for-profits.

#### A.1.2 Pre-Award Costs

Applicants selected for award negotiations 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 Grants and Agreements Officer.

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

Pre-award expenditures are made at the applicant's risk. OCED 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 applicant anticipated. This includes 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.

#### A.1.3 Buy America Requirements for Infrastructure Projects

Pursuant to the Build America, Buy America Act (referred to here as "Buy America") in Title IX of Division G of the BIL, 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 that term is defined in Section 70912 of the BIL, and whether the infrastructure in question is publicly owned or serves a public function.

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

For additional information on Buy America requirements, visit DOE's [Build America, Buy America](#) webpage.

#### **A.1.4 Davis-Bacon Act Requirements**

Projects awarded under this FOA will be funded under Division D of the BIL. Accordingly, per Section 41101 of the BIL, 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). There are weekly reporting requirements.

Recipients of funding under this FOA will also be required to undergo DBA compliance training and to maintain competency in DBA compliance. The Contracting Officer will notify the recipient of any DOE sponsored DBA compliance trainings. The Department of Labor 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 DBA 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>.

#### **A.1.5 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 Part 200](#) as amended and adopted by [2 CFR Part 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.

In addition, risk assessment should include assessment of community opposition, potential labor disputes, availability of a skilled workforce, and public and worker health and safety considerations.

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 Part 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.

The applicant should consider that for large construction projects, DOE may require a Project Labor Agreement (PLA), an agreement between a private entity (or entities) and a labor organization (or organizations) representing individuals who will be working on a construction project. Assessment of applicability will be conducted on a case-by-case basis.

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

### **A.1.6 Human Subjects Research**

No funding will be provided under this FOA for any activities involving human subjects.

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

## A.1.7 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 recipient must flow down this requirement to its subrecipients.

### 2. Failure to Comply

If the 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 recipient is responsible should any work be performed outside the United States, absent a waiver, regardless of whether the work is performed by the 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 D](#) lists the information that must be included in a request for a foreign work waiver.

## A.1.8 Prohibition related to Foreign Government-Sponsored Talent Recruitment Programs

### *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.

## *Definitions*

**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.

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.

### **A.1.9 Affirmative Action and Pay Transparency Requirements**

All federally assisted construction contracts exceeding \$10,000 annually will be subject to the requirements of [Executive Order 11246, as amended, Equal Employment Opportunity](#).

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

Additionally, for construction projects valued at \$35 million or more and lasting more than one year, the recipients, subrecipients, contractors and subcontractors may be selected by OFCCP to participate in the [Mega Construction Project Program](#). DOE, under relevant legal authorities including Sections 205 and 303(a) of Executive Order 11246, will require participation as a condition of the award. This program offers extensive compliance assistance with EO 11246.

## **A.1.10 Post Submission Materials and Just-In-Time Documents**

Some materials will be required as post submission materials that are due after the merit review is complete. The applicant will be notified on what documents and materials to submit, the format required, and where and when to submit the materials.

## **A.1.11 Administrative and National Policy Requirements**

To receive a Federal award under this FOA, all applicants must follow applicable cross-cutting administrative and national policy requirements. The policies are requirements based on social, economic, or other objectives or considerations that may be attached to the expenditure of federal funds by award recipients, consortium participants, and contractors, in general, or may relate to the expenditure of federal funds for other specified activities.

These administrative and national policy requirements include, but are not limited, to the following:

- Clean Air Act (42 U.S.C. § 7401 *et seq.*)
- Clean Water Act (33 U.S.C. § 1251 *et seq.*)
- National Flood Insurance Act of 1968 and Flood Disaster Prevention Act of 1973 (42 U.S.C. § 4001 *et seq.*), DOE regulations at 10 C.F.R. Part 1022, and Executive Order 13690 – establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input
- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*) and DOE regulations at 10 C.F.R. Part 1040 Subpart B
- Section 504 of the Rehabilitation Act of 1973 as amended (29 U.S.C. § 794) and DOE regulations at 10 C.F.R. Part 1040 Subpart D
- Age Discrimination Act of 1975 as amended (42 U.S.C. § 6101 *et seq.*) and DOE regulations at 10 C.F.R. Part 1040 Subpart E
- Title IX of the Education Amendments of 1972 (20 U.S.C. § 1681 *et seq.*) and DOE regulations at 10 C.F.R. Part 1042
- Federal Funding and Transparency Act of 2006; 2 C.F.R. Part 170

### **A.1.1.1 Requirement to Report Potentially Duplicative Funding**

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.

## **A.2 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 the 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 October 2021, which is available at: [DEPARTMENT OF ENERGY GUIDE TO FINANCIAL ASSISTANCE October 2021](#)

## **A.3 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 and non-disclosure acknowledgements (NDA) prior to reviewing an application. Non-federal personnel conducting administrative activities must sign an NDA.

## **A.4 Other Information**

### **A.4.1 Treatment of Application Information**

DOE takes very seriously the confidentiality of all applicants and will treat information submitted in applications, as well as the identity of applicants, as confidential to the fullest extent permissible under Federal law. In order for DOE to protect confidential information, the applicant must also treat the information as confidential and properly mark it as described below. DOE will not be able to protect information that the applicant has released publicly or is in the public domain. For additional information on DOE’s FOIA regulations, see 10 CFR part 1004.

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

If an application includes business sensitive, trade secrets, proprietary, or otherwise confidential information, it is furnished to the federal government (government) in confidence with the understanding that the information shall be used or disclosed only for evaluation of the application. Such information will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act.

Without assuming any liability for inadvertent disclosure, DOE will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the application or as otherwise authorized by law. This restriction does not limit the government's right to use the information if it is obtained from another source.

Applications, and other submissions containing confidential, proprietary, or privileged information must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information and may use or disclose such information for any purpose.

The cover sheet of the Application, and other submissions must be marked as follows and identify the specific pages containing trade secrets, confidential, proprietary, or privileged information:

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

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

The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: "Contains Trade Secrets, Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure." In addition, each line or paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

#### **A.4.2 Retention of Submissions**

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

### A.4.3 Personally Identifiable Information

All information provided by the applicant must to the greatest extent possible exclude Personally Identifiable Information (PII), which is information which can be used to distinguish or trace an individual's identity, such as their name, social security number, biometric records, alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name. (See OMB Memorandum M-07-16 dated May 22, 2007, found at: [M-07-16 \(whitehouse.gov\)](#))

By way of example, applicants must screen resumes to ensure that they do not contain PII such as personal addresses, personal landline/cell phone numbers, and personal emails. **Under no circumstances should Social Security Numbers (SSNs) be included in the application.** Federal agencies are prohibited from the collecting, using, and displaying unnecessary SSNs. (See, the Federal Information Security Modernization Act of 2014 (Pub. L. No. 113-283, Dec 18, 2014; 44 U.S.C. § 3551).

### A.4.4 Informational Webinar

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

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

### A.4.5 Uniform Commercial Code 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 \$1,000,000, the recipient or subrecipient must:

Properly record, and consent to the Department's ability to properly record if the recipient fails to do so, UCC financing statement(s) for all equipment in excess of \$5,000 purchased with project funds. These financing statement(s) must be approved in writing by the Grants and Agreements 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 Grants and Agreements 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 Grants and Agreements Officer may direct.

#### **A.4.6 Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment**

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

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

#### **A.4.7 Title to Subject Inventions**

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

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

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



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

DEC: On June 07, 2021, DOE approved a DETERMINATION OF EXCEPTIONAL CIRCUMSTANCES (DEC) UNDER THE BAYH-DOLE ACT TO FURTHER PROMOTE DOMESTIC MANUFACTURE OF DOE SCIENCE AND ENERGY TECHNOLOGIES. In accordance with this DEC, all awards, including sub-awards, under this FOA shall include the U.S. Competitiveness Provision in accordance with the U.S. Manufacturing Commitments section further below. 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 on the website above further DEC's prior to the issuance of awards under this FOA. DOE may require additional submissions or requirements as authorized by any applicable DEC.

#### **A.4.8 Government Rights in Subject Inventions**

Where applicants retain title to subject inventions, the United States government retains certain rights.

##### **Government Use License**

The United States 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 United States 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.

#### **A.4.9 Subject Invention Utilization Reporting**

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

#### **A.4.10 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 United States government will not normally require delivery of confidential or trade secret-type technical data developed solely at private expense prior to issuance of an award, except as necessary to monitor technical progress and evaluate the potential of proposed technologies to reach specific technical and cost metrics.

Government Rights in Technical Data Produced Under Awards: The United States government normally retains unlimited rights in technical data produced under government financial assistance awards, including the right to distribute to the public. However, pursuant to special statutory authority, certain categories of data generated under DOE awards may be protected from public disclosure for up to five years after the data is generated (“Protected Data”).

For awards permitting Protected Data, the protected data must be marked as set forth in the award's intellectual property terms and conditions and a listing of unlimited rights data (i.e., non-protected data) must be inserted into the data clause in the award. In addition, invention disclosures may be protected from public disclosure for a reasonable time in order to allow for filing a patent application.

#### **A.4.11 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.

#### **A.4.12 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](#). 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.

#### **A.4.13 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.

#### **A.4.14 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 [here](#).

Please note that a subject invention is any invention conceived or first actually reduced to practice in performance of work under an award. An invention is any invention or discovery which is or may be patentable. The recipient includes any awardee, recipient, sub-awardee, or sub-recipient.

As noted in the U.S. Competitiveness Provision, if an entity cannot meet the requirements of the U.S. Competitiveness Provision, the entity may request a modification or waiver of the U.S. Competitiveness Provision. For example, the entity may propose modifying the language of the U.S. Competitiveness Provision in order to change the scope of the requirements or to provide more specifics on the application of the requirements for a particular technology.

As another example, the entity may request that the U.S. Competitiveness Provision be waived in lieu of a net benefits statement or 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. Additional information on DOE's Commitment to Domestic Manufacturing for DOE-funded R&D is available [here](#).

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 A.4.7](#) Title to Subject Inventions for more information on the DEC and DOE Patent Waivers.

#### **A.4.15 Government Right to Reject or Negotiate**

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

#### **A.4.16 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.

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.

#### **A.4.17 Interim Conflicts of Interest Policy for Financial Assistance**

The recipient is subject to the requirements of the DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy), and the recipient must certify that it is compliant with all the requirements in the DOE interim COI Policy. The recipient must flow down the requirements of the DOE interim COI Policy to any subrecipient non-federal entities. The DOE interim COI Policy can be found [here](#).

## APPENDIX B - APPLICATION REQUIREMENTS CHECKLIST

Component	File Format	Page Limit	File Name
SF-424 Application for Federal Assistance	PDF	N/A	ControlNumber_LeadOrganization_App424
Cover Page	PDF	2 pages	ControlNumber_LeadOrganization_CoverPage
Project Overview	PDF	3 pages	ControlNumber_LeadOrganization_ProjectOverview
Eligibility File (Proof project is on eligible mine land)	PDF	N/A	ControlNumber_LeadOrganization_EligibilityInformation
Business Development and Management	PDF	12 pages	ControlNumber_LeadOrganization_BDM
Workplan	PDF	10 pages	ControlNumber_LeadOrganization_Workplan
Engineering, Procurement, Construction, and Operations	PDF	12 pages	ControlNumber_LeadOrganization_EPCO
Safety and Occupational Health, Cybersecurity, Permitting and Regulatory Requirements	PDF	6 pages	ControlNumber_LeadOrganization_SafetySecurity
Risk Analysis and Mitigation	PDF	6 pages	ControlNumber_LeadOrganization_RiskAnalysis
Techno-Economic Analysis and Life Cycle Analysis Narrative and Projections	PDF and MS Excel	5 pages and N/A	ControlNumber_LeadOrganization_TEA_LCA
Community Benefits Plan: Job Quality and Equity	PDF	25 pages	ControlNumber_LeadOrganization_CBP
Community Partnership Documentation	PDF	Each letter may not exceed 3 pages	ControlNumber_LeadOrganization_PartnerDoc
Resumes	PDF	2 pages each	ControlNumber_LeadOrganization_Resumes
Letters of Commitment	PDF	1 page each	ControlNumber_LeadOrganization_LOCs
Budget Justification Workbook	MS Excel	N/A	ControlNumber_LeadOrganization_Budget_Justification
Subrecipient Budget Justification	MS Excel	N/A	ControlNumber_LeadOrganization_Subrecipient_Budget_Justification
Summary of Public Release	PDF	1	ControlNumber_LeadOrganization_Public_Release
Summary Slide	MS Powerpoint	1	ControlNumber_LeadOrganization_Slide
Environmental Considerations Summary	PDF	10 pages	ControlNumber_LeadOrganization_Environmental_Considerations
SF-LLL Disclosure of Lobbying Activities	Pdf	NA	ControlNumber_LeadOrganization_SF-LLL

## APPENDIX C – LIST OF ACRONYMS

CEML	Clean Energy Demonstration Program on Current and Former Mine Land
DEIA	Diversity, Equity, Inclusion, and Accessibility
DMP	Data Management Plan
DOE	Department of Energy
OCED	Office of Clean Energy Demonstrations
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
G/AO	Grants and Agreements Officer
IPMP	Intellectual Property Management Plan
M&O	Management and Operating
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
OMB	Office of Management and Budget
OSTI	Office of Scientific and Technical Information
PII	Personal Identifiable Information
RFI	Request for Information
RFP	Request for Proposal
SAM	System for Award Management
SOPO	Statement of Project Objectives
SPOC	Single Point of Contact
TIA	Technology Investment Agreement
TRL	Technology Readiness Level
UCC	Uniform Commercial Code
UEI	Unique Entity Identifier
WBS	Work Breakdown Structure
WP	Work Proposal

## **APPENDIX D – WAIVER REQUESTS FOR FOREIGN ENTITY PARTICIPATION AND FOREIGN WORK**

### **Waiver for Foreign Entity Participation as Subrecipient**

Many of the technology areas DOE funds fall in the category of critical and emerging technologies (CETs). CETs are a subset of advanced technologies that are potentially significant to United States national and economy security.<sup>20</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 Application.

### **Waiver Criteria**

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

- a. Its participation is in the best interest of the United States industry and United States economic development;
- b. The project team has appropriate measures in place to control sensitive information and protect against unauthorized transfer of scientific and technical information;
- c. Adequate protocols exist between the United States subsidiary and its foreign parent organization to comply with export control laws and any obligations to protect proprietary information from the foreign parent organization;
- d. The work is conducted within the United States and the entity acknowledges and demonstrates that it has the intent and ability to comply with the U.S. Competitiveness Provisions (see [Section A.4.14](#)); and
- e. The foreign entity will satisfy other conditions that may be deemed necessary by DOE to protect United States government interests.

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<sup>20</sup> See [Critical and Emerging Technologies List Update \(whitehouse.gov\)](#).



## **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 of 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(s) or foreign individual(s);
- c. The rationale for proposing that a foreign entity participate (must address the criteria above);
- d. A description of the project's anticipated contributions to the United States economy;
- e. A description of how the foreign entity's participation is essential to the project, including;
  - 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 the likelihood of Intellectual Property (IP) being created from the work and the treatment of any such IP; and
- f. 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 foreign work waiver request).

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 may be added to any agreement or sub-agreement to protect IP, mitigate risk, or other related purposes.
- DOE may require additional information before considering a waiver request.

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

## **Waiver for Performance of Work in the United States (Foreign Work Waiver)**

As set forth in [Section A.1.7](#), 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 application. A separate waiver request must be submitted for each entity proposing performance of work outside of the United States.

Overall, a waiver request must demonstrate to the satisfaction of DOE that it would further the purposes of this FOA and is otherwise in the economic interests of the United States to perform work outside of the United States. A request for a foreign work waiver must include the following:

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

DOE may require additional information before considering a waiver request.

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