



U.S. Department of Energy  
Office of Fossil Energy and Carbon Management

Notice of Intent to Issue

Notice of Funding Opportunity No. DE-FOA-0003606 titled  
“Improving Efficiency, Reliability, and Flexibility of Coal-Based Power Plants”

This “Notice of Intent” No. DE-FOA-0003607, is for informational purposes only. The Department is not seeking comments on the information in this Notice. All information contained in this Notice is subject to change.

**PURPOSE:**

The U.S. Department of Energy (DOE), National Energy Technology Laboratory (NETL) intends to issue a Notice of Funding Opportunity (NOFO) on behalf of the Office of Fossil Energy and Carbon Management (FECM). The anticipated NOFO release is October 2025.

**BACKGROUND:**

The United States (U.S.) is confronting an urgent capacity crisis. DOE’s *2025 Resource Adequacy Report (DOE/GR-2025-001)*<sup>1</sup> confirmed that the rapid retirement of firm thermal generation has outpaced the deployment of replacement resources capable of delivering necessary grid services. These challenges are especially acute in regions with constrained transmission and sustained load growth. In January 2025, Executive Order 14156, *Declaring a National Energy Emergency*, directed DOE and other Federal agencies to use their full statutory authority to preserve and restore statutory authority to ensure reliable, affordable, and secure generation capacity.<sup>2</sup>

The operational strain created by the increasing penetration of intermittent renewables, insufficient compensation in markets and onerous environmental compliance costs, has forced thermal units to cycle beyond their designed parameters, accelerating wear and raising the risk of forced outages and blackouts. This reliability emergency coincides with surging demand from national defense installations, semiconductor fabrication plants, Artificial Intelligence (AI) data centers, critical mineral processing, and industrial re-shoring, all of which require access to power.

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<sup>1</sup> U.S. Department of Energy, *Resource Adequacy Report: Evaluating the Reliability and Security of the United States Electric Grid* (July 7, 2025), [https://www.energy.gov/sites/default/files/2025-07/DOE Final EO Report %28FINAL JULY 7%29.pdf](https://www.energy.gov/sites/default/files/2025-07/DOE%20Final%20EO%20Report%20FINAL%20JULY%207%29.pdf).

<sup>2</sup> See Exec. Order No. 14156 of Jan. 20, 2025, *Declaring a National Energy Emergency*, 90 Fed. Reg. 8433 (Jan. 29, 2025), <https://www.federalregister.gov/documents/2025/01/29/2025-02003/declaring-a-national-energy-emergency>.

Coal-fired facilities, long central to U.S. energy security, are affordable, reliable, secure, and uniquely positioned to deliver near-term reliability at scale. Specifically, the U.S. possesses a substantial fleet of approximately 203 gigawatts (GW) of coal-fired power plants currently in operation. A significant portion of this capacity, approximately 100 GW, presents a compelling opportunity for strategic refurbishment, providing a path for rapid and cost-effective path to restoring stability while supporting the nation’s industrial and security priorities.

## **TECHNICAL OBJECTIVES AND OTHER CONSIDERATIONS:**

The DOE anticipates that approximately \$100 Million will be made available for this NOFO for the following Topic Areas.

| <b>Topic Area</b> | <b>Title</b>                                                  | <b>Estimated Number of Awards</b> | <b>Estimated Federal Funding</b> |
|-------------------|---------------------------------------------------------------|-----------------------------------|----------------------------------|
| 1                 | Development and Implementation of Advanced Wastewater Systems | ≤5                                | up to \$50M                      |
| 2                 | Engineering and Implementation of Dual Firing Retrofits       | ≤5                                | up to \$25M                      |
| 3                 | Development and Testing of Natural Gas Cofiring Systems       | ≤5                                | up to \$25M                      |

Projects awarded under this NOFO are anticipated to be executed through a stage-gated approach with individual project awards comprised of sequential phases (i.e., Conceptual Design, Detailed Design, Demonstration/Validation) and the DOE is considering go/no-go decision points between phases. Any additional requirements will be provided in the NOFO, if one is released. Non-federal cost share requirements will also be specified in the NOFO, with a minimum non-federal cost share of 20% anticipated for design phases and a minimum non-federal cost share of 50% anticipated for projects that progress to the demonstration/validation phase. Full period of performance for any/all projects awarded under this NOFO will be limited to a maximum of 5 years.

### **Topic 1 – Development and Implementation of Advanced Wastewater Management Systems:**

The objective of this topic area is to demonstrate scalable, cost-effective wastewater management systems that enhance water recovery from regulated wastestreams, reduce operational costs, enhance commercial byproduct recovery. System attributes of interest include energy efficiency optimization and capital cost reduction with emphasis on prioritizing recovery of high-quality byproducts (e.g., gypsum).

The topic area will fund the development, engineering, and implementation of advanced wastewater management systems at existing coal plants. Funding is intended to support engineering, detailed design, installation and operation of innovative advanced wastewater management technologies integrated with existing plant infrastructure.

It is anticipated that awarded projects will be required to collect sufficiently detailed cost and performance data to support the scalability and economic viability of the technology of interest.

**Topic 2 – Engineering and Implementation of Dual Firing Retrofits:** The objective of this topic area is to enable coal plants to seamlessly switch between coal and natural gas, achieving full steam capacity, emissions compliance (e.g., NO<sub>x</sub> < 0.2 lb/mmBtu, CO < 100 ppm), and economic advantage provided through full fuel flexibility.

The topic area will fund engineering, implementation, and testing of dual-fuel firing retrofits for aging coal boilers. This includes developing burner modifications, overfire air (OFA) systems, and automated controls for safe and reliable fuel switching. Activities involve engineering studies to adapt infrastructure, component testing to optimize combustion, and full-scale implementation to validate performance at varying loads. Funding also supports training and system integration for automatic operation, reducing capital costs and enhancing competitiveness against natural gas price volatility.

**Topic 3 – Development and Testing of Natural Gas Cofiring Systems:** The objective of this topic area is to achieve up to 100% natural gas cofiring in coal boilers to reduce CO<sub>2</sub> emissions by at least 20-40% and other pollutants (SO<sub>x</sub>, NO<sub>x</sub>, Hg) by up to 50% at ~\$50/kW, maintain boiler efficiency and reliability, and meet regulatory requirements/market demands.

The topic area will fund natural gas cofiring system development, engineering, and testing. Activities are anticipated to include burner modifications for 40-100% gas input, advanced control systems for fuel balance, and operational testing to optimize performance and operability while minimizing efficiency penalties. It is anticipated that awarded projects will be required to collect sufficiently detailed cost and performance data to quantify CO<sub>2</sub> abatement costs (\$25-60/ton), parasitic load reductions that mitigate efficiency impact, and maintenance savings that enable cost-effective compliance and sustainability.

## **Concept Papers/Letters of Intent**

The use of concept papers/letters of intent are still under consideration for the anticipated NOFO. Any requirements related to concept papers or letters of intent will be provided in detail in the NOFO, if one is released.

## SAM.gov Registration

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You must have an active account with [SAM.gov](https://sam.gov), the System for Award Management (SAM). This includes having a Unique Entity Identifier (UEI).

- **What is it?** SAM is a Federal procurement database. All entities that want to do business with the Federal Government MUST be registered in SAM.
- Existing SAM registrations must be updated annually.
- **Duration to complete:** can take several weeks.
- **Registration Link:** <https://sam.gov/content/home>
  - **NOTE:** Subrecipients are not required to obtain an active SAM registration but must obtain a UEI.
- **HELP:** <https://sam.gov/content/help> Applicants must allow several weeks for the SAM process to complete. All registrations rely on completion of the SAM registration. (START Early).

## Unique Entity Identifier (UEI)

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- **What is it?** UEI is a non-proprietary identifier that has replaced the Federal Government use of Data Universal Numbering System (DUNS) number effective April 4, 2022.
- Applicants must obtain a 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 a UEI from the SAM and provide the UEI to the recipient before the subaward can be issued.
- **Duration to complete:** can take several weeks.
- **Registration Link:** <https://sam.gov/content/entity-registration>
- **HELP:** [https://www.fsd.gov/gsafsd\\_sp](https://www.fsd.gov/gsafsd_sp)

## Grants.gov Registration

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You must have an active [Grants.gov](https://www.grants.gov) registration in order to receive automatic updates when modifications to this NOFO are posted. Doing so requires a Login.gov registration as well.

- **What is it?** Website used to enable Federal grant-making agencies to notify potential applicants of funding opportunities. Please note that letters of intent, concept papers, and applications will not be accepted through Grants.gov.
- Step-by step instructions for applicants at How to Apply for Grants website <https://www.grants.gov/applicants/grant-applications/how-to-apply-for-grants>.
- **Duration to complete:** can take several days.

- **Registration Link:** <https://grants.gov/applicants/applicant-registration>
- **HELP:**  
<https://apply07.grants.gov/help/html/help/index.htm#t=GetStarted%2FGetStarted.htm>

## eXCHANGE Registration

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Register with eXCHANGE, with Login.gov or ID.me.

- **What is it?** The Department of Energy (DOE) has several eXCHANGE databases that are useful in searching for funding opportunities.
- As part of the eXCHANGE registration process, new users will be directed to create an account in Login.gov. Please note that the email address associated with Login.gov must match the email address associated with the eXCHANGE account.
- Submission of application documents in any DOE eXCHANGE system constitutes the authorized representative's approval and electronic signature.

**Duration to complete:** can take two to three days.

**Registration Link:**

**NETL Funding Opportunity eXCHANGE:** <https://netlhttps://netl-exchange.energy.gov/exchange.energy.gov/>

## Disclaimer

This NOI is issued so that interested parties are aware that DOE may issue a NOFO as described herein, may issue a NOFO that is significantly different than what is described herein, or may not issue a NOFO at all. Any information contained within this NOI is subject to change.

No concept papers, letters of intent, or full applications are being requested nor accepted in response to this NOI. The Department is not seeking comments on the information in this notice and will not respond to questions concerning this Notice. Upon release of a NOFO, an avenue for potential applicants to submit questions will be provided.