Notice of Intent (NOI) no. DE-FOA-0003381
Issue Date: May 14, 2024

DISCLAIMER: The "Notice of Intent to Issue" is for informational purposes only; the Department of Energy is not seeking comments on the information in this notice.

This is a Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0003384
"Critical Facility Energy Resilience (CiFER)"

The Department of Energy (DOE) Office of Electricity (OE) intends to issue a Funding Opportunity Announcement (FOA) seeking applications for financial assistance awards that would address FY2024 Congressional Direction, which directs OE to pursue a competitive pilot demonstration grant program, as authorized in section 3201 of the Energy Act of 2020, for energy storage projects that are wholly U.S.-made, sourced, and supplied[1].

BACKGROUND

The Nation's electricity grid is essential for maintaining economic prosperity, critical societal services, as well as national security functions. The grid faces a number of threats such as extreme weather, cyber or physical attacks, aging infrastructure and electromagnetic events that have the potential to cause widespread power outages[2]. Across the United States (U.S.), facilities and sites that provide critical societal and economic services must maintain operations during low frequency high impact events that may cause electrical grid outages. Traditional back up power solutions such as diesel generators may have drawbacks such as required onsite fuel storage, potential for interruption of fuel delivery, extensive maintenance, harmful emissions and limited value proposition during non-emergency events.

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[3]. OE's energy storage division has a mission to ensure that next generation energy storage technologies can serve a resiliency asset that is cost effective, safe, and reliable.

Additionally, DOE is invested in advancing innovative storage technologies from early-stage R&D to widespread commercialization. In 2020, DOE launched the Energy Storage Grand Challenge (ESGC), the comprehensive, Department-wide strategy for coordinating energy

[1] Explanatory Statement to H.R.4366 - Consolidated Appropriations Act, 2024, P.L. 118-42, HPRT 118-55-007 at p. 669, CPRT-118HPRT55007.pdf (congress.gov). See also, FY24 EW Conference JES scan.pdf (house.gov) at p. 28.
[2] GAO-21-105403, Electricity Grid Resilience
[3] About the Office of Electricity | Department of Energy

storage efforts across DOE. Subsequently, in 2021, DOE launched the Long Duration Storage Shot, which establishes the target to reduce the cost of grid-scale energy storage by 90%, to $0.05/kWh levelized cost of storage (LCOS), by 2030.

In the anticipated FOA, partnerships between storage technology providers, beneficiary organizations, and resiliency analytics partners will be required. Entities that could apply in each of these 3 categories include, but may not be limited to, the following:

Technology Providers	Critical Facility or Infrastructure Owner	Resiliency Analytics Partner
• A private energy storage company. • An institution of higher education. • Other organizations that develop or deploy energy storage. • Other organizations involved in Engineering, Procurement, and Construction (EPC) of a storage system.	• A first responder or emergency response facility. • Critical service sites such as healthcare, telecommunications, data centers, and government facilities. • Other organizations that could benefit from the resiliency services provided by an energy storage system.	• Academic or Research Organizations • Consultants • National Labs

As required under Section 3201(c)(4), DOE is required to "make publicly available a report describing the performance of those programs" with regards to the energy storage demonstration programs described in The Energy Act of 2020. To fulfill this requirement, OE will require that these demonstrations participate in the Rapid Operational Validation Initiative (ROVI)[4] which will leverage the data from projects funded under this FOA to accelerate commercial development and deployment of relevant energy storage technologies.

Applicant teams would be expected to work with the ROVI Lab Consortium to negotiate data sharing requirements and allocate a portion of the awarded funding to ensure these requirements are met.

TECHNOLOGY AREA OF INTEREST

If this planned FOA is released, resulting awards will be made for projects that align with the technology considerations below:

[4] Rapid Operational Validation Initiative (ROVI) | Department of Energy

Systems must be a bi-directional electricity-in electricity out system with quality performance metrics justified by the applicant based on their intended storage application. Example performance metrics include[5]:

- High Round Trip Efficiency (> 65% AC-AC Efficiency if AC Grid Connected)
- Long Calendar Life (> 10 years of operation before end of life)
- Low Cost (Pathway to < $.05/kWh Levelized Cost of Storage (LCOS)[6])

Demonstration must have the capability to discharge at least 100 kW of electricity for at least 10 hours at the maximum rated power. Applicants may justify having a lower discharge duration than 10 hours at maximum rated power for this demonstration if they can demonstrate that the project would both:

- Provide additional benefits or value for a similar overall cost to what the 10+ hour system would cost.
- Provide justification that this demonstration would advance the technology's ability to cost-effectively provide 10+ hours by 2030.

GENERAL INFORMATION

The DOE plans to make the FOA available by the fall of 2024. If released, the FOA is expected to make up to $15 million available for cost-shared research, development, and demonstration (RD&D) project(s) to support the goals of the DOE, ESGC, and OE to facilitate the large-scale commercial development and deployment innovative storage technologies to support resiliency needs. There are 3 anticipated awards for this opportunity. The awards would be cooperative agreements and would include substantial involvement by the DOE. The DOE plans to contribute up to $5,000,000 for each award, with each award having a period of performance lasting up to 36 months starting from the funding being awarded and ending once the demonstration is operational and has initiated data collection for ROVI. Demonstrations must provide data to the ROVI lab consortium for a minimum of 12 months during system operation.

Expected outcomes and objectives for the anticipated FOA include, but are not limited to:

- Deploy an innovative energy storage technology at a host site with identified resiliency needs at the required scale, performance, and technology maturity level appropriate to advance technology towards commercialization. Energy storage technologies of interest may have characteristics such as:
    - cost and performance measures that are attractive to potential end users and can be validated in the field including a LCOS of < $.05/kWh.
    - use materials and components that have favorable manufacturing and supply chain attributes such as available domestic suppliers and minimal price and supply volatility.
    - high likelihood that demonstration system can be delivered at scale and within budget.

[5] ESGC Cost Performance Report 2022 PNNL-33283.pdf
[6] LCOS Methodology.pdf (pnnl.gov)

- Demonstrate the benefits of an innovative energy storage technology being used in the field to the large energy storage end-user and potential investor ecosystem.
- Identify a host site that has a compelling need for a dependable supply of energy based on potential impact if the site were not able to maintain normal operations during a grid outage or other emergency event.
- Learn from industry and community stakeholders the type of criteria they consider are crucial for "validation" of a new technology. Can consider these criteria for defining validation objectives for future strategy and activities.
- Conduct analysis on the value of resiliency provided by the energy storage system and use or develop valuation methods could be leveraged by other that are considering similar projects.
- Disseminate results and methods used for quantifying value of energy resiliency to broad set of stakeholders interested in resiliency solutions.
- Demonstrations that that provide community benefits and address workforce considerations.
- Willingness to participate in ROVI data sharing program with national labs.

Areas specifically not of interest:

- Demonstrations of storage technologies that are already commercially successful in a similar application.
- Demonstrations in a lab or testbed environment.
- Demonstration of technologies that are not "U.S.-controlled, U.S.-made, and North American sourced and supplied."

The DOE will not accept questions at this time regarding issuance of the planned FOA. Details on how to submit questions and comments will be provided in the FOA, if issued.

CONCEPT PAPERS

If the FOA is released, Concept Papers may be required. That is, an applicant must submit a Concept Paper prior to submitting a Full Application. Using established criteria, the DOE will make an independent assessment of each Concept Paper and will encourage a subset of applicants to submit Full Applications. Other applicants will be discouraged from submitting a Full Application. While an applicant who receives a "discouraged" notification may still submit a Full Application, the DOE intends to convey its lack of programmatic interest in the proposed project in an effort to save the applicant the time and expense of preparing an application that is unlikely to be selected for award negotiations.

If the FOA is released, instructions (and an email address) will be included for prospective applicants to submit Concept Papers. However, **Concept Papers are not being requested under this NOI.**

SUBMISSION AND REGISTRATION REQUIREMENTS

If the proposed FOA is released, it will be posted at Grants.gov (http://www.grants.gov) and at FedConnect (http://www.fedconnect.net). Entities interested in applying for awards under the FOA are strongly encouraged to register at these sites to receive notification of announcements regarding the FOA. If DOE decides to issue the FOA, applications can only be submitted through Grants.gov.

There are several one-time actions an applicant must complete to submit a Full Application in Grants.gov (e.g., obtain a Unique Entity Identifier (UEI) number, register with the System for Award Management (SAM), register with Grants.gov, and register in FedConnect.net to submit questions). It is vital that applicants address these items as soon as possible. Some may take several weeks, and failure to complete them could interfere with an applicant's ability to apply to this FOA. Applicants who are not registered should allow up to 44 days at a minimum to complete these requirements.

- **UEI - Applicants must obtain a UEI from the SAM to uniquely identify the entity. The UEI is already available in the SAM entity registration record.**

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

- **SAM** - Applicants must register with the SAM at http://www.sam.gov/ prior to submitting a Full Application in response to a FOA. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Failure to register with SAM will prevent an organization from applying through Grants.gov. The applicant must maintain an active SAM registration with current information at all times during which it has an active Federal award or an application under consideration. More information about SAM registration for applicants is found at: https://www.fsd.gov/gsafsd_sp?id=gsafsd_kb_articles&sys_id=650d493e1bab7c105465eaccac4bcbcb.

  NOTE: If clicking either of the SAM links does not work, please copy and paste the link into your browser.

- **Grants.gov** - Applicants must register with Grants.gov and set up a WorkSpace. An applicant cannot submit a Full Application through Grants.gov unless it is registered. Please read the registration requirements carefully and start the process immediately.

  1) The Authorized Organizational Representative (AOR) must register at: https://apply07.grants.gov/apply/OrcRegister
  2) An email is sent to the E-Business (E-Biz) POC listed in SAM. The E-Biz POC must approve the AOR registration using their MPIN from their SAM registration.

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

In addition:

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

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

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

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

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

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

- **FedConnect.net -** Applicants must register with FedConnect to submit questions to an FOA. FedConnect website: www.fedconnect.net.

DISCLAIMER

This NOI is issued so that interested parties are aware that DOE may issue a FOA on this topic. Any information contained in this NOI is subject to change.

No Concept Papers or Full Applications are being accepted at this time.