

Financial Assistance Notice of Funding Opportunity Part 1



**U.S. Department of Energy (DOE)
Office of Electricity
Aligning Manufacturability & Pre-production Design (AMPD)
for Storage Technologies
Notice of Funding Opportunity Number: DE-FOA-0003425
Application due: March 17, 2025 at 5:00PM ET**

Modifications to this NOFO will be posted on Grants.gov and the FedConnect portal. Grants.gov and FedConnect will automatically notify applicants when a NOFO modification is processed. Applicants must be registered to this NOFO in Grants.gov to receive email notifications. Register in FedConnect as an interested party to this NOFO for announcement messages. It is recommended that you register as soon after release of the NOFO as possible to ensure you receive timely notice of any modifications or other announcements. See Registration Requirements in Part 2 of this NOFO.

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Before You Begin

Navigating the Notice of Funding Opportunity

The [OMB Memorandum M-24-11](#) directs federal agencies to reduce the burden on applicants in the Notice of Funding Opportunity (NOFO) process and limit the length of the NOFO information requests. With Fiscal Year (FY) 2025 NOFOs, DOE has separated the NOFO into two parts.

The [NOFO Part 1](#) describes the specific DOE programmatic goals and evaluation criteria, eligibility, and other components that are specific to each funding opportunity. The [NOFO Part 2](#) includes the fixed DOE requirements that generally do not change from NOFO to NOFO, including standard information for the application phase, expectations for award negotiations, and post-award requirements. Applicants must review both the [NOFO Part 1](#) and the [NOFO Part 2](#) prior to applying. To facilitate navigation, you will find references throughout this document to additional information found in [NOFO Part 2](#).

There are several required one-time actions applicants must take before applying to this NOFO. 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. If you have previously completed the necessary registrations, make sure your registration is active and up to date. All registrations are free. Please refer to [NOFO Part 2, Get Registered](#), for additional information.

This announcement is published in conjunction with [NOFO Part 2 version 1.0](#).

I. Basic Information

A. Key Facts

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| Issuing Agency | Department of Energy, Office of Electricity, Energy Storage | KEY DATES Notice of Funding Opportunity Issue Date: 01/16/2025 Application Deadline: 03/17/2025 Anticipated Selection Notification Date: 06/23/2025 Anticipated Award Date: 09/22/2025 Estimated Period of Performance: 09/22/2025 - 09/22/2028 |
| Funding Opportunity Title | Aligning Manufacturability & Pre-production Design (AMPD) for Storage Technologies | |
| Announcement Type | Initial | |
| Funding Opportunity Number | DE-FOA-0003425 | |
| Funding Instrument | Cooperative Agreements | |
| Assistance Listing Number | 81.122 Electricity Research Development and Analysis | |
| Funding Opportunity Description | The AMPD NOFO is soliciting applications to improve the manufacturability of energy storage technologies through pre-production design innovations, setting the stage for manufacturing scale-up to meet the energy storage needs of American consumers. | |
| Objective(s) | The design innovations resulting from successful projects, whether targeting a material, subcomponent, component, or system, should put one or more energy storage technologies on a path to advance from a Technology Readiness Level (TRL) and a Manufacturing Readiness Level (MRL) of at least 4 to a TRL and MRL of at least 5. | |
| Topic Areas | Single Topic Area | |
| Eligible Applicants | Domestic Entities (Institutes of higher education; for-profit entities; non-profit entities; state and local government entities and Indian Tribes). Please refer to Section II (Eligibility) for more detail. | |
| FedConnect URL and Helpdesk | FedConnect NOFO URL FedConnect Helpdesk https://www.fedconnect.net/FedConnect/Default.htm | |
| Grants.gov URL and Helpdesk | Grants.gov URL Grants.gov Support | |

1. Funding Details

Single Topic Area

- Approximate total available funding: **\$8,000,000 in FY25**
- Approximate number of awards: **4**
- Approximate dollar amount of individual awards: **\$2,000,000**
- Minimum cost share required: **20% of total project costs**
- Approximate award project period: **36 months**
- Anticipated length of budget periods: **36 months**

2. Period of Performance

DOE anticipates making awards comprised of one budget period. Project continuation will be contingent upon several elements, including satisfactory performance and DOE's Go/No-Go decision. For a complete list and more information on the Go/No-Go review, see the [NOFO Part 2, Award Administration Information](#).

In conjunction with the award, recipients will be required to participate in a promotional showcase video created by DOE after awards are distributed. For more information about the promotional video, see [VIII.A.4 Promotional Video](#).

B. Executive Summary

The objective of this NOFO is to facilitate innovative energy storage technology material, subcomponent, component, or system pre-production design to improve the manufacturability of one or more energy storage technologies. The R&D projects supported by this NOFO will improve the manufacturability of an energy storage technology and advance the TRL and MRL of the technology in the United States. Results may benefit a consortium of developers if the design challenges are widely shared within an industry. Manufacturability improvements can reduce technology production costs for the energy storage technology in question. Identifying and implementing design innovations will align pre-production storage system design to set the stage for manufacturing scale-up.

By advancing the TRL and MRL of an energy storage technology, supported projects can contribute to electrification of the national grid, supporting the Administration's goal to achieve a carbon pollution-free power sector by 2035 and net zero emissions economy by no later than 2050.¹ R&D projects that improve manufacturability of an energy storage material, subcomponent, component, or system that reduces the technology production cost may also contribute to the Long Duration Storage Shot™ to reduce storage costs by 90% in storage systems that deliver 10+ hours of duration by 2030.²

¹ The White House. "FACT SHEET: President Biden to Catalyze Global Climate Action through the Major Economies Forum on Energy and Climate." *The White House*, 20 Apr. 2023 (<https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/20/fact-sheet-president-biden-to-catalyze-global-climate-action-through-the-major-economies-forum-on-energy-and-climate/>).

² U.S. Department of Energy. "Long Duration Storage Shot." *Energy.gov*, 2021 (<https://www.energy.gov/eere/long-duration-storage-shot>).

Manufacturability improvements have the potential to secure America's clean energy supply chain by encouraging deployment of energy storage technologies that meet cost feasibility and supply chain sustainability metrics.³

In this NOFO, DOE strongly encourages applicants to form teaming partnerships of multiple entities and propose engagement strategies that foster collaboration and dissemination of data, results, and lessons to benefit the energy storage community. Partnerships could comprise multiple technology developers or producers (e.g., of energy storage materials, subcomponents, components, or systems) and research institutions with complementary knowledge and expertise.

C. Agency Contact Information

Office of Electricity
U.S. Department of Energy
1000 Independence Ave SW
Washington, D.C. 20585

Questions regarding this NOFO must be submitted through the FedConnect portal.

DISCLAIMER: Applicants are discouraged from submitting information considered proprietary unless it is deemed essential for proper evaluation of the application. If the application contains information that the applicant organization considers to be trade secrets, information that is commercial or financial, or information that is privileged or confidential, the pages containing that information must be identified as specified in the application instructions. When such information is included in the application, it will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act, with the understanding that the information will be used or disclosed only for evaluation of the application. The information contained in the application will be protected by DOE from unauthorized disclosure, consistent with the need for merit review of applications of financial assistance awards to assure the integrity of the competitive process and the accuracy and completeness of the information. If a federal financial assistance award is made as a result of or in connection with an application, the federal government has the right to use or disclose the information to the extent authorized by law. This restriction does not limit the federal government's right to use the information if it is obtained without restriction from another source.

³ U.S. Department of Energy. *America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition*. 2022 (<https://www.energy.gov/policy/articles/americas-strategy-secure-supply-chain-robust-clean-energy-transition>).

II. Eligibility

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 and ineligible for any award. DOE will not make eligibility determinations for potential applicants prior to the date on which applications to this NOFO must be submitted. The decision whether to apply in response to this NOFO lies solely with the applicant. The information included here is specific to eligibility requirements for this NOFO. For eligibility requirements applicable to all NOFOs, please consult the [NOFO Part 2, Eligibility](#).

A. Eligible Applicants

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.

DOE strongly encourages applicants to form teaming partnerships of multiple eligible entities. Partnerships could comprise multiple technology developers or producers (e.g., of energy storage materials, subcomponents, components, or systems) and research institutions with complementary knowledge and expertise. See [III.D Teaming Partnerships](#) for more information.

1. Domestic Entities

Domestic entities are eligible to apply as recipients or subrecipients. The following types of domestic entities are eligible to participate as a recipient or subrecipient of this NOFO:

- Institutions of higher education;
- For-profit organization;
- Non-profit organization;
- State and local governmental entities; and
- Indian Tribes, as defined in section 4 of the Indian Self-Determination and Education Assistance Act, 25 U.S.C. § 5304⁴

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 or under the laws of the United States; have majority domestic ownership and control; and have a physical place of business in the United States.

⁴ "Indian Tribe," for the purposes of this NOFO and as defined in in section 4 of the Indian Self-Determination and Education Assistance Act ([25 U.S.C. § 5304](#)), means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act ([85 Stat. 688](#)) [[43 U.S.C. § 1601, et seq.](#)], which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians. Federally Recognized Indian Tribes are also considered disadvantaged communities for the purposes of Justice40 requirements in this NOFO per https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf.

Participant Limitations

Participation of the following entities are limited as follows.

- DOE Federally-Funded Research and Development Centers (FFRDCs)⁵ are eligible to apply for funding as a subrecipient but are not eligible to apply as a recipient.
- Non-DOE FFRDCs are eligible to participate as a subrecipient but are not eligible to apply as a recipient.
- Federal agencies and instrumentalities (other than DOE) are eligible to participate as a subrecipient but are not eligible to apply as a recipient.

2. Foreign Entity Participation

In general, foreign entities are not eligible to apply as either a recipient or subrecipient. In limited circumstances, DOE may approve a waiver to allow a foreign entity to participate as a recipient or subrecipient.

A foreign entity may submit an application to this NOFO, but the application must be accompanied by an explicit written waiver request. Likewise, if the applicant seeks to include a foreign entity as a subrecipient, the applicant must submit a separate explicit written waiver request in the application for each proposed foreign subrecipient. Please see **NOFO Part 2, Application Content Requirements** for the requirements for submission of a foreign entity waiver request. The applicant does not have the right to appeal DOE's decision concerning a waiver request.

Prime recipients and subrecipients must be legally formed in the United States, have majority domestic ownership and control, and have a physical location for business operations in the United States.

Entities that are organized, chartered, or incorporated (or otherwise formed) under the laws of the United States or a particular state or territory of the United States and have a physical location for business operations in the United States are eligible to apply for funding as a recipient or subrecipient.

Foreign Entity Participation

A foreign entity is eligible to apply for funding as a recipient if it designates in the application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a state or territory of the United States to be the recipient. The application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate.

Foreign entities may request a waiver of the requirement to designate a subsidiary in the United States as the recipient in the application (i.e., a foreign entity may request that it be the recipient). To do so, the applicant must submit an explicit written waiver request in the application.

NOFO Part 2, Application Content Requirements lists the information that must be included in a request to waive this requirement. The applicant does not have the right to appeal DOE's decision concerning a waiver request.

Performance of Work in the United States

⁵ 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/>.

All work for the awards under this NOFO must be performed in the United States. To request a waiver of this requirement, the applicant must submit a written waiver request in the application. Absent an approved waiver, such costs will not be allowable under the award. The [NOFO Part 2, Application Content Requirements](#) lists the requirements for submission of a foreign work waiver request.

3. Ineligible Participants

The following entities, whether foreign or domestic, are ineligible for participation in this NOFO in any form, including as a recipient, subrecipient, or subcontractor.

- In accordance with 2 CFR 200.214, 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.
- Entities identified on Department of the Treasury Office of Foreign Assets Control Treasury's Sanctions Program Specially Designated Nationals list are prohibited from doing business with the United States Government and are not eligible. See [OFAC - Sanctions List Service \(treas.gov\)](https://www.treas.gov/sanctions).
- 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.
- Entities of Concern are prohibited from participating in projects selected under this NOFO (see [NOFO Part 2, Eligibility, Other Eligibility Information, Entity of Concern Prohibition](#) section for details and definitions).
- DOE employees, employees of sponsoring organizations, DOE support service contractors, members of their immediate families (e.g., spouses, children, siblings, or parents), and persons living in the same household as such persons, whether or not related, are not eligible to participate in the NOFO.
- NETL is not eligible for an award under this announcement and may not be proposed as a subrecipient on another entity's application. An application that includes NETL as a recipient or subrecipient will be considered non-responsive.

B. Limitation on Number of Full Applications Eligible for Review

An entity may submit multiple applications for this NOFO as long as each application describes a unique, scientifically distinct project. If an entity submits duplicate applications, the DOE will only review the last submission. This limitation does not prohibit an applicant from collaborating on other applications that describe a unique, scientifically distinct project (e.g., as a potential subrecipient or partner).

C. Cost Sharing

Applicants are expected to follow through on estimated cost share commitments proposed in their applications if selected for award negotiations. Please refer to the [NOFO Part 2, Eligibility](#) for more information on Cost Sharing.

1. Cost Share Requirements

The cost share must be at least 20% of the total project costs⁶ for research and development.⁷

D. FFRDC Eligibility Criteria

1. DOE and Non-DOE FFRDCs as a Subrecipient

As long as they have no conflict, DOE and non-DOE FFRDCs may be proposed as a subrecipient on another entity's application subject to the following guidelines:

Authorization for non-DOE FFRDCs

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

Authorization for DOE FFRDCs

The cognizant Contracting Officer for the FFRDC must authorize in writing the participation of the FFRDC in 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.

Funding, Cost Share, and Subaward with FFRDCs

The recipient and FFRDC are responsible for entering into an appropriate subaward that will govern, among other things, the funding of the FFRDC portion of the work from the recipient under its DOE award. Such an agreement must be fully executed prior to the FFRDC starting work directly allocable to the financial assistance award. DOE funds the recipient, and the recipient will fund the FFRDC through a subaward.

Cost share calculations will be based on the total cost of the project (e.g., recipient and subrecipient, including FFRDC, portions).

Responsibility

The 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 recipient and the FFRDC.

⁶ Total project costs are the sum of the government share, including FFRDC costs (if applicable), and the recipient share of project costs.

⁷ 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.

Limit on FFRDC Effort

The FFRDC effort, in aggregate, shall not exceed 50% of the total project cost.⁸

⁸ Total project cost is the sum of the government share, including FFRDC costs if applicable, and the recipient share of project costs.

III. Program Description

A. Background and Purpose

The Aligning Manufacturability & Pre-production Design (AMPD) for Storage Technologies notice of funding opportunity (NOFO or AMPD NOFO) is soliciting applications to improve the manufacturability of energy storage technologies through pre-production design innovations, setting the stage for manufacturing scale-up to meet the energy storage needs of American consumers. Additionally, DOE is invested in advancing innovative energy storage technologies from early-stage R&D to widespread commercialization. The Energy Storage Grand Challenge (ESGC)⁹ serves as the DOE-wide coordinating body for energy storage efforts. A goal of the ESGC is to develop and domestically manufacture energy storage technologies that can meet all marketplace demands by 2030.

DOE's Office of Electricity (OE) provides national leadership to ensure that the Nation's energy delivery system is secure, resilient and reliable. Through research and development, OE develops new technologies to improve the infrastructure that effectively and securely brings electricity into our homes, offices, and factories.¹⁰ OE's Energy Storage Division ensures that next generation energy storage technologies can serve as resiliency assets that are cost-effective, safe, and reliable. The OE Energy Storage Division supports applied materials development to identify safe, low-cost, and earth-abundant elements that enable cost-effective stationary storage. Improving the manufacturability of energy storage technologies will enable the advancement, production, and commercialization of energy storage solutions needed by consumers.

Designing to improve manufacturability shares similarities with the engineering concept known as design for manufacturing (DFM) which is applied to increase production quality, increase production volumes, and/or decrease costs by designing parts to work well for the intended process.¹¹ DFM is a design method that was originally developed in the mid-1980s as part of an integrated product development framework to improve industrial production sectors, but it has since been applied to other production sectors.¹²

The life-cycle for a technology generally comprises design, production, operation, and end-of-life management phases. An important element of energy storage technology development is establishing viable designs with the manufacturability of the technology in mind before production, providing the opportunity to improve manufacturability at the *pre-production* phase. This phase can include considerations for energy storage technology materials, form factors, subcomponents, components, or systems, though specifics can vary across technology. For example, developing an electrochemical

⁹ U.S. Department of Energy. "Energy Storage Grand Challenge." *Energy.gov* (<https://www.energy.gov/energy-storage-grand-challenge/energy-storage-grand-challenge>).

¹⁰ U.S. Department of Energy. "About the Office of Electricity." *Energy.gov* (<https://www.energy.gov/oe/about-office-electricity>).

¹¹ DOE Industrial Efficiency & Decarbonization Office (IEDO) Build4Scale – Training Modules Hub teaches manufacturing fundamentals to energy hardware innovators (https://www.energy.gov/sites/default/files/2021-07/Module_3D.pdf).

¹² Duarte, Paulo Cesar, et al. "Integrated Product Development and Lifecycle Management in Building Production – a Case Study for Logistic of Mortar Distribution in Building Sites." *Journal of Building Engineering*, vol. 32, Nov. 2020, p. 101802, <https://doi.org/10.1016/j.jobbe.2020.101802>.

battery will likely include design considerations for cells, modules, racks, and containers. These design changes can be in the form of strategies, techniques, or tools that improve various characteristics of the technology, including safety, performance, and the ease of producibility, also known as manufacturability.

For this NOFO, “pre-production” refers to energy storage technologies that have a Manufacturing Readiness Level (MRL) of 7 (“Capability to produce systems, subsystems, or components in a production representative environment”) or lower.¹³ MRL 7 indicates that “system detailed design activity is nearing completion” and that “[t]echnologies should be on a path to achieve [a Technology Readiness Level (TRL) of 7]”.¹⁴ Pre-production manufacturability challenges may relate to energy storage technology materials, subcomponents, components, or systems. Design solutions to improve manufacturability may impact a variety of metrics related to production costs, the levelized cost of storage (LCOS), commercial viability, synthesis and testing protocols (including safety considerations), equipment and material considerations, geographic or logistical constraints, and end-of-life considerations. Moreover, design innovations that improve manufacturability may ultimately lead to enhanced quality assurance and reduction in the overall cost to consumers.

Domestic industrial-scale stationary storage manufacturing capacity is an important aspect of overcoming the challenge of making domestic energy storage technologies cost-competitive and overcoming barriers to widespread deployment. For example, for the last few years, manufacturers have been typically sold out of battery modules on a rolling six (6) to twelve (12) month basis, making availability of cells difficult and driving cost increases for the stationary storage market with smaller orders.¹⁵ In another example, a recent DOE analysis indicated that 10-15 GW/year of manufacturing capacity will be needed by 2035 to support mature technology deployment at scale for long duration energy storage.¹⁶ The same long duration energy storage analysis found that compressed air energy storage, liquid air energy storage, and lithium-ion batteries have high risk for manufacturing and assembly capacity, while some varieties of thermal energy storage and electrochemical batteries were found to have medium risk.

Many companies struggle to meet the challenging investment and time demands required to mature an energy storage technology from the lab to a viable market product, but not all succeed. The projects supported by the AMPD NOFO will result in early-stage design innovations that not only improve manufacturability, but also provide additional benefits. Potential impacts of AMPD NOFO-supported projects include compressing lengthy and uncertain storage technology development timelines, cutting capital costs for consumers, and strengthening the community of domestic manufacturers. For this

¹³ Office of the Secretary of Defense (OSD) Manufacturing Technology Program. *Manufacturing Readiness Level (MRL) Deskbook*. 2011. (https://www.dodmrl.com/MRL_Deskbook_V2.pdf).

¹⁴ U.S. Government Accountability Office. *Assessment Guide Technology Readiness Best Practices for Evaluating the Readiness of Technology for Use in Acquisition Programs and Projects Preface*. 2016. (<https://www.gao.gov/assets/gao-16-410g.pdf>).

¹⁵ Viswanathan, Vilayanur, et al. *Energy Storage Grand Challenge 2022 Grid Energy Storage Technology Cost Performance Assessment*. Pacific Northwest National Laboratory. Report No. PNNL-33283 (https://www.pnnl.gov/sites/default/files/media/file/ESGC_Cost_Performance_Report_2022_PNNL-33283.pdf).

¹⁶ U.S. Department of Energy. “Long Duration Energy Storage - Pathways to Commercial Liftoff.” *Pathways to Commercial Liftoff*, 23 Oct. 2024 (<https://liftoff.energy.gov/long-duration-energy-storage/>).

reason, DOE strongly encourages applicants to form teaming partnerships of multiple entities and to propose engagement strategies that significantly benefit the larger energy storage community.

B. Objectives

The objective of the AMPD NOFO is to facilitate innovative energy storage technology material, subcomponent, component, or system design to improve the pre-production manufacturability of one or more energy storage technologies. Identifying and implementing design innovations will align pre-production storage system design to set the stage for manufacturing scale-up.

The AMPD NOFO supports OE Energy Storage Program priorities to enable a reliable, resilient, secure, and affordable electricity grid by accelerating the development and manufacturability of bi-directional electrical energy storage technologies as a key component of the future-ready electricity grid. Addressing domestic pre-production manufacturability challenges that energy storage technology developers face when making design decisions that impact production of the technology, including scale-up, will help expand the portfolio of technology options to meet customer needs.

The scope of the AMPD NOFO is to support design solutions that address specific, clearly identified manufacturability challenges, including, but not limited to, the selection, modification, or development of the size, shape, or composition of a material, subcomponent, component, or system. The design innovations will clearly and directly benefit one or more energy storage technologies that discharge energy in the form of electricity to support stationary, non-mobility applications (including, but not limited to, grid-scale or grid-connectable applications).

The pre-production design innovations must improve the manufacturability of energy storage technologies and increase the TRL and MRL of the technologies. These design innovations can be in the form of strategies, techniques, or tools that improve manufacturability and reduce overall technology production cost. The AMPD NOFO-supported projects must improve manufacturability metrics and/or indicators (which may be technical or non-technical), such as the estimated production cost, time to produce, production volumes, supply chain issues, and product quality.

The design innovation, whether it targets a material, subcomponent, component, or system, should advance one or more energy storage technologies from a TRL of at least 4 (“Component and/or system validation in laboratory environment”) and an MRL of at least 4 (“Capability to produce the technology in a laboratory environment”) to a TRL of at least 5 (“Laboratory scale, similar system validation in relevant environment”) and an MRL of at least 5 (“Capability to produce prototype components in a production relevant environment”).

C. Expected Performance Goals

The design innovations resulting from successful projects, whether targeting a material, subcomponent, component, or system, should put one or more energy storage technologies on a path to advance from a TRL of at least 4 (“Component and/or system validation in laboratory environment”) and an MRL of at least 4 (“Capability to produce the technology in a laboratory environment”) to a TRL of at least 5 (“Laboratory scale, similar system validation in relevant environment”) and an MRL of at least 5 (“Capability to produce prototype components in a production relevant environment”).

Additionally, in conjunction with the award, recipients will be required to participate in a promotional showcase video created by DOE after awards are distributed. For more information about the promotional video, see [VIII.A.4 Promotional Video](#).

D. Teaming Partnerships

DOE strongly encourages applicants to form teaming partnerships of multiple entities and to propose engagement strategies that foster collaboration and dissemination of data, results, and lessons to benefit the energy storage community. Partnerships could comprise technology developers or producers (e.g., of energy storage materials, subcomponents, components, or systems) and research institutions with complementary knowledge and expertise. Members of an applicant team will be considered covered individuals, consistent with [IV.B.1 Covered Individual Definition, Designation, and Responsibility](#). The roles of each entity in the partnership should be described consistent with [IV.B.3 Technical Volume](#).

E. Applications Specifically Not of Interest

The following types of applications will be deemed nonresponsive and will not be reviewed or considered (please also refer to [VI.B Responsiveness Review](#) below):

- Applications that fall outside the technical parameters specified in [III.A Background and Purpose](#) and [III.B Objectives](#) above.
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the laws of thermodynamics).
- Design innovations that do not focus on pre-production.
- Design innovations that improve only the performance or operational characteristics of energy storage technology materials, subcomponents, components, or systems without a clear, direct improvement to manufacturability.
- Design innovations that improve the manufacturability of energy storage technologies for mobility applications or energy storage technologies that do not have the capability to both charge and discharge energy in the form of electricity.
- Design innovations that improve the manufacturability of non-energy storage technologies, including power electronics not essential to the function of the energy storage technology, or other grid components.
- Projects that focus on manufacturing facilities or equipment for manufacturing of energy storage technologies.
- Projects that focus on manufacturing processes, approaches, or strategies (e.g., 3-D printing or automation).
- Projects that only support manufacturing workforce efforts or training programs, or manufacturing standards, regulations, or policies, without a clear, direct improvement to manufacturability.
- Manufacturability improvements for flow battery membranes; system design, and manufacturing scale-up of flow battery production; and cost-effective integration of flow battery systems. This is to avoid program overlap with DE-FOA-0003326: Platform Technologies for Transformative Battery Manufacturing, Subtopic 1.2 Processes and Design for

- Manufacturability of Flow Batteries, which closed on May 7, 2024.¹⁷
- Projects that focus on hydrogen as the energy storage medium.

F. Statement of Substantial Involvement

DOE anticipates awarding cooperative agreements under this NOFO, which include a statement of DOE's "substantial involvement" in the work performed under the resulting awards. For cooperative agreements, DOE does not limit its involvement to the administrative requirements of the award. Instead, DOE has substantial involvement in the direction and redirection of the technical aspects of the project. DOE's substantial involvement in resulting awards may include the following:

- DOE shares responsibility with the recipient for the management, control, direction, and performance of the project.
- DOE may intervene in the conduct or performance of work under this award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
- DOE may redirect or discontinue funding the project based on the outcome of DOE's evaluation of the project at the Go/No-Go decision point(s).
- DOE participates in major project decision-making processes.
- Reviewing project plans, including as required: project management, testing, cybersecurity, interoperability, data management, and technology transfer/commercialization plans in a timely manner, including recommending alternate approaches if the plans do not address critical programmatic objectives.
- Conducting periodic reviews to ensure adequate progress and that the work accomplishes the program and project objectives. Recommending alternate approaches or shifting work emphasis, if needed.
- Reviewing scientific/technical reports to ensure programmatic needs and the requirements of the Financial Assistance award instrument, including intellectual property rights, are satisfied, including providing comments to the recipient in a timely manner.
- Promoting and facilitating technology transfer activities, including disseminating program results through presentations and publications.
- Serving as scientific/technical liaison between recipients and other DOE programs.

G. Statutory Authority

The programmatic authorizing statute is:

- [Public Law \(PL\) 95-91, DOE Organization Act](#)
- [Energy Act of 2020 Pub. L. 116-260, div. Z, title III, §3201, codified as 42 U.S.C. § 17232](#)

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

¹⁷ U.S. Department of Energy. "DE-NOFO-0003236: Platform Technologies for Transformative Battery Manufacturing." *EERE EXCHANGE: Funding Opportunities*, May 7, 2024 (<https://eere-exchange.energy.gov/Default.aspx#NOFOId53aa8240-df4b-4bc3-80b4-af5547897562>).

IV. Application Content and Form

This section includes application information specific to this NOFO Part 1. Refer to the [NOFO Part 2, Application Content and Form](#) for standard information that applies to all DOE NOFOs such as formatting and content requirements, and funding restrictions.

A. Summary

The application process includes:

| Application Submission Phase | Eligibility for Submission |
|------------------------------|---|
| Application | Must be submitted by the specified due date and time to be eligible for comprehensive merit review. |

B. Application Content Requirements

Each application must be limited to a single concept. Applications must conform to the following requirements and must not exceed the stated page limits. Please refer to the [NOFO Part 2, Application Content and Form](#) for a complete list of application requirements. Detailed guidance on the content and form of NOFO-specific requirements is provided following the [0.B.2 Summary of Application Requirements](#) table below.

1. Covered Individual Definition, Designation, and Responsibility

Several of the Application Content Requirements listed below and in the [NOFO Part 2](#) are required of covered individuals.

“Covered Individual” means an individual who (a) contributes in a substantive, meaningful way to the development or execution of the scope of work of a project proposed for funding by DOE, and (b) is designated as a covered individual by DOE.

DOE designates as covered individuals any principal investigator (PI); project director (PD); co-principal investigator (Co-PI); co-project director (Co-PD); project manager; and any individual regardless of title that is functionally performing as a PI, PD, Co-PI, Co-PD, or project manager.

In addition, DOE designates technical staff (e.g., postdoctoral fellows/researchers and graduate students) as covered individuals for the purpose of this funding opportunity.

DOE may further designate covered individuals during award negotiations or the award period of performance.

2. Summary of Application Requirements

| Component | File Format | Page Limit | File Name |
|--|-------------|--------------|--|
| Application for Federal Assistance (SF-424) | Form | n/a | n/a |
| Technical Volume | PDF | 15 pages | TechnicalVolume.pdf |
| Letters of Commitment | PDF | 1 page each | LOC.pdf |
| Impacted Indian Tribes Documentation | PDF | n/a | ImpactedTribes.pdf |
| Statement of Project Objectives | MS Word | 5 pages | SOPO.doc or .docx |
| Project Management Plan | PDF | 20 pages | PMP.pdf |
| Budget Information Non-Construction Programs (SF-424A) | MS Excel | n/a | SF-424A.xls or .xlsx |
| Budget Justification Workbook | MS Excel | n/a | Budget_Justification.xls or .xlsx |
| Subrecipient Budget Justification | MS Excel | n/a | Subrecipient_Budget_Justification.xls or .xlsx |
| Work Proposal for FFRDC, (see DOE O 412.1A) | PDF | n/a | WP.pdf |
| Authorization for Non-DOE or DOE FFRDCs | PDF | n/a | FFRDCAuth.pdf |
| Waiver for Foreign Entity Participation | PDF | n/a | FEW.pdf |
| Performance of Work in the United States (Foreign Work Waiver) | PDF | n/a | FWW.pdf |
| Resumes (Research and Development (R&D)) | PDF | 3 pages each | Resumes.pdf |
| Current and Pending Support (for each covered individual) | PDF | n/a | CPS.pdf |
| Digital Persistent Identifier (for each covered individual) | n/a | n/a | Include in Current & Pending Support |
| Research Security Training Requirement (for each covered individual) | n/a | n/a | Include in Current & Pending Support |
| Transparency of Foreign Connections | PDF | n/a | BusinessSensitive_TFC.pdf |
| Potentially Duplicative Funding Notice | PDF | n/a | PDFN.pdf |
| Data Management Plan | PDF | n/a | DMP.pdf |
| Project/Performance Site Location(s) | Form | n/a | n/a |
| Environmental Questionnaire | PDF | n/a | ENV.pdf |
| Disclosure of Lobbying Activities, if applicable (SF-LLL) | PDF | n/a | SF-LLL.pdf |
| Certification Regarding Lobbying (OMB 4040-0013) | PDF | n/a | Cert Lobbying.pdf |
| Summary for Public Release | PDF | 1 page | Summary.pdf |

| | | | |
|----------------------------------|-------|--------|-----------|
| Summary Slide for Public Release | MS | 1 page | Slide.pdf |
| | Power | | |
| | Point | | |

3. Technical Volume

The Technical Volume must conform to the following content and form requirements. This volume must address the technical review criteria as discussed in [VI.C.2 Technical Review Criteria](#).

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

The Technical Volume to the application may not be more than 15 pages, including the cover page, table of contents, and all citations, charts, graphs, maps, photos, or other graphics or tables, and must include all information below. The applicant should consider the weighting of each of the technical review criteria (see [VI.C.2 Technical Review Criteria](#)) when preparing the Technical Volume.

Cover Page

The cover page must include all of the following:

- The project title
- The recipient's name (and organization, if applicable), and entity type(s)
- The project team (if applicable), including names of all team members, their respective organizations, and entity types
- Technical and business POC(s) (e-mail address(es) and telephone number(s))
- Senior/key personnel, and other covered individuals, and their respective organizations
- The project location(s)
- The proposed total federal funding level, cost share and period of performance
- The proposed federal funding level and cost share for each project participant
- Statements regarding confidentiality

A sample Technical Volume Cover Page is included as an attachment to this announcement.

Table of Contents

Applicant's table of contents should capture, at a minimum, all of the required sections identified below.

Introduction

- Describe, in detail, the energy storage technology material, subcomponent, component, or system that the project will target.
- Describe the pre-production manufacturability challenge that the project will improve.
- Provide a brief summary of the project's overall objectives and significance.

Merit Review Criteria Discussion

The section should be formatted to address each of the merit review criterion and sub-criterion listed in [VI.C.2 Technical Review Criteria](#). Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. DOE will evaluate and consider only those applications that address separately each of the merit review criterion and sub-criterion. References should be included in the Bibliography section.

Technology Maturation

This section should summarize the technology maturation approach. A Technology Maturation Plan (TMP) will be required as a deliverable under the award within 90 days after award, and a final TMP will be due within 90 days of project completion. A technology maturation plan template is provided as an attachment to the NOFO for reference. This section should address elements of the TMP including the following:

- Provide documentation describing the technology's TRL and MRL at the beginning of the project.
- Define manufacturability metrics/indicators (technical and non-technical) to evaluate manufacturability (e.g., estimated production cost, time to produce, production volumes, supply chain issues, and product quality). Explain the selected metrics/indicators and estimate their value at the beginning of the project with supporting documentation.
- Summarize the necessary R&D steps to advance the technology to the targeted TRL and MRL and improve manufacturability metrics/indicators.
- Provide the estimated potential improvement to TRL, MRL, and manufacturability metrics/indicators at the completion of the project, with the expectation of reporting the actual improvement at the completion of the project.
- Include technical details to explain the approach for measuring TRL, MRL, and the manufacturability metrics/indicators before and after completion of the project (e.g., diagrams, schematics, performance and operational characteristics, power ratings, project lifetime, information and performance data from simulations, lab-scale tests, or demonstrations).
- Include references, as appropriate, in the Bibliography section.

Relevance and Outcomes/Impacts

This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts. The justification for the proposed project should include a clear statement of the importance of the project in terms of the utility of the outcomes and the target community of beneficiaries. Specifically, this section should address the following industry impacts:

- Describe the targeted commercial application(s) of the proposed design innovation.
- Propose an engagement strategy to foster collaboration and dissemination of data, results, and lessons learned to relevant entities in the larger energy storage community not immediately involved with the project. The strategy should identify and characterize participating entities and describe methods to implement the strategy. Engagement strategies that include a consortia or other partnership approach that promotes outputs benefitting more than a single entity are welcome, subject to intellectual property and other constraints.
- Estimate and explain the project's potential impact on the energy storage technology manufacturing sector.
- Define the project's potential benefits on non-manufacturability considerations (e.g., improving technology safety, improving end-of-life management, reducing supply chain risks, supporting workforce efforts).
- Characterize and describe the anticipated pathway for driving broad adoption, commercialization, and, if applicable, technology transfer of the proposed design innovation.
- Include references, as appropriate, in the Bibliography section.

Roles of Participants

For multi-organizational projects, describe: the roles and the work to be performed by each participant/organization; business agreements between the applicant and other participating organizations; and how the various efforts will be integrated and managed. Describe how the composition of the project team will enable the project's engagement strategy to foster collaboration and dissemination of data, results, and lessons learned to significantly benefit the larger energy storage community not immediately involved with the project.

Multiple Principal Investigators

The applicant, whether a single organization or team/partnership/consortium of multiple organizations, must indicate if the project will include multiple PIs. This decision is solely the responsibility of the applicant. If multiple PIs will be designated, the application must identify the Contact PI/Project Coordinator and provide a "Coordination and Management Plan" that describes the organization structure of the project as it pertains to the designation of multiple PIs. This plan should, at a minimum, address:

- Process for making decisions on scientific/technical direction;
- Publications;
- Intellectual property issues;
- Communication plans;
- Procedures for resolving conflicts; and
- PIs' roles and administrative, technical, and scientific responsibilities for the project.

Facilities and Other Resources

Identify the facilities (e.g., office, laboratory, computer, etc.) to be used at each performance site listed and, if appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Provide any information describing the other resources available to the project such as machine and electronics shops. References, as appropriate, should be included in the Bibliography section.

Equipment

List important items of equipment already available for this project and, if appropriate, note the location and pertinent capabilities of each. If you are proposing to acquire equipment, describe comparable equipment, if any, already at your organization and explain why it cannot be used. References, as appropriate, should be included in the Bibliography section.

Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers (Not Included in Page Limitation)

Provide the following information in this section:

Collaborators and Co-editors: List in alphabetical order all persons, including their current organizational affiliation, who are, or who have been, collaborators or co-authors with you on a research project, book or book article, report, abstract, or paper during the 48 months preceding the submission of this application. Also, list any individuals who are currently, or have been, co-editors with you on a special issue of a journal, compendium, or conference proceedings during the 24 months preceding the submission of this application. If there are no collaborators or co-editors to report, state "None."

Graduate and Postdoctoral Advisors and Advisees: List the names and current organizational affiliations of your graduate advisor(s) and principal postdoctoral sponsor(s) during the last 5 years. Also, list the names and current organizational affiliations of your graduate students and postdoctoral associates.

Bibliography (Not included in page limitation)

Provide a bibliography for any references cited in the Project Narrative section. This section must include only bibliographic citations.

C. Funding Restrictions

Program-specific funding restrictions applicable to awards funded under this NOFO are identified below. Standard funding restrictions are described in the [NOFO Part 2, Funding Restrictions](#) section.

| Applicable Funding Restrictions | | |
|--|-------------|--|
| Title | Location | Additional Information |
| Allowable Costs | NOFO Part 2 | Applicable to awards made under this NOFO |
| Pre-Award Costs | NOFO Part 2 | Applicable to awards made under this NOFO |
| Performance of Work in the United States (Foreign Work Waiver Requirement) | NOFO Part 2 | Applicable to awards made under this NOFO |
| Foreign Travel | NOFO Part 2 | Foreign Travel is not allowed for awards made under this NOFO |
| Lobbying | NOFO Part 2 | Applicable to awards made under this NOFO |
| Equipment and Supplies | NOFO Part 2 | Purchasing American-made equipment and supplies is applicable to this award. |

V. Submission Requirements and Deadlines

There are several one-time actions applicants must take before applying to this NOFO. Some of these 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 outlined in detail in the [NOFO Part 2, Get Registered](#).

A. Required Registrations

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

You must have an active account with SAM.gov. This includes having a Unique Entity Identifier (UEI). SAM.gov registration can take several weeks. To register, go to SAM.gov Entity Registration and click Get Started. From the same page, you can also click on the Entity Registration Checklist for the information you will need to register.

Each applicant must:

1. Be registered in SAM.gov before submitting an application;
2. Provide a valid Unique Entity Identifier in the application; and
3. Continue to maintain an active registration in SAM.gov with current information at all times during which you have an active federal award or an application or plan under consideration by a federal agency.

DOE may not make a federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a federal award, the DOE will determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

2. FedConnect

Register in FedConnect at <https://fedconnect.net>. For more information about the registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf. An active SAM account and a UEI must be obtained before initiating the FedConnect registration.

3. Grants.gov

Register in Grants.gov at <https://www.grants.gov/register> to set up your Workspace and to receive automatic updates when amendments to the NOFO are posted. Doing so requires a Login.gov registration as well. An applicant cannot submit an application through Grants.gov unless registered. See step-by-step instructions for applicants at How to Apply for Grants website at <https://www.grants.gov/applicants/grant-applications/how-to-apply-for-grants>.

B. Application Package

1. Grants.gov

The application package requirements are outlined in [IV.B Application Content and Form](#) above. The application package forms for application requirements are included in Grants.gov. The application forms and instructions are available on Grants.gov at <https://www.grants.gov/> under the NOFO number identified on the NOFO Cover Page.

Note: The maximum file size that can be uploaded to the Grants.gov website is 10MB. Files larger than 10MB cannot be uploaded and hence cannot be submitted for review. If a file is larger than 10MB but is still within the maximum page limit specified in the NOFO, it must be broken into parts and denoted to that effect. For example:

- TechnicalVolume_Part_1
- TechnicalVolume_Part_2

DOE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 10MB.

Electronic Authorization of Applications and Award Documents

Submission of an application and supplemental information under this NOFO through electronic systems used by the DOE, including Grants.gov, constitutes the authorized representative's approval and electronic signature.

C. Submission Date and Times

All required submissions must be submitted to the Grants.gov site identified in [I.A Key Facts](#) of [NOFO Part 1](#) no later than 5 p.m. ET on the dates provided in [I.A Key Facts](#).

Applicants are strongly encouraged to submit all required application documents 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 application documents. Once the application documents are submitted in the Grants.gov site identified in the [NOFO Part 1](#), 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 them 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. Intergovernmental Review

This NOFO is not subject to Executive Order 12372, Intergovernmental Review of Federal Programs.

VI. Application Review Information

A. Standards for Application Evaluation

Applications that are determined to be eligible will be evaluated in accordance with this NOFO and the guidance provided in the “DOE Merit Review Guide for Financial Assistance,” effective October 1, 2020, which is available at: <https://energy.gov/management/downloads/merit-review-guide-financial-assistance-and-unsolicited-proposals-current>.

B. Responsiveness Review

The following applications will be deemed nonresponsive and will not be reviewed or considered:

- Project concepts or approaches not based on established scientific principles.
- Project concepts or approaches identified specifically as NOT of interest (see [III.E Applications Specifically Not of Interest](#) above).

C. Review Criteria

1. Compliance Criteria

All applicant submissions must:

- Comply with the applicable content and form requirements listed in [IV Application Content and Form](#), [V Submission Requirements and Deadlines](#), and [NOFO Part 2](#);
- Include all required documents;
- Be uploaded successfully in Grants.gov as indicated in the [I.A Key Facts](#) above, including clicking the “Submit” button; and
- Comply with the submission deadline stated in [I.A Key Facts](#).

DOE will not review or consider submissions submitted through means other than the Grants.gov site indicated in [I.A Key Facts](#), submissions submitted after the applicable deadline (see [V.C Submission Date and Times](#)), or incomplete submissions.

Applicants are strongly encouraged to submit all required application documents 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 application documents. Once the application documents are submitted in the Grants.gov site identified in the [I.A Key Facts](#) section, 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 them 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.

2. Technical Review Criteria

Applications

Applications will be evaluated against the technical review criteria shown below:

The following evaluation criteria will be utilized by the Technical Evaluation Committee and Federal Merit Review Panel members in conducting their evaluations of applications subjected to comprehensive merit review.

| Review Criterion Overview | |
|---|--------|
| Criterion | Weight |
| Technical Merit and Innovation | 30% |
| Significance and Impact | 40% |
| Project Execution and Management Approach | 15% |
| Team and Resources | 15% |

For purposes of the technical review, “applicant” and “team” refer to the covered individuals (whether a single individual and/or organizations or a team/partnership/consortia) identified in the proposal as contributing to the execution of the proposed project.

CRITERION 1: TECHNICAL MERIT AND INNOVATION (30%)

This criterion will evaluate the technical merit and feasibility of the proposed project as detailed in the application. This criterion will also be used to gauge the degree of innovation of the proposed solution in comparison to contemporary approaches, along with the effectiveness of the proposal in addressing the technical requirements specified in the NOFO.

1. Degree to which the proposed project addresses the key objectives outlined in the NOFO.
2. Level of the applicant’s understanding of the pre-production manufacturability challenge of the targeted energy storage technology material, subcomponent, component, or system, indicated by the degree of clarity and thoroughness articulated in the description of the proposed project.
3. Extent to which the proposed project is innovative compared to previous and ongoing work, existing and emerging approaches, and existing and emerging technologies.
4. Extent to which the application clearly and convincingly demonstrates that the project is reasonably expected to advance the relevant technology beyond its current TRL, MRL, and manufacturability, as described in the required [III Program Description](#) of this NOFO.
5. Validity/viability of the proposed project as evidenced by documentation (e.g., peer reviewed or collaborated data, and results of previous and ongoing work) of the evaluation approach and the estimated value of the TRL, MRL, and manufacturability of the technology, as described in the [III Program Description](#) of this NOFO.

CRITERION 2: SIGNIFICANCE AND IMPACT (40%)

This criterion will evaluate the significance of implementation of the proposed project on the energy storage technology manufacturing sector and other potential benefits.

1. Extent to which the proposed project outcomes meet or exceed the goals or performance targets specified in the NOFO.
2. Degree to which the application clearly and convincingly explains the manufacturability improvement of the proposed project over existing and emerging approaches and technologies.
3. Degree to which the application clearly and convincingly conveys the potential pathway for driving broad adoption, commercialization, and, if appropriate, technology transfer of the proposed design innovation.

4. Extent to which the proposed approach fosters collaboration and would reasonably lead to dissemination of data, results, and lessons learned to relevant entities in the larger energy storage community not immediately involved with the project.
5. Magnitude of the impact on the energy storage technology manufacturing sector that the proposed project is poised to have.
6. Impact of the potential benefits the project will have on non-manufacturability considerations (e.g., improving technology safety, improving end-of-life management, reducing supply chain risks, supporting workforce efforts).

CRITERION 3: PROJECT EXECUTION AND MANAGEMENT APPROACH (15%)

This criterion will evaluate the level of the applicant's management skills and the adequacy, appropriateness, and reasonableness of the proposed management strategy to achieve the stated goals and objectives of both the NOFO and the proposed technical concept/project as articulated through the Project Management Plan (PMP) and Statement of Project Objectives (SOPO).

1. Level of the applicant's project management skills and thoroughness of the PMP as demonstrated by the use of sound project management principles to clearly define the roles and responsibilities of the project team, an appropriate schedule of tasks, with associated interdependencies, milestones, and the use of sound risk mitigation strategies and plans. At a minimum, the PMP must address the following elements:
 - Executive Summary/Technical Approach – clarity and conciseness of the project description which, at a minimum, must discuss the objectives, goals, expected results, and technical approach.
 - Key Personnel – appropriate utilization of the project team's key personnel; including the principal investigator (PI), business point of contact, and any other individuals having significant tasks or responsibilities in the execution of the project.
 - Funding and Costing Profile – adequacy of detail (including a Budget Table and Quarterly Spending Plan) in describing how the applicant will manage and monitor the execution of the project budget.
 - Milestone Log – extent to which each milestone in the Milestone Log is appropriate, specific, measurable, achievable, relevant, timely, verifiable, and shows progress toward achievement of project goals. At a minimum, each milestone must include a short title, description, planned completion date, and verification method.
 - Technical Deliverables Log – description of deliverables and progress toward delivery. Each deliverable should be identified by a short title, description, planned delivery date, and delivery method.
 - Project Schedule – adequacy and relevance of interdependencies between tasks. The schedule must clearly indicate milestones identified in the Milestone Log and include a proposed project timeline broken down by phase and task (as identified in the SOPO) with team members and their roles. The schedule must also indicate the deliverables identified in the Technical Deliverables Log, which must include each deliverable's title, associated phase/task, and planned completion date.
 - Risk Management – extent to which the application identifies and defines the potential risks that may impact project success, identifies potential mitigation measures, and the adequacy of the proposed approach to continue to assess and mitigate risks throughout the project.

2. Degree to which the SOPO provides a sufficiently detailed, concise, and understandable description of the tasks, subtasks, and Technical Deliverables by which the overall project scope will be performed, and the project objectives will be achieved. At a minimum, the SOPO must address the following:
 - Objectives – extent to which the overall objectives of the project, and the objective for each phase of work (if applicable), are clearly described.
 - Scope of Project – appropriateness of the focus and effort to achieve the objectives of the proposed technical concept/project.
 - Tasks (and Subtasks) to be Performed – extent to which tasks (and subtasks) are clearly defined and organized in a logical sequence that increases the likelihood of achieving the objectives of the proposed technical concept/project. As warranted, Go/No-Go decision point(s) are to be included that demonstrate meaningful and measurable technical progress and provide justification for the continuance of the proposed technical concept/project.
 - Technical Deliverables – appropriateness of proposed deliverables (beyond those required by this NOFO) and their relevance to the corresponding task.
 - Briefings/Technical Presentations – appropriateness of the applicant's planned briefing(s) and/or technical presentation(s).

CRITERION 4: TEAM AND RESOURCES (15%)

This criterion will evaluate the likelihood that the project team, facilities, and other resources are appropriate and sufficient to achieve the project's proposed goals and objectives. At a minimum, the proposal should address the following considerations:

1. Adequacy and appropriateness of the qualifications, expertise, and experience of key personnel and team members.
2. Adequacy of the project team composition, including, as appropriate, representation from multiple technology developers or producers and research institutions with complementary knowledge and expertise.
3. Availability of key personnel.
4. Appropriateness and quality of past peer reviewed publications of key personnel and team members, which demonstrate the team's technical expertise and past results.
5. Degree of demonstrated experience and past collaboration of the project team in completing comparable efforts that yielded successful technology development and deployment.
6. Level of dedication of the project team as demonstrated by letters of commitment that clearly identify each participant's role, contribution, and amount of proposed cost share.
7. Availability, appropriateness, adequacy, and condition of facilities and equipment.

D. Other Selection Factors

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

1. 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 NOFO.
2. The degree to which the proposed project, including proposed cost share, optimizes the use of available DOE funding to achieve programmatic objectives,
3. The level of industry involvement and demonstrated ability to accelerate demonstration and commercialization and overcome key market barriers.

4. The degree to which the proposed project is likely to lead to increased high-quality employment and manufacturing in the United States.
5. The degree to which the proposed project will accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty.
6. The degree to which the proposed project, or group of projects, represent a desired geographic distribution (considering past awards and current applications).
7. The degree to which the proposed project incorporates applicant or team members from Minority Serving Institutions; and partnerships with businesses majority-owned or controlled by underrepresented persons or groups of underrepresented persons or Indian Tribes.
8. The degree to which the proposed project contributes to the diversity of organizations and organization types and sizes selected from the subject NOFO when compared to the existing DOE project portfolio.
9. The degree to which the proposed project avoids duplication/overlap with other publicly- or privately-funded work.
10. The degree to which the proposed project supports complementary efforts or projects, which, when taken together, will best achieve the research goals and objectives.

VII. Selection and Award Notices

Please see the [NOFO Part 2, Selection and Award Notices](#) for information on notifications for Applications, Award Negotiations, and Post-Selection Information Requests.

VIII. Award Administration Information

A. Post-Award Requirements and Administration

DOE requires all award recipients to follow and accept requirements governed by laws and policies – both federal government-wide and DOE or program specific. These post-award requirements include all National and Administrative Policy Requirements; financial assistance general Certifications and Representations; Fraud, Waste and Abuse requirements; Safety, Security, and Regulatory requirements; and Environmental Review in Accordance with National Environmental Policy Act requirements.

Post-Award requirements and administration applicable to awards funded under this NOFO are identified below. Detailed descriptions of standard funding restrictions are provided in the [NOFO Part 2, Post-Award Requirements and Administration](#) section. Detailed descriptions of program specific funding restrictions are provided below the table.

| Applicable Post-Award Requirements and Administration | |
|--|-------------|
| Title | Location |
| Award Administrative Requirements | NOFO Part 2 |
| Subaward and Executive Reporting | NOFO Part 2 |
| National Policy Requirements | NOFO Part 2 |
| Applicant Representations and Certifications | NOFO Part 2 |
| Statement of Federal Stewardship | NOFO Part 2 |
| Uniform Commercial Code (UCC) Financing Statements | NOFO Part 2 |
| Interim Conflict of Interest Policy for Financial Assistance | NOFO Part 2 |
| Whistleblower Protections | NOFO Part 2 |
| Fraud, Waste, and Abuse | NOFO Part 2 |
| Participants and Collaborating Organizations | NOFO Part 2 |
| Current and Pending Support | NOFO Part 2 |
| Prohibition Related to Malign Foreign Talent Recruitment Programs | NOFO Part 2 |
| Foreign Collaboration Considerations | NOFO Part 2 |
| U.S. Manufacturing Commitments | NOFO Part 2 |
| Subject Invention Utilization Reporting | NOFO Part 2 |
| Intellectual Property Provisions | NOFO Part 2 |
| Go/No-Go Review | NOFO Part 2 |
| Conference Spending | NOFO Part 2 |
| Invoice Review and Approval | NOFO Part 2 |
| Cost-Share Payment | NOFO Part 2 |
| Implementation of Executive Order 13798, Promoting Free Speech and Religious Liberty | NOFO Part 2 |

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| Affirmative Action and Pay Transparency Requirements | NOFO Part 2 |
| Construction Signage | NOFO Part 2 |
| Human Subjects Research | NOFO Part 2 |
| Real Property and Equipment | NOFO Part 1 |
| Rights in Technical Data | NOFO Part 1 |
| Cost Share Payment | NOFO Part 1 |
| Promotional Video | NOFO Part 1 |

1. Real Property and Equipment

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

For resulting awards under this NOFO, the recipients may (1) take disposition action on the real property and equipment; or (2) continue to use the real property and equipment after the conclusion of the award period of performance with Grants Officer approval. The recipient's written request for Continued Use must identify the property and include: a summary of how the property will be used (must align with the authorized project purposes); a proposed use period, (e.g., perpetuity, until fully depreciated, or a calendar date 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. In addition, pursuant to the FY23 Consolidated Appropriations Act (Pub. L. No. 117-328), Division D, Title III, Section 309, at the end of the award period the Secretary or a designee of the Secretary, at their discretion, may vest unconditional title or other property interests acquired under this project regardless of the fair market value of the property.

2. 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 under this NOFO 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.

3. Cost Share Payment

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

4. Promotional Video

After awards are provided, recipients must participate in a public-facing promotional showcase video created by DOE. The promotional video may be used by DOE for, e.g., news items, social media posts, showcases at the annual ESGC Summit or other relevant events. The project should budget for in-kind activities (e.g., employee time, providing access to film crews, reviewing approving draft/final scripts and video). These costs may be included as part of a recipient's overall cost share contribution. The specific terms for participating in the development of the video will be defined during award negotiations. DOE will initiate communications regarding production of the video after awards are distributed.

B. Questions and Support

1. Questions

Upon the issuance of a NOFO, DOE personnel are prohibited from communicating (in writing or otherwise) with applicants regarding the NOFO except through the established question and answer process described below. Questions regarding this NOFO must be submitted through the FedConnect portal. The applicant must register with FedConnect to respond as an interested party to submit questions, and to view responses to questions. It is recommended that the applicant registers as soon as possible after release of the NOFO to have the benefit of all responses. Applicants are encouraged to review previously issued Questions and Answers prior to the submission of questions. Questions or comments concerning this NOFO shall be submitted not 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 NOFO will be posted on the FedConnect portal, listed in the [I.A Key Facts](#) section above. DOE will attempt to respond to a question within three (3) business days unless a similar question and answer has already been posted on the website.

Questions related to the registration process, system requirements, how an application form works, or the submittal process must be directed to the Support contacts identified below.

2. Support

Grants.gov

Grants.gov provides 24/7 support. You can call 1-800-518-4726 or email support@grants.gov. Hold on to your ticket number.

SAM.gov

If you need help, you can call 866-606-8220 or live chat with the [Federal Service Desk](#).

FedConnect

If you need help, you can call 800-899-665, Option 2 or submit a ticket at [Unison FedConnect Support](#).

IX. Other Information

Please see the [NOFO Part 2, Other Information](#) for additional information and requirements that apply to all DOE NOFOs.