

Notice of Intent (NOI) No. DE-FOA-0003456**Issue Date: September 13, 2024**

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

**This is a Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0003396****“Renewable Integration Management with Innovative High Voltage Direct Current Power Circuit Breakers (REIMAGINE BREAKERS)”**

Prior to the end of calendar year 2024, the United States (U.S.) Department of Energy (DOE) on behalf of the Office of Electricity (OE) and the Office of Energy Efficiency and Renewable Energy’s Wind Energy Technologies Office (EERE WETO) intends to issue a Funding Opportunity Announcement (FOA) seeking applications for financial assistance awards to support research and development related to high voltage direct current power circuit breakers (HVDC PCB).

OVERALL BACKGROUND AND TECHNICAL OBJECTIVES

The project(s) funded by this opportunity will address a key gap in HVDC protection through the development of HVDC PCB technical standards and explore innovative concepts that aim to reduce the cost and footprint of HVDC PCB technology.

The FOA’s anticipated topic areas are described below:

Topic Area 1:

Given the sparse use of HVDC systems throughout the country and world, standards for HVDC network operation are significantly less prevalent than their AC counterpart. Additionally, protection strategies for multi-terminal HVDC (MTDC) transmission systems remain highly customized and project specific. This topic area seeks to further the work within DOE’s HVDC transmission portfolio¹ and address a key gap in HVDC protection through the development of HVDC PCB technical standards. It is envisioned that potential project teams will coordinate with existing DOE HVDC standards development efforts² to expand the suite of standards available for HVDC systems to include HVDC PCB technical specifications and functional requirements.

Topic Area 2:

¹ [HVDC COst REduction \(CORE\) Initiative | Department of Energy](#)

² [DOE Wind Energy Technologies Office Selects 15 Projects Totaling \\$27 Million to Address Key Deployment Challenges for Offshore, Land-Based, and Distributed Wind | Department of Energy](#)

While DC circuit breakers are seen as the leading solution to implement protection controls on a MTDC system, gaps in the technology still exist. Currently, only one major original equipment manufacturer (OEM) offers a commercially viable HVDC power circuit breaker in the United States. To support the anticipated scale of MTDC transmission networks to be deployed in the US, it is essential that HVDC PCB technology is more readily available to customers.

Ways to increase commercial readiness of the technology include standardization (addressed in Topic Area 1) and the R&D of novel design concepts to reduce the barrier to entry for industry to invest in and produce the technology.

This topic area aims to explore potential innovative concepts that can reduce the cost to produce, install, and operate HVDC PCB technology as well as reduce the footprint of the equipment.

This FOA will encourage partnerships between industry and research organizations to execute R&D projects that improve HVDC PCB technology via either standards or technology improvements. This includes relevant industry members from one or more of the following groups: original equipment manufacturers, consultants, electric utilities, and/or system operators. Teaming partnerships are highly recommended.

ANTICIPATED AWARDS

If a FOA is released, subject to annual congressional appropriation, funding is expected to be available for awarding new cooperative agreements. The number of awards will depend on the applications submitted and the availability of funds. DOE anticipates making awards that have a single Budget Period and do not exceed three (3) years.

DOE envisions that the awarded projects will consist of both research and development tasks. Award Recipients would be required to provide a minimum 20% non-federal cost share for R&D activities.

SUBMISSION AND REGISTRATION REQUIREMENTS FOR FULL APPLICATION

If the 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., register with the System for Award Management (SAM), obtain a Unique Entity Identifier (UEI) number, register with Grants.gov, and register with 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.

➤ **SAM** - Applicants must register with SAM at <http://www.sam.gov> prior to submitting an

application in response to an 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 your 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 the SAM links do not work, please copy and paste the link into your browser.

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

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

- **Grants.gov** - Applicants must register with Grants.gov and set up your WorkSpace. You cannot submit an application through Grants.gov unless 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:

- o 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 in the UEI field 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>

- o 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. 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 currently.