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Department of Energy Announces up to \$36 Million to Support the Development of Drop-In Biofuels and Bioproducts

Investments will help diversify America's sources of clean, renewable alternatives to fossil fuels

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As part of the Obama Administration's efforts to cut foreign oil imports, U.S. Secretary of Energy Steven Chu today announced up to \$36 million to fund six small-scale projects in California, Michigan, North Carolina, Texas, and Wisconsin, that will advance the technology improvements and process integration needed to produce drop-in advanced biofuels and other valuable bio-based chemicals. The projects aim to improve the economics and efficiency of biological and chemical processes that convert non-food biomass feedstocks into replacements for petroleum-based feedstocks, products, and fuels. These selections further the Obama Administration's strategy for accelerating research and development that will lead the way toward affordable, clean alternatives to fossil fuels and diversify our nation's energy portfolio.

"Projects such as these are helping us to diversify our energy portfolio and decrease our dependence on foreign oil," said Secretary Chu. "Together with our partners, the Department is working hard to expand the clean energy economy, creating jobs in America and providing sustainable replacements for the fuels and products now provided primarily by petroleum."

The funding announced today will help diversify DOE's Biomass Program portfolio to include a breadth of fuels and chemicals beyond cellulosic ethanol and ensure that the Department's research and development on biofuels remains integrated and strategic.

The following projects were selected:

General Atomics (up to \$2.0 million, San Diego, California): The proposed project aims to reduce energy, capital, and operational cost for algal fermentation processes. This will increase production of algal oils, which can be further refined into advanced biofuels.

Genomatica, Inc. (up to \$5.0 million, San Diego, California): This project will deliver an engineered organism and optimized fermentation process to enable the conversion of cellulosic sugars to the valuable industrial chemical, 1,4-butanediol (BDO). Such technology will enhance the commercial profitability of integrated biorefineries by enabling co-production of high-volume fuels and the higher-margin commodity chemical, BDO.

Michigan Biotechnology Institute (up to \$4.3 million, Lansing, Michigan): The project will focus on improvements to a pretreatment process, which provides a stable, conversion-ready intermediate of consistent quality at a cost and in a format compatible with long-term storage and ease of transfer between multiple modes of transportation.

HCL CleanTech, Inc. (up to \$9.0 million, Oxford, North Carolina): This project will develop and demonstrate process improvements for pretreatment, conversion to sugars, and subsequent conversion of those sugars to fuels. The complete integrated process will use concentrated hydrochloric acid hydrolysis to convert pre-extracted biomass feedstocks including wood waste into fermentable sugars, and then further convert the sugars into diesel products.

Texas Engineering Experiment Station (up to \$2.3 million, College Station, Texas): The focus of this project will be on developing a novel pretreatment for cellulosic biomass feedstocks using a combination of chemical and mechanical processing. Once the cellulosic feedstock has been pretreated it can be converted into biofuels, including hydrocarbons.

Virent (up to \$13.4 million, Madison, Wisconsin): The overarching objective of this project is to develop a fully integrated process that can efficiently and cost effectively convert a cellulosic biomass feedstock, such as corn stover, to a mix of hydrocarbons ideally suited for blending into jet fuel.

Final funding amounts are subject to negotiation.

DOE's Biomass Program works with industry, academia, and national laboratory partners on a balanced portfolio of research in biomass feedstocks and conversion technologies. For more information on DOE's Biomass Program, please visit the [Biomass Program website](#).

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