U.S. Department of Energy

Office of Fossil Energy and Carbon Management

Notice of Intent to Issue

Notice of Funding Opportunity No. DE-FOA-0003583 titled
"Mines & Metals Capacity Expansion – Piloting By-Product Critical Minerals and Materials Recovery at Domestic Industrial Facilities"

This "Notice of Intent" No. DE-FOA-0003582,
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 NOFO is anticipated to be issued in the fourth quarter of calendar year 2025.

BACKGROUND:

The United States imports greater than 80% of its rare earth elements from non-domestic supplies. For example, domestic industrial and defense sectors are entirely reliant on China for more than 25% of our critical materials.[1] Recent accounting of critical mineral flows[2] indicates that the U.S. continues to lose market share to other countries.

President Donald Trump, recognizing the need to secure America's critical material supply chain, included "critical minerals" in the definition of Executive Order (EO) 14156, *Declaring a National Energy Emergency,*[3] which highlighted the role critical materials play in all parts of the U.S.

[1] Critical material as defined in 30 U.S.C. § 1606(a)(2), meaning (A) any non-fuel mineral, element, substance, or material that the Secretary of Energy determines- (i) has a high risk of a supply chain disruption; and (ii) serves an essential function in 1 or more energy technologies, including technologies that produce, transmit, store, and conserve energy; or (B) a critical mineral. *See also* What Are Critical Materials and Critical Minerals? | Department of Energy.

[2] U.S. Geological Survey, 2025, Mineral commodity summaries 2025 (ver. 1.2, March 2025): U.S. Geological Survey, 212 p., https://doi.org/10.3133/mcs2025

[3] https://www.federalregister.gov/documents/2025/01/29/2025-02003/declaring-a-national-energy-emergency

energy system, including hydrocarbon energy production, refining, and other industrial uses.[4] President Trump also released EO 14241, *Immediate Measures to Increase American Mineral Production*, which highlights the need to immediately increase domestic mineral production.[5]

Therefore, pursuant to sections 7001(a) and 7002(g) of the Energy Act of 2020,[6] section 41003(b) - (c) of the Infrastructure Investment and Jobs Act (IIJA),[7] and the aforementioned EOs, this Notice of Intent (NOI) announces the intent of DOE's Office of Fossil Energy and Carbon Management to issue a funding opportunity that leverages American industrial leadership to **use the industries we have to recover the materials we need.** The planned NOFO will focus investments on American industrial facilities that have the potential to produce valuable mineral byproducts from existing industrial processes. Industries such as mining and mineral processing, power generation, coal, oil and gas, specialty metals, and basic materials have the potential to address many of America's most severe mineral vulnerabilities. For example, gallium, germanium, indium compounds, antimony and bismuth are all small market materials with nearly 100% dependence on foreign byproduct recovery. Moreover, as of August 2025, China has implemented export restrictions on all of these materials, which has impacted global supply chains and triggered price volatility.

American industrial facilities have the potential to recover valuable critical minerals and materials from industrial processes, but many technologies must be piloted at an industrial scale in an industrial facility where material feedstocks can be processed to derisk the technical uncertainty and financial risk for commercial deployment.

The purpose of this NOI is to provide potential applicants with information that may be useful in determining whether to apply to this NOFO, if it is issued.

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[4] Exec. Order No. 14156 of January 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.

[5] Exec. Order No. 14241 of March 20, 2025, *Immediate Measures to Increase American Mineral Production*, 90 Fed. Reg. 13673 (March 25, 2025), https://www.federalregister.gov/documents/2025/03/25/2025-05212/immediate-measures-to-increase-american-mineral-production.

[6] Energy Act of 2020, Pub. L. 116-260, div. Z, title VII, §§ 7001(a) and 7002(g), Dec. 27, 2020, as amended, https://www.govinfo.gov/content/pkg/PLAW-116publ260/pdf/PLAW-116publ260.pdf.

[7] Infrastructure Investment and Jobs Act, Pub. L. 117-58, div. D, title X, § 41003(b)-(c), Nov. 15, 2021, https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf.

TECHNICAL OBJECTIVES AND OTHER CONSIDERATIONS:

It is anticipated that the NOFO may include the following Topic Areas.

Please note, the exact cost share percentage that will be required should a NOFO be released, has yet to be determined.

Topic Area 1	**Mines & Metal Pilots — Coal-Based Industry** Pilot-scale critical minerals and materials recovery facility — design, construction, and operation at a domestic location. Pilot-scale facility must be based on bench-scale and/or small pilot-scale process(es) that have been demonstrated, utilizing actual (non-simulated) feedstock(s), as being technically feasible on a continuous/semicontinuous basis at technology readiness level (TRL) 5.[8] Coal industry-related feedstocks, including waste materials, and facilities are required. Production of sustainable market-ready critical minerals and materials (e.g., Co, Ni, Mg, Mn, Ga, Ge, Li, heavy rare earth elements (HREE), and other REE). Process automation (e.g., AI-driven) and combined use of feedstock materials are preferred, both supporting sustainable commercial operation for a minimum of 5 years. Plan for near-term (e.g., 2028-2030) process commercialization is required.	Total Government Funding: $75M Awards: Maximum of 3 awards ranging from $10M to $50M per award Cost Share: 20-50% Beginning TRL: 5-6 Ending TRL: 7
Topic Area 2	**Mines & Metals Pilots — All Industry** Pilot-scale critical minerals and materials recovery facility — design, construction, and operation at a domestic industrial site. Pilot-scale facility must be based on bench-scale and/or small pilot-scale process(es) that have been demonstrated, utilizing actual (non-simulated) feedstock(s), on a continuous/semicontinuous basis at TRL 5.	Total Government Funding: $175M Awards: Maximum of 7 awards ranging from $10M to $50M per award Cost share: 20-50%

[8] https://netl.doe.gov/resource-sustainability/critical-minerals-and-materials/program-overview/definitions.

	Any domestic industrial facility with potential byproduct streams that include critical mineral and material products may qualify. Production of sustainable market-ready critical minerals and materials (e.g., Co, Ni, Mg, Mn, Ga, Ge, Li, REE). Process automation (e.g., AI-driven) is preferred. Plan for near-term (e.g., 2028-2030) critical mineral and material recovery process commercialization is required.	Beginning TRL: 5-6 Ending TRL: 7

This NOI describes a preliminary plan that will evolve during the NOFO development process. The Office of Fossil Energy and Carbon Management, in addition to other offices within DOE, coordinates critical minerals and materials funding opportunities via the Critical Materials Collaborative (CMC), a DOE coordinating entity authorized by language in the Energy Act of 2020.[9]

Concept Papers/Letters of Intent

The use of concept papers/letters of intent are still under consideration for any subsequent 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

You must have an active account with 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 Unique Entity Identifier.
- **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)

[9] *See* Energy Act of 2020, Pub. L. 116-260, div. Z, title VII, § 7002(g)(8), Dec. 27, 2020, as amended, https://www.govinfo.gov/content/pkg/PLAW-116publ260/pdf/PLAW-116publ260.pdf.

Unique Entity Identifier (UEI)

- **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 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 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

Grants.gov Registration

You must have an active 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

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://netl-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.