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Department of Energy's National Labs to Collaborate with Gevo to Optimize Ethanol-to-Olefins (ETO) Catalyst Performance

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Project to Explore Using Other Potential Feedstocks Including Low-Value Process Side Streams from Industrial Plants

ENGLEWOOD, Colo., Oct. 09, 2017 (GLOBE NEWSWIRE) -- [Gevo, Inc.](#) (NASDAQ:GEVO), announced today that it will be partnering with National Renewable Energy Laboratory (NREL), Argonne National Laboratory (ANL) and Oak Ridge National Laboratory (ORNL) on a project to fine-tune the composition of the catalyst used in Gevo's proprietary ETO process, in order to improve performance and accelerate scale-up efforts. ChemCatBio, a consortium within the US Department of Energy, awarded funding to the national labs in support of the project.

As previously disclosed, Gevo is developing its ETO technology, a process using ethanol as a feedstock for the production of hydrocarbons, renewable hydrogen, and other chemical intermediates. The process produces tailored mixes of isobutylene, propylene, hydrogen and acetone, which are valuable as standalone molecules, or as feedstocks to produce other chemical products and longer chain alcohols. At this time, Gevo's ETO technology has only been operated at a laboratory scale. If successfully scaled-up to commercial level, however, this technology may provide the estimated 25BGPY global ethanol industry a broader set of end-product market and margin opportunities.

In addition, Gevo's catalyst is capable of converting complex mixtures of other bio-based alcohols, acids and other oxygenates to primarily propylene or isobutylene along with significant levels of renewable hydrogen. Suitable feedstocks could include difficult to process side streams from fermentation plants, biomass gasification plants, syngas plants, municipal or industrial waste processing plants, or crude petro-based chemical streams. Gevo believes this catalytic technology could provide a cost-competitive option for industrial plants to upgrade lower value products and side streams, and facilitate entry into markets actively pursuing more sustainable options. These markets could include renewable fuels and plastics, renewable hydrogen and renewable downstream chemicals based on propylene or butylenes.

"We are excited to begin this collaboration with Gevo and believe that the state-of-the-art capabilities and expertise available through the Advanced Catalyst Synthesis and Characterization (ACSC) project within the ChemCatBio Consortium will enable us to gain a fundamental understanding of critical catalyst features that can change over time and impact the performance of Gevo's ETO catalysts. We'll use a combination of high energy X-ray characterization techniques at ANL, subatomic-resolution microscopy at ORNL, and highly sensitive vibrational spectroscopies at NREL to deliver insight into the atomic-level structure of these catalysts under reaction relevant conditions. Armed with a detailed knowledge of the "working" catalyst structure we can design and synthesize catalyst composition that have dramatically improved stability and lifetime in Gevo's ETO process," said Dr. Susan Habas, a Principal Investigator in the ChemCatBio Consortium.

"Converting alcohols using catalytic chemistry has been key to our successes with jet fuel and isooctane. We have made good progress in developing the catalysts to convert ethanol to olefins and hydrogen. This project with the Department of Energy's national labs is expected to help further optimize these catalysts, as well as expand the feedstock base beyond ethanol, to include a variety of water-based, organic chemical streams produced in a variety of industries. Our interest is in developing the catalysts and processes to become commercially ready, so we can license them," said Dr. Patrick Gruber, Gevo's Chief Executive Officer.

About Gevo

Gevo is a renewable technology, chemical products, and next generation biofuels company. Gevo has developed proprietary technology that uses a combination of synthetic biology, metabolic engineering, chemistry and chemical engineering to focus primarily on the production of isobutanol, as well as related products from renewable feedstocks. Gevo's strategy is to commercialize bio-based alternatives to petroleum-based products to allow for the optimization of fermentation facilities' assets, with the ultimate goal of maximizing cash flows from the operation of those assets. Gevo produces isobutanol, ethanol and high-value animal feed at its fermentation plant in Luverne, Minnesota. Gevo has also developed technology to produce hydrocarbon products from renewable alcohols. Gevo currently operates a biorefinery in Silsbee, Texas, in collaboration with South Hampton Resources Inc., to produce renewable jet fuel, octane, and ingredients for plastics like polyester. Gevo has a marquee list of partners including The Coca-Cola Company, Toray Industries Inc. and Total SA, among others. Gevo is committed to a sustainable bio-based economy that meets society's needs for plentiful food and clean air and water.

Forward-Looking Statements

Certain statements in this press release may constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements, which include statements relating to Gevo's ETO technology and catalysts, markets for Gevo's ETO technology and catalysts, the capabilities of Gevo's ETO technology and catalysts, are made on the basis of the current beliefs, expectations and assumptions of the management of Gevo and are subject to significant risks and uncertainty. Investors are cautioned not to place undue reliance on any such forward-looking statements. All such forward-looking statements speak only as of the date they are made, and Gevo undertakes no obligation to update or revise these statements, whether as a result of new information, future events or otherwise. Although Gevo believes that the expectations reflected in these forward-looking statements are reasonable, these statements involve many risks and uncertainties that may cause actual results to differ materially from what may be expressed or implied in these forward-looking statements. For a further discussion of risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of Gevo in general, see the risk disclosures in the Annual Report on Form 10-K of Gevo for the year ended December 31, 2016, and in subsequent reports on Forms 10-Q and 8-K and other filings made with the U.S. Securities and Exchange Commission by Gevo.

Media Contact

David Rodewald
The David James Agency, LLC
+1 805-494-9508
gevo@davidjamesagency.com

Investor Contact

Shawn M. Severson
EnergyTech Investor, LLC
+1 415-233-7094
gevo@energytechinvestor.com
@ShawnEnergyTech
www.energytechinvestor.com



Gevo, Inc.