Notice of Intent (NOI) No.: DE-FOA-0003413
Issue Date: July 25, 2024

DISCLAIMER: This "Notice of Intent to Issue" is for informational purposes only; the Department of Energy is not seeking comments on the information in this notice and applications are not being accepted at this time. Any information contained in this notice is subject to change.

This is a Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0003409
"Pre-Commercial Testing of Low-Carbon Emissions Gas Turbine"

The Department of Energy (DOE) National Energy Technology Laboratory (NETL) intends to issue Funding Opportunity Announcement (FOA) No. DE-FOA-0003409 on behalf of the Office of Fossil Energy and Carbon Management (FECM) in the 2024 calendar year.

TECHNICAL OBJECTIVES

In support of Executive Order 14008 (dated January 27, 2021), "Tackling the Climate Crisis at Home and Abroad," and to further past decades of DOE-supported carbon management research, development and demonstration (RD&D) done in cooperation with industry and academia, DOE-FECM anticipates issuing a FOA. DOE-FECM will seek applications for financial assistance awards supporting research and development (R&D) projects to develop technologies reducing carbon emissions from gas turbines providing baseload and dispatchable power to the US power grid to enable net-zero carbon energy production.

If issued, this FOA will seek to develop technologies to enable the existing gas turbine power infrastructure to achieve net-zero carbon energy through the utilization of carbon-free fuels or through the enhancement of post-combustion carbon capture technology via exhaust gas recirculation.

This notice is issued so that interested parties are aware of the DOE's intention to issue a FOA in the near term. DOE envisions awarding multiple financial assistance awards in the form of cooperative agreements in response to this FOA.

If released, this FOA is anticipated to focus on two areas of interest (AOIs).

ANTICIPATED AREAS OF INTEREST

AOI 1. Hydrogen Combustion Systems for Gas Turbines
Enabling the utilization of high-purity hydrogen fuel in existing gas turbine power generation infrastructure is a key component for decarbonization of the electric grid. Decarbonization will require further development of gas turbine combustor modules capable of safe, efficient, and low emissions operation while burning hydrogen-based fuels.

This AOI seeks to develop hydrogen fuel capable combustion modules for aeroderivative and industrial (also known as "heavy-duty") gas turbines. The goal of this AOI is to complete rig testing of hydrogen fuel capable combustors to prepare the combustors for subsequent engine integration and field testing in a potential future FOA.

AOI 2. Exhaust Gas Recirculation Systems for Gas Turbines
Enabling the recirculation of exhaust gases in existing gas turbine power generation infrastructure will enhance the efficiency of state-of-the-art carbon capture equipment, a key component for decarbonization of the electric grid. This requires further development of gas turbine combustor modules that are capable of safe, efficient, and low emissions operation while burning fuels with greater inert reactants such as carbon dioxide.

This AOI seeks to develop exhaust gas recirculation modules for aeroderivative and industrial (also known as "heavy-duty") gas turbines to research robust flame stabilization methods to maximize the amount of exhaust gas recirculation (EGR) without impacting combustion stability. The goal of this AOI is to complete rig testing of high-EGR combustors to enable engine integration and field testing in a potential future FOA.

SUBMISSION AND REGISTRATION REQUIREMENTS

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 are strongly encouraged to register at these sites to receive notification of announcements regarding 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), register with Grants.gov, and register in FedConnect.net to submit questions). Applicants who are not registered with SAM and Grants.gov, should allow **at least 44 days** to complete these requirements. It is suggested the process be started as soon as possible.

- **SAM** – Applicants must register with SAM at https://www.sam.gov/ prior to submitting a Full Application in response to a FOA. NOTE: 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://sam.gov/content/entity-registration.

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

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

- **UEI** – Applicants must obtain a UEI from the SAM to uniquely identify the entity. The DUNS number has been replaced with the UEI. The UEI is already available in the SAM entity registration record.

  NOTE: Sub-awardees/Sub-recipients at all tiers must also obtain a UEI from the SAM and provide the UEI to the Prime Recipient before the sub-award can be issued.

- **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://grants.gov/register.

  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://grants.gov/applicants/applicant-registration.

  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 a FOA. FedConnect website: www.fedconnect.net.

DISCLAIMER

This is a Notice of Intent (NOI) only. DOE may issue a FOA as described herein, may issue a FOA that is significantly different than described herein, or may not issue a FOA at all. 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.

DOE will not entertain questions at this time. Details on how to submit questions will be provided in the FOA, if issued.