



U.S. Department of Energy
Office of Electricity (OE)

Request for Information (RFI)

DE-FOA-00003282

Title: "Request for Information regarding creation of Blue-Sky Training Program Announcement for Grid Scale Energy Storage Systems"

Issue Date: April 29, 2024

Due Date: June 03, 2024

Program Area: Office of Electricity (OE)/National Energy Technology Laboratory (NETL); U.S. Department of Energy (DOE)

Purpose

The U.S. Department of Energy's (DOE) Office of Electricity (OE) is seeking public comment through a Request for Information (RFI) (DE-FOA- 0003282) regarding the planned approach for Blue Sky Training Program (BSTP) for Grid Scale Energy Storage Systems (ESS). The goal of the BSTP is to educate and train first responders, law enforcement agencies, local communities, utilities, authorities having jurisdictions (AHJs), and others on how to respond to unanticipated ESS failures including those caused by cyber threats, physical threats, and other unanticipated operational failures. DOE is releasing this RFI to notify interested parties of its intent to implement BSTP and to describe the proposed plan and timeline. The Department also seeks input from all stakeholders through this RFI regarding existing expertise and resources, effective methods for collaboration, and key partners that will be needed to achieve desired objectives. Information collected from this RFI may be used by DOE for planning purposes, which could include possibly developing future Funding Opportunity Announcements (FOAs), other solicitations or technical assistance efforts related to OE's Energy Storage program. DOE strongly encourages that no confidential business information or proprietary information be submitted and, if such information is provided, all documents are marked accordingly. This is an RFI only. DOE will not pay for information provided under this RFI and no

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Background

The OE provides leadership to ensure that the Nation's energy delivery system provides reliable, resilient, secure, and affordable electricity. Maintaining a robust electricity grid is critical as the nation experiences rapid transformation in how electricity is both generated and consumed due to trends in how the generation mix is changing, the amount and location of electricity demand, and increasing number of threats to infrastructure security and reliability. In OE, The Energy Storage program accelerates development of bi-directional electrical energy storage technologies to serve as a key component of a reliable, resilient, and affordable future-ready grid¹. The program's Storage Validation portfolio is focused on supporting activities that reduce commercialization and deployment barriers for emerging energy storage technologies to facilitate safe and effective use of these systems.

The energy industry has experienced a number of high-profile threats to infrastructure including multiple extreme weather/climate events², intentional attacks on electric grid infrastructure³, and a ransomware attack on a major oil and gas pipeline⁴. As more ESS continues to be deployed in the field, stakeholders must consider how to properly plan and prepare for threats that may have similar potentially negative impacts as described in these other energy sector emergency events. Events such as the McMicken ESS Fire in Arizona demonstrate the serious consequences that can arise from an ESS emergency event. It also highlights the risk of not having clearly defined emergency response and prevention measures for those involved in managing and responding to such events⁵.

BSTP Proposed Approach and Structure

As storage technologies continue to be deployed by unprecedented amounts, it is critical that communities are "storage ready" and that necessary stakeholders are brought to the table to ensure a new or existing ESS will operate safely and reliably. In localities across the country, uncertainty over proper response procedures to security threats and unanticipated failures of ESS can delay or even prevent deployment. The proposed BSTP is intended to support programs to educate and train first responders, law enforcement agencies, local communities, utilities, authorities having jurisdictions (AHJs), and others on how to respond to unanticipated failures of ESS. The BSTP is anticipated to entail tabletop exercise and on-site boots-on-the-ground drills that is anticipated to bring stakeholders together to address safety, emergency response, and security concerns in deploying and operating energy storage technologies.

¹ [DOE FY 2024 Budget Request Vol 4 OE \(energy.gov\)](https://www.energy.gov/eere/oe/doe-fy-2024-budget-request-vol-4-oe)

² [Climate Change Impacts on Energy | US EPA](https://www.epa.gov/climate-change/impacts-energy)

³ [Sector Spotlight: Electricity Substation Physical Security \(cisa.gov\)](https://www.cisa.gov/sector-spotlight-electricity-substation-physical-security)

⁴ [The Attack on Colonial Pipeline: What We've Learned & What We've Done Over the Past Two Years | CISA](https://www.cisa.gov/the-attack-on-colonial-pipeline-what-weve-learned-what-weve-done-over-the-past-two-years)

⁵ [Arizona ESS Explosion Investigation and Line of Duty Injury Reports Now Available | NFPA](https://www.nfpa.org/newsroom/press-releases/2023/arizona-ess-explosion-investigation-and-line-of-duty-injury-reports-now-available)

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Anticipated major objectives and outcomes include but are not limited to:

1. Provide resources to bring community stakeholders to the table that may traditionally not be involved in decision making around ESS deployment, operation, and safety planning.
2. Development of emergency response plans and trainings that participating community stakeholders will walkthrough at an ESS site.
3. Development of a safety validation report which describes site-wide criteria that will need to be met to verify that the needed safety measures/functions are incorporated into the ESS site.

This opportunity is considering a partnership structure that may consist of the following:

Prime Applicant (Required) – Storage asset owner/operator that is responsible for identifying and gaining an understanding of specific threats to their existing ESS. It is anticipated that they will also be responsible for developing emergency response procedures (ERP) and conducting tabletop exercises that will walk through proper response measures and discuss roles and responsibilities of the involved parties. Examples of possible eligible prime applicants for this opportunity include utilities, project developers, building/facility managers, or other organizations responsible for the ownership or operation of an ESS.

Partner Applicant(s) (Required) – One or more community training participants that may participate in boots on the ground exercises located at the ESS site to gain an understanding of the threat and their role in ensuring proper response. May ultimately adopt new response procedures and guidance for existing or future projects. Examples of possible eligible partners include elected officials, AHJs, and first responders, or other community stakeholders.

Other Partner (Optional) – Other companies, industry groups, academic institutions, U.S National labs or other organizations that can support development of training programs.

The proposed areas of interest are anticipated to be divided into three different topics based on type of threat that an applicant is interested in preparing for:

- 1.) Physical threats: External natural or human-caused actions or events that may damage, destroy or disrupt the normal operation of an ESS. Examples include severe weather (earthquakes, hurricanes, snowstorms, wildfires, etc.), wildlife interference, intentional attacks, or unintentional actions by people.⁶
- 2.) Cyber threats: External actions that would compromise the protection networks, devices, and data from unauthorized access or criminal use or ensuring confidentiality, integrity, and availability of information⁷ as it relates to the operation of an ESS.

⁶ [Understanding Power System Threats and Impacts \(nrel.gov\)](https://www.nrel.gov/understanding-power-system-threats-and-impacts/)

⁷ [What is Cybersecurity? | CISA](https://www.cisa.gov/what-is-cybersecurity/)

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- 3.) Unanticipated Operational Failures: Any other incident caused by something internal to the ESS that could potentially damage, destroy, or disrupt the system or its normal operations.

Questions for Requests for Information:

1. Program Objectives

- a. What physical threats to ESS are of most concern to your organization?
- b. What cyber threats to ESS are of most concern to your organization?
- c. What unanticipated operational failures would cause the greatest impact to your organization?
- d. Are there safety considerations that are specific to aspects of a system deployment such as:
 - i. Energy Storage Technology type
 - ii. Size of System and proximity to other structures or systems
 - iii. Surrounding environment at deployment location etc.
- e. How should training programs take into account emerging storage technologies with different failure mechanisms?
- f. This [2022 report](#) identified a range of existing storage codes and safety standards.⁸ What additional rules, codes, standards, or other procedures could be created or modified to better take into account ESS emergency response and safety?
- g. What kind of funding mechanisms could DOE consider to enhance the effectiveness of this opportunity?
- h. What is an adequate award size and of awardee cost share percentage to achieve the described objectives?

2. Applicants and Partners:

- a. What are effective mechanisms to involve key stakeholders with regards to creating an effective threat response program for ESS?
- b. What organizations do you regard as having the most credible knowledge or expertise with regard to identifying, preventing, or training with regards to threats to energy storage or similar energy infrastructure?
- c. What types of partners are critical to include in an energy storage emergency response program training?

3. Project Deliverables and Results

- a. What key outcomes or deliverables would be effective to ensure that communities will become “storage ready”?
- b. What specific criteria should an ESS site meet to verify that there are adequate safety measures or functions in place to properly to manage or respond to a certain type of threat?
- c. How can results of these projects be most effectively disseminated to others?

⁸ https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-32789.pdf

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- d. What would an effective tabletop exercise for this type of training program consist of?
- e. What would effective drill(s) to practice responding to a potential ESS emergency consist of?

Disclaimer and Important Notes

This RFI is not a FOA; therefore, DOE is not accepting funding applications at this time. Information collected from this RFI may be used by DOE for planning purposes, which could include developing future FOAs, Broad Agency Announcements, or other solicitations related to implementation of cybersecurity for the energy sector. Responding to this RFI does not provide any advantage or disadvantage to potential applicants if DOE chooses to issue a FOA regarding the subject matter.

Your response to this notice will be treated as information only. DOE will review and consider all responses in its formulation of program strategies for the identified materials of interest that are the subject of this request.

DOE will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that DOE is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind DOE to any further actions related to this topic.

Freedom of Information Act

Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. Submit these documents via email. DOE will make its own determination about the confidential status of the information and treat it according to its determination. Because information received in response to this RFI may be used to structure future programs and FOAs and/or otherwise be made available to the public, **respondents are strongly advised to NOT include any information in their responses that might be considered business sensitive (e.g., commercial, or financial information that is privileged or confidential), trade secrets, proprietary, or otherwise confidential.**

Request for Information Response Guidelines

Responses to this RFI must be submitted electronically to DE-FOA-0003282RFI@NETL.DOE.GOV no later than 5:00pm (ET) on Monday June 03, 2024. Responses must be provided as attachments to an email. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to ensure message delivery. Responses must be provided as a Microsoft Word (.docx) or PDF attachment to the email, and no more than 15 pages in length, 12-point font, 1-inch margins. Only electronic responses will be accepted.

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Format Guidance for RFI submission (not an FOA)

For ease of replying and to aid categorization of your responses, **please copy and paste the RFI questions, including the question numbering, and use them as a template for your response.** Entities responding to this RFI do not have to respond to all questions and may answer as many or as few questions as they wish and may delete unanswered questions.

DOE will not respond to individual submissions or publish publicly a compendium of responses. However, information included in any submission may still become public via a requirement to disclose under the Freedom of Information Act or other federal law or regulation. A response to this RFI will not be viewed as a binding commitment to develop or pursue the project or ideas discussed.

Respondents are requested to provide the following information at the start of their response to this RFI:

1. Contact person's first and last name.
2. Contact person's title.
3. Contact person's organization/institution name, street address, city, state, and zip code.
4. Contact person's phone number and email address.
5. Which organization type best categorizes your organization?
 - a. Electric cooperative utility
 - b. Electric municipal/public power utility
 - c. Small investor-owned electric utility (<4,000,000-megawatt hours electricity sales per year)
 - d. Other investor-owned electric utility
 - e. Other energy provider (solar, wind, hydropower, etc.)
 - f. Oil and natural gas companies
 - g. Energy sector vendor solution providers
 - h. Not-for-profit national trade association
 - i. State or Local Government
 - j. Academic or Research Organization
 - k. Non-profit community-based organization
 - l. First Responder or Emergency Response Organization
 - m. U.S. National Laboratory.
 - n. Other, please specify:

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