

Notice of Intent No. DE-FOA-0003276**Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0003274**

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Bioenergy Technology Office (BETO) and the Office of Fossil Energy and Carbon Management (FECM), a Funding Opportunity Announcement (FOA) entitled MACRO: “Mixed Algae Conversion Research Opportunity”.

If issued, this FOA will support BETO’s research and development (R&D) priorities in the Conversion Technologies Program and FECM’s R&D priorities in the Carbon Dioxide Conversion Program. BETO’s Conversion Technologies Program supports R&D in technologies for converting biomass feedstocks into finished liquid transportation fuels—such as renewable gasoline, diesel, and jet fuel along with co-products or chemical intermediates. FECM’s Carbon Dioxide Conversion Program invests in R&D of technologies that convert captured carbon dioxide (CO₂) into economically valuable products such as chemicals, fuels, building materials, plastics, and bioproducts.

The R&D activities to be funded under this FOA will support the government-wide approach to the climate crisis by driving the innovation that can lead to the deployment of clean energy technologies, which are critical for climate protection. A diverse range of feedstocks will be required to reach the Biden Administration’s goals to “deliver an equitable, clean energy future, and put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050.”¹ Seaweeds, also known as macroalgae, represent a significant biomass resource potential of 3.3 billion dry metric tons that will be newly described in BETO’s upcoming Billion Ton Report. Rapid growth of the seaweed cultivation industry, in part inspired by the DOE ARPA-E (Advanced Research Projects Agency – Energy) MARINER (Macroalgae Research Inspiring Novel Energy Resources) program efforts, has spurred new interest in working with seaweeds as a renewable biomass feedstock. Due to the expansion of domestic cultivation and the potential of seaweeds to contribute to DOE’s mission areas, this announcement is the first time BETO and FECM have specifically called for research into converting seaweeds to fuels and products.

This FOA will seek to address R&D challenges in converting various seaweeds, other waste algae and wet waste feedstocks to low-carbon fuels, chemicals, and agricultural products. These feedstocks are readily available today but are underutilized and are difficult to convert due to

¹ Executive Order 14008, “Tackling the Climate Crisis at Home and Abroad,” January 27, 2021.

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their variability, unique chemical compositions, and storage instability. R&D is needed to address gaps in storage, mobilization, and conversion of these highly advantaged algal feedstocks to low-carbon products to improve their utilization to meet BETO's strategic goals for Sustainable Aviation Fuels (SAF) and renewable chemicals. Such R&D is similarly necessary to address the goals of FECM Carbon Dioxide Conversion Program to use anthropogenic carbon dioxide emissions in the cultivation process to convert both macro and micro algae into low-carbon agricultural products such as animal feed. Overcoming challenges associated with these unique but readily available feedstocks will help build supply chains and develop market pull. In turn, the expanded algal resource potential will enable greater volumes of SAF and/or carbon dioxide utilization in the future.

It is anticipated that the FOA may include the following Topic Areas:

Topic Area 1: Conversion of Seaweeds and Waste Algae to Low Carbon Fuels and Products

Topic Area 1 aims to address gaps in storage, mobilization, and conversion of seaweeds and other wet algal feedstocks to low-carbon products and enable these readily available feedstocks to access new markets. Applications would be sought that will develop laboratory or bench scale technologies and/or processes for utilizing: macroalgae (seaweeds); blends of macroalgae and wet wastes, and/or wet algal wastes for conversion to fuels and products with significant, on a national scale, potential to displace fossil greenhouse gas (GHG) emissions. Applications will be required to demonstrate that the utilization of these feedstocks to generate products at commercial scale has the potential of at least 50% GHG reductions compared to conventional fuel and/or products.

Topic Area 2: Conversion of Algal Biomass for Low Carbon Agricultural Products

The goal of Topic Area 2 is to utilize carbon dioxide emissions streams from utilities or industrial sources to grow algae for source material and create value-added products. Applications would be sought that use anthropogenic (e.g., fossil fuel derived) carbon dioxide emissions to be used in the algae cultivation process and then convert those macro- and/or micro algae into low-carbon agricultural applications or products such as animal feed. Applications will be encouraged to focus on optimization of the technologies and processes for the conversion of cultivated algae biomass to products and clearly describe the end use products targeted. Applications will be required to show a reduction in CO₂ emissions through life cycle analysis and demonstrate that the targeted products provide benefits compared to current, commercially available products. Applications proposing animal feed as products should describe requirements for necessary testing or demonstrations of the resulting product. Developing successful conversion technologies can further improve, the economics and carbon utilization efficiencies of these products, resulting in additional market share that encourages further algae biomass cultivation and carbon dioxide utilization.

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Please note: If a FOA is published, DOE's government-owned, government-operated (GOGO) National Energy Technology Laboratory (NETL) will not be eligible for award under the FOA and may not be proposed as a Subrecipient on another entity's application. An application that includes NETL as a Prime Recipient or Subrecipient will be considered non-responsive. Additionally, DOE/NNSA and non-DOE/NNSA Federally Funded Research and Development Centers (FFRDCs) will be restricted from applying for funding as a Prime Recipient but are eligible to participate as a Subrecipient. The FFRDC effort, in aggregate, shall not exceed 50% of the total estimated cost of the project, including the applicant's and the FFRDC's portions of the effort.

This potential FOA is expected to be announced in March 2024 and could include up to \$19 million in federal funding to achieve the above outcomes. DOE envisions awarding multiple financial assistance awards for R&D activities in the form of cooperative agreements lasting approximately two to three years.

DOE is compiling a Teaming Partner List to facilitate the formation of new project teams for the FOA. All entities interested in participating as part of an applicant team may provide their contact information for the Teaming Partner List. The list allows organizations to express their interest and to explore potential partners.

- Updates to the Teaming Partner List will be available on the EERE eXCHANGE website. The Teaming Partner List will be regularly updated to reflect new teaming partners who have provided their organization's teaming partner information.
- **SUBMISSION INSTRUCTIONS:** Any organization that would like to be included on this list should submit their information to Teaming Partner List via EERE eXCHANGE.
- **DISCLAIMER:** By submitting a request to be included on the Teaming Partner List, the requesting organization consents to the publication of the above-referenced information. By facilitating the Teaming Partner List, DOE is not endorsing, sponsoring, or otherwise evaluating the qualifications of the individuals and organizations that are self-identifying themselves for placement on this Teaming Partner List. DOE will not pay for the provision of any information, nor will it compensate any applicants or requesting organizations for the development of such information.

This Notice is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All 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.

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EERE plans to issue the FOA on or about March 2024 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 apply to any open EERE FOAs that are currently in EERE eXCHANGE.

To access EERE eXCHANGE, potential applicants will be required to have a [Login.gov](https://login.gov/) account. As part of the eXCHANGE registration process, new users are directed to create an account in [Login.gov](https://login.gov/). Please note that the email address associated with Login.gov must match the email address associated with the eXCHANGE account. For more information, refer to the Exchange Multi-Factor Authentication (MFA) Quick Guide in the [Manuals section](#) of 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) is an important step in SAM registration. Please update your SAM registration annually. Upon registration, SAM will automatically assign a Unique Entity ID (UEI).

NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration 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](#).

- 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

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- 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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