



**Testimony of the
Biotechnology Industry Organization (BIO)**

Hearing of the Hawaii House Energy and Environmental Protection Committee
March 17, 2015

Regarding Hawaii SB 717:

**“AN ACT TO REPEAL THE REQUIREMENT THAT GASOLINE FOR MOTOR
VEHICLES IN THE STATE INCLUDE 10% ETHANOL”**

The Honorable Chris Lee, Committee Chair
The Honorable Nicole Lowen, Committee Vice-Chair
And the Members of the Energy and Environmental Protection Committee:

Chairman Lee, Vice Chairman Lowen, and Members of the Committee, the Biotechnology Industry Organization (“BIO”) appreciates this opportunity to provide comments on SB 717, legislation repealing the requirement that gasoline for motor vehicles in the state include 10% ethanol. This proposal is of significant concern to BIO and its members in the State of Hawaii and throughout the country.

BIO is the world’s largest biotechnology organization with more than 1,000 member companies worldwide. BIO represents leading technology companies in the production of conventional and advanced biofuels, renewable chemicals, biobased products and other sustainable solutions to energy and climate challenges. BIO also represents the leading developers of new crop technologies for food, feed, fiber, and fuel.

BIO opposes SB 717 because of the impact such legislation would have on research, development and commercialization of advanced and cellulosic biofuels and other innovative products of industrial biotechnology in Hawaii and throughout the country, and on the price of gasoline for Hawaii consumers. It needlessly restricts consumer choice; risks exposing Hawaii residents to higher gas prices and increased emissions of greenhouse gases (GHGs) and other pollutants; and puts at risk Hawaii’s future job growth in biotechnology.

The national adoption of ethanol and other biofuels has played an important role in reducing U.S. dependence on foreign sources of petroleum, in reducing transportation fuel costs to the consumer, and in beginning to reduce the carbon intensity of the nation’s transportation fuels. It has also paved the way for promising next generation cellulosic and advanced biofuels being developed in the State of Hawaii and throughout the country. Limiting the use of ethanol thus closes off a major source of potential economic development in the State that



would come from its production of ethanol from feedstocks grown in HI, such as sugarcane, energy grasses, and algae. It also prevents the use of more sustainable fuels.

Cellulosic and advanced biofuels, which can be produced from forest residues, algae, municipal solid waste, or other renewable sources of biomass, offer some of the most promising solutions to high gas prices, U.S. dependence on foreign petroleum, and job losses in resource-dependent regions of the country, such as Hawaii. Innovative industrial biotechnology developers – including Cellana Corporation, a leading developer of algae-based bioproducts, based right here in Hawaii – already face a very challenging environment trying to secure private capital to commercialize their technologies.

Actions by the State of Hawaii to repeal the state's renewable fuel standard only exacerbate the financing challenge to local companies by destabilizing the policy environment for all biofuels. For example, the recent proposal by the U.S. Environmental Protection Agency (EPA) to limit conventional biofuel volumes in 2014 under the federal Renewable Fuel Standard (RFS) has resulted in suspension of commercialization plans by several leading cellulosic biofuel developers.^{i, ii}

Hawaii has also been home to the Navy biofuel research conducted at the U.S. Pacific Command and the Great Green Fleet. The Navy, like Hawaii, is almost totally dependent on fossil fuels which are priced on a global market. Continued support of biofuels in Hawaii will help advance both the state and military's goals of energy and national security.

Moreover, Hawaii has received over \$79 million in USDA energy program funds developing renewable biomass in the state. Passing SB 717 would send the industry and its investors the wrong message and would chill investment in research and development for advanced and cellulosic biofuels – as well as other promising biobased technologies, such as renewable chemicals and plastics produced from algae – and possibly send the unintended signal to investors that Hawaii is hostile to all biofuels.

The proposed legislation also hurts Hawaii consumers. Simply having an alternative fuel in any market helps drive down the price for consumers at the pump. The production and use of renewable fuel has kept oil costs between \$15 and \$40 per barrel lower than they would have been.ⁱⁱⁱ This translates to a reduction in gasoline prices at the pump between \$0.50 and \$1.50, saving U.S. consumers between \$700 billion and \$2.6 trillion during 2013.^{iv} Price supports for advanced biofuels under the RFS compliance mechanisms will ensure that new fuels will also present significant value to consumers. In Hawaii, the cost of importing oil is high both economically and with respect to Hawaii's carbon footprint, since oil has to be transported such a long distance.



Sale of transportation fuel is heavily controlled by major oil companies through marketing agreements with branded retailers. As with advanced ethanol, emerging “drop-in” advanced biofuels, such as biobutanol and renewable hydrocarbon fuels, will require enforcement of fuel choice laws, such as the RFS, to provide investors with confidence that there will be market access for these new fuels when they are commercialized. Actions by states to limit market access to new fuel entrants substantially erode this confidence, further complicating the already challenging task of securing private capital for first-of-a-kind biorefineries. In addition, while Hawaii could produce its own ethanol from feedstocks grown on the island, it does not have a similar opportunity with respect to oil, since there are no opportunities for Hawaii to drill for oil.

Finally, repealing the state’s renewable fuel standard will increase emissions of GHGs and other pollutants resulting from combustion of transportation fuel in Hawaii. Refiners need ethanol for octane trimming. Removing ethanol increases use of toxic aromatics for octane and could expose the public to more air toxins. Ethanol is also used presently as an oxygenate, and helps states comply with their carbon monoxide standards. And by removing ethanol from the gasoline supply, Hawaii could make it more difficult for the state to meet its national ambient air quality standards under Federal law.

Renewable fuel use in the U.S. slashed greenhouse gas emissions by 33.4 million metric tons in 2012^v and is expected to reach 138 million metric tons per year when the RFS is fully implemented in 2022.^{vi} In practice, greenhouse gas reductions are likely to be even more significant. Many cellulosic and other advanced biofuel pathways approved by EPA already substantially exceed the minimum GHG reductions required by the law. For example, the INEOS Bio process, which is being commercialized at a new biorefinery in Vero Beach, Florida, reduces greenhouse gas emissions up to 109% — a net carbon savings. Future feedstock and conversion technology improvements will drive GHG reductions even further. In contrast, lifecycle GHG emissions for petroleum are increasing with time. “Well-to-Wheel GHG emissions” of gasoline produced from Canadian tar sands, for example, emit 14% to 20% more GHGs than the weighted average of transportation fuels sold or distributed domestically. The GHG reductions produced by biofuels are a vital part of the nation’s effort to combat climate change. It is crucial we maintain the opportunities for biofuels growth to achieve these environmental gains.

Companies like Cellana and DuPont and the more than 80 BIO members developing next generation biofuels, renewable chemicals and biobased products are working to create sustainable jobs for the future. A recent report, *U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030*, indicates that cellulosic and advanced biofuels production



under the RFS could create over half a million jobs in the U.S., many of which would be tied to sustainable sources of renewable biomass like algae.^{vii}

BIO urges the Committee to oppose SB 717. The proposed repeal of the state's renewable fuel standard would hurt consumers at the pump and would undermine investment in the continued research, development and production of advanced and cellulosic biofuels in Hawaii and beyond.

ⁱ <http://thehill.com/blogs/congress-blog/energy-environment/196891-wavering-policy-spells-disaster-for-renewable-fuel>;

ⁱⁱ <http://biomassmagazine.com/articles/9920/industry-says-rfs-proposal-will-chill-cellulosic-investments>

ⁱⁱⁱ Philip K. Verleger, "Doubling World Oil Prices: The Success of International Energy Agreements," The Petroleum Economics Monthly, Vol. XXX, No. 8, Aug. 2013.

^{iv} Philip K. Verleger, "Commentary: Renewable Fuels Legislation Cuts Crude Prices." PKVerlegerLLC.com, Sept. 23, 2013. http://www.pkverlegerllc.com/assets/documents/130923_Commentary1.pdf

^v Renewable Fuels Association, "Battling for the Barrel: 2013 Ethanol Industry Outlook." Washington, DC: February 2013, p.18.

^{vi} US EPA, "Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis." Washington, DC: EPA-420-R-10-006, February 2010.

^{vii} <http://bio.org/ind/advbio/EconomicImpactAdvancedBiofuels.pdf>