U.S. Department of Energy (DOE)
Office of Manufacturing and Energy Supply Chains (MESC)

Bipartisan Infrastructure Law (BIL)
Battery Materials Processing and Battery Manufacturing

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Amendment 000001 Date	12/01/2023
Amendment 000002 Date	12/12/2023
Amendment 000003 Date	01/30/2024
Submission Deadline for First Round Concept Papers:	01/09/2024 5:00 p.m. ET
Submission Deadline for First Round Full Applications:	03/19/2024 5:00 p.m. ET
Expected Date for DOE Selection Notifications:	August 2024
Expected Timeframe for Award Negotiations:	Aug. 2024– Jan. 2025

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

- To apply to this FOA, applicants must register with and submit application materials through the Clean Energy Infrastructure (S3) Exchange at https://infrastructure-exchange.energy.gov, MESC's online application portal.

- Applicants must designate primary and backup points-of-contact in S3 Exchange with whom DOE will communicate to conduct award negotiations. If an application is selected for award negotiations, it is not a commitment to issue an award. It is imperative that the applicant/selectee be responsive during award negotiations and meet negotiation deadlines. Failure to do so may result in cancelation of further award negotiations and rescission of the selection.

- **Unique Entity Identifier (UEI) and System for Award Management (SAM)** - Each applicant (unless the applicant is excepted from those requirements under 2 CFR 25.110) is required to: (1) register in the SAM at https://www.sam.gov before submitting an application; (2) provide a valid UEI number in the application; and (3)

maintain an active SAM registration with current information when the applicant has an active federal award or an application or plan under consideration by a federal awarding agency. DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

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

Amendments

Amend. No.	Date	Description of Amendment
000001	12/01/2023	The purpose of this Amendment is to update Section I.B. (Area of Interest 1a and 5b) and Appendix D. Changes are highlighted in yellow highlighted text.
000002	12/12/2023	The purpose of this amendment is to update Section I.B. (Area of Interest 8), update Appendix D (Area of Interest 4), update instructions for the Concept Paper control number (Section V.A.) and update the format for the Environmental Information Volume (Section D.I. and Section D.xxiii). Changes are highlighted in the green highlighted text.
000003	01/30/2024	The purpose of this amendment is to update the font size for the Concept Paper (Section IV.A.), update the Workplan section Technical Volume Content (Section IV.D.ii.), update the Community Benefits Plan template (Section IV.D.xx).

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I. Funding Opportunity Description

A. Background and Context

The Office of Manufacturing and Energy Supply Chains (MESC) is issuing this Funding Opportunity Announcement (FOA). Projects awarded under this FOA will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act[1], also more commonly known as the Bipartisan Infrastructure Law (BIL).

The BIL is a once-in-a-generation investment in infrastructure, which will grow a more sustainable, resilient, and equitable economy through enhancing U.S. competitiveness in the world, creating and retaining good jobs, and ensuring stronger access to economic and other benefits for disadvantaged communities.[2] The BIL appropriates more than $62 billion to the Department of Energy (DOE)[3] to deliver a more equitable clean energy future for the American people by investing in American manufacturing and workers; expanding access to energy efficiency and clean energy for families, communities and businesses; delivering reliable, clean and affordable power to more Americans; and building the technologies of tomorrow through clean energy demonstrations.

The BIL will invest more than $7 billion in the battery supply chain over the five-year period encompassing fiscal years (FYs) 2022 through 2026. This includes sustainable sourcing of critical minerals from secondary and unconventional sources, reducing the need for new extraction and mining; sustainable processing of critical minerals; and the end-of-life battery collection and recycling.

The activities to be funded under this FOA support BIL Sections 40207 (b) & (c), as well as the broader government-wide approach to upgrading and modernizing infrastructure, including by strengthening critical domestic manufacturing and supply chains to maximize the benefits of the clean energy transition as the nation works to curb the climate crisis and advance environmental justice. These BIL Sections are focused on:

- Expanding the capabilities of the United States in advanced battery manufacturing;
- Enhancing national security by reducing the reliance of the United States on foreign competitors for critical materials and technologies;

[1] Infrastructure Investment and Jobs Act (referred to as BIL), Public Law 117-58 (November 15, 2021).
[2] Addendum to the Interim Implementation Guidance for the Justice40 Initiative, M-21-28, on using the Climate and Economic Justice Screening Tool (CEJST).. M-23-09. Executive Office of the President. January 2023. https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf
[3] U.S. Department of Energy. November 2021. "DOE Fact Sheet: The Bipartisan Infrastructure Deal Will Deliver For American Workers, Families and Usher in the Clean Energy Future." https://www.energy.gov/articles/doe-fact-sheet-bipartisan-infrastructure-deal-will-deliver-american-workers-families-and-0

- Ensuring that the United States has a viable battery materials processing industry with sufficient capacity to supply the North American battery supply chain;
- Ensuring that the United States has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain;
- Ensure investments in high-quality jobs support America's competitive advantage
- Providing good quality jobs for people in low- or moderate-income communities, rural communities, and/or in communities and for workers that have lost jobs or are at risk of job loss due to the displacement of fossil energy, including automotive workers and communities.
- Prioritizing partnerships with Tribes, universities, and laboratories; and
- Increasing capacity, enhancing national security and shoring up the viability of the national battery supply chain with attention to the creation and retention of good quality jobs in the sector, including the provision of competitive wages and vital benefits, inclusive workforce recruitment and retention activities, work environments where workers' rights to choose to join or form a union is protected, and other factors that contribute to the development of jobs that are sought-after and have low workforce turnover.

i. Program Purpose

The Biden Administration has laid out a bold agenda to upgrade and modernize infrastructure, to address the climate crisis and build a clean and equitable energy economy that achieves carbon pollution-free electricity by 2035, and to put the United States on a path to achieve net-zero emissions economy-wide by no later than 2050[4] to the benefit of all Americans. The DOE is committed to pushing the frontiers of science and engineering, catalyzing clean energy jobs through research, development, demonstration, and deployment (RDD&D), prioritizing the creation of good quality jobs and investments in the U.S. workforce, and advancing environmental justice and inclusion of underserved communities and disadvantaged communities, including in terms of economic benefits created by energy investments.

Batteries are a critical element of the ongoing transition to an energy economy that is decarbonizing and lowering energy costs to American families and businesses, and also critical to national competitiveness–for grid storage, for the resilience of homes and businesses, and for electrification of the transportation sector. President Biden's Executive Order on America's Supply Chains directed the Department of Energy (DOE) to produce a report identifying the risks in the current and forecasted battery supply chain landscape and providing policy recommendations to address them. The "Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth" 100-

[4] Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad," January 27, 2021.

Day Reviews under Executive Order 14017 report assesses vulnerabilities and opportunities across four key products, including high-capacity batteries. [5] Subsequently, DOE published "America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition", including a "Supply Chain Deep Dive Assessment of Grid Energy Storage" that described actions to address vulnerabilities in the battery storage supply chain.[6] The "National Blueprint for Lithium Batteries", a report developed by the Federal Consortium for Advanced Batteries[7], lays out five critical goals and key actions to guide federal agency collaboration to secure the nation's long-term economic competitiveness and create good-paying jobs for American workers, while supporting the Biden Administration's decarbonization goals.

With the demand for electric vehicles (EVs) and stationary storage alone projected to increase the size of the lithium battery market five- to ten-fold by the end of the decade, it is essential that the United States invests in the capacity to accelerate the development of a resilient supply chain for high-capacity batteries.

Applicants to this FOA will be required to submit a Community Benefits Plan as part of their application. The **Community Benefits Plan will account for 20 percent** of the technical merit review of proposals. This section will be evaluated on four priorities that together will ensure project success, efficient and effective use of taxpayer funds, timely project implementation, and the acceleration of private sector uptake in projects: (1) engaging communities and labor; (2) creating and retaining good quality jobs to attract and retain a skilled workforce; (3) advancing diversity, equity, inclusion, and accessibility pertaining to economic opportunity including investing in equitable workforce development to prepare and connect people to these jobs; and (4) implementing the President's Justice40 Initiative, including prioritizing work opportunities for workers of low

[5] Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth.100-Day Reviews under Executive Order 14017. A Report by The White House. June 2021. https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf

[6] America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition
U.S. Department of Energy Response to Executive Order 14017, "America's Supply Chains". February 2022. https://www.energy.gov/policy/articles/americas-strategy-secure-supply-chain-robust-clean-energy-transition

[7] The Federal Consortium for Advanced Batteries (FCAB) provides a framework for cooperation and coordination among federal agencies having a stake in developing advanced battery technology and establishing a domestic supply of lithium batteries. The FCAB is led by the Departments of Energy, Defense, Commerce, and State and includes many organizations across the government. https://www.energy.gov/eere/vehicles/federal-consortium-advanced-batteries-fcab

and moderate income, rural communities, as well as coal, oil and gas, and powerplant communities[8].

The Community Benefits Plan includes criteria to encourage worker organizing and collective bargaining[9,10,8] and advance equity. This FOA and any related activities will seek to affirmatively support workers' ability to organize and collectively bargain as well as to engage and partner with labor unions, underserved communities, and underrepresented groups, including Indian Tribes.[11] Consistent with Executive Order 14008, this FOA will advance the Biden-Harris Administration's Justice40 Initiative[12] and help meet the goal that 40% of the overall benefits of certain federal investments in climate, clean energy, and other areas flow to disadvantaged communities identified by the Climate and Economic Justice Screening Tool[13] and drive creation of good-paying jobs with the free and fair choice for workers to join a union.[14]

As part of the whole-of-government approach to advance equity across the Federal Government[15], and in alignment with BIL Sections 40207 (b) & (c), this FOA and any related activities will prioritize projects that provide workforce

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[8] E.O. 14008, "Tackling the Climate Crisis at Home and Abroad," January 27, 2021, and the Office of Management and Budget's Interim Justice40 Implementation Guidance M-21-28, Section 217 within E.O. gives further context to outline energy communities.https://www.energy.gov/sites/default/files/2021/02/f83/eo-14008-tackling-climate-crisis-home-abroad.pdf

[9] EO 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government," January 20, 2021. EO 14091, Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government," February 16, 2023.

[10] EO 14025, "Worker Organizing and Empowerment," April 26, 2021.

[11] EO 13175, November 6, 2000, "Consultation and Coordination with Indian Tribal Governments," charges all executive departments and agencies with engaging in regular, meaningful, and robust consultation with Tribal officials in the development of federal policies that have Tribal implications. Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships | The White House

[12] Established by EO 14008, the Justice40 Initiative has made it a goal that 40 percent of the overall benefits of certain federal investments in climate, clean energy, and other areas flow to disadvantaged communities that are marginalized and overburdened by pollution and underinvestment.

[13] DOE uses the Climate and Economic Justice Screening Tool to identify geographically defined disadvantaged communities. For more information, see Justice40 Initiative, https://www.whitehouse.gov/environmentaljustice/justice40/; OMB, CEQ, & CPO, M-23-09, Addendum to the Interim Implementation Guidance for the Justice40 Initiative, M-21-28, on using the Climate and Economic Justice Screening Tool (CEJST) (Jan. 27, 2023), https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf.

[14] For more information, see E.O. 14008, Tackling the Climate Crisis at Home and Abroad (Jan. 27, 2023), https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-andabroad

[15] Executive Order 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government" (Jan. 20, 2021). Executive Order. 14091, "Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government" (February 16, 2023).

opportunities for communities in low-and moderate-income communities, rural communities, and communities that have lost jobs due to the displacements of fossil energy jobs (including manufacturing of internal combustion engine vehicles and powertrains), as well as engagement with Tribal Nations, universities and laboratories. And as stated above, this FOA will prioritize projects that create quality jobs to increase capacity, enhance national security and shore up the viability of the national battery supply chain.

This FOA provides approximately $3.5 billion to successful applicants to fund investments within the electric vehicle battery supply chain, increase domestic battery manufacturing, and create good-paying clean energy jobs. The overall scope in this FOA includes demonstration and commercial facilities for battery-grade precursor materials, battery components, and cell manufacturing and recycling. (See Section I.B. Areas of Interest.)

ii. Technology Space and Strategic Goals

The high-capacity battery supply chain consists of five main steps including: (1) raw material production, (2) materials processing including material refinement and processing, (3) battery material /component manufacturing and cell fabrication, (4) battery pack and end use product manufacturing, and (5) battery end-of-life and recycling. The graphic below shows how these five steps relate to the BIL investments in the battery supply chain. This FOA aims to reach across both the midstream and downstream segments of the battery supply chain, supporting both midstream battery materials and component manufacturing, as well as subsequent cell manufacturing and end of life recycling.

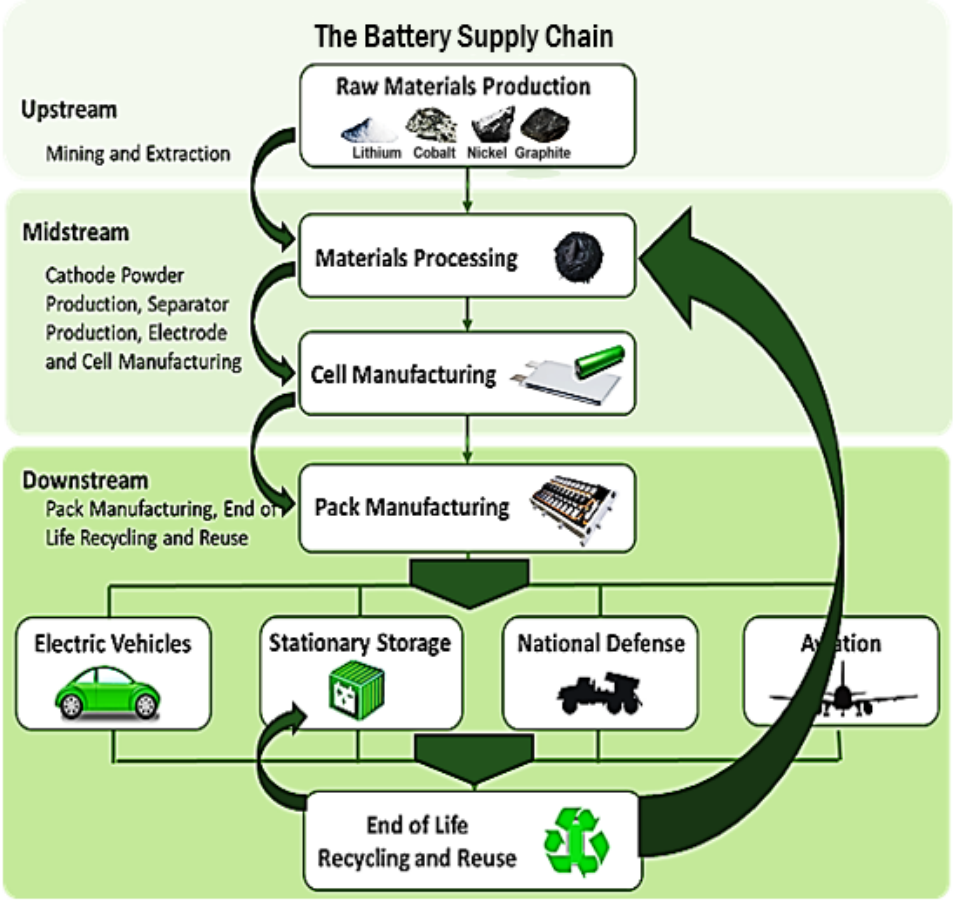

Figure 1. The Battery Supply Chain.

It is anticipated that the FOA would increase domestic battery manufacturing and create good-paying clean energy jobs. The overall FOA scope includes commercial facilities for battery-grade precursor materials, constituent materials, battery components, and cell manufacturing and recycling.

iii. Teaming Partner List (Optional)

DOE is compiling a Teaming Partner List to facilitate the formation of project teams for this FOA. The Teaming Partner List allows organizations that may wish to participate on a project to express their interest to other applicants and explore potential partnerships. Please note that while teaming is a viable approach, teams must name one "prime" applicant for each team and specify this prime applicant on their application.

The Teaming Partner List will be available on S3 Exchange and will be regularly updated to reflect new teaming partners who provide their organization's information.

SUBMISSION INSTRUCTIONS: View the Teaming Partner List by visiting the S3 Exchange homepage and clicking on "Teaming Partners" within the left-hand navigation pane. This page allows users to view published Teaming Partner Lists. To join the Teaming Partner List, submit a request within Exchange. Select the appropriate Teaming Partner List from the drop-down menu, and fill in the following information: Investigator Name, Organization Name, Organization Type, Area of Interest, Background and Capabilities, Website, Contact Address, Contact Email, and Contact Phone.

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

B. Areas of Interest (See Appendix D for more information)

Area of Interest	Area of Interest Title	Area of Interest Description
Bipartisan Infrastructure Law Section 40207 (b): Battery Materials Processing Grants		
1	**Commercial-scale Lithium Separation from Domestic Sources**	
1.a	Domestic Brine and Recycled Sources	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create U.S. battery-grade **Lithium** manufacturing capacity from **domestic brine and/or recycled feedstocks** as a supply source capable of use in electric vehicles and/or electric grid energy storage applications.
1.b	Domestic Hard Rock and Clay Source	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create U.S. battery-grade **Lithium** manufacturing capacity from **domestic hard rock and clay sources** capable of use in electric vehicles and/or electric grid energy storage applications.
2	**Commercial-scale Domestic Recovery of Battery Critical Minerals (non-Lithium)**	

2.a	From Traditional Sources	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create U.S. battery-grade **non-lithium critical materials manufacturing capacity from traditional sources (natural occurrences including hard rock and brine, mine tailings, chemical process solutions, and battery recycling sources, etc.)** capable of use in electric vehicles and/or electric grid energy storage applications.
2.b	From Alternative Sources	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create U.S. battery-grade **non-lithium critical materials manufacturing capacity from alternative sources (mine waste, mineral substitutes, other waste and non-battery recycling streams, etc.)** capable of use in electric vehicles and/or electric grid energy storage applications.
3	**Commercial-scale Domestic Processing of Battery Material Precursors**	
3	Commercial-scale Domestic Processing of Battery Material Precursors	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create a U.S. battery-grade **battery material precursor** manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications. Relevant battery material precursors would be those that feed directly to into downstream electrode active material powders and battery manufacturing and may include silane gas and cathode active material precursors, among others.
Bipartisan Infrastructure Law Section 40207 (c): Battery Manufacturing Grants		
4	**Commercial-scale Domestic Manufacturing of Battery Cathodes and Anodes**	
4.a	Commercial-scale Domestic Production of Battery Cathodes	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create a U.S. battery-grade **cathode** manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.
4.b	Commercial-scale Domestic Production of Battery Anodes	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create a U.S. battery-grade **anode** manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.
5	**Commercial-scale Domestic Production of Electrolyte Salts and Electrolyte Solvents**	
5.a	Commercial-scale Domestic Production of Battery Electrolyte Salts	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create U.S. battery-grade **electrolyte salt** manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.

5.b	Commercial-scale Domestic Production of Battery Electrolyte Solvents and Mixes	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit facilities to create U.S. battery-grade **electrolyte solvent** and/or electrolyte mix manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.
6	**Commercial-scale Domestic Production of Cell Manufacturing for Small and Specialized Markets**	
6	Commercial-scale Domestic Production of Cell Manufacturing for Small and Specialized Markets	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create **U.S. cell manufacturing capacity for (1) non-light duty transportation and stationary storage as well as well as for (2) small and specialized markets such as commercial and off-road vehicles, defense, aerospace, power tools, and other end-use markets.**
7	**Commercial-scale Domestic Production of Non-Lithium Based Battery Cell and Systems**	
7	Commercial-scale Domestic Production of Non-Lithium Based Battery Cell and Systems	The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing facilities to create **U.S. Non-Lithium Based Battery Cell and Systems capacity.**
8	**Commercial-scale Domestic Manufacturing of Other Battery Cell and System Components (Open Topic)**	
8	Commercial-scale Domestic Manufacturing of Other Battery Cell and System Components (Open Topic)	The objective of this area of interest is to ~~construct new commercial-scale facilities or~~ expand, retool, or retrofit existing facilities to create U.S. manufacturing capacity **for other battery cell and system components (components not addressed in other areas of interest)**.

Bipartisan Infrastructure Law Section 40207 (b): Battery Materials Processing Grants Areas of Interest 1-3

Consistent with the goals of the BIL the AOIs under 40207(b) intend to fund projects that promote the use of more clean energy, create new, good-paying jobs and lower costs for American families and workers by guiding the Nation towards a 100% carbon pollution-free electricity sector by 2035 and net-zero economy by 2050. Specifically, the AOIs within 40207(b) will ensure that the U.S. has a viable battery materials processing industry to supply the North American battery supply chain; to expand the capabilities of the U.S. in advanced battery manufacturing; to enhance national security by reducing the reliance of the U.S. on foreign competitors for critical materials and technologies; and to enhance the

domestic processing capacity of minerals necessary for battery materials and advanced batteries.

The Battery Material Processing AOIs (1-3) will focus on commercial scale domestic separation of battery materials from extracted feed stocks for battery grade materials. The proposed materials must be capable of being used in an advanced battery that will be used in electric vehicles and/or electric grid applications. **See Appendix D for more information on the Areas of Interest.**

AOI 1: Commercial-scale Lithium Separation from Domestic Sources

Domestic sources for processed and purified materials represent a critical gap within the domestic supply chain that is vastly underrepresented relative to the U.S. electric vehicle demand. This gap creates market uncertainty, loss of economic value added in high-capacity battery production and leaves the U.S. vulnerable to future supply chain disruptions. Addressing this critical gap in the supply chain provides an entry point for both mined and recycled battery materials, creates supply chain resilience, and adds to the overall value chain for the electric vehicle sector.

Lithium material demand is expected to double from 2025 to 2030[16]. The U.S. has extensive hard rock and brine reserves of lithium so there is extensive opportunity for production of domestic Lithium materials for battery production.

AOI 2: Commercial-scale Separation, Processing, and Recovery of Battery Critical Minerals (non-Lithium)

Battery critical material demand is anticipated to far outpace announced production[17]. Access to high purity, processed critical minerals such as Nickel, Cobalt, Manganese, and others will be critical for supply chains to feed the growing downstream domestic cell manufacturing sector that is expected to reach 1 TWh by 2030[18].

AOI 3: Commercial-scale Domestic Production of Crucial Precursors for Battery Manufacturing

There are many advanced precursor materials that are necessary for lithium-ion based battery or other alternative advanced battery production. Securing supply of ultra-high purity, battery-grade precursor materials are critical for US battery material production and downstream battery manufacturing. Materials including silane gas for silicon anodes may be bottlenecks for crucial materials production.

[16] "Battery 2030: Resilient, sustainable, and circular". January 16, 2023. McKinsey & Company. mckinsey.com

[17] "Building Resilient Supply Chains: 100 Day Reviews under Executive Order 14107", High-Capacity Batteries. A report by The White House. June 2021. https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf

[18] "IRA at 1: US climate law cues $63B spending spree on battery factories". August 2023. S&P Global. spglobal.com

Bipartisan Infrastructure Law Section 40207 (c): Battery Manufacturing Grants Areas of Interest 4-8

Consistent with the goals of the Bipartisan Infrastructure Law (BIL), the AOIs under Section 40207(c) intend to fund projects that promote the use of more clean energy, create new good-paying jobs, and lower costs for American families and workers by guiding the nation towards a 100% carbon pollution-free electricity sector by 2035 and net-zero economy by 2050. Specifically, the AOIs within Section 40207(c) will ensure that the United States has a viable domestic manufacturing and recycling capability to support and sustain a North American battery supply chain.

The Battery Component Manufacturing and Recycling AOIs (4-8) will focus on commercial scale battery cell, cathode, separator, and silicon-based anode production facilities and demonstration manufacturing facilities for new manufacturing processes or techniques. The proposed technologies must be capable of being used in an advanced battery that will be used in electric vehicles and/or electric grid applications. **See Appendix D for more information on the Areas of Interest.**

AOI 4. Commercial-scale Domestic Manufacturing of Battery Cathode and Anode Materials and Electrodes

Cathode and anode active materials and electrodes are critical materials and components needed for domestic battery manufacturing. Still, demand is expected to outpace US capacity in the near term.

AOI 5. Commercial-scale Domestic Production of Electrolyte Salts, Electrolyte Solvent, and Mix Manufacturing

A total of 99% of all electrolyte salt capacity in 2022 existed within the PRC.[19] There is no active large scale electrolyte salt or electrolyte solvent production domestically.[20] MESC selected an electrolyte salt project in 2022, which will be the U.S.'s first lithium electrolyte salt production facility by 2025. Further development of electrolyte salt, solvent, and electrolyte mix facilities are needed to feed growing domestic cell production.

AOI 6. Commercial-scale Domestic Production of Cell Manufacturing for Specialized and Small Markets

While cell manufacturing capacity is expected to reach 750+ GWh by 2030, this capacity will nearly all be used to feed passenger car EV demand, leaving a gap in sourcing for other, smaller markets. Commercial-scale cell manufacturing for (1) non-light duty transportation (e.g., medium and heavy-duty vehicles, off-road, maritime, aviation, commercial/agricultural) and grid and stationary storage as well as (2) small and specialized markets such as power tools, agriculture and lawn equipment, defense, industrial and more

[19] BNEF Battery Components Database.
[20] DOE Battery Selection Factsheets

are significantly limited in today's domestic manufacturing landscape. As goals for clean energy and electrified landscape equipment increase demand to these specialized segments, and defense demand for battery capacity grows in parallel, this manufacturing gap continues to grow.

AOI 7. Commercial-scale Domestic Production of High-Capacity, Rechargeable Non-Lithium Based Battery Cell and Systems

Utilization of non-lithium-based systems may be necessary for full decarbonization of the U.S.'s grid. With greater duration requirements and less stringent density or weight constraints, non-lithium storage technologies may emerge as the most cost-effective solutions for these stationary needs. Supporting battery manufacturing facilities to produce the most commercially-viable, technologically-advanced, and manufacturing-ready systems will be critical in the coming decade for the stationary storage market.

AOI 8. Commercial-scale Domestic Manufacturing of Other Battery Cell and Systems Components (Open Topic)

Non-storage materials such as battery current collectors, solid state materials, binder, conductive additives, and coating precursor materials all play a critical role in meeting battery performance requirements. Advancement of these areas within industry provides an opportunity to advance domestic supply chain economic value added and resilience by creating more economic value added in battery manufacturing and supply chain stability. To enable these markets, the U.S. needs to use innovative materials and processing techniques to ensure global competitiveness. This AOI applies to all lithium-ion based battery or other alternative advanced battery components that are not covered under AOIs 4-7. A facility that processes and integrates multiple precursors is eligible.

All work for projects selected under this FOA must be performed in the United States. See Section IV.I.iii. and Appendix B.

Anticipated FOA Cycle Bipartisan Infrastructure Law Section 40207 (b) and (c):

This FOA may remain open for up to 48 months, with review cycles occurring approximately every six months, while funding lasts. The "rolling" nature of this announcement is meant to accommodate diverse funding cycles across the private sector.

It is possible that all funding may be expended after the 1st application/review cycle for some Areas of Interest in which case all subsequent cycles for these Areas of Interest will not occur and only Areas of Interest where funding remains unexpended would be accepted in a future cycle.

The planned review periods are outlined below. Please note that appropriated funding may be expended after the 2nd Cohort selections are made. If this is the case, DOE will notify the community via Exchange that subsequent submission periods will be withdrawn.

Cohort	Event	Anticipated Timeframe	Notes
1	FOA Release	Nov. 2023	
	1st Round of Concept Papers Due	Jan. 2024	
	1st Round Full Applications Due	Mar. 2024	
2	2nd Round Notice of Intent Issued	Aug. 2024	Areas of Interest may be modified
	2nd Round FOA Released	Sept. 2024	
	2nd Round of Concept Papers Due	Oct. 2024	
	2nd Round of Full Applications Due	Dec. 2024	
3	3rd Round Notice of Intent Issued	Mar. 2025	Areas of Interest may be modified
	3rd Round FOA Released	Apr. 2025	
	3rd Round of Concept Papers Due	May 2025	
	3rd Round of Full Applications Due	Aug. 2025	
4	4th Round Notice of Intent Issued	Oct. 2025	Areas of Interest may be modified
	4th Round of Concept Papers Due	Nov. 2025	
	4th Round of Full Applications Due	Mar. 2026	

C. Applications Specifically Not of Interest

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

- Applications that fall outside the technical parameters specified in Sections I.A. and I.B. of the FOA.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).

- Applications that are based on research, development, or pilot-scale (alone) activities.
- Applications for Demonstration Projects that have less than $50,000,000 for Federal Share.
- Applications for new Commercial-Scale Projects that have less than $100,000,000 for Federal Share.
- Applications for retooling, retrofitting, or expanding Commercial-Scale Projects that have less than $50,000,000 for Federal Share.
- Applications that include mining operations (mining and extraction) or mining equipment, excavation, labor, siting, etc. within the project scope.
- Applications that propose cost share contributions in the form of donation of land, existing buildings, or existing equipment.
- Applications that propose the purchase of land in the scope of the award (as part of the budget).
- Applications that propose to subordinate Federal government interest in property or equipment to obtain project financing.
- Applications that propose the use of Federal Financing such as DOE Loans or Loan Guarantees, to provide the required cost share or otherwise support the same scope that is proposed in response to this FOA.

D. Community Benefits Plan: Job Quality and Equity

To support the goal of building a clean and equitable energy economy, BIL-funded projects are expected to (1) support meaningful community and labor engagement; (2) create and retain good quality jobs to attract and retain a skilled workforce; (3) advance diversity, equity, inclusion, and accessibility pertaining to economic opportunity including investing in equitable workforce development to prepare and connect people to these jobs; and (4) contribute to the President's goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities (the Justice40 Initiative) .[21] To ensure these goals are met, applications must include a Community Benefits Plan that describes how the proposed project would incorporate the four objectives stated above.

For this particular funding opportunity, DOE will prioritize projects that create work opportunities for workers of low and moderate income, rural communities, and in communities that have lost or are at risk of losing jobs due to the

[21] About Community Benefits Plans | Department of Energy

displacement of fossil energy jobs, including in the automotive sector. DOE will also prioritize projects that include clear engagement with Tribal Nations, universities, and laboratories. Commitments toward these goals should be clearly identified in the Quality Jobs, diversity, equity, inclusion, and accessibility (DEIA), Justice40, and community and labor engagement sections of the Community Benefits Plan.

Within the Community Benefits Plan, the applicant is strongly encouraged to provide details on how to ensure the delivery of measurable community and jobs benefits, detailing plans to negotiate agreements between the applicant and community stakeholders, and/or the applicant and labor unions referred to collectively here as "Workforce and Community Agreements." These include collective bargaining agreements, project labor agreements, community workforce agreements, good neighbor agreements, community benefits agreements, and others.

Applicants should clearly include whether or not they seek to negotiate a Project Labor Agreement (PLA), an agreement between contractors and labor unions, generally pertaining to construction and maintenance related work.

See Section IV.D.xx. and IV.D.xxi. for the Community Benefits Plan content requirements.

Applicants are encouraged to submit Community and Labor Partnership Documentation from established labor and community-based organizations that demonstrate the applicant's ability to achieve the above goals, as outlined in both Job Quality and Workforce Investment and the Community Benefits Plans.

E. Authorizing Statutes

The programmatic authorizing statutes are Public Law (P.L.) 102-486, Energy Policy Act (EPAct) of 1992, amended by P.L. 109-58, EPAct 2005, Section 911, as amended (codified at 42 U.S.C. § 16191), and P.L. 110-140,

Public Law 117-58, Infrastructure Investment and Jobs Act of 2021 (referred to as BIL), Section 40207 (codified at 42 U.S.C. § 18741.)

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

F. Notice of Bipartisan Infrastructure Law–Specific Requirements

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

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

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

FOREIGN ENTITIES OF CONCERN:

Section 40207(b)(3)(C) directs DOE to prioritize material processing applicants that will not use battery material supplied by or originating from a "foreign entity of concern" (FEOC). Similarly, section 40207(c)(3)(C) directs DOE to prioritize manufacturing applicants who will not use battery material supplied by or originating from a FEOC and prioritize recycling applicants who will not export recovered critical materials to a FEOC.

DOE will give priority to applicants that (1) will not use battery material supplied by or originating from a FEOC, and (2) will not export recovered critical materials to a FEOC. This prioritization is in addition to those requirements related to Foreign Country Collaboration in Section IV.I.xiv.

FEOC is defined in BIL section 40207(a)(5).

DOE intends to release draft guidance on interpretative definitions of relevant terms within BIL section 40207(a)(5)(c) for public notice and comment. This guidance is expected in December 2023.

II. Award Information

A. Award Overview

i. Estimated Funding

DOE expects to make a total of approximately $3.5 billion of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. DOE anticipates making approximately 19-41 awards under this FOA. DOE may issue one, multiple, or no awards. Individual awards may vary between $50,000,000 and $300,000,000.

DOE may issue awards in one, multiple, or none of the following Areas of Interest:

Area of Interest	Anticipated Number of Awards		Award Type	Federal Funds		
	Minimum	Maximum		Statutory Minimum Any One Individual Award	Anticipated Maximum Award Size for Any One Individual Award	Approximate Total Funding Available for All Awards
Bipartisan Infrastructure Law Section 40207 (b): Battery Materials Processing Grants						
1	3	7	Retrofit / Retool / Expansion	$50,000,000	$150,000,000	$700,000,000
			New Facility	$100,000,000	$300,000,000	
2	3	7	Retrofit / Retool / Expansion	$50,000,000	$150,000,000	$600,000,000
			New Facility	$100,000,000	$300,000,000	
3	2	4	Retrofit / Retool / Expansion	$50,000,000	$100,000,000	$200,000,000
			New Facility	$100,000,000	$200,000,000	
Bipartisan Infrastructure Law Section 40207 (c): Battery Manufacturing Grants						
4	4	8	Retrofit / Retool / Expansion	$50,000,000	$150,000,000	$800,000,000
			New Facility	$100,000,000	$300,000,000	
5	2	6	Retrofit / Retool / Expansion	$50,000,000	$150,000,000	$600,000,000
			New Facility	$100,000,000	$300,000,000	

6	2	3	Retrofit / Retool / Expansion	$50,000,000	$100,000,000	$300,000,000
			New Facility	$100,000,000	$200,000,000	
7	1	2	Retrofit / Retool / Expansion	$50,000,000	$50,000,000	$100,000,000
			New Facility	$100,000,000	$100,000,000	
8	2	4	Retrofit / Retool / Expansion	$50,000,000	$50,000,000	$200,000,000

For awarded projects, DOE may establish more than one budget period for each award and fund only the initial budget period(s). DOE reserves the right to discontinue funding, including in the initial budget period.

ii. Period of Performance

DOE anticipates making awards that will run from 24 months up to 60 months, comprised of one or more budget periods. Project continuation will be contingent upon several elements, including satisfactory performance and DOE's Go/No-Go decision. For details regarding the Go/No-Go review, see Section VI.B.xiii.

iii. New Applications Only

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

B. DOE Funding Agreements

DOE will fund projects selected under this FOA through grants.

i. Funding Agreements with Federally Funded Research and Development Center (FFRDCs)[22]

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

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

III. Eligibility Information

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

A. Eligible Applicants

i. Individuals

U.S. citizens and lawful permanent residents are eligible to apply for funding as a prime recipient or subrecipient.

ii. Domestic Entities

The proposed prime recipient and subrecipient(s) must be domestic entities. The following types of domestic entities are eligible to participate as a prime recipient or subrecipient of this FOA:

1. Institutions of higher education;
2. National Laboratories;
3. Nonprofit and for-profit entities;
4. State and local governments; and
5. Consortia of entities described above.

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.

NETL (National Energy Technology Laboratory) is not eligible for award under this announcement and may not be proposed as a subrecipient on another entity's application. An application that includes NETL as a prime recipient or subrecipient will not be considered.

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

Nonprofit organizations described in Section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, are **not** eligible to apply for funding.

iii. Foreign Entities

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

Foreign entity waivers will be granted with consideration of BIL section 40207(a)(5) and the forthcoming guidance by DOE to define 40207(a)(5)(C).

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

B. Cost Sharing

Applicants are required to propose a cost share for their project, specifying the total expected cost of the project, the share of project expenses to be incurred by DOE, and the share of project expenses to be covered by private capital, either from the company's balance sheet or provided by private investors. Applicants are bound by the cost share proposed in their Full Applications if selected for award negotiations.

The applicant's cost share (coming from private capital) must be at least 50% of the total project costs[23] for demonstration or commercial application projects.[24] The cost share must come from non-federal sources, unless otherwise allowed by law.

To help applicants calculate proper cost share amounts, DOE has included a cost share information sheet and sample cost share calculation in Appendix A of this FOA.

i. Legal Responsibility

Although the cost share requirement applies to the entire project, including work performed by members of the project team other than the prime recipient, the prime recipient is legally responsible for paying the entire cost share. If the

[23] Total project costs are the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.
[24] Energy Policy Act of 2005, Pub.L. 109-58, sec. 988. Also see 2 CFR 200.306 and 2 CFR 910.130 for additional cost sharing requirements.

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

In a structure with a prime recipient and subrecipients, the prime recipient is solely responsible for managing cost share contributions by the project team and enforcing cost share obligation assumed by project team members in subawards or related agreements.

ii. Cost Share Allocation

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

iii. Cost Share Types and Allowability

Projects cannot use, designate, or leverage federal financing, such as DOE Loans or Loan Guarantees, to provide the required cost share or otherwise support the same scope that is proposed in response to this FOA. Additionally, the achievement of MESC project objectives must not rely upon a current or future DOE Loan Guarantee for another project.

In the event equipment purchased under an award is used as collateral for project financing, the DOE will not subordinate its financial interest below that of the lender. Title to all equipment with a fair market value of at least $5,000 purchased in whole or in part with Federal funds under a grant is conditionally vested with a recipient pursuant to the terms of 2 CFR 910.360. The Federal Government will retain an undivided reversionary interest in the equipment at the Federal cost-share proportion as specified in the award terms and conditions. See 2 CFR 200.1 for the definition of equipment.
An applicant selected under this FOA cannot propose the value of previously acquired equipment, buildings, or land as cost share.

Every cost share contribution must be allowable under the applicable federal cost principles, as described in Section IV.I.i. of the FOA. In addition, cost share must be verifiable upon submission of the Full Application.

Cost share may be provided in the form of cash or cash equivalents, or in-kind contributions. Cost share must come from non-federal sources (unless otherwise

allowed by law), such as project participants, state or local governments, or other third-party financing.

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

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

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

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

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

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

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

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

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

iv. Cost Share Contributions by FFRDCs

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

v. Cost Share Verification

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

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

vi. Cost Share Payment

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

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

C. Compliance Criteria

All applicant submissions must:

- Comply with the applicable content and form requirements listed in Section IV of the FOA;

- Include all required documents;
- Be uploaded and submitted to S3 Exchange https://infrastructure-exchange.energy.gov; and
- Be submitted by the deadline stated in the FOA.

DOE will not review or consider submissions delivered through means other than S3 Exchange, submissions submitted after the applicable deadline, or incomplete submissions.

Applicants are strongly encouraged to submit their Concept Papers, Full Applications at least 48 hours in advance of the submission deadline. Under normal conditions (i.e., at least 48 hours before the submission deadline), applicants should allow at least one hour to submit a Concept Paper or Full Application. Once the Concept Paper or Full Application is submitted in S3 Exchange, applicants may revise or update that submission until the expiration of the applicable deadline. If changes are made to any of these documents, the applicant must resubmit the Concept Paper or Full Application before the applicable deadline. DOE will not extend the submission deadline for applicants that fail to submit required information by the applicable deadline due to server/connection congestion.

D. Responsiveness Criteria

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

E. Other Eligibility Requirements

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

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

a. Authorization for non-DOE/NNSA FFRDCs
The federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be submitted with the application. The use of a FFRDC must be consistent with its authority under its award.

b. Authorization for DOE/NNSA FFRDCs
The cognizant Contracting Officer for the FFRDC must authorize in writing the use of the FFRDC on the proposed project and this authorization must be

submitted with the application. The following wording is acceptable for this authorization:

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

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

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

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

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

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

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

e. Limit on FFRDC Effort
The scope of work to be performed by the FFRDC may not be more significant than the scope of work to be performed by the applicant.

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

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

G. Questions Regarding Eligibility

DOE will not make eligibility determinations for potential applicants prior to the date on which applications to this FOA must be submitted. The decision whether to apply in response to this FOA lies solely with the applicant.

IV. Application and Submission Information

A. Application Process

The application process includes multiple submission phases: Concept Paper, and Full Application. **Only eligible Concept Paper submissions may result in a Full Application**.

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

- Each must be submitted in Adobe PDF format unless stated otherwise;
- Each must be written in English;
- All pages must be formatted to fit on 8.5" x 11" paper with margins not less than one inch on every side. Use Calibri typeface, a black font color, and a font size of 12-point or larger (except in figures or tables, which may be 10-point font, or the Concept Paper template, which defaults to 11-point font). A symbol font may be used to insert Greek letters or special characters, but the font size requirement still applies. References must be included as footnotes or endnotes in a font size of 10 or larger. Footnotes and endnotes are counted toward the maximum page requirement;
- A **control number** will be issued when an applicant begins the S3 Exchange application process. The control number must be included with all application documents. Specifically, the control number must be prominently displayed on the upper right corner of the header of every page and included in the file name (i.e., *Control Number_Applicant Name_Full Application*). For the Concept Paper, the control number is not required to be in the header, but is instead inserted into the "General Information" section of the template;
- Page numbers must be included in the footer of every page; and
- Each submission must not exceed the specified maximum page limit, including cover page, charts, graphs, maps, and photographs when printed using the formatting requirements set forth above and single spaced. If applicants exceed the maximum page lengths indicated below, DOE will review only the authorized number of pages and disregard any additional pages.

i. Additional Information on S3 Exchange

S3 Exchange is designed to enforce the deadlines specified in this FOA. The "Apply" and "Submit" buttons will automatically disable at the defined submission deadlines.

Applicants who experience technical difficulties with submission PRIOR to the FOA deadline should contact the S3 Exchange helpdesk for assistance (InfrastructureExchangeSupport@hq.doe.gov).

B. Application Forms

To access application forms and instructions available on S3 Exchange, go to https://infrastructure-exchange.energy.gov and select the appropriate funding opportunity number.

Note: The maximum file size that can be uploaded to the S3 Exchange website is 50MB. Files larger than 50MB cannot be uploaded and hence cannot be submitted for review. If a file is larger than 50MB but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect. For example:

TechnicalVolume_Part_1
TechnicalVolume_Part_2

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

C. Content and Form of the Concept Paper

Each Concept Paper must be limited to a single concept or technology. The Concept Paper must conform to the requirements listed below, including the stated page limits. A Concept Paper template can found on the S3 Exchange website at https://infrastructure-exchange.energy.gov/.

Section	Page Limit	Description
Cover Page	1 page maximum	The cover page should include: • Project Title, • Area of Interest being addressed, • Technical and business points of contact, • Names of all team member organizations, • Project location, and • Any statements regarding confidentiality.
Technology Innovation and Impact	2 pages maximum	Applicants are required to describe succinctly: • The overall scope and objectives of the proposed project. • The project location, including the address of the proposed facility and whether it is in a disadvantaged community, rural community, or community that has lost jobs due to the displacement of fossil fuels.

		• Relevance and Outcomes: This section should describe the relevance of the proposed project to the goals and objectives of this FOA, including the potential to meet specific DOE technical targets, BIL policy priorities, or other relevant performance targets. The applicant should clearly specify the expected outcomes of the project. The applicant should address the impact the project will have in bolstering the relevant domestic supply chain, including analysis of how the project will impact or improve the current baseline by increasing domestic capacity to meet current or projected demand and/or by onshoring capacity to enhance national security, resilience, and economic competitiveness. • Feasibility: The applicant should describe the technology to be produced and the technology traits that separate it from competitors. This section should also address the project's access to necessary infrastructure (e.g., transportation, water, electricity transmission), including any use of existing infrastructure. • Innovation and Impacts: The product(s) to be produced, how this production will impact domestic battery landscape, the targeted annual manufacturing capacity and information or data to support the targeted annual manufacturing capacity. • The applicant should describe how the project will create or improve production processes that reduce production cost and improve facility energy efficiency while creating high-wage jobs that can attract and retain a skilled American workforce. • Extent to which the project will contribute to bolstering the domestic supply chain by increasing domestic capacity. Extent to which project adopts workforce practices shown to increase technological viability.

Financial Stability/ Business Viability and Commercial Market Viability	2 pages maximum	**Financial Stability and Business Viability:** Applicants must describe the strength of the project's economic viability, sustainability, and potential growth beyond DOE funding. Relevant data-backed deliverables include:
		• Financial health assessment of the company, as well as any parent company with a controlling stake, indicating key financial ratios, e.g. current ratio, cash ratio, debt ratio, etc.
		  ○ Overview of the current capital stack, including cash balance
		• Financing plan for the facility including:
		  ○ Proposed budget / spend plan for the facility
		  ○ Proposed cost share for DOE

		• Overview of their supply plan and / or supply agreements with supporting documentation • Overview of equipment needs and required specifications for the site and sourcing plan for equipment and land • **Commercial Market Viability:** Applicants are required to succinctly describe their projected target market for manufactured product(s). Applicants are required to succinctly describe their projected target market for manufactured product(s). The plan should include an analysis of the current and projected target market for manufactured product(s), including the sufficiency of the existing target market(s); the stability of the target market – that the product(s) will be competitive based on a data-based market assessment, including with respect to average selling prices, strength of current and potential competitors, and forward-looking market trend; the market entry strategy (e.g. product differentiation, barriers to entry, intellectual property rights, first mover advantage, etc.); and the plan for marketing the product(s). Relevant data-backed deliverables include: • Assessment of the total and segment addressable market(s), including relevant projections and underlying market trends • If entering a new market or geography, summary of market entry strategy (e.g. product differentiation, barriers to entry, intellectual property rights, first mover advantage etc.) and rationale • Assessment of price-competitiveness, including relative to average selling prices • Customer segmentation analysis and the associated strategy for marketing the product(s) to the relevant segments.
Project Team and Approach	1 page maximum	Applicants are required to succinctly describe the unique capabilities and expertise of their organization and the organizations of any major project partners or subrecipients, debt or equity sponsors, contractors/vendors (if known), and any other counterparty that the applicant believes will enable the project to be successful. The applicant should also summarize the prior experience of their team and the team of any major project partners in similar undertakings to the proposed project. Applicants are asked to submit documentation of any potential

		sourcing from an entity that would be designated a FEOC by DOE's definitional guidance.
Community Benefits Plan: Job Quality and Equity	1 page maximum	Applicants are required to succinctly describe their approach to the Community Benefits Plan, addressing the four core elements: • Labor and Community engagement; • Creating and retaining quality jobs in BOTH construction and ongoing operations; • Advancing diversity, equity, inclusion, and accessibility including through equitable workforce development; and • Contributing to the Justice40 Initiative goal that 40% of the overall benefits of climate and clean energy investments flow to disadvantaged communities. In addition, applicants are required to succinctly describe their approach to prioritize quality job and equitable training opportunities for workers of low and moderate income, rural communities, and in communities that have lost jobs due to the displacements of fossil energy jobs, including automotive communities. Applicants should detail how many total construction phase and permanent jobs the project is anticipated to support, and how many prioritize opportunities for these specific workers and communities.

DOE makes an independent assessment of each Concept Paper based on the criteria in Section V. of the FOA. DOE will encourage a subset of applicants to submit Full Applications. Other applicants will be discouraged from submitting a Full Application. Discouraged applicants can still apply but would be well-served by a careful review of the rationale for discouragement. See Section VI.A.

D. Content and Form of the Full Application

Applicants must complete the following application forms found on the S3 Exchange website at https://infrastructure-exchange.energy.gov/.

Applicants will have approximately 30 days from receipt of the Concept Paper Encourage/Discourage notification on S3 Exchange to prepare and submit a Full Application. Regardless of the date the applicant receives the Encourage/Discourage notification, the submission deadline for the Full Application remains the date and time stated on the FOA cover page.

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

i. Full Application Content Requirements

Each Full Application must be limited to a single concept. Full Applications must conform to the following requirements and must not exceed the stated page limits. Below is an overview of each of the application components, followed by a detailed definition and overview of each component.

Component	File Format	Page Limit	File Name
Technical Volume	PDF	30 pages	ControlNumber_LeadOrganization_TechnicalVolume
Resumes	PDF	3 pages	ControlNumber_LeadOrganization_Resumes
Letters of Commitment	PDF	1 page	ControlNumber_LeadOrganization_LOCs
Offtake Agreement Letters of Commitment	PDF	1 page	ControlNumber_LeadOrganization_Offtake
Community Partnership Documentation	PDF	10 pages	ControlNumber_LeadOrganization_PartnerDocs
Impacted Tribal Nations Documentation	PDF	2 pages	ControlNumber_LeadOrganization_TribalNationsDoc
Letters of Support from Tribal Nations	PDF	n/a	ControlNumber_LeadOrganization_TribalLOS
Statement of Project Objectives	MS Word	8 pages	ControlNumber_LeadOrganization_SOPO
SF-424: Application for Federal Assistance	PDF	n/a	ControlNumber_LeadOrganization_App424
Budget Justification Workbook	MS Excel	n/a	ControlNumber_LeadOrganization_Budget_Justification
Summary/Abstract for Public Release	PDF	1 page	ControlNumber_LeadOrganization_Summary
Summary Slides	MS PowerPoint	n/a	ControlNumber_LeadOrganization_Slide
Subrecipient Budget Justification	MS Excel	n/a	ControlNumber_LeadOrganization_Subrecipient_Budget_Justification
Data Management Plan	Word	n/a	ControlNumber_LeadOrganization_DMP
Authorization from cognizant Contracting Officer for FFRDC	PDF	n/a	ControlNumber_LeadOrganization_FFRDCAuth
Budget for DOE/NNSA FFRDC	PDF	n/a	ControlNumber_LeadOrganization_FWP
SF-LLL Disclosure of Lobbying Activities	PDF	n/a	ControlNumber_LeadOrganization_SF-LLL
Foreign Entity Waiver Requests and Foreign Work Waiver Requests	PDF	n/a	ControlNumber_LeadOrganization_Waiver

Letters of Support from Labor Unions	PDF	1 page	ControlNumber_LeadOrganization_LOS-LU
Community Benefits Plan	PDF	12 pages	ControlNumber_LeadOrganization_CBP
Community Benefits Plan Budget Justification	MS Excel	n/a	ControlNumber_CBP_Budget_Justification
Location(s) of Work	Excel	n/a	ControlNumber_LeadOrganization_LOW
Environmental Information Volume (Applicants must use the template in Exchange)	PDF or Word	n/a	ControlNumber_LeadOrganization_EIV
Environmental Questionnaire (Applicants must use the template in Exchange	PDF	n/a	ControlNumber_LeadOrganization_EQ
Potentially Duplicative Funding Notice	PDF	n/a	ControlNumber_LeadOrganization_PDFN

Note: The maximum file size that can be uploaded to the S3 Exchange website is 50MB. See Section IV.B.

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

ii. Technical Volume

The Technical Volume is the main body of the application that includes cover page, project overview, technical description, innovation and impact, business development and management plan, workplan, and technical qualification and resources. The Technical Volume must conform to the following content and form requirements in the below table. This volume must address the technical review criteria as discussed in Section V. of the FOA. Save the Technical Volume in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_TechnicalVolume".

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

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

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

Technical Volume Content Requirements	
SECTION/PAGE LIMIT	**DESCRIPTION**
Cover Page	The cover page should include the project title, the specific Area of Interest being addressed, both the technical and business points of contact, names of all team member organizations, names of project managers, senior/key personnel and their organizations, the project location(s), and any statements regarding confidentiality.
Project Overview (Approximately 10% of the Technical Volume)	The Project Overview should include the information set forth below, as well as clear, unambiguous, and quantified data and measures to support any included analysis and projected impacts. Information provided in the Project Overview should be consistent with and supported by other sections of the application. • **Scope and Objectives:** The overall scope and objectives of the proposed project. • **Project Location:** The project location, including the address of the project location. In the event a project site is not yet identified, the schedule for securing a project site must be provided. • **Production Capacity:** The product(s) to be produced, the targeted annual manufacturing capacity and information or data to support the targeted annual manufacturing capacity. • **Market Overview:** The market segment(s) the project will fulfill the stability of that market segment(s), the growth potential of that market segment(s), and the competitiveness of the project in the market segment(s). Relevant data-backed deliverables include: ○ Assessment of price-competitiveness, including relative to average selling prices ○ Competitive landscape assessment, covering current and potential competitors, ○ Customer segmentation analysis and the associated strategy for marketing the product(s) to the relevant segments. • **Project Impacts:** The impact that the project will have in bolstering the relevant domestic supply chain, including an assessment of analysis of how the project will impact or improve the current baseline by increasing domestic capacity to meet current or projected demand and/or by onshoring capacity to enhance national security, resilience, and economic competitiveness.

	• **Experience:** The applicant should discuss previous manufacturing experience, the background of their organization, including the history, successes, and current technical track-record relevant to the technical topic being addressed in the Full Application. • **DOE Impact:** The applicant should discuss the impact that DOE funding would have on the proposed project. Applicants should specifically explain how DOE funding, relative to prior, current, or anticipated funding from other public and private sources, is necessary to achieve the project objectives. • **Use of Natural Resources:** The applicant should identify all potential short- or long-term constraints or sensitivities the project will have related to the community's access to natural resources (e.g., water) and Tribal cultural resources. As applicable, describe the environmental risk mitigation plan and resource strategy that ensures communities and neighborhoods remain healthy and safe.

Technical Description, Innovation, and Impact (Approximately 25% of the Technical Volume)	The Technical Description should contain the following information:
	• **Relevance and Outcomes:** The applicant should provide a detailed description of the technology to be produced and the unique characteristics that drive the product's value proposition. This section should describe key innovations that drive production efficiency and innovation such as relevant patents, processes, flow diagrams, etc. and the relevance of the proposed project to the goals and objectives of the FOA, including the potential to meet specific DOE technical targets, BIL policy Priorities, or other relevant performance targets. The applicant should clearly specify the expected outcomes of the project.
	• **Feasibility:** Within the feasibility discussion, the applicant should demonstrate the following:
	  ○ The technical feasibility of the proposed facility, technology, and their capability of achieving the anticipated performance targets.
	  ○ A description of any related previous work done and prior results.
	  ○ This section should address the project's access to necessary infrastructure (e.g., transportation, water, electricity transmission), including any use of existing infrastructure.
	  ○ This section should address the project's access to skilled workers, ideally in the surrounding community, for both the construction and ongoing operations of the facility.
	  ○ Include any developed maps, diagrams, and projections that support the understanding of feasibility of the proposed facility.
	• **Innovation and Impacts**: The applicant should describe any specific measures being taken by the project to improve or enhance the performance, quality, cost, and energy efficiency of production

	processes and facility energy use. Applicant should describe the innovativeness of the process compared to state-of-the-art and how this can result in better market positioning for facility success.
	• **Supply Chain Impacts of Project:** The applicant should supply any existing offtake agreements and describe how the project will address domestic supply chain issues, such as the following:
	  ○ Assessment of potential to address current or projected gaps or insufficiencies in the domestic supply chain, including ratio of units to be produced relative to federal funding requested.
	  ○ Assessment of other potential supply chain vulnerabilities, risks, or issues upstream or downstream of the project that could impact the project as well as the associated risk mitigation plan to address these issues.
	  ○ Sourcing plan for critical supply chain segments – components, systems, testing, etc.
	• **Technology Impact:** The applicant should describe how the end item technology, once deployed, will positively impact the domestic supply chain for batteries. Please specify the number of EVs, stationary installations, or units of equipment that could be enabled by the target production volume.

Business Development, Market Viability, Management, and Financial Plan (Approximately 35% of the Technical Volume)	The Business Development & Management Plan should address the items listed below, as well as any other pertinent and related information. Information provided in the Business Development & Management Plan should be consistent with and supported by other sections of the application.
	
	BUSINESS PLAN
	
	• **Site Selection:** If the applicant is building a new facility, the plan should include:
	  ○ The rationale for selection of the project site;
	  ○ Evidence of control over the site or the plan to establish control over the site such as a letter of intent, lease agreement, or contract;
	  ○ Specific information about how the project will leverage existing facilities and regional assets, including regional economic development plans, infrastructure, workforce, and workforce training assets, to foster commercial viability, sustainability, and future growth of the project; and
	  ○ Overview of equipment needs and required specifications for the site; sourcing plan for equipment and land, with supporting documentation, e.g. equipment supply agreement / LOI, land purchase / lease records.
	
	• **Engineering, Procurement, Construction, and Operations:** Applications should include initial versions of Engineering, Procurement, Construction and Operations (EPC&O) project documents if available.

The EPC&O project documents should provide detailed technical data and/or information to show how the targeted annual manufacturing capacity of the proposed project could be ramped and delivered.

- **Risk Analysis and Mitigation:** The applicant should provide a comprehensive Risk Management Plan (RMP) that is accompanied by a corresponding risk register for logging, tracking, assigning, and describing risks and the accompanying risk mitigation plans to be used for ongoing risk management. DOE expects award recipients to understand and actively manage risks.

  In addition, the applicant must identify risks and risk mitigation strategies associated with the upstream supply chain. This must include consideration of existing sources, projected raw material shortfalls, projected shortages, and those upstream sources that will need to be developed to support the proposed project end product. These the applicant must fully consider all aspects of the upstream supply chain that could impact the planned production capacity of the facility.

  - Foreign upstream sources must consider risks resulting from factors such as international trade laws and standards, foreign government influence, exposure to geopolitical conflicts, etc.
  - Domestic upstream sources must consider risks resulting from factors such as potential impact of natural disasters, potential impact of labor disputes, shortage of skilled workers, community and Tribal cultural considerations, environmental noncompliance or required approvals, etc.

MARKET VIABILITY

- **Upstream Supply Chain Security and Reliability:** The success of the proposed project is reliant upon the reliability and vulnerability of the upstream supply chain. The applicant must identify plans for managing the upstream supply chain to support the future of the proposed project.

  The application must identify the current and projected availability of outsourced upstream supply chain materials, the names and addresses of the upstream suppliers, whether or not the supplying entity meets the definition of a Foreign Entity of Concern (FEOC), the amount of materials to be provided by each supplier, and the adequacy of these sources to achieve the project capacity requirements.

- **Market Analysis:** Applicants are required to succinctly describe their projected target market for manufactured product(s). The plan should include an analysis of the current and projected target market for

manufactured product(s), including the sufficiency of the existing target market(s); the stability of the target market – that the product(s) will be competitive based on a data-based market assessment, including with respect to average selling prices, strength of current and potential competitors, and forward-looking market trend; the market entry strategy (e.g. product differentiation, barriers to entry, intellectual property rights, first mover advantage, etc.); and the plan for marketing the product(s).

Relevant data-backed deliverables include:

- Assessment of the total and segment addressable market(s), including relevant projections and underlying market trends
- If entering a new market or geography, summary of market entry strategy (e.g. product differentiation, barriers to entry, intellectual property rights, first mover advantage etc.) and rationale,
- competitive landscape assessment, covering current and potential competitors,
- Overview of planned or current off-take agreement(s) with state, local, and/or private companies/organizations (contractors, utilities, retail, and/or otherwise) with supporting documentation.

- **Growth Plan:** The plan should describe the strength of the project's economic viability, sustainability, and potential growth beyond DOE funding, including the ability to achieve follow-on investments beyond the award performance period. Applicants are encouraged to submit a description (potentially including letter(s) of commitment) of a supply agreements and off-take agreement(s) with state, local, and/or private companies/organizations (contractors, utilities, retail, and/or otherwise).

MANAGEMENT PLAN

- **Organizational Structure:** The plan should include an organizational chart of key entities and senior/key personnel for the project. 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) and the roles and responsibilities held by each organization. The level of participation by project participants should be supported by letter(s) of commitment and integrated into the Workplan. Identify any foreign entities proposed to be involved in the project. Note, applications must include a waiver for each proposed foreign entity proposed on the project team, see Section III.A.iii.

Applicants are further asked to include any information on supply sourcing from or critical material exporting to an entity that could be determined to be a FEOC.

- **Impacts:** Discussion of climate impacts and extreme weather patterns (such as tornadoes, hurricanes, heat and freezing temperatures, drought, wildfire, and floods) that may impact the resilience/sustainability of the project.

- **Management:** The plan should describe management and operations strategies for the project, including the names, positions or titles, and percentage of time that will be dedicated to the project by senior/key personnel. Key management and staff are expected to dedicate a significant percentage of their time executing on this project.

- **Labor Relations:** The plan should describe approach to labor relations, including existing collective bargaining agreements, neutrality agreements, or company policy related to labor organizing.

- **Experience:** The plan should detail the unique capabilities and expertise of the applicant and any major project partners or subrecipients, debt or equity sponsors, contractors/vendors (if known), and any other counterparty that the applicant believes will enable the project to be successful. In addition, the plan should summarize the prior experience of the applicant and any major project partners in similar undertakings to the proposed project.

- **Pending Investigations:** The plan should 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/key personnel, and the status of any appeals.

FINANCIAL PLAN

- The financial plan should include the proposed budget and spend plan covering both DOE funding and non-federal cost share. It may reference the Budget Justification Workbook. It should include: (i) the amount of cost share proposed in proportion to the Federal award requested; (ii) the proposed cost share and initial capital stack for the project at hand, including the availability, credibility, and risk/terms of non-federal cost share sources; (iii) the plan and schedule to achieve long-term financial viability, beyond federal funding; and (iv) the ability to provide contingency funding to meet unexpected project cost overruns, including the source of such funding.

  Relevant data for the financial plan for the facility should include:

  - Proposed budget / spend plan for the facility

- Proposed cost share for DOE
- Financial health assessment of the company, as well as any parent company with a controlling stake, indicating key financial ratios, e.g. current ratio, cash ratio, debt ratio, etc.
  - Overview of the current capital stack, including cash balance
- Plan to provide the full remainder of the DOE cost share from private sources, including balance sheet or other private capital, with supporting evidence (bank statements, LOIs, etc.)
  - Overview of equity positions, debt seniority, and other relevant T&Cs associated with each of the other sources of capital
- Proposed plan for contingency funding in the case of cost overruns on this project and overview of risk mitigations in place to avoid cost overruns on this project
- If known, plans for any follow-on investments for further growth or expansion after the award performance period, with supporting evidence (LOIs, etc.)

- **Total Project Cost:** Applications should include a current Total Project Cost (TPC) estimate that covers the entirety of the project, including construction, capital, labor, and finance costs associated with the Community Benefits Plan, and other cost categories as appropriate for individual project plans. Cost estimates should meet industry standards for the size and complexity of the proposed project and should explain what assumptions were used and why they were deemed appropriate. An overview of the project's current TPC estimate should be included in the Financial Plan. Supporting itemized data can be provided as part of the "Budget Justification Workbook." During award negotiations, DOE may conduct a third-party review of the project TPC. The rationale for all estimates and the approach for arriving at the estimates must be discussed. Additionally, the level of confidence in the estimate should be provided.

- **Applicant and Project Partners:** In line with the Management Plan section, the application should 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 should include a table that identifies the name of the organization or entity that is 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 facility funded by the project. The plan should indicate the applicant, project partners, and other debt or equity contributors by listing the organization or entity name, website address, mailing address, city and state, and postal code. The applicant must also identify whether they are applying as a small business and the planned use of small businesses for the award.

	• **Financial Strength:** The plan should describe the financial strength of the applicant and major project partners, as well as the project's financial impact to the prime recipient and major project partner involved. Plan should also describe the degree of the impact to other efforts across the organization resulting from the allocation of funds to the DOE project should be described. • **Project Financing:** The application must identify sources of project financing for the entire project plan. The application must specifically identify the amount of cash in hand as well as plans for obtaining the remaining balance from sources such as equity and/or debt as well as corporate approvals required and when the future financing will be obtained. The risks and risk mitigations for obtaining all required project finances must be provided. • **Other Federal Support:** Federal financing, such as grants, investment tax credits, or loan guarantees from federal agencies, cannot be leveraged by applicants to provide the required project cost share or to otherwise support the same scope of the project. However, an award under this FOA does not preclude the prime recipient or subrecipients from obtaining other forms of federal support for projects with separate scope. ○ **Non-Federal Support:** The plan should identify other non-federal governmental (including state or local) incentives or other assistance on which the proposed project relies to support the financing, construction, and operation of the project. It should 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.
Workplan (Approximately 20% of the Technical Volume)	The Workplan should include a summary of the Project Objectives, Technical Scope, Work Breakdown Structure (WBS), Milestones, Go/No-Go decision points, and Project Schedule. A detailed Statement of Project Objectives (SOPO) is separately requested. The Workplan should contain the following information: • **Project Objectives:** The applicant should provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcomes. • **Technical Scope Summary:** The applicant should provide a summary description of the overall work scope and approach to achieve the objective(s). The overall work scope is to be divided by performance periods that are separated by discrete, approximately annual decision points (see below for more information on Go/No-Go decision points). The applicant should describe the specific

expected end result of each performance period, including milestones in the Community Benefits Plan.

- **Work Breakdown Structure and Task Description Summary:** The Workplan should describe the work to be accomplished and how the applicant will achieve the milestones, will accomplish the final project goal(s), and will produce all deliverables. The Workplan is to be structured with a hierarchy of performance period (approximately annual), task and subtasks, which is typical of a standard WBS for any project. The Workplan shall contain a concise description of the specific activities to be conducted over the life of the project. The description shall be a full explanation and disclosure of the project being proposed (e.g., a statement such as "we will then complete a proprietary process" is unacceptable). It is the applicant's responsibility to prepare an adequately detailed task plan to describe the proposed project and the plan for addressing the objectives of this FOA. The summary provided should be consistent with the SOPO. The SOPO will contain a more detailed description of the WBS and tasks.

- **Key Contracts, Permits, and Agreements:** The Workplan should provide a top-level description, schedule, and status, of critical path contracts and agreements relevant to the project, encompassing permits, National Environmental Policy Act (NEPA), design, engineering, technology licensing, financing, construction, startup, commissioning, shakedown, operation, maintenance, and external plans or dependencies that could negatively impact the success of the proposed project. **If any known part of the project or critical supply source is pending permitting, please flag and describe your engagement to date.**

  Projects that involve construction typically encounter risks associated with the skilled labor shortages, escalating construction labor costs, and the resulting impact to the project schedule. The application must identify the labor risks for the proposed construction project and the approach to mitigating significant risks through agreements *such as* project labor agreements, community workforce agreements, contracts, partnership agreements, etc.

- **Milestone Summary:** The applicant should provide a summary of appropriate milestones throughout the project to demonstrate success. A milestone may be either a progress measure (which can be activity based) or a Specific, Measurable, Attainable, Realistic, and Timely (SMART) technical milestone. SMART milestones should be Specific, Measurable, Achievable, Relevant, and Timely, and must demonstrate a technical achievement rather than simply completing a task. These milestones should be highlighted in bulleted form or tables. Unless otherwise specified in the FOA, the

minimum requirement is that each project must have at least one milestone per quarter for the duration of the project with at least one SMART technical milestone per year (depending on the project, more milestones may be necessary to comprehensively demonstrate progress). The applicant should also provide the means by which the milestone will be verified. The summary provided should be consistent with the Milestone Summary Table in the SOPO and should also include the milestones associated with the Community Benefits Plan.

- **Go/No-Go Decision Points** (See Section VI.B.xiii. for more information on the Go/No-Go Review): The applicant should provide a summary of project-wide Go/No-Go decision points at appropriate points in the Workplan. At a minimum, each project must have at least one project-wide Go/No-Go decision point for each budget period (12 to 18-month period) of the project. See Section VI.B.xiii. The applicant should also provide the specific technical and community benefits plan criteria to be used to evaluate the project at the Go/No-Go decision point. The summary provided should be consistent with the SOPO. **End of Project Goal:** The applicant should provide a summary of the end of project goal(s). At a minimum, each project must have one SMART end of project goal. The summary provided should be consistent with the SOPO.
- **Integrated Project Schedule (IPS):** The applicant should provide a schedule for the entire project, including task and subtask durations, milestones, and Go/No-Go decision points. The initial IPS should include all major project activities and milestones (consistent with the overall Workplan), including engineering, design, procurement, construction, and Community Benefits Plan activities. If applicable, the schedule must allocate approximately nine months before the initiation of construction activities for environmental approvals required for compliance with NEPA and other applicable environmental statutes, including but not limited to the National Historic Preservation Act (NHPA). The applicant should also include the sufficiency of the Earned Value Management Plan to use total project costs and schedule to enable timely and accurate project performance monitoring and prediction as a means to make project adjustments. This IPS will be revised, expanded, and updated in future project activities. By the end of award negotiation, it is expected that the IPS will be execution ready and reflect comprehensive schedule risk and uncertainty analyses. During each budget period, projects will report actual progress against their execution schedule or schedules as part of regular project management reporting requirements.
- **Buy American Requirements for Infrastructure Projects:** Within the first 2 pages of the Workplan, include a short statement on

	whether the project will involve the construction, alteration, and/or repair of infrastructure in the United States. See Appendix D for applicable definitions and other information to inform this statement. See section IV.I.vii regarding Build America Buy America for Infrastructure Projects. • **Project Management:** The applicant should discuss the team's proposed management plan, including the following: ○ The overall approach to and organization for managing the work; ○ The roles of each project team member; ○ Any critical handoffs/interdependencies among project team members; ○ The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices; ○ A description of how project changes will be handled; and ○ If applicable, the approach to Quality Assurance/Control.
Technical Qualifications and Resources (Approximately 10% of the Technical Volume)	The Technical Qualifications and Resources should contain the following information: • Deliverables to describe the specific qualifications, experience, capabilities, and other resources necessary to complete the proposed project include: ○ Biography of the Lead Principal Investigator (the prime project manager assigned to the project) and core Project Team (which may include CEOs, CTOs, CFOs, VPs, and other key leadership personnel who will assist in overseeing the project) highlighting relevant skills and expertise in relation to the project plan; ○ Prior experience in performing tasks of similar risk and complexity; ○ Describe the key characteristics of the production capability such as production steps, production facility design and layout, production line(s) and equipment types, recycling plans, use of automation, inventory control, and the key performance indicators to be used to monitor efficiency, e.g. production cost, employee utilization, Takt time, etc.; ○ In the case of structure with a prime recipient and sub recipients, outline the operating structure and roles & responsibilities of each of the teaming partners; highlight any track record of prior collaboration; and ○ A description of the project team's unique qualifications and expertise, including those of key subrecipients. • A description of the project team's existing equipment and facilities, or equipment or facilities already in place on the proposed project site, that will facilitate the successful completion of the proposed project;

	include a justification of any new equipment or facilities requested as part of the project;
	• Relevant, previous work efforts, demonstrated innovations, and how these enable the applicant to achieve the project objectives;
	• The time commitment of the key team members to support the project;
	• A description of the technical services to be provided by DOE/NNSA FFRDCs, if applicable; and
	• For multi-organizational projects, describe succinctly:
	  ○ The roles and the work to be performed by the project manager and Senior/Key Personnel at the prime and sub levels;
	  ○ Business agreements between the applicant and sub;
	  ○ How the various efforts will be integrated and managed;
	  ○ Process for making decisions on technical direction;
	  ○ Publication arrangements;
	  ○ Intellectual property issues; and
	  ○ Communication plans.

iii. Resumes

A resume provides information reviewers can use to evaluate an individual's relevant skills and the experience of the key project personnel. Applicants must submit a resume (limited to three pages) for each project manager and Senior/Key Personnel that includes the following:

1. Contact information;
2. Education: 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; and
6. There should be no lapses in time over the past 10 years or since age 18, whichever period is shorter.

As an alternative to a resume, it is acceptable to use the biographical sketch format approved by the National Science Foundation (NSF). The biographical sketch format may be generated by the Science Experts Network Curriculum Vita (SciENcv), a cooperative venture maintained at https://www.ncbi.nlm.nih.gov/sciencv/, also available at

https://nsf.gov/bfa/dias/policy/nsfapprovedformats/biosketch.pdf. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats.

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

iv. Letters of Commitment

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

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

v. Off-Take Agreement Letters of Commitment

Submit Offtake Agreement Letters of Commitment from state, local, and/or private companies/organizations (contractors, utilities, retail, and/or otherwise) (one-page maximum per letter). Save the Offtake Agreement Letters of Commitment in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_OffTake".

vi. Community Partnership Documentation

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

total, the partnership documentation must not exceed 10 pages. Save the partnership documentation in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_PartnerDoc".

vii. Impacted Tribal Nations Documentation (if applicable)

For any project intended to be sited on Tribal land(s), a letter of support from Tribal leadership acting on behalf of the Tribe is required with the application. For projects not intended to be sited on Tribal land(s) but that may have other potential impacts on Tribal interests, letters of support are strongly encouraged and, depending on the nature of the impact, may be required if selected for negotiation of a financial assistance award.

These requirements apply in the case of any Federally recognized Indian Tribe(s), including Alaska Native regional and village corporation). Applicants are encouraged to reach out to Tribes as early as possible in the application process to give Tribes ample time to evaluate and respond. Where required, letters must be signed by an authorized representative of the Indian Tribe, typically an elected official (e.g., Chief, Chairman, Chairwoman, Governor, Nation Representative, President, Chief Executive Officer, Chief Financial Officer, Speaker of the Council, Speaker of the Congress). The signer of the letter must be an authorized representative at the time the application is submitted.

The following resources may be useful to help determine if a project may impact Indian Tribes and the appropriate contacts at Tribes. These resources are not exhaustive, and many Tribes have reserved rights which extend beyond their Tribal lands, or are covered within treaties, statutes, or case-law. Applicants are encouraged to do additional research:

- Map of Indian Lands: https://bia-geospatial-internal.geoplatform.gov/indianlands/
- Tribal Treaties Database: https://treaties.okstate.edu/
- Directory of federally recognized Tribes and Tribal leaders: https://www.bia.gov/service/tribal-leaders-directory
- Best Practices for Identifying and Protecting Tribal Treaty Rights, Reserved Rights, and other similar rights in federal regulatory actions: https://www.bia.gov/sites/default/files/dup/inline-files/best_practices_guide.pdf

To help determine if an Indian Tribe is impacted by the project, applicants must answer the following questions:

- Will the project take place on or adjacent to Tribal lands, traditional homelands, or in proximity to any Tribal historic or sacred sites? If so, which Indian Tribe(s) or Alaska Native regional or village

corporation(s) might be affected? If unsure, please explain any instances of uncertainty."

- Will the project use sources of raw minerals that are on or adjacent to the Tribal lands, traditional homelands, or in proximity to any Tribal historic or sacred sites? If so, which Indian Tribe(s) or Alaska Native regional or village corporation(s) might be affected? If unsure, please explain any instances of uncertainty."
- Does a federally recognized Indian Tribe(s), including Alaska Native regional or village corporation(s) have water rights (surface or subsurface), fishing rights, or other rights which could be impacted by the proposed project? For example, water use or discharge associated with process water at the facility.
    - If so, which Indian Tribe(s) or Alaska Native regional or village corporation might be affected? If unsure, please explain any instances of uncertainty.
    - Has the potential for resource migration been considered (e.g., ground water migration)?
    - Have any applicable legal determinations been made?"
- Does a federally recognized Indian Tribe(s), including Alaska Native regional or village corporation(s), have mineral rights which could be impacted by the proposed project? Note that the procurement of minerals from outside companies with existing mining operations would not necessarily be considered an impact, while the co-development of mining and processing operations may be considered an impact. Please explain.

Applicants are required to document any efforts taken to identify any potential impacts to Indian Tribes, including Alaska Native regional and village corporations, Indian lands, Alaska Native regional and village land, traditional homelands, Tribal rights, or historic or sacred sites, and address any actions taken to address or mitigate those potential actions including engaging with the affected Indian Tribe(s) or Alaska Native regional or village corporation(s).

If Tribes are impacted, applicant must provide initial information on location and impacts and how the applicant will engage with Indian tribe(s) throughout the project, including Alaska Native regional and village corporation(s). The Department of Energy may need to perform Government-to-Government consultation with the impacted Tribes(s) in addition to any engagement by applicant.

An applicant's failure to submit a letter of support, when required as described above, may constitute grounds for determining an application ineligible, non-

responsive to the FOA, not subject to further review and/or not otherwise subject to selection or award.

If the applicant is an Indian Tribe, other than an Alaska Native regional and village corporations, then a Tribal Council Resolution must be provided as the Applicant Commitment and verification of Cost Sharing. An Indian Tribe may provide a commitment in a format other than a Tribal Council Resolution provided that evidence of the statutory or other legal authority authorizing that form of commitment in lieu of a Tribal Council Resolution is also provided. Such evidence must establish that the commitment submitted carries the same level of Tribal leadership commitment as a Tribal Council Resolution. Applications without the requisite Applicant Commitment and cost share will be deemed ineligible.

Any application that may potentially impact Indian Tribe(s), including Alaska Native regional and village corporations, may be shared with the potentially impacted Tribes. Applicants should include a Notice of Restriction on Disclosure and Use of Data identifying any business sensitive, trade secrets, proprietary, or otherwise confidential information. Such information shall be used or disclosed only for evaluation of the application or to determine whether the proposed project affects an Indian Tribe(s).

Save the Impacted Tribal Nations Documentation in a single PDF file (2-page limit) using the following convention for the title: "ControlNumber_LeadOrganization_TribalNationsDoc".

Save the Letters of Support from Tribal Nations in a single PDF file (no page limit) using the following convention for the title: "ControlNumber_LeadOrganization_TribalLOS".

viii. Statement of Project Objectives (SOPO)

Applicants must complete a SOPO. A SOPO template is available on S3 Exchange at https://infrastructure-exchange.energy.gov/. The SOPO, including the Milestone Table, must not exceed 8 pages when printed using standard 8.5" x 11" paper with 1" margins (top, bottom, left, and right) with font not smaller than 12-point (except in figures or tables, which may be 10-point font). Save the SOPO in a single Microsoft Word file using the following convention for the title: "ControlNumber_LeadOrganization_SOPO".

ix. SF-424: Application for Federal Assistance

Applicants must complete the SF-424: Application for Federal Assistance, which is available on S3 Exchange at https://infrastructure-exchange.energy.gov/. The

list of certifications and assurances in Field 21 can be found at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms, under Certifications and Assurances. Note: The dates and dollar amounts on the SF-424 are for the complete project period and not just the first project year, first phase, or other subset of the project period. Save the SF-424 in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_424".

x. Budget Justification Workbook

Applicants must complete the Budget Justification Workbook, available on S3 Exchange at https://infrastructure-exchange.energy.gov/. Applicants must complete each tab of the Budget Justification Workbook for the project, including all work to be performed by the prime recipient and its subrecipients and contractors. Applicants should include costs associated with implementing the various BIL-specific requirements (e.g., Buy America requirements for infrastructure projects, Davis-Bacon, Community Benefits Plan, reporting, oversight) and with required annual audits and incurred cost proposals in their proposed budget documents. Such costs may be reimbursed as a direct or indirect cost. The "Instructions and Summary" included with the Budget Justification Workbook will auto-populate as the applicant enters information into the Workbook. Applicants must carefully read the "Instructions and Summary" tab provided within the Budget Justification Workbook. Save the Budget Justification Workbook in a single Microsoft Excel file using the following convention for the title:
"ControlNumber_LeadOrganization_Budget_Justification".

xi. Summary/Abstract for Public Release

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

xii. Summary Slides

Applicants must provide slides summarizing the proposed project. The Summary Slide templates are available on Exchange at https://infrastructure-exchange.energy.gov/.

Save the Summary Slides in a single Microsoft PowerPoint file using the following convention for the title: "ControlNumber_LeadOrganization_Slide".

xiii. Subrecipient Budget Justification (if applicable)

Applicants must provide a separate budget justification for each subrecipient that is expected to perform work estimated to be more than $250,000 or 25% of the total work effort, whichever is less. The budget justification must include the same justification information described in the "Budget Justification" section above. Save each subrecipient budget justification in a Microsoft Excel file using the following convention for the title: "ControlNumber_LeadOrganization_Subrecipient_Budget_Justification".

xiv. Data Management Plan

Applicants are required to submit a DMP with their Full Application.

An applicant is encouraged to use the template Data Management Plan (DMP) shown below. Alternatively, instead of selecting the template DMP, an applicant may submit another DMP provided that the DMP, at a minimum, (1) describes how data sharing and preservation will enable validation of the results from the proposed work, how the results could be validated if data are not shared or preserved and (2) has a plan for making all research data, if applicable, displayed in publications resulting from the proposed work digitally accessible at the time of publications. DOE Public Access Plan dated July 24, 2014 provides additional guidance and information on DMPs.

Template Data Management Plan:
The Recipient will not be required to make the underlying research data supporting findings in the deliverables under the grant publicly available other than as specified in the Statement of Project Objectives (SOPO) and the Intellectual Property Provisions attached to the grant. Specifically, any identified Protected Data, Restricted Computer Software, and Limited Rights Data will receive the protection available for such data under the grant and applicable regulations. Data that qualifies as Protected Data shall be shielded from public disclosure consistent with the conditions of the award, including the period of protection specified. The Government may verify the status of all data specifically used by or generated by the Recipient. The DOE, and any other duly authorized government representatives, will have access, upon request, to all

data generated under the award. Other than providing the specific deliverables subject to public disclosure as specified in the award, the Recipient does not currently intend to publish any other results from the project. Where a publication includes results of the project or the underlying research data, these results and data will be made available according to the policies of the publication, Recipient, and the Intellectual Property Provisions of this grant. The Recipient will ensure compliance with any requirements pertaining to advance review by the DOE and to any clause(s) mandating the acknowledgement of federal sponsorship of the data to be published.

Save the DMP in a single MS Word file using the following convention for the title "ControlNumber_LeadOrganization_DMP".

xv. Authorization for Non-DOE/NNSA or DOE/NNSA FFRDCs (if applicable)

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

xvi. Budget for DOE/NSNA FFRDC (if applicable)

If a DOE/NNSA FFRDC is to perform a portion of the work, the applicant must provide a DOE WP in accordance with the requirements in DOE Order 412.1A, Work Authorization System, Attachment 3, available at: https://www.directives.doe.gov/directives-documents/400-series/0412.1-BOrder-a-chg1-AdmChg. Save the FWP in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_FWP".

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

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

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

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

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

xviii. Waiver Requests (if applicable)

Foreign Entity Participation

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

Foreign Work Waiver Request

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

Save the Waivers in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_Waiver".

xix. Letters of Support from Labor Unions

If applicable, the letter(s) must state that the labor union is committed to specific terms that support the hiring and/or retention of workers in the motor vehicle or parts manufacturing industries, support workforce continuity, and reduce workforce risks. The following information for each third party contributing a letter should be identified: (1) the name of the organization; (2) the understanding and relationship between the applicant and the labor union. Each letter must not exceed one page. Save the letters of support in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_LOS-LU".

xx. Community Benefits Plan: Job Quality and Equity

The Community Benefits Plan: Job Quality and Equity (Community Benefits Plan or Plan) must set forth the applicant's approach to ensuring that federal investments advance four goals:
1) community and labor engagement;
2) creating and retaining high quality jobs
3) advancing DEIA, including through equitable workforce development; and
4) contributing to the Justice40 Initiative.

The below sections include the requirements for each goal. The Community Benefits Plan should indicate the applicant's intention to engage meaningfully with labor and community stakeholders on these goals, including the potential of entering into formal Workforce and Community Agreements. Given project complexity and sensitivities, applicants should consider pursuing multiple agreements.

~~For your convenience, a Community Benefits Plan template is available at: About Community Benefits Plans.~~ Applicants are strongly encouraged to use the template to complete their specific Plan. If the template is not used, the Plan must address all of the elements described below, and as outlined in the template. The Community Benefits Plan updated template is ~~also~~ available on Exchange at https://infrastructure-exchange.energy.gov/.

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

For additional information, see About Community Benefits Plans.

The Community Benefits Plan must address the following:

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

Community and labor engagement should lay the groundwork for the negotiation of Workforce and Community Agreements, which could take the form of one or more kinds of negotiated agreements with communities, labor unions, or, ideally, both. Registered apprenticeship programs, labor-management training partnerships, quality pre-apprenticeship programs, a card check provision, and local and targeted hiring goals are all examples of provisions that Workforce and Community Agreements could cover that would increase the success of a DOE-funded project. Such project-specific agreements between developers and community organizations should include provisions on how a project will help the community, such as by paying wages and benefits at or above the prevailing rate when not already required, committing to recruit and retain and hire local workers, especially from underserved communities, including workers from impoverished neighborhoods, and sending job opportunity notices to and recruiting from local residents and organizations.

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

2. Quality Jobs to Attract and Retain Skilled Workers: It is the policy of the United States to eliminate the causes of certain substantial obstructions to the free flow of commerce by encouraging the practice and procedure of collective bargaining and by protecting the exercise by workers of full freedom of association.

Applicant should provide clear indication of if and how they plan to affirmatively support worker organizing and collective bargaining for both construction and ongoing operations activities. This might include a commitment to negotiate pre-hire project labor agreements, a pledge to remain neutral during any union organizing campaigns, intention or willingness to permit union recognition through card check (as opposed to requiring union elections), intention or willingness to enter into binding arbitration to settle first contracts, a pledge to allow union organizers access to appropriate onsite non-work places (e.g., lunch rooms), a pledge to refrain from holding captive audience meetings, and other supportive commitments or pledges. CBPs with such commitments for both construction and operations will receive higher scores.

In addition, applicant should **detail the number and type of jobs that are anticipated to be created** and measures of the quality of those jobs, including

both construction (involved in both construction and maintenance of facilities) and ongoing operations/production jobs in the battery manufacturing, materials processing and recycling industries. The quality of jobs is indicated by upper quartile wages for the industry and occupation and competitive benefits, hourly worker participation and training in health and safety committees, and investments in worker education, training, and advancement in their careers, through labor-management training programs, tuition reimbursement, etc. The CBP template details examples of such commitments.

To ensure the highest standards of workplace safety and health, detail how hourly employees will be involved in the development and execution of a workplace safety and health plan, including worksite analysis, hazard prevention and control, safety and health training, and anti-harassment training. Applicants should also describe whether they plan to distribute notices of employment and labor law rights throughout work areas.

3. DEIA: The Community Benefits Plan must include a section describing how DEIA objectives will be incorporated into the project, including through equitable workforce development to remove and reduce barriers to economic opportunity for underrepresented workers. The section should detail how the applicant will partner with underrepresented businesses, educational institutions, and training organizations that serve workers who face barriers to accessing quality jobs, and/or other project partners to help address DEIA.

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

A) Commit to partnering with Minority Business Enterprises, minority-owned businesses, women-owned businesses, and veteran-owned businesses for contractor support needs.

B) To fill open positions for the DOE-funded project, partner with workforce training organizations serving underrepresented communities and those facing systemic barriers to quality employment, such as those with disabilities, women, returning citizens, opportunity youth, and veterans.

C) Describe Local and/or Economic Hire efforts (i.e., preferences for economically disadvantaged populations).

D) Describe how the applicant will support programs in the local community to improve access to career-track training and jobs for underrepresented workers and economically marginalized populations.

E) Describe how the applicant will invest in equitable workforce development pathways including labor-management training programs, sector-based workforce development initiatives, partnerships with community colleges, registered apprenticeship programs, and pre-apprenticeship programs that have formal relationships with registered apprenticeship programs.

F) Describe plans to provide training or supportive services to workers or training participants. Supportive services include but are not limited to childcare; housing; counseling; health services; legal services; financial and budgeting resources; emergency cash assistance for items such as tools, work clothing, application fees, and other costs of apprenticeship or required pre-employment training; transportation and travel to training and work sites; car repair; and services aimed at helping to develop and retain underrepresented groups like mentoring, support groups, and peer networking.

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

A) Identification of applicable disadvantaged communities to which the anticipated project benefits will flow.

B) Identification of applicable benefits that are quantifiable, measurable, and trackable, including, at a minimum, a discussion of the relevance of each of the eight DOE Justice40 Initiative benefits outlined below.

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

C) A description of how and when anticipated benefits are expected to flow to disadvantaged communities. For example, whether the benefits will be provided directly within disadvantaged communities identified in the Justice40 Initiative section or in another way; whether the benefits will flow during project development or after project completion; and how the applicant will track benefits delivered.

D) A discussion of anticipated negative and cumulative environmental impacts on disadvantaged communities. Applicants should discuss any anticipated negative or positive environmental impacts associated with the project, and how they will mitigate any negative impacts. Within the context of cumulative impacts created by the project, applicants should use Environmental Protection Agency's EJSCREEN tool to quantitatively discuss existing environmental impacts in the project area. See EJScreen: Environmental Justice Screening and Mapping Tool.

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

For the Community Benefit Plan:

- The applicant must include at least one Specific, Measurable, Attainable, Realistic and Timely (SMART) milestone per budget period to measure progress on the proposed actions.
- The Plans will be evaluated as part of the technical review process. If DOE selects a project, DOE will incorporate the Plans into the award and the recipient must implement its Plans when carrying out its project.
- Public transparency around the plan and SMART commitments ensure accountability.
- DOE will evaluate the recipient's progress during the award period of performance, including as part of the Go/No-Go review process.

In addition, in alignment with BIL Sections 40207 (b) & (c), this FOA and any related activities will prioritize projects that provide work opportunities for low- and moderate-income workers, rural communities, and communities that have lost jobs due to the displacements of fossil energy jobs (including manufacturing of internal combustion engine vehicles and powertrains. Engagement with Tribal Nations, universities and laboratories is also important. In relation to these priorities, please detail engagement, the quality of jobs, investments in equitable workforce development, and the targeted communities served in the appropriate CBP sections above.

xxi. Community Benefits Plan Budget Justification

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

xxii. Locations of Work

Applicants must complete the Locations of Work Documentation, available on Exchange at https://infrastructure-exchange.energy.gov/. The applicant must complete the supplied template by listing the city, state, and zip code + 4 digits for each location where project work will be performed by the prime recipient or subrecipient(s). Save the completed template as a Microsoft Excel file using the following convention for the title: "Control Number_LeadOrganization_LOW".

xxiii. Environmental Information Volume (EIV)

You must complete the Environmental Information Volume. This form is available on Exchange at https://infrastructure-exchange.energy.gov/. Save the Environmental Information Volume in a single PDF file using the following convention for the title "Control Number_LeadOrganization_EIV".

xxiv. Environmental Questionnaire

You must complete the Environmental Questionnaire. This form is available on Exchange at https://infrastructure-exchange.energy.gov/. The form is available in both Word and PDF. Save the Environmental Questionnaire in a single PDF file using the following convention for the title "Control Number_LeadOrganization_EQ". Files submitted in Word format will also be accepted.

xxv. Potentially Duplicative Funding Notice

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

activities that potentially overlap with the activities funded under the DOE award, the recipient must promptly notify DOE in writing of the potential overlap and state whether project funds from any of those other federal awards have been, are being, or are to be used (in whole or in part) for one or more of the identical cost items under the DOE award. If there are identical cost items, the recipient must promptly notify the DOE Contracting Officer in writing of the potential duplication and eliminate any inappropriate duplication of funding.

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

xxvi. Transparency of Foreign Connections

NOTE: This information does not need be submitted with the Full Application. This information will be required of applicants selected for Pre-Selection Interviews or upon request by DOE. Also note that this information is in addition to and separate from the requirement that applicants whose supply chains contain foreign entities of concern will not be prioritized.

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

1. Entity name, website address, and mailing address;
2. The identity of all owners, principal investigators, project managers, and senior/key personnel who are a party to any *Foreign Government-Sponsored Talent Recruitment Program* of a foreign country of risk (i.e., China, Iran, North Korea, and Russia);
3. The existence of any joint venture or subsidiary that is based in, funded by, or has a foreign affiliation with any foreign country of risk;
4. Any current or pending contractual or financial obligation or other agreement specific to a business arrangement, or joint venture-like arrangement with an enterprise owned by a foreign state or any foreign entity;
5. Percentage, if any, that the proposed recipient or subrecipient has foreign ownership or control;
6. Percentage, if any, that the proposed recipient or subrecipient is wholly or partially owned by an entity in a foreign country of risk;

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

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

E. Post Selection Information Requests

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

- Personnel proposed to work on the project and collaborating organizations (See Section VI.B.xix. Participants and Collaborating Organizations);

- Current and Pending Support;
- Data Management Plan;
- Indirect cost information;
- Other budget information;
- Letters of Commitment from third parties contributing to cost share, if applicable;
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5);
- Information for the DOE Office of Civil Rights to process assurance reviews under 10 CFR 1040;
- Representation of Limited Rights Data and Restricted Software, if applicable;
- Information related to Davis-Bacon Act requirements;
- Information related to any proposed Workforce and Community Agreement, as defined above in the "Community Benefits Plan: Job Quality and Equity," that applicants may have made with the relevant community;
- Any proposed or required Project Labor Agreements; and
- Environmental Questionnaire.

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

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

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

G. Submission Dates and Times

All required submissions must be submitted in S3 Exchange no later than 5 p.m. ET on the dates provided on the cover page of this FOA.

H. Intergovernmental Review

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

I. Funding Restrictions

i. Allowable Costs

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

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

ii. Pre-Award Costs

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

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

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

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

DOE's decision whether and how to distribute federal funds under this FOA is subject to NEPA. Applicants should carefully consider and should seek legal counsel or other expert advice before taking any action related to the proposed project that would have an adverse effect on the environment or limit the choice of reasonable alternatives prior to DOE completing the NEPA review process.

DOE does not guarantee or assume any obligation to reimburse pre-award costs incurred prior to receiving written authorization from the Contracting Officer. If the applicant elects to undertake activities that DOE determines may have an adverse effect on the environment or limit the choice of reasonable alternatives prior to receiving such written authorization from the Contracting Officer, the applicant is doing so at risk of not receiving federal funding for its project and such costs may not be recognized as allowable cost share. Nothing contained in the pre-award cost reimbursement regulations or any pre-award costs approval letter from the Contracting Officer overrides the requirement to obtain the written authorization from the Contracting Officer prior to taking any action that may have an adverse effect on the environment or limit the choice of reasonable alternatives.

Likewise, if an application is selected for negotiation of award, and the prime recipient elects to undertake activities that are not authorized for federal funding by the Contracting Officer in advance of DOE completing an environmental review (NEPA, NHPA, and other applicable environmental statutes), the prime recipient is doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

iii. Performance of Work in the United States (Foreign Work Waiver)

1. Requirement

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

2. Failure to Comply

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

3. Waiver

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

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

iv. Construction

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

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

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

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

v. Foreign Travel

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

vi. Equipment and Supplies

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

However, pursuant to the FY23 Consolidated Appropriations Act (Pub. L. No. 117-328), Division D, Title III, Section 309, the Secretary or a designee of the Secretary may, at their discretion, vest unconditional title or other property interests acquired under this project regardless of the fair market value of the property at the end of the award period.

vii. Build America Buy America Requirements for Infrastructure Projects

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

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

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

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

Subawards should conform to the terms of the prime award from which they flow; in other words, for-profit prime recipients are not required to flow down these Buy America requirements to subrecipients, even if those subrecipients are "non-Federal entities", e.g., a State, local government, Indian tribe, Institution of Higher Education, or nonprofit organization. Conversely, prime recipients which are non-Federal entities must flow the Buy America requirements down to all subrecipients, even if those subrecipients are for-profit entities. Finally, for all applicants—both non-Federal entities and for-profit entities—DOE is including a Program Policy Factor that the Selection Official may consider in determining which Full Applications to select for award negotiations that considers whether the applicant has made a commitment to procure U.S. iron, steel, manufactured products, and construction materials in its project.

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

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

viii. Davis-Bacon Act Requirements

Projects awarded under this FOA will be funded under Division D of BIL. Accordingly, per Section 41101 of that law, all laborers and mechanics employed by the recipient, subrecipients, contractors, or subcontractors in the performance of construction, alteration, or repair work funded in whole or in

part under this FOA shall be paid wages at rates not less than those prevailing on similar projects in the locality, as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code commonly referred to as the Davis-Bacon Act (DBA).

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

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

(1) Ensuring that the wage determination(s) and appropriate Davis-Bacon clauses and requirements are flowed down to and incorporated into any applicable subcontracts or subrecipient awards;

(2) Ensuring that if wage determination(s) and appropriate Davis-Bacon clauses and requirements are improperly omitted from contracts and subrecipient awards, the applicable wage determination(s) and clauses are retroactively incorporated to the start of performance;

(3) Being responsible for compliance by any subcontractor or subrecipient with the Davis-Bacon labor standards;

(4) Receiving and reviewing certified weekly payrolls submitted by all subcontractors and subrecipients for accuracy and to identify potential compliance issues;

(5) Maintaining original certified weekly payrolls for three years after the completion of the project and making those payrolls available to DOE or the U.S. Department of Labor (DOL) upon request, as required by 29 CFR 5.6(a)(2);

(6) Conducting payroll and job-site reviews for construction work, including interviews with employees, with such frequency as may be necessary to assure compliance by its subcontractors and subrecipients and as requested or directed by DOE;

(7) Cooperating with any authorized representative of DOL in its inspection of records, interviews with employees, and other actions undertaken as part of a DOL investigation;

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

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

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

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

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

DOE anticipates contracting with a third party for a Davis-Bacon Act electronic payroll compliance software application. Recipients of funding under this FOA must ensure the timely electronic submission of weekly certified payrolls through this software as part of its compliance with the Davis-Bacon Act unless a

waiver is granted to a particular contractor or subcontractor because it is unable or limited in its ability to use or access. Applicants should indicate if they will seek a waiver.

ix. Lobbying

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

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

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

x. Risk Assessment

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

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

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

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

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

Further, as DOE invests in critical infrastructure and funds critical and emerging technology areas, DOE also considers possible threats to United States research, technology, and economic security from undue foreign government influence when evaluating risk. If high risks are identified and cannot be sufficiently mitigated, DOE may elect to not fund the applicant. As part of the research, technology, and economic security risk review, DOE may contact the applicant and/or proposed project team members for additional information to inform the review.

xi. Invoice Review and Approval

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

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

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

a. Prohibition

Persons participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk* are prohibited from participating in projects selected for federal funding under this FOA. Should an award result

from this FOA, the recipient must exercise ongoing due diligence to reasonably ensure that no individuals participating on the DOE-funded project are participating in a *Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk*. Consequences for violations of this prohibition will be determined according to applicable law, regulations, and policy. Further, the recipient must notify DOE within five (5) business days upon learning that an individual on the project team is or is believed to be participating in a foreign government talent recruitment program of a foreign country of risk. DOE may modify and add requirements related to this prohibition to the extent required by law.

b. Definitions

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

2. **Foreign Country of Risk.** DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

xiii. Affirmative Action and Pay Transparency Requirements

All applicants must comply with all applicable federal labor and employment laws, including but not limited to Title VII of the Civil Rights Act of 1964, the Fair

Labor Standards Act, the Occupational Safety and Health Act, and the National Labor Relations Act, which protects employees' right to bargain collectively and engage in concerted activities for the purpose of workers' mutual aid or protection.

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

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

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

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

DOL's Office of Federal Contractor Compliance Programs (OFCCP) uses a neutral process to schedule compliance evaluations. Consult OFCCP's Technical Assistance Guide[25] 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 the 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. For more information regarding this program, see https://www.dol.gov/agencies/ofccp/construction/mega-program.

[25] See OFCCP's Technical Assistance Guide at: https://www.dol.gov/sites/dolgov/files/ofccp/Construction/files/ConstructionTAG.pdf?msclkid=9e397d68c4b111ec9d8e6fecb6c710ec Also see the National Policy Assurances http://www.nsf.gov/awards/managing/rtc.jsp

xiv. Foreign Collaboration Considerations

a. Consideration of new collaborations with foreign entities and governments. The recipient will be required to provide DOE with advanced written notification of any potential collaboration with foreign entities or governments in connection with its DOE-funded award scope. The recipient will then be required to await further guidance from DOE prior to contacting the proposed foreign entity or government regarding the potential collaboration or negotiating the terms of any potential agreement.

b. Existing collaborations with foreign entities and governments. The recipient will be required to provide DOE with a written list of all existing foreign collaborations in which has entered in connection with its DOE-funded award scope.

c. Description of collaborations that should be reported. In general, a collaboration will involve some provision of a thing of value to, or from, the recipient. A thing of value includes but may not be limited to all resources made available to, or from, the recipient in support of and/or related to the DOE award, regardless of whether or not they have monetary value. Things of value also may include in-kind contributions (such as office/laboratory space, data, equipment, supplies, employees, students). In-kind contributions not intended for direct use on the DOE award but resulting in provision of a thing of value from or to the DOE award must also be reported. Collaborations do not include routine workshops, conferences, use of the recipient's services and facilities by foreign investigators resulting from its standard published process for evaluating requests for access, or the routine use of foreign facilities by awardee staff in accordance with the recipient's standard policies and procedures.

V. Application Review Information

A. Technical Review Criteria

i. Concept Papers

Concept Papers are evaluated based on consideration of 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:

- **Technology:** The applicant clearly describes the end item technology to be manufactured, the unique aspects of the technology, and the proposed manufacturing capacity.

- **Technology impact:** Extent to which the project will contribute to bolstering the domestic supply chain by increasing domestic capacity. Extent to which project adopts workforce practices shown to increase technological viability, such as compensation that attracts and retains experienced workforce, training in fundamental principles (such as registered apprenticeship), frontline worker involvement in problem-solving, and supportive services that allow workers to fully focus on their work (e.g., family care and transportation).

- **Technical feasibility:** The extent to which the planned project represents a viable plan that separates it from competitors.

- **Business viability/commercial market:** The degree to which the planned project supports a target market that is economically viable, sustainable, and contains potential growth after the project concludes.

- **Financial availability:** The proposed financing plan, including the availability, credibility, capability, strength, and risk/terms of non-federal cost share sources to meet ongoing need.

- **Strength of cost share sources:** Extent and strength of cost share commitments including extent of use of cash as cost share, extent of the amount of cost share in proportion to the Federal funds requested, extent of leverage measured in terms of annual production capacity per government dollar invested for the

entire project. The extend of project financing in-hand and the soundness of the plan to obtain the remaining balance.

- **Qualifications and resources:** The extent of evidence of the project team and key personnel's experience and success in industry and/or in similar projects. The project team has the qualifications, experience, capabilities, and other resources (such as facilities, infrastructure, and workforce) necessary to complete the proposed project.

- **Community benefits plan approach:** The applicant clearly describes the approach planned for the four core elements.

ii. Full Applications

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

Criterion 1: Technology Merit, Innovation, and Supply Chain Impact (30%)

This criterion involves consideration of the following factors:

- **Supply chain security:** The extent to which the project resolves current or projected gaps in secure, resilient domestic supply chains, including domestic manufacturing equipment, extent of end product domestic content.

- **Supply chain strength:** Strength of the supply chain to support production of the projected market share as supported through supply chain analysis and supporting mitigation strategies for supply chain vulnerabilities, risks, or issues revealed.

- **Supply chain coverage:** Ability to significantly satisfy gaps within the critical supply chain segment(s) – materials, components, or whole systems.

- **Supply chain analysis:** Reasonableness of the supply chain analysis, comprehensiveness of supplier company list with locations, degree of supply capacity to be purchased from each supplier, extent of supply provided by domestic suppliers in terms of capacity and sales amount, justifications for the use of non-domestic suppliers, validity of certifications for foreign entities of concern, as well as strength and quantity of supplier offtake agreements and/or Letters of Commitment (Letters of Support are not applicable to this criterion). Validity of the upstream supply chain risk analysis and proposed risk mitigations.

  Applicants are asked to provide Information on facility and project sourcing from any entities which could be considered foreign entities of concern as defined by

section 40207(a)(5) of BIL as interpreted by DOE's guidance on the term foreign entity of concern. Applicants are further asked to provide information on recycled critical material exporting to an entity that could be determined to be a foreign entity of concern (if applicable).

- **Feasibility:** The extent to which the project can achieve commercial production within the proposed timeframe.

- **Technical innovation:** The extent to which the project will create efficient, advanced, and innovative production processes, develop partnerships with universities and laboratories to spur innovation and drive down costs, and reduce facility/process GHG emissions.

- **Technology impact:** The extent to which the project will contribute to reduction in energy use, cost, and greenhouse gas emissions, including projected manufactured end item performance.

- **End product:** Comprehensiveness of the manufactured product description, including specifications and applications.

- **Recycling approach:** Comprehensiveness and reasonableness of the recycling approach in terms of plans for recovery and reuse of materials within the manufacturing process in addition to the extent of waste material or residue that will be discarded annually at full production capacity.

- **Environmental impacts:** Comprehensiveness and reasonableness of the plan to address potential environmental impacts including emissions of greenhouse gases and other air pollutants, energy use, water use, habitat destruction or impairment, etc. from the manufacturing facility or facilities.

- **Workforce and operational impact:** Effectiveness of strategies that can contribute to providing good jobs that enable steady worker supply, retention, and increased productivity, such as training (especially registered apprenticeship), and frontline worker problem-solving.

    - Effectiveness of strategies that can contribute to workforce transition, retention, and increased productivity, such as training (especially registered apprenticeship), and frontline worker problem-solving.

- **Applicants will be reviewed considering factors that minimize risks to project success, including implementing effective strategies to avoid labor strife and otherwise ensure adequate labor supply**.

Criterion 2: Cost Share, Financial Resources, and Commercial Market Viability (30%)

This criterion involves consideration of the following factors:

- **Cost share strength:** Soundness of proposed cost share, extent of use of cash as cost share, extent of commitments from potential investment partners if proposed, and reasonableness of the plan to secure future project financing.
    - The extent of the amount of cost share in proportion to the Federal funds requested.
    - The extent of leverage measured in terms of annual production capacity per government dollar invested for the entire project.
    - The extent to which the financial solvency of all entities is detailed to complete a project of this scale.
- **Financial availability:** The extent of cash in hand for the project and the realism of the plan for obtaining the balance of required project financing as well as the ability to leverage state and local incentives in addition to DOE funding, including the availability, credibility, capability, strength, and risk/terms of non-federal cost share sources to meet ongoing need.
- **Business viability:** The degree to which the application justifies the proposed project's economic viability, sustainability, and potential growth, to include current customers and replicability beyond DOE funding.
- **Market viability:** The extent to which the applicant demonstrates potential market for manufactured product including that the end product will be competitive based on a data-based market assessment, including with respect to average selling prices, competition, off-take agreement(s), and forward-looking market trend.
- **Budget reasonableness:** The reasonableness of the proposed project budget and spend plan for the proposed project and objectives, including the level of contingency proposed to address risk.

- **Intellectual property:** Extent that North American-owned intellectual property and content are deployed as a result of the project.

- **Regional impacts:** The extent to which the proposed project utilizes and leverages available regional resources to meet the FOA objectives.

In assessing each item above, the following will be considered: (a) the comprehensiveness, specificity, and accuracy of the information and plans provided; (b) the reasonableness of assumptions used in making estimations and projections and (c) the extent to which the applicant demonstrates an understanding of relevant risks (e.g., technical, siting, market, and/or project management risks) and the quality of the strategies put forward to mitigate and manage those risks.

Criterion 3: Project Workplan, Management Team, and Partners (20%)

This criterion involves consideration of the following factors:

- The degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan will succeed in meeting the project goals.

- The adequacy, reasonableness, and soundness of the project metrics, project schedule, milestones, and track process.

- The soundness of the plan to address environmental, siting, and other regulatory requirements for the project in a timely manner.

- The extent to which the Community Benefits Plan is integrated into the project management schedule and provides mechanisms with measurable actions.

- The extent to which the proposed site and facilities are suited for the proposed project.

- The capability of the project team to address all aspects of the proposed work with a high probability of success, including the qualifications, relevant experience and expertise, and time commitment of the individuals on the team. The extent of evidence of the project teams' and key personnel's experience and success in industry and/or in similar projects.

- The level of participation by project participants, including labor partners, as evidenced by letter(s) of commitment and how well they are integrated into the Workplan.

- The degree to which the application defines a project management structure and plan, including clear and appropriate roles for team members, that gives confidence in a high likelihood of success.

- The degree to which the application's labor relations plan and strategy reflects federal government policy to maintain an equitable balance of power between labor and management.

- The extent of project strengthening by participation in consortia or industry partnerships.

- The level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan. The extent of labor partnerships and agreements to support project execution.

Criterion 4: Community Benefits Plan (20%)

This criterion involves consideration of the following factors:

Community and Labor Engagement

- Extent to which the applicant demonstrates community and labor engagement to date that results in support letters from labor unions and CBOs for the proposed project.

- Extent to which the applicant has a clear and appropriately robust plan to negotiate enforceable Workforce & Community Agreements—with labor unions, Tribal entities, and community-based organizations that support or work with disadvantaged communities and other affected stakeholders.

Quality Jobs to Attract and Retain Skilled Workers

- Quality and manner in which the proposed project will create and/or retain high quality jobs with upper quartile wages, and employer-sponsored benefits for hourly classifications in both construction and ongoing production; investments in education, training, and worker advancement; and creation of health and safety committees.

- Extent to which the project affirmatively supports in worker organizing and collective bargaining, by avoiding classification of workers as contract or temporary workers, pledging neutrality, union recognition via card check, or other actions that contribute to the effective conduct of business and facilitates amicable settlements of any potential disputes between employees and employers.

- Affirmative commitment to negotiate or use a Project Labor Agreement on construction activity to mitigate risks and maximize benefits to project.

Diversity, Equity, Inclusion, and Accessibility

- Extent to which the Community Benefits Plan includes specific and high-quality actions to meet DEIA goals, which may include DEIA recruitment procedures, supplier diversity plans, and other DEIA initiatives; and

- Quality of any partnerships and agreements with apprenticeship readiness programs, or community-based workforce training and support organizations serving workers facing systematic barriers to employment to facilitate participation in the project's construction and operations.

Justice40 Initiative

- Extent to which the Community Benefits Plan identifies: specific, measurable benefits for disadvantaged communities, how the benefits will flow to disadvantaged communities, and how negative environmental impacts affecting disadvantaged communities would be mitigated; and

- Extent to which the project would contribute to meeting the objective that 40% of the overall benefits of climate and clean energy investments will flow to disadvantaged communities.

iii. Criteria for Replies to Reviewer Comments

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

B. Standards for Application Evaluation

Applications that are determined to be eligible will be evaluated in accordance with this FOA, by the standards set forth in EERE's Notice of Objective Merit Review Procedure (76 Fed. Reg. 17846, March 31, 2011) and the guidance provided in the "DOE Merit Review Guide for Financial Assistance," effective September 2020, which is available at: https://energy.gov/management/downloads/merit-review-guide-financial-assistance-and-unsolicited-proposals-current.

C. Other Selection Factors

i. Program Policy Factors

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

- The degree to which the proposed project exhibits technological diversity when compared to the existing DOE project portfolio and other projects selected from the subject FOA.
- The degree to which the proposed project, including proposed cost share, optimizes the use of available DOE funding to achieve programmatic objectives.
- The number, type, and quality of jobs created or retained for low- and moderate-income workers and/or in rural communities or communities facing job loss from displacement of fossil fuels, including automotive manufacturing communities.
- The degree to which the project engages Tribal entities, universities, and national laboratories.
- The degree to which the proposed project, or group of projects, represent a desired geographic distribution, including communities facing job loss from displacement of fossil fuels, including automotive manufacturing communities.
- The degree to which the proposed project has committed to not use battery material supplied by or originating from a foreign entity of concern.
- The degree to which the proposed project incorporates applicant or team members from Minority Serving Institutions (e.g., Historically Black Colleges and Universities (HBCUs)/Other Minority Institutions); and partnerships with Minority Business Enterprises, minority-owned businesses, woman-owned businesses, veteran-owned businesses, or Tribal Nations.
- The degree to which the proposed project maximizes benefits to disadvantaged communities.
- The degree to which the proposed project minimizes environmental impacts, especially to disadvantaged communities.
- The degree to which the proposed project supports the expansion of union jobs.
- 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.
- The degree to which the proposed project collectively represents a diversity of applicant types and sizes of applicant organizations.
- The degree to which the proposed project has broad public support from the communities most directly impacted by the project.
- The degree to which the proposed project avoids duplication/overlap with other publicly or privately funded work.
- The degree to which the proposed project enables new and expanding market segments.
- The degree to which the project's solution or strategy will maximize deployment or replication.
- The degree to which the proposed project utilizes feedstock produced in the United States.
- The proposed project is located and operated in the United States.
- The degree to which the proposed project is not controlled or influenced by foreign entities of concern.
- The degree to which the proposed project includes prime and subrecipients that are not foreign entities of concern.
- The degree to which the proposed projects involves offtake agreements with entities that are not foreign entities of concern. The degree to which applicants producing recycled feedstocks will not export recovered critical materials to a foreign entity of concern.

ii. Strengthening Secure, Domestic, Clean Energy Supply Chains

In addition to the above criteria, the DOE Selection Official may consider whether proposed projects address specific gaps, vulnerabilities, or risks in the domestic production of clean energy products.

D. Evaluation and Selection Process

i. Overview

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

ii. Pre-Selection Interviews

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

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

Invited applicants will be required to submit (1) disclosures for senior/key personnel that address foreign affiliations, obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government sources of support, and connections with foreign-government talent recruitment programs, and (2) Transparency of Foreign Connections information as it relates to the proposed recipient and subrecipients.

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

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

iii. Pre-Selection Clarification

DOE may determine that pre-selection clarifications are necessary from one or more applicants. Pre-selection clarifications are distinct from and less formal than pre-selection interviews. These pre-selection clarifications will solely be for the purposes of clarifying the application. The pre-selection clarifications may occur before, during or after the merit review evaluation process. Information provided by an applicant that is not necessary to address the pre-selection clarification question will not be reviewed or considered. Typically, a pre-selection clarification will be carried out through either written 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.

iv. Recipient Responsibility and Qualifications

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

The applicant, at its option, may review information in the entity information domain in SAM.gov and comment on any information about itself that a federal awarding agency previously entered and is currently in the entity information domain in SAM.gov.

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

v. Selection

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

E. Anticipated Notice of Selection and Award Negotiation Dates

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

VI. Award Administration Information

A. Award Notices

i. Ineligible Submissions

Ineligible Concept Papers and Full Applications will not be further reviewed or considered for award. The Contracting Officer will send a notification letter by email to the technical and administrative points of contact designated by the applicant in S3 Exchange. The notification letter will state the basis upon which the Concept Paper or the Full Application is ineligible and not considered for further review.

ii. Concept Paper Notifications

DOE will notify applicants of its determination to encourage or discourage the submission of a Full Application. DOE will post these notifications to S3 Exchange. DOE may include general comments provided from reviewers on an applicant's Concept Paper in the encourage/discourage notifications.

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

iii. Full Application Notifications

DOE will notify applicants of its determination via a notification letter by email to the technical and administrative points of contact designated by the applicant in S3 Exchange. The notification letter will inform the applicant whether or not its Full Application was selected for award negotiations. Alternatively, DOE may notify one or more applicants that a final selection determination on particular Full Applications will be made at a later date, subject to the availability of funds or other factors.

iv. Applicants Selected for Award Negotiations

Successful applicants will receive written notification that they have been selected for award negotiations. Receipt of a notification letter selecting a Full Application for award negotiations does not authorize the applicant to commence performance of the project. If an application is selected for award negotiations, it is not a commitment by DOE to issue an award nor is it a

guarantee of federal government funding. Applicants do not receive an award unless and until award negotiations are complete and the Contracting Officer executes the funding agreement, accessible by the prime recipient in FedConnect.

The award negotiation process typically takes several months. Applicants must designate a primary and a backup point-of-contact in S3 Exchange with whom DOE will communicate to conduct award negotiations. The applicant must be responsive during award negotiations (i.e., provide requested documentation) and meet the negotiation deadlines. If the applicant fails to do so or if award negotiations are otherwise unsuccessful, DOE will cancel the award negotiations and rescind the selection. DOE reserves the right to terminate award negotiations at any time for any reason.

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

v. Alternate Selection Determinations

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

vi. Unsuccessful Applicants

DOE shall promptly notify in writing each applicant whose application has not been selected for award.

B. Administrative and National Policy Requirements

i. Registration Requirements

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

1. **S3 Funding Opportunity Exchange (Exchange)**
   Register and create an account on S3 Exchange at https://infrastructure-exchange.energy.gov. This account will allow the user to apply to any open MESC FOAs in S3 Exchange.

To access S3 Exchange, potential applicants must have a Login.gov account. As part of the Exchange registration process, new users will be directed to create an account in Login.gov. Please note that the email address associated with Login.gov must match the email address associated with the Exchange account. For more information, refer to the Exchange Multi-Factor Authentication (MFA) Quick Guide in the Manuals section of Exchange.

Each organization or business unit, whether acting as a team or a single entity, should use only one account as the contact point for each submission. Applicants must also designate backup points of contact. **This step is required to apply to this FOA.** The Exchange registration does not have a delay; however, **the remaining registration requirements below could take several weeks to process and are necessary for a potential applicant to receive an award under this FOA.**

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

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

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

5. **Electronic Authorization of Applications and Award Documents**
   Submission of an application and supplemental information under this FOA through electronic systems used by the DOE, including S3 Exchange and FedConnect, constitutes the authorized representative's approval and electronic signature.

ii. Award Administrative Requirements

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

iii. Foreign National Participation (April 2023)

All applicants selected for an award under this FOA and project participants (including subrecipients and contractors) who anticipate involving foreign nationals in the performance of an award may be required to provide DOE with specific information about each foreign national to satisfy requirements for foreign national participation. The volume and type of information collected may depend on various factors associated with the award. DOE concurrence may be required before a foreign national can participate in the performance of any work under an award.

Approval for foreign nationals in Principal Investigator/Co-Investigator roles, from countries of risk (i.e., China, Iran, North Korea, and Russia), or from countries identified on the U.S. Department of State's list of State Sponsors of Terrorism (https://www.state.gov/state-sponsors-of-terrorism/) may require written authorization from DOE before they can participate in the performance of any work under an award.

A "foreign national" is defined as any person who is not a United States citizen by birth or naturalization. DOE may elect to deny foreign national's participation in the award. Likewise, DOE may elect to deny a foreign national's access to a DOE sites, information, technologies, equipment, programs, or personnel.

Applicants selected for award negotiations must include this requirement in subawards.

iv. Subaward and Executive Reporting

Additional administrative requirements necessary for DOE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR Part 170. Prime recipients must register with the new FFATA Subaward Reporting System database and report the required data on their first tier subrecipients. Prime recipients must report the executive compensation for their own executives as part of their registration profile in SAM.

v. National Policy Requirements

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

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

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

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all recipients selected for an award will be required to assist in the timely and effective completion of the NEPA process in the manner most pertinent to their proposed project. If DOE determines certain records must be prepared to complete the NEPA review process (e.g., biological evaluations or environmental assessments), the recipient may be required to prepare the records and the costs to prepare the necessary records may be included as part of the project costs.

vii. Flood Resilience

Applications should indicate whether the proposed project location(s) is within a floodplain, how the floodplain was defined, and how flooding will factor into the project's design. The base floodplain long used for planning has been the 100-year floodplain, which has a 1% chance of flooding in any given year. As directed by Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input (2015), federal agencies, including DOE, must continue to avoid development in a floodplain to the extent possible. When doing so is not possible, federal agencies are directed to "expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended." The higher flood elevation is based on one of three approaches: climate-informed science (preferred), freeboard value, or 0.2% annual flood change (500-year floodplain). EO 13690 and related information is available at https://www.energy.gov/nepa/articles/eo-13690-establishing-federal-flood-risk-management-standard-and-process-further.

viii. Applicant Representations and Certifications

1. **Lobbying Restrictions**
   By accepting funds under this award, the prime recipient agrees that none of the funds obligated on the award shall be expended, directly or indirectly, to influence Congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. § 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

2. **Corporate Felony Conviction and Federal Tax Liability Representations**
   In submitting an application to this FOA, the applicant represents that:

   a. It is **not** a corporation that has been convicted of a felony criminal violation under any federal law within the preceding 24 months; and

   b. It is **not** a corporation that has any unpaid federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

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

3. **Nondisclosure and Confidentiality Agreements Representations**
   In submitting an application to this FOA the applicant represents that:

   a. It **does not and will not** require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contactors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a federal department or agency authorized to receive such information.

   b. It **does not and will not** use any federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:

''These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive Order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive Orders and statutory provisions are incorporated into this agreement and are controlling.''

(1) The limitation above shall not contravene requirements applicable to Standard Form 312 Classified Information Nondisclosure Agreement (https://fas.org/sgp/othergov/sf312.pdf), Form 4414 Sensitive Compartmented Information Disclosure Agreement (https://fas.org/sgp/othergov/intel/sf4414.pdf), or any other form issued by a federal department or agency governing the nondisclosure of classified information.

(2) Notwithstanding the provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the U.S. government, may contain provisions appropriate to the activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received during such activity unless specifically authorized to do so by the U.S. government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the U.S. Department of Justice, that are essential to reporting a substantial violation of law.

ix. Statement of Federal Stewardship

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

conditions; and reviewing technical performance after project completion to ensure that the project objectives have been accomplished.

x. Subject Invention Utilization Reporting

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

xi. Intellectual Property Provisions

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

xii. Reporting

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

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

- New manufacturing production or recycling capacity
- Jobs data, including:
    - Number and types of jobs provided, wages and benefits paid
    - Workforce demographics, including local hires
    - Efforts to minimize risks of labor disputes and disruptions
    - Contributions to training; employee certificates and training credentials; ratio of apprentice- to journey-level workers employed
    - Number of trainings completed, trainees placed in full-time employment, or number of trainings with workforce partnerships involving employers, community-based organizations, or labor unions
- Justice and Equity data, including:

  - Minority Business Enterprises, minority-owned businesses, woman-owned businesses, and veteran-owned businesses acting as vendors and subcontractors for bids on supplies, services, and equipment
  - Value, number, and type of partnerships with MSIs
  - Stakeholder engagement events, consent-based siting activities
  - Other relevant indicators from the Community Benefits Plan
- Number and type of energy efficient and clean energy equipment installed
- Funding leveraged, follow-on-funding, intellectual property generation and utilization

xiii. Go/No-Go Review

Each project selected under this FOA will be subject to a periodic project evaluation referred to as a Go/No-Go Review. A Go/No-Go Review is a risk management tool and a project management best practice to ensure that, for the current phase or period of performance, technical success is definitively achieved and potential for success in future phases or periods of performance is evaluated, prior to beginning the execution of future phases. At the Go/No-Go decision points, DOE will evaluate project performance, project schedule adherence, the extent milestone objectives are met, compliance with reporting requirements, and overall contribution to the program goals and objectives. Federal funding beyond the Go/No-Go decision point (continuation funding) is contingent upon (1) availability of federal funds appropriated by Congress for the purpose of this program; (2) the availability of future-year budget authority; (3) recipient's technical progress compared to the Milestone Summary Table stated in Attachment 1 of the award; (4) recipient's submittal of required reports; (5) recipient's compliance with the terms and conditions of the award; (6) DOE's Go/No-Go decision; (7) the recipient's submission of a continuation application;[26] and (8) written approval of the continuation application by the Contracting Officer.

As a result of the Go/No-Go Review, DOE may, at its discretion, authorize the following actions: (1) continue to fund the project, contingent upon the availability of funds appropriated by Congress for the purpose of this program

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

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

and the availability of future-year budget authority; (2) recommend redirection of work under the project; (3) place a hold on federal funding for the project, pending further supporting data or funding; or (4) discontinue funding the project because of insufficient progress, change in strategic direction, or lack of funding.

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

xiv. Conference Spending

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

xv. Indemnity

Awards resulting from this FOA will contain the following provision reminding Recipients of DOE's right of indemnification.

The Recipient shall indemnify the Government and its officers, agents, or employees for any and all liability, including litigation expenses and attorney's fees, arising from suits, actions, or claims of any character for death, bodily injury, or loss of damage to property or to the environment, resulting from the project, except to the extent that such liability results from the direct fault Awards resulting from this FOA will contain the following provision reminding recipients of DOE's right of indemnification.

The Recipient shall indemnify the Government and its officers, agents, or employees for any and all liability, including litigation expenses and attorney's fees, arising from suits, actions, or claims of any character for death, bodily injury, or loss of damage to property or to the environment, resulting from the project, except to the extent that such liability results from the direct fault or

negligence of Government officers, agents or employees, or to the extent such liability may not be covered by applicable allowable costs provisions.

xvi. Uniform Commercial Code (UCC) Financing Statements

Per 2 CFR 910.360 (Real Property and Equipment) when a piece of equipment is purchased by a for-profit recipient or subrecipient with federal funds, and when the federal share of the financial assistance agreement is more than $1 million the recipient or subrecipient must:

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

xvii. Real Property and Equipment[27]

Real property and equipment purchased with project funds (federal share and recipient cost share) are subject to the requirements at 2 CFR 200.310, 200.311, 200.313, and 200.316 (non-federal entities, except for-profit entities) and 2 CFR 910.360 (for-profit entities). For projects selected for awards under this FOA, the

27 [1] Pursuant to the FY23 Consolidated Appropriations Act (Pub. L. No. 117-328), Division D, Title III, Section 309, "(a) [h]ereafter, for energy development, demonstration, and deployment programs funded under Department of Energy appropriations (other than those for the National Nuclear Security Administration and Office of Environmental Management) provided for fiscal year 2022, the current fiscal year, or any fiscal year thereafter (including by Acts other than appropriations Acts), the Secretary may vest unconditional title or other property interests acquired under projects in an award recipient, subrecipient, or successor in interest, including the United States, at the conclusion of the award period for projects receiving an initial award in fiscal year 2022 or later. (b) Upon vesting unconditional title pursuant to subsection (a) in an award recipient, subrecipient, or successor in interest other than the United States, the United States shall have no liabilities or obligations to the property. (c) For purposes of this section, the term 'property interest' does not include any interest in intellectual property developed using funding provided under a project." Use of this authority by DOE is not guaranteed under this award.

recipients may (1) take disposition action on the real property and equipment; or (2) continue to use the real property and equipment after the conclusion of the award period of performance with Contracting Officer approval. The recipient's written request for Continued Use must identify the property and include: a summary of how the property will be used (must align with the authorized project purposes); a proposed use period, (e.g., perpetuity, until fully depreciated, or a calendar date when the recipient expects to submit disposition instructions); acknowledgement that the recipient shall not sell or encumber the property or permit any encumbrance without prior written DOE approval; current fair market value of the property; and an estimated useful life or depreciation schedule for equipment.

When the property is no longer needed for authorized project purposes, the recipient must request disposition instructions from DOE. For-profit entity disposition requirements are set forth in 2 CFR 910.360. Property disposition requirements for other non-federal entities are set forth in 2 CFR 200.310 – 200.316. However, pursuant to the FY23 Consolidated Appropriations Act (Pub. L. No. 117-328), Division D, Title III, Section 309, the Secretary or a designee of the Secretary may, at their discretion, vest unconditional title or other property interests acquired under this project regardless of the fair market value of the property at the end of the award period.

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

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

xix. Participants and Collaborating Organizations

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

xx. Current and Pending Support

If selected for award negotiations, within 30 days of the selection notice the selectee must submit current and pending support disclosures and resumes for

any PIs or senior/key personnel. Throughout the life of the award, the recipient has an ongoing responsibility to submit: 1) current and pending support disclosure statements and resumes for any new PI and senior/key personnel, and 2) updated disclosures if there are changes to the current and pending support previously submitted to DOE.

xxi. U.S. Manufacturing Commitments

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

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

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

substantial United States economic benefits, and grant the request. If granted, DOE will modify the award terms and conditions for the requesting entity accordingly.

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

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

xxii. Interim Conflict of Interest Policy for Financial Assistance

The DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy)[28] is applicable to all non-Federal entities applying for, or that receive, DOE funding by means of a financial assistance award (e.g., a grant, cooperative agreement, or technology investment agreement) and, through the implementation of this policy by the entity, to each Investigator who is planning to participate in, or is participating in, the project funded wholly or in part under the DOE financial assistance award. The term "Investigator" means the PI and any other person, regardless of title or position, who is responsible for the purpose, design, conduct, or reporting of a project funded by DOE or proposed for funding by DOE. Recipients must flow down the requirements of the interim COI Policy to any subrecipient non-federal entities. Further, for DOE funded projects, the recipient must include all financial conflicts of interest (FCOI) (i.e., managed and unmanaged/unmanageable) in its initial and ongoing FCOI reports.

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

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

award to come into full compliance with the other requirements set forth in DOE's interim COI Policy. Prior to award, the applicant must certify that it is, or will be within 180 days of the award, compliant with all requirements in the COI Policy.

xxiii. Fraud, Waste, and Abuse

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

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

Additionally, recipients of DOE awards must be cognizant of the requirements of 2 CFR 200.113 Mandatory disclosures, which states:

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

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

xxiv. Human Subjects Research

Research involving human subjects, biospecimens, or identifiable private information conducted with DOE funding is subject to the requirements of DOE

Order 443.1C, Protection of Human Research Subjects, 45 CFR Part 46, Protection of Human Subjects (subpart A which is referred to as the "Common Rule"), and 10 CFR Part 745, Protection of Human Subjects.

Additional information on the DOE Human Subjects Research Program can be found at: HUMAN SUBJECTS Human Subjects Pr... | U.S. DOE Office of Science (SC) (osti.gov).

xxv. Bonding Requirements

If selected for award negotiations, the selectee must submit documentation supporting compliance with 2 CFR 200.326, Bonding Requirements.

xxvi. Material Supply Plan

If selected for award negotiations, the selectee must submit a Material Supply Plan to DOE within 60 days of notice of selection for award negotiations. The Material Supply Plan must set out the selectee's strategy and approach for materials supply, including a new supply chain for North American and European suppliers, in form and substance satisfactory to DOE. During the life of the award, the recipient must meet the stated objectives set forth in its Material Supply Plan. The recipient must notify the Department of any revisions to the Material Supply Plan. A report on the recipient's progress towards meeting the objectives and milestones set forth in the Material Supply Plan must be included in any continuation application. The Material Supply Plan and any revisions to the plan and all related deliverables must be emailed securely to the point of contact designated by DOE.

xxvii. Technology Protection Plan

If selected for award negotiations, the selectee must submit a Technology Protection Plan within 60 days of award setting out the selectee's policies and procedures for identifying, accessing, handling, controlling, and releasing the following under the proposed award: (1) the selectee's proprietary information, including non-public technical information, trade secrets and other confidential business information, including but not limited to information, know-how, methods or processes that give the selectee a competitive advantage in the marketplace; (2) information that is subject to U.S. export control laws or regulations; (3) information that has been designated as classified or controlled unclassified information (CUI) by DOE; (4) any other information designated by DOE as sensitive throughout the period of performance. The recipient must meet the stated objectives set forth in its Technology Protection Plan. The recipient must notify the Department of any revisions to the Technology Protection Plan or the proposed security approach. A report on the recipient's progress toward

meeting the objectives and milestones set forth in the Technology Protection Plan must be included in any continuation application. The Technology Protection Plan and any revisions to the plan and all related deliverables must be emailed securely to the point of contact designated by DOE.

Any DOE and/or National Laboratory review comments or feedback provided to the recipient does not constitute an endorsement or approval of any specific elements within the Technology Protection Plan or the proposed security approach. Therefore, such feedback should not be referenced or used in marketing or promotional materials.

xxviii. Threat Briefing

Selectees may be required to participate in threat briefing to discuss, at an unclassified level, the current threat environment related to economic espionage, intellectual property theft, insider threats, and other relevant topics.

xxix. Research Technology and Economic Security Officer

Selectees may be required to appoint an employee as a Security Officer who will be responsible for ensuring compliance the terms and conditions related to research, technology, and economic security (RTES).

xxx. Cybersecurity Plan

In accordance with BIL section 40126, applicants selected for award negotiations must submit a cybersecurity plan to DOE prior to receiving funding.[29] These plans are intended to foster a cybersecurity-by-design approach for BIL efforts. The Department will use these plans to ensure effective integration and coordination across its research, development, and demonstration programs. A cybersecurity plan is **not** required as part of the application submission for this FOA, but all projects selected under this FOA will be required to submit a cybersecurity plan during the award negotiation phase.

DOE recommends using open guidance and standards, such as the National Institute of Standards and Technology's (NIST) Cybersecurity Framework (CSF) and the DOE Cybersecurity Capability Maturity Model (C2M2).[30] The

[29] 42 U.S.C. § 18725

[30] NERC critical infrastructure protection (CIP) standards for entities responsible for the availability and reliability of the bulk electric system. NIST IR 7628: 2 Smart grid cyber security strategy and requirements. NIST SP800-53, Recommended Security Controls for Federal Information Systems and Organizations: Catalog of security controls in 18 categories, along with profiles for low-, moderate-, and high-impact systems. NIST SP800-82, Guide to Industrial Control Systems (ICS) Security. NIST SP800-39, Integrated Enterprise-Wide Risk Management: Organization,

cybersecurity plan created pursuant to BIL section 40126 should document any deviation from open standards, as well as the utilization of proprietary standards where the awardee determines that such deviation is necessary.

- Cybersecurity plans should be commensurate to the threats and vulnerabilities associated with the proposed efforts and demonstrate the cybersecurity maturity of the project.
- Cybersecurity plans may cover a range of topics relevant to the proposed project—e.g., software development lifecycle, third-party risks, and incident reporting.
- At a minimum, cybersecurity plans should address questions noted in BIL section 40126 (b), Contents of Cybersecurity Plan.[31]

Supplementary guidance on the cybersecurity plan requirement is available at https://www.energy.gov/ceser/bipartisan-infrastructure-law-implementation.

mission, and information system view. AMI System Security Requirements: Security requirements for advanced metering infrastructure. ISO (International Organization for Standardization) 27001, Information Security Management Systems: Guidance on establishing governance and control over security activities (this document must be purchased). IEEE (Institute of Electrical and Electronics Engineers) 1686-2007, Standard for Substation Intelligent Electronic Devices (IEDs) Cyber Security Capabilities (this document must be purchased). DOE Cybersecurity Capability Maturity Model (C2M2).

[31] 42 U.S.C. § 18725

VII. Questions/Agency Contacts

Upon the issuance of a FOA, DOE personnel are prohibited from communicating (in writing or otherwise) with applicants regarding the FOA except through the established question and answer process described below. Questions regarding this FOA must be submitted to DE-FOA-0003099@netl.doe.gov no later than three (3) business days prior to the application due date and time. Please note, feedback on individual concepts will not be provided through Q&A.

All questions and answers related to this FOA will be posted on S3 Exchange at https://infrastructure-exchange.energy.gov. **You must first select the FOA Number to view the questions and answers specific to this FOA**. MESC will attempt to respond to a question within three (3) business days unless a similar question and answer has already been posted on the website.

Questions related to the registration process and use of the S3 Exchange website should be submitted to InfrastructureExchangeSupport@hq.doe.gov.

VIII. Other Information

A. FOA Modifications

Amendments to this FOA will be posted on S3 Exchange and the Grants.gov system. However, you will only receive an email when an amendment or a FOA is posted on these sites if you register for email notifications for this FOA in Grants.gov. MESC recommends that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any amendments or other FOAs.

B. Government Right to Reject or Negotiate

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

C. Commitment of Public Funds

The Contracting Officer is the only individual who can make awards or commit the government to the expenditure of public funds. A commitment by anyone other than the Contracting Officer, either express or implied, is invalid.

D. Treatment of Application Information

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

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

If an applicant chooses to submit trade secrets or business-sensitive, proprietary, or otherwise confidential information, the applicant must provide **two copies** of the submission (e.g., Concept Paper, Full Application). The first copy should be marked "non-confidential," with the information believed to be confidential

deleted. The second copy should be marked "confidential" and must clearly and conspicuously identify the trade secrets or business-sensitive, proprietary, or otherwise confidential information and must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The federal government is not liable for the disclosure or use of unmarked information and may use or disclose such information for any purpose as authorized by law.

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

> **Notice of Restriction on Disclosure and Use of Data:**
> Pages [list applicable pages] of this document may contain trade secrets or business-sensitive, proprietary, or otherwise confidential information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance agreement between the submitter and the government. The government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

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

E. Evaluation and Administration by Non-Federal Personnel

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

F. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this FOA include those that describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

G. Notice of Right to Conduct a Review of Financial Capability

DOE reserves the right to conduct an independent third-party review of financial capability for applicants that are selected for negotiation of award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

H. Requirement for Full and Complete Disclosure

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

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

I. Retention of Submissions

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

J. Title to Subject Inventions

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

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

- Class Patent Waiver:

  DOE has issued a class waiver that applies to this FOA. Under this class waiver, domestic large businesses may elect title to their subject inventions similar to the right provided to the domestic small businesses, educational institutions, and nonprofits by law. 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.

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

K. Government Rights in Subject Inventions

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

Government Use License

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

March-In Rights

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

subject invention when a prime recipient, subrecipient, or their assignees and exclusive licensees refuse to do so.

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

- The owner or licensee has not taken or is not expected to take effective steps to achieve practical application of the invention within a reasonable time;
- The owner or licensee has not taken action to alleviate health or safety needs in a reasonably satisfied manner;
- The owner has not met public use requirements specified by federal statutes in a reasonably satisfied manner; or
- The United States manufacturing requirement has not been met.

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

L. Rights in Technical Data

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

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

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

M. Copyright

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

N. Export Control

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

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

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

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

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

P. Personally Identifiable Information (PII)

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

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

Q. Annual Independent Audits

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

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

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

APPENDIX A – COST SHARE INFORMATION

Cost Sharing or Cost Matching

The terms "cost sharing" and "cost matching" are often used synonymously. Even the DOE Financial Assistance Regulations, 2 CFR 200.306, use both terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses "cost sharing," as it conveys the concept that non-federal share is calculated as a percentage of the Total Project Cost. An exception is the State Energy Program Regulation, 10 CFR 420.12, State Matching Contribution. Here "cost matching" for the non-federal share is calculated as a percentage of the federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. FFRDC costs must be included in Total Project Costs. The following is an example of how to calculate cost sharing amounts for a project with $1 million in federal funds with a minimum 50% non-federal cost sharing requirement:

- Formula: Federal share ($) divided by federal share (%) = Total Project Cost
  Example: $1,000,000 divided by 50% = $2,000,000

- Formula: Total Project Cost ($) minus federal share ($) = Non-federal share ($)
  Example: $2,000,000 minus $1,000,000 = $1,000,000

- Formula: Non-federal share ($) divided by Total Project Cost ($) = Non-federal share (%)
  Example: $1,000,000 divided by $2,000,000 = 50%

What Qualifies for Cost Sharing

While it is not possible to explain what specifically qualifies for cost sharing in one or two sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under a DOE grant or cooperative agreement, it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the federal government under another award unless authorized by federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though they are generally the same for all types of entities. The specific rules applicable to:

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

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

In addition to the above regulations, other factors may come into play, such as timing of donations and length of the project period. For example, the value of 10 years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, DOE generally does not allow pre-award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, DOE generally does not allow pre-award costs prior to the signing of the Selection Statement by the DOE Selection Official.

General Cost Sharing Rules on a DOE Award

1. **Cash Cost Share** encompasses all contributions to the project made by the recipient or subrecipient(s) for costs incurred and paid for during the project. This includes when an organization pays for personnel, supplies, or equipment for their company with organizational resources. If the cost of the item or service is reimbursed, it is cash cost share. All cost share items must be necessary to the performance of the project.

2. **In-Kind Cost Share** encompasses all contributions to the project made by the recipient or subrecipient(s) that do not involve a payment or reimbursement and represent donated items or services. In-Kind cost share items include volunteer personnel hours, donated existing equipment, and donated existing supplies. The cash value and calculations thereof for all In-Kind cost share items must be justified and explained in the Cost Share section of the project Budget Justification. All cost share items must be necessary to the performance of the project. Consult your DOE contact if you have questions before filling out the In-Kind cost share section of the Budget Justification.

3. **Funds from other federal sources** may **not** be counted as cost share. This prohibition includes FFRDC subrecipients. Non-federal sources include any source not originally derived from federal funds. Cost sharing commitment letters from subrecipients must be provided with the original application.

4. **Fee or profit**, including foregone fee or profit, are not allowable as project costs (including cost share) under any resulting award. The project may incur only those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

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

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

(A) Acceptable contributions. All contributions, including cash contributions and third-party in-kind contributions, must be accepted as part of the prime recipient's cost sharing if such contributions meet all of the following criteria:

(1) They are verifiable from the recipient's records.

(2) They are not included as contributions for any other federally assisted project or program.

(3) They are necessary and reasonable for the proper and efficient accomplishment of project or program objectives.

(4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:

a. For-profit organizations. Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A–122 is determined in accordance with the for-profit cost principles in 48 CFR Part 31 in the FAR, except that patent prosecution costs are not allowable unless specifically authorized in the award document. (v) Commercial Organizations. FAR Subpart 31.2—Contracts with Commercial Organizations; and

b. Other types of organizations. For all other non-federal entities, allowability of costs is determined in accordance with 2 CFR Part 200 Subpart E.

(5) They are not paid by the federal government under another award unless authorized by federal statute to be used for cost sharing or matching.

(6) They are provided for in the approved budget.

(B) Valuing and documenting contributions

(1) Valuing recipient’s property or services of recipient’s employees. Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in

the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:

a. The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or

b. The current fair market value. If there is sufficient justification, the Contracting Officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The Contracting Officer may accept the use of any reasonable basis for determining the fair market value of the property.

(2) Valuing services of others' employees. If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.

(3) Valuing volunteer services. Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.

(4) Valuing property donated by third parties.

a. Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.

b. Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the Contracting Officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:

i. The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately owned building in the same locality.

ii. The value of loaned equipment must not exceed its fair rental value.

(5) Documentation. The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:

a. Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.

b. The basis for determining the valuation for personal services and property must be documented.

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

1. Waiver for Foreign Entity Participation

Many of the technology areas DOE funds fall in the category of critical and emerging technologies (CETs). CETs are a subset of advanced technologies that are potentially significant to United States national and economic security.[32] For projects selected under this FOA, all recipients and subrecipients must be organized, chartered or incorporated (or otherwise formed) under the laws of a state or territory of the United States; have majority domestic ownership and control; and have a physical location for business operations in the United States. To request a waiver of this requirement, an applicant must submit an explicit waiver request in the Full Application.

Waiver Criteria

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

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

Content for Waiver Request

A Foreign Entity waiver request must include the following:

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

[32] See Critical and Emerging Technologies List Update (whitehouse.gov).

ownership/control by foreign entities, foreign shareholders, foreign state, or foreign individuals;

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

DOE may also require:

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

DOE may require additional information before considering the waiver request.

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

2. Waiver for Performance of Work in the United States (Foreign Work Waiver)

As set forth in Section IV.I.iii., all work funded under this FOA must be performed in the United States. To seek a waiver of the Performance of Work in the United States requirement, the applicant must submit an explicit waiver request in the Full

Application. A separate waiver request must be submitted for each entity proposing performance of work outside of the United States.

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

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

DOE may require additional information before considering the waiver request.

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

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

A. Definitions

For purposes of the Buy America requirements, based both on the statute and OMB Guidance Document dated April 18, 2022, the following definitions apply:

Construction materials includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives[33]—that is or consists primarily of:

- Non-ferrous metals;
- Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- Glass (including optic glass);
- Lumber; or
- Drywall.

Infrastructure includes, at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Infrastructure includes facilities that generate, transport, and distribute energy.

Moreover, according to the OMB guidance document:

> When determining if a program has infrastructure expenditures, Federal agencies should interpret the term "infrastructure" broadly and consider the definition provided above as illustrative and not exhaustive. When determining if a particular construction project of a type not listed in the definition above constitutes "infrastructure," agencies should consider whether the project will serve a public function, including whether the project is publicly owned and operated, privately operated on behalf of the public, or is a place of public accommodation, as opposed to a project that is privately owned and not open to the public. Projects with the former qualities have greater indicia of infrastructure, while projects with the latter quality have fewer. Projects consisting solely of the

[33] BIL, § 70917(c)(1).

purchase, construction, or improvement of a private home for personal use, for example, would not constitute an infrastructure project.

The Agency, not the applicant, will have the final say as to whether a given project includes infrastructure, as defined herein. Accordingly, in cases where the "public" nature of the infrastructure is unclear but the other relevant criteria are met, DOE strongly recommends that applicants complete their full application with the assumption that Buy America requirements will apply to the proposed project.

Project means the construction, alteration, maintenance, or repair of infrastructure in the United States.

B. Buy America Requirements for Infrastructure Projects ("Buy America" requirements)
In accordance with Section 70914 of the BIL, none of the project funds (includes federal share and recipient cost share) may be used for a project for infrastructure unless:

(1) all iron and steel used in the project are produced in the United States--this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;

(2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and

(3) all construction materials[34] are produced in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

The Buy America requirements only apply to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does the Buy America requirements apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of the structure or permanently affixed to the infrastructure project.

[34] Excludes cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

These requirements must flow down to all sub-awards, all contracts, subcontracts, and purchase orders for work performed under the proposed project, except where the prime recipient is a for-profit entity. Based on guidance from the Office of Management and Budget (OMB), the Buy America requirements of the BIL do not apply to DOE projects in which the prime recipient is a for-profit entity; the requirements only apply to projects whose prime recipient is a State, local government, Indian tribe, Institution of Higher Education, or nonprofit organization.

For additional information related to the application and implementation of these Buy America requirements, please see OMB Memorandum M-22-11, issued April 18, 2022: https://www.whitehouse.gov/wp-content/uploads/2022/04/M-22-11.pdf

Note that for all applicants—both non-Federal entities and for-profit entities—DOE is including a Program Policy Factor that the Selection Official may consider in determining which Full Applications to select for award negotiations that considers whether the applicant has made a commitment to procure U.S. iron, steel, manufactured products, and construction materials in its project.

C. Waivers

The DOE financial assistance agreement will require each recipient: (1) to fulfill the commitments made in its application regarding the procurement of U.S.-produced products and (2) to fulfill the commitments made in its application regarding the procurement of other key component metals and domestically manufactured products that are deemed available in sufficient and reasonably available quantities or of a satisfactory quality at the time of award negotiation.

In limited circumstances, DOE may waive the application of the Buy America requirements where DOE determines that:

> (1) Applying the Buy America requirements would be inconsistent with the public interest;
>
> (2) The types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or
>
> (3) The inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25%.

If an applicant or recipient is seeking a waiver of the Buy America requirements, it may submit a waiver request after it has been notified of its selection for award negotiations. A waiver request must include:

- A detailed justification for the use of "non-domestic" iron, steel, manufactured products, or construction materials to include an explanation as to how the non-domestic item(s) is essential to the project
- A certification that the applicant or recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and nonproprietary communications with potential suppliers
- Applicant/Recipient name and Unique Entity Identifier (UEI)
- Total estimated project cost, DOE and cost-share amounts
- Project description and location (to the extent known)
- List and description of iron or steel item(s), manufactured goods, and construction material(s) the applicant or recipient seeks to waive from Domestic Content Procurement Preference requirement, including name, cost, country(ies) of origin (if known), and relevant PSC and NAICS code for each
- Waiver justification including due diligence performed (e.g., market research, industry outreach) by the applicant or recipient
- Anticipated impact if no waiver is issued

DOE may require additional information before considering the waiver request.

Waiver requests are subject to public comment periods of no less than 15 days and must be reviewed by the Made in America Office. There may be instances where an award qualifies, in whole or in part, for an existing waiver described at DOE Buy America Requirement Waiver Requests.

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

APPENDIX D – AREAS OF INTEREST

AOI 1. Commercial-scale Lithium Separation from Domestic Sources

AOI 1.a: From Domestic Brine and Recycled Sources

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create **U.S. battery-grade lithium processing capacity that uses domestic brine and/or recycled feedstocks as supply sources** and can be used in transportation, stationary storage, and/or other energy applications. Projects will need to produce Li-containing materials that can be used in production of Li-ion batteries, this can include concentrates, lithium chloride, lithium carbonate, lithium hydroxide, or lithium metal, among others.

Sources can include, but are not limited to the following:

- Continental brines
- Geothermal brines
- Oil-field brines
- Recycled and waste streams

Requirements

- Applications must be utilizing (1) domestic brine sources, these can include continental, geothermal, and oil-field brines; or (2) recycled and waste streams.
- Applicants must be producing lithium-containing materials that can be utilized in Li-ion battery production (this could include lithium concentrates, lithium salts, lithium hydroxide, lithium carbonates, or lithium metal).
- Applications focused on recycling feedstocks where lithium materials are the primary focus of production, but where other critical minerals are being produced are within scope of this topic area.
- Applications must include off-take agreements or letters of commitment from one or more battery-grade cathode precursor manufacturers to buy products produced at the proposed manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications are required to utilize domestic upstream sources, and supply domestic downstream customers are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes, the capacity utilization timeline attributed to this project, as well as battery-grade lithium materials production capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include detailed descriptions of product purities, impurity profiles, and waste products in addition to other applicable feed study information.

- Applications must identify any process whereby raw material is concentrated for extraction if scale and capacity utilization is part of the commercialization plan. Though mining and extraction is not considered to be in-scope for this FOA, the viability of this privately funded segment of the supply chain will impact commercial and technical viability, such as irrigation needs for lithium brines.

AOI 1.b: From Domestic Hard Rock and Clay Sources

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U**.S. battery-grade lithium processing capacity that uses domestic hard rock and/or clay feedstocks as supply sources** and can be used in transportation, stationary storage, and/or other energy applications. Projects will need to produce Li-containing materials that can be used in production of Li-ion batteries, this can include concentrates, lithium chloride, lithium carbonate, lithium hydroxide, or lithium metal, among others.

Sources can include, but are not limited to the following:

- Hard rock mined materials
- Clay sourced materials
- Mine tailings

Requirements

- Applications must be utilizing domestic mined sources of materials including hard rock, clay, and mine tailings.
- Applicants must be producing lithium-containing materials that can be utilized in Li-ion battery production (this could include lithium salts, lithium hydroxide, lithium carbonates, or lithium metal).
- Applications must include off-take agreements or letters of commitment from one or more battery-grade cathode precursor manufacturers to buy products produced at the proposed manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications are required to utilize domestic upstream sources, and supply domestic downstream customers are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes, the capacity utilization timeline attributed to this project, as well as battery-grade lithium materials production capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include detailed descriptions of product purities, impurity profiles, and waste products in addition to other applicable feed study information.
- Applications must identify any process whereby raw material is concentrated for extraction if scale and capacity utilization is part of the commercialization plan.

Though mining and extraction is not considered to be in-scope for this FOA, the viability of this privately funded segment of the supply chain will impact commercial and technical viability., such as irrigation needs for lithium brines.

AOI 2. Commercial-scale Domestic Recovery of Battery Critical Minerals (non-Lithium)

AOI 2.a: From Traditional Sources

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U.S. battery-grade, non-lithium, critical minerals processing capacity from traditional sources as supply feedstocks and can be used in in transportation, stationary storage, and/or other energy applications. Separation of battery critical minerals, including nickel, manganese, cobalt, aluminum, and more from natural occurrences (including hard rock, clay, brine, etc.) are within topic scope.

Requirements

- Applications must be utilizing traditional mineral sources, these can include brines, hard rock materials, and clay materials.
- Applicants must be producing mineral-containing materials that can be utilized in Li-ion battery production (this could include salts, sulfates, carbonates, or metals).
- Applications must include off-take agreements or letters of commitment from one or more battery-grade cathode precursor manufacturers to buy products produced at the proposed manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications are required to utilize domestic upstream sources, and supply domestic downstream customers are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes, the capacity utilization timeline attributed to this project, as well as battery-grade lithium materials production capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include detailed descriptions of product purities, impurity profiles, and waste products in addition to other applicable feed study information.
- Applications must identify any process whereby raw material is concentrated for extraction if scale and capacity utilization is part of the commercialization plan. Though mining and extraction is not considered to be in-scope for this FOA, the viability of this privately funded segment of the supply chain will impact commercial and technical viability, such as irrigation needs for brines.

AOI 2.b From Alternative Sources

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U.S. battery-grade,

non-lithium, critical minerals processing capacity from alternative sources as supply feedstocks and can be used in in transportation, stationary storage, and/or other energy applications. Separation of battery critical minerals, including nickel, manganese, cobalt, aluminum, and more from non-traditional sources (including mine tailings, recycled and waste streams, etc.) are within topic scope.

Requirements

- Applications must be utilizing domestic alternative sources.
- Applicants must be producing mineral-containing materials that can be utilized in Li-ion battery production (this could include salts, sulfates, carbonates, or metals).
- ~~Applicants must be producing lithium-containing materials that can be utilized in Li-ion battery production (this could include lithium salts, lithium hydroxide, lithium carbonates, or lithium metal).~~
- Applications focused on recycling feedstocks where critical materials aside from lithium are the primary focus of production, but where lithium may also be produced, are within scope of this topic area.
- Applications must include off-take agreements or letters of commitment from one or more battery-grade cathode precursor manufacturers to buy products produced at the proposed manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications are required to utilize domestic upstream sources, and supply domestic downstream customers are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes, the capacity utilization timeline attributed to this project, as well as battery-grade lithium materials production capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include detailed descriptions of product purities, impurity profiles, and waste products in addition to other applicable feed study information.

Applications must identify any process whereby raw material is concentrated for extraction if scale and capacity utilization is part of the commercialization plan. Though mining and extraction is not considered to be in-scope for this FOA, the viability of this privately funded segment of the supply chain will impact commercial and technical viability, such as irrigation needs for brines.

AOI 3. Commercial-scale Domestic Production of Crucial Precursors for Battery Manufacturing

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U.S. precursors processing capacity that use mineral feedstocks as supply sources and to produce crucial

precursors to battery materials that can then be used in transportation, stationary storage, and/or other energy applications.

Potential precursors of interest include, but are not limited to the following:

- Silane gas
- Recycling black mass
- Active material precursor
- Other critical mineral containing precursors

Requirements

- Applications must include letter of commitment from one or downstream battery materials customers to buy products produced at the manufacturing facility. Both domestic and foreign battery partners may be included.
- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes/year, the
- capacity utilization timeline attributed to this project, as well as manufacturing capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable. Applications must include detailed descriptions of product purities, impurity profiles, and waste products in addition to other applicable feed study information.
- ~~Applications must include a detailed description of the battery cathode technology, including material components/chemistry and performance. This should include at a minimum:~~
    - ~~particle size and distribution,~~
    - ~~impurities (e.g., Fe, Cu, Na, Mg, Ca, Zn ppm),~~
    - ~~Material shelf life, and~~
    - ~~cost estimates of the precursor materials ($/kg).~~

Teaming Arrangements

- Applicants must include participation by at least one downstream customer. In the event applicants are producing intermediate products that will need additional processing to reach battery-grade materials specifications or products, teaming with a downstream processing partner is required.
- Participation by underrepresented partners and suppliers and labor unions is highly encouraged.

AOI 4.a: Commercial-scale Domestic Production of Battery Cathodes

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create a U.S. battery-grade cathode materials production as well as cathode manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.

Requirements

- Applications must include letter of commitment from one or more battery manufacturers to buy products produced at the manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes/year, the capacity utilization timeline attributed to this project, as well as manufacturing capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include a detailed description of the battery cathode technology, including material components/chemistry and performance. This should include at a minimum:
    - particle size and distribution, tap density (g/cm3), particle surface area (m2/g), impurities (e.g., Fe, Cu, Na, Mg, Ca, Zn ppm),
    - first cycle charge capacity with corresponding voltage range (mAh/g), first cycle discharge capacity with corresponding voltage range and current rate (C-rate) (mAh/g), first cycle irreversible capacity loss (%),
    - cycle life, power performance, and calendar life,
    - cost estimates of the cathode active powder ($/kg) or electrode.
- The cathode powder description must include how the data was acquired, cell construction (e.g., pouch cell or coin cell), whether the data was from half-cell or full cell configurations, electrode loading (mAh/cm2), electrolyte formulation, and testing temperature.
- Applications can include additional manufacturing capacity beyond cathode materials/electrodes for other relevant battery materials, such as anodes. If applications are for facilities to produce both cathode materials/electrodes and additional materials/electrodes, applications should be submitted to the most-relevant subtopic area within AOI 4 that best matches the primary or predominant production capacity. Applications will be evaluated against other applications submitted within that subtopic area.

AOI 4.b: Commercial-scale Domestic Production of Battery Anodes

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create a U.S. battery-grade anode materials production as well as anode manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.

Requirements

- Applications must include letter of commitment from one or more battery manufacturers to buy products produced at the manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications must identify expected total plant annual capacity (tonnes/year if producing a powder or GAh/year if producing electrodes), the capacity utilization timeline attributed to this project, as well as manufacturing capacity additions (tonnes/year if producing a powder or GAh/year if producing electrodes) from future expansion, retooling, or retrofitting plans if applicable.
- Applications shall provide a detailed description of the battery ~~silicon~~ technology, including material components/chemistry and performance. This should include at a minimum:
    - particle size and distribution, tap density (g/cm3), particle surface area (m2/g), impurities,
    - first cycle charge capacity with corresponding voltage range (mAh/g), first cycle discharge capacity with corresponding voltage range and current rate (C-rate) (mAh/g), first cycle irreversible capacity loss (%),
    - cycle life, power performance, and calendar life,
    - cost estimates of the anode active powder ($/kg) or electrode.
- The anode material description must include how the data was acquired, cell construction (e.g. pouch cell or coin cell), whether the data was from half-cell or full cell configurations, electrode composition, electrode loading (mAh/cm2), electrolyte formulation, and testing temperature.
- Applications can include additional manufacturing capacity beyond anode materials/electrodes for other relevant battery materials, such as cathodes. If applications are for facilities to produce both anode materials/electrodes and additional materials/electrodes, applications should be submitted to the most-relevant subtopic area within AOI 4 that best matches the primary or predominant production capacity. Applications will be evaluated against other applications submitted within that subtopic area.

AOI 5.a: Commercial-scale Domestic Production of Battery Electrolyte Salts

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U.S. battery-grade electrolyte salt manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.

Requirements

- Applications must include letter of commitment from one or more downstream battery, battery components manufacturing companies to buy products produced at the

manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.

- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes/year, the capacity utilization timeline attributed to this project, as well as manufacturing capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include a detailed description of the battery ~~cathode~~ electrolyte technology, including material components/chemistry and performance. This should include at a minimum:
    - Impurities and levels (e.g., Fe, Cu, Na, Mg, Ca, Zn ppm),
    - Material shelf life,
    - Temperature stability, and
    - cost estimates of the electrolyte salts ($/kg).

AOI 5.b: Commercial-scale Domestic Production of Battery Electrolyte Solvents and Mixes

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U.S. battery-grade electrolyte solvent manufacturing capacity capable of use in electric vehicles and/or electric grid energy storage applications.

Requirements

- Applications must include letter of commitment from one or more downstream battery, battery components manufacturing companies to buy products produced at the manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications must identify expected total plant annual capacity in tonnes/year, the capacity utilization timeline attributed to this project, as well as manufacturing capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include a detailed description of the battery ~~cathode~~ electrolyte solvent and/or mix technology, including material components/chemistry and performance. This should include at a minimum:
    - impurities (~~e.g., Fe, Cu, Na, Mg, Ca, Zn ppm~~),
    - Material shelf life, and
    - cost estimates of the electrolyte solvents ($/kg) or final electrolyte mix.
- In the case of final electrolyte mixture, a detailed description of the concentration, mixture, and electrochemical performance including:
    - first cycle charge capacity with corresponding voltage range (mAh/g), first cycle discharge capacity with corresponding voltage range and current rate (C-rate)

(mAh/g), first cycle irreversible capacity loss (%),cycle life, power performance, and calendar life,

AOI 6. Commercial-scale Domestic Production of Cell Manufacturing for Specialized and Small Markets

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U.S. rechargeable, electrochemical battery cell manufacturing capacity for (1) transportation or stationary markets and (2) small and specialized markets such as defense, power tools, agriculture, industrial applications, and more.

Applicants are required to specify at least one primary market (transportation or stationary) and a secondary market.

Primary markets include:

- Transportation including:
  - Medium Duty, Heavy Duty
  - Off-road
    - Maritime
    - Aviation
    - Commercial/Agriculture
- Grid and Stationary Storage

Secondary markets of interest include, but are not limited to the following:

- Defense
- Agriculture and lawn equipment
- Industrial
- Power tools

Cell manufacturing for the ~~commercial~~ light duty vehicle market is out of scope for this AOI. Projects that do not identify a primary market for transportation or stationary storage applications are out of scope of this AOI. Production of either conventional and/or solid-state cells are applicable to this AOI. Annual production capacities are expected in the order of 0.5 to 10 GWh.

Examples of the preferred minimum cell performance characteristics are provided in, but are not limited to, the table below:

Format	Energy Density (Wh/L)	Specific Energy (Wh/kg)

Cylindrical 18650	≥640	≥230
Cylindrical 21700	≥730	≥260
Cylindrical 4680	≥620	≥230
Pouch	≥660	≥260
Prismatic	≥360	≥180

Requirements

- Applications must include a letter of commitment from one or more customers such as pack assemblers or electric vehicle, and/or electric grid original equipment manufacturers (OEMs) to buy products produced at the manufacturing facility. Both domestic and foreign OEM partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications must identify expected total plant annual capacity in GWh/year, the capacity utilization timeline attributed to this project, as well as manufacturing capacity additions in tonnes/year from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include a detailed description of the battery technology, including materials, chemistry and performance (including cycle life, power performance, and calendar life at a minimum), as well as cost estimates of the materials and the final battery product ($/kWh).
- Applications must also include specification of the volume, weight, capacity, nominal voltage, power capability and any available supporting data for the battery specifications and performance claims.

AOI 7. Commercial-scale Domestic Production of High-Capacity, Rechargeable Non-Lithium Based Battery Cell and Systems

The objective of this area of interest is to construct new commercial-scale facilities or expand, retool, or retrofit existing commercial-scale facilities to create U.S. Non-Lithium Based Battery Cell and Systems capacity.

Potentially applicable non-lithium systems include, but are not limited to the following:

- Na-ion batteries
- Redox flow batteries
- Zinc-based batteries
- Other chemistries

High-capacity batteries exhibiting ~~a specific energy~~ competitive performance ~~of 100 Wh/kg or equal~~ compared to state of the art for said chemistry ~~or higher~~ on the cell or system level are supported by this FOA. Applicants are encouraged to review DOE's Energy Storage Grand Challenge Roadmap. [35] Non-electrochemical and non-rechargeable systems are out of scope.

Requirements

- Applications must include letter of commitment from one or more battery manufacturers to buy products produced at the manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications must identify expected total plant annual capacity, the capacity utilization timeline attributed to this project, as well as manufacturing capacity additions from future expansion, retooling, or retrofitting plans if applicable.
- Applications must include a detailed description of the battery technology, including materials, chemistry and performance (including cycle life, power performance, and calendar life at a minimum), as well as cost estimates of the materials and the final battery product ($/kWh).
- Applications must also include specification of the volume, weight, capacity, nominal voltage, power capability and any available supporting data for the battery specifications and performance claims.

AOI 8. Commercial-scale Domestic Manufacturing of Other Battery Cell and System Components (Open Topic)

The objective of this area of interest is to expand, retool, or retrofit existing commercial-scale facilities to create U.S. manufacturing capacity for other cell and system components (components not addressed in other topic areas).

Potentially applicable components include, but are not limited to the following:

- Separators
- Binders
- Current Collectors
- Solid-state Materials
- Conductive Additives
- Module or pack manufacturing

Requirements

[35] Energy Storage Grand Challenge Draft Roadmap. Department of Energy. July 2020.

- Applications must include letter of commitment from one or more battery manufacturers to buy products produced at the manufacturing facility. Both domestic and foreign battery partners may be included. The type, amount, and duration of the commitment shall be included.
- Applications that use the domestic upstream supply chain are highly encouraged.
- Applications for this AOI must be focused on retrofitting, retooling, or expanding existing facilities.
- Applications must identify expected total plant annual capacity, the capacity utilization timeline attributed to this project, as well as manufacturing capacity additions from future expansion, retooling, or retrofitting plans if applicable.
- Applicants are expected to explain how their battery component complies with their customers' product specifications.
- Applications must include a detailed description of the battery technology, including materials, chemistry and performance (including cycle life, power performance, and calendar life at a minimum), as well as cost estimates of the materials and the final battery product ($/kWh).
- Applications must also include specification of the volume, weight, capacity, nominal voltage, power capability and any available supporting data for the battery specifications and performance claims.

APPENDIX E – LIST OF ACRONYMS

BIL	Bipartisan Infrastructure Law
CETs	Critical and Emerging Technologies
CEJST	Climate and Economic Justice Screening Tool
COI	Conflict of Interest
CRADA	Cooperative Research and Development Agreement
DEC	Determination of Exceptional Circumstances
DEIA	Diversity, Equity, Inclusion, and Accessibility
DMP	Data Management Plan
DOE	Department of Energy
DOI	Digital Object Identifier
DOL	Department of Labor
EERE	Energy Efficiency and Renewable Energy
FAR	Federal Acquisition Regulation
FCOI	Financial Conflicts of Interest
FFATA	Federal Funding and Transparency Act of 2006
FOA	Funding Opportunity Announcement
FOIA	Freedom of Information Act
FFRDC	Federally Funded Research and Development Center
GAAP	Generally Accepted Accounting Principles
HBCUs	Historically Black Colleges and Universities
IPMP	Intellectual Property Management Plan
IRB	Institutional Review Board
M&O	Management and Operating
MESC	Office of Manufacturing and Energy Supply Chains
MFA	Multi-Factor Authentication
MPIN	Marketing Partner ID Number
MSI	Minority-Serving institution
MYPP	Multi-Year Program Plan
NDA	Non-Disclosure Acknowledgement
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
NSF	National Science Foundation
OFCCP	Office of Federal Contractor Compliance Programs
OIG	Office of Inspector General
OMB	Office of Management and Budget
OSS	Open-Source Software
OSTI	Office of Scientific and Technical Information
OTA	Other Transactions Authority
PII	Personal Identifiable Information

RD&D	Research, Development, and Demonstration
RFI	Request for Information
RFP	Request for Proposal
SAM	System for Award Management
SciENcv	Science Experts Network Curriculum Vita
SMART	Specific, Measurable, Attainable, Realistic, and Timely
SOPO	Statement of Project Objectives
SPOC	Single Point of Contact
STEM	Science, Technology, Engineering, and Mathematics
TAA	Technical Assistance Agreement
TIA	Technology Investment Agreement
TRL	Technology Readiness Level
UCC	Uniform Commercial Code
UEI	Unique Entity Identifier
WBS	Work Breakdown Structure
WP	Work Proposal