

AlgaePrize Competition Fact Sheet

What Is the AlgaePrize?

The AlgaePrize is a U.S. Department of Energy Bioenergy Technologies Office (BETO) national competition, in partnership with the Algae Foundation and the National Renewable Energy Laboratory, which encourages students to pursue innovative ideas for the development, design, and invention of technologies within the commercial algae value chain. AlgaePrize 2023–2025 is now part of DOE’s American-Made Challenges.¹

Tell Me About Bioenergy and Algae

What is bioenergy?

Bioenergy is a form of renewable energy that is derived from recently living organic materials, like plants and algae, and can be used to produce transportation fuels, heat, electricity, and products.

How does algae play a part in bioenergy?

The term “algae” refers to a great diversity of organisms—from microscopic cyanobacteria to giant kelp. Most algae convert sunlight into energy in a similar manner to plants; however, the genetic diversity of algae means there are an incredible number of unique properties that can be harnessed to develop promising bioenergy, like algal biofuels, in addition to bioproducts.

Some of algae’s unique properties include:

- High potential yield per acre



Photos by Dennis Schroeder and Christy Eschenfeldt, National Renewable Energy Laboratory

- Ability to grow on land not suited for agriculture
- Ability to grow in saline, brackish, or wastewater
- Potential for recycling of water and nutrients during production
- Relative ease of conversion into fuels and products that are fully compatible with today’s vehicles, jets, and delivery systems.

You can read more about algae’s properties and BETO’s work in this research area on the Renewable Carbon Resources (RCR) subprogram’s website.²

“President Biden’s energy strategy aims to create a safer and more sustainable planet, while ensuring American students and workers have the skills they need for the challenging jobs of today and tomorrow,” said Dr. Valerie Sarisky-Reed, Director for BETO. “The AlgaePrize competition supports this commitment by providing a channel for developing the nation’s science, technology, engineering, and mathematics research and by helping to engage the next generation of green energy workforce.”

AlgaePrize Competition

During the competition that spans two academic years, student teams will work on creative solutions for real-world issues in the algae value chain based on one of the following areas of interest:



Production

- Cultivar enhancement
- Aquaculture engineering
- Husbandry and productivity

Downstream Processing

- Harvesting, dewatering, and preprocessing
- Additional downstream processing technologies like extraction and biorefining

Novel Products, Analytical Tools, or Ecosystem Services

- New product development
- Remote sensing and modeling
- Ecosystem services

¹ Learn more about American-Made Challenges at: americanmadechallenges.org

² energy.gov/eere/bioenergy/renewable-carbon-resources

This competition challenges students to develop novel solutions to algae production, processing, and new product development, that will help lower the costs of producing algal biofuels and bioproducts.

Get In Touch

Visit us online at energy.gov/algaeprize and follow us on social media. ■

The AlgaePrize is sponsored by BETO.



The AlgaePrize is supported by:



About the Bioenergy Technologies Office

BETO supports research, development, and demonstration to enable the sustainable use of domestic biomass and waste resources for the production of biofuels and bioproducts. BETO's overall goals are designed to:

- Lower costs and reduce technology risks for production of biofuels and bioproducts
- Improve environmental benefits of bioenergy production
- Reduce greenhouse gas emissions from the transportation, industrial, and agricultural sectors to address the climate crisis
- Support the scale-up of sustainable, low-carbon biofuel production technologies
- Create economic opportunities and good-paying jobs in agriculture and manufacturing sectors.

Meeting these goals requires significant and rapid advances in technology development and innovation across the entire biomass-to-bioenergy supply chain.

For more information, visit:

energy.gov/eere/bioenergy

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