

Notice of Intent No. DE-FOA-0002865

Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0002864

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the new Advanced Materials and Manufacturing Office Technologies Office (AMMTO) and the Building Technologies Office (BTO), a Funding Opportunity Announcement (FOA) entitled “FY22 Advanced Materials and Manufacturing Technologies—Building Technologies Office Multi-topic Funding Opportunity Announcement.”

EERE’s AMMTO collaborates with industry, small business, universities, national laboratories, state and local governments and other stakeholders on emerging manufacturing technologies to drive U.S. industrial decarbonization, productivity and economic competitiveness. AMMTO has a mission to develop technologies that 1) increase the competitiveness of the U.S. manufacturing sector with a focus on clean energy manufacturing and 2) reduce the life cycle energy and carbon impact of manufactured goods in industry, buildings, transport, power, and agricultural sectors.

EERE’s BTO develops, demonstrates, and accelerates the adoption of cost-effective technologies, techniques, tools and services that enable high-performing, energy-efficient and demand-flexible residential and commercial buildings in both the new & existing buildings markets, in support of an equitable transition to a decarbonized energy system by 2050, starting with a decarbonized power sector by 2035.

This FOA supports the Biden-Harris Administration’s priorities to enhance manufacturing competitiveness through technological innovation by focusing in three main areas: 1) Next Generation Materials and Manufacturing, 2) Secure and Sustainable Materials, and 3) Energy Technology Manufacturing and Workforce Development. The FOA integrates identified research opportunities across AMMTO and BTO into a single funding opportunity and is intended to fund high-impact, applied research, technology development, and pilot demonstration projects.

Within the main areas of research identified above, it is anticipated that the FOA may include the following sub-topic areas:

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Next Generation Materials and Manufacturing.

1) Increased Conductivity Metals

The objective of this sub-topic area is to increase the energy efficiency of electrification by increasing the conductivity of the best conductors through innovative compositions and fabrication methods.

2) Harsh Environment Materials

The objective of this sub-topic is to create new materials with improved properties in harsh operating environments, such as high temperature, high pressure, high wear, and nuclear environments. This sub-topic also seeks new and scalable processing techniques that can produce these materials including decarbonized steel-making processes, including net zero carbon or high-temperature hydrogen-based processes; new refractory materials and processes; and polymer-based precursors for infiltration processes that enable the fabrication of high temperature ceramic matrix materials for composite components (including Silicon Carbide).

3) AI/Machine Learning for Aerostructures:

The objective of this sub-topic is to use machine learning and artificial intelligence to increase manufacturing efficiency for large scale aerostructures, including wind turbine blades, made at high rates. Proposals should indicate how they plan to use Office of Science's high-performance computing assets in their proposed research.

Secure and Sustainable Materials.

1) Materials Circularity Regional Pilot Demonstrations

The objective of this sub-topic is to accelerate pilot scale demonstrations of circular economy technologies including innovative material recovery and end-of-life processing and recycling for key regional material supply chains. Specifically, proposals should demonstrate value at a regional scale through recovery, recycling, and reuse of regional industry-relevant materials from material waste streams including metals, fibers, plastics, and e-waste.

Energy Technology Manufacturing and Workforce Development.

1) Electric Vehicle Battery Manufacturing: cathode active materials (CAMs).

The objective of this sub-topic is to develop, scale-up, and pilot demonstrate chemistry-agnostic processing technologies to manufacture state-of-the-art CAMs that can be dropped into current domestic manufacturing. Of particular interest are partnerships and consortia that include private industry, universities with relevant manufacturing and workforce development expertise, and regional development organizations.

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2) Building Dehumidification Scaleup.

The objective of this sub-topic is to manufacture and pilot-demonstrate all-electric or low grade/waste sources driven dehumidification systems (e.g. dessicants) that: Achieve dehumidification Moisture Removal Efficiency (MRE) greater than 3.5 kg/kWh at indoor air conditions 75 °F and 60% relative humidity or Integrated Seasonal Moisture Removal Efficiency (ISMRE) greater than 1.82 kg/kWh and water-cooled equipment 6 2.73 kg/kWh based on ASHRAE standard 90.1-2019 or ASHRAE standard 139, or ANSI/AHRI Standard 920; Have reduced size and/or weight relative to today's current state of the art units; Are capable of flexible operation to provide demand flexibility services; and Minimize water consumption.

EERE envisions awarding multiple financial assistance awards in the form of cooperative agreements. The estimated period of performance for each award will be approximately one to three years.

This Notice is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All of the information contained in this Notice is subject to change. EERE will not respond to questions concerning this Notice. Once the FOA has been released, EERE will provide an avenue for potential Applicants to submit questions.

EERE plans to issue the FOA about Mid-November 2022 via the EERE Exchange website <https://eere-exchange.energy.gov/>. If Applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE Exchange. When the FOA is released, applications will be accepted only through EERE Exchange.

In anticipation of the FOA being released, Applicants are advised to complete the following steps, which are **required** for application submission:

- Register and create an account in EERE Exchange at <https://eere-exchange.energy.gov/>. This account will allow the user to register for any open EERE FOAs that are currently in EERE Exchange. It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission.

Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov

- Register with the System for Award Management (SAM) at <https://www.sam.gov>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.
- Ensure that you have the Unique Entity ID created by SAM.gov (NOTE: effective 4/4/2022 DUNS is no longer used by the federal government. Entities doing business with the federal

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government no longer have to go to a third-party website to obtain their identifier. This transition allows the government to streamline the entity identification and validation process, making it easier and less burdensome for entities to do business with the federal government)

- Register in FedConnect at <https://www.fedconnect.net/>. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf
- Register in Grants.gov to receive automatic updates when Amendments to a FOA are posted. However, please note that applications will not be accepted through Grants.gov. <http://www.grants.gov/>. All applications must be submitted through EERE Exchange.

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