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Testimony of
MARK B. GLICK, Chief Energy Officer

before the
**SENATE COMMITTEES ON
ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM
AND
AGRICULTURE AND ENVIRONMENT**

Tuesday, February 13, 2024
1:00 PM
State Capitol, Conference Room 229 and Videoconference

In Support of
SB 2675

RELATING TO RENEWABLE ENERGY AND FOOD SECURITY.

Chairs DeCoite and Gabbard, Vice Chairs Wakai and Richards, and members of the Committees, the Hawai'i State Energy Office (HSEO) offers testimony in support of SB 2675, which provides direction on improving the ability of renewable energy production to support local food security.

HSEO appreciates that this proposal requires HSEO to build on prior work by those in the private sector, academia, and state agencies to facilitate the co-location of clean energy and local food production. This bill would allow HSEO to leverage the excellent research of the agrivolatics project of the Hawai'i Agricultural Research Center and Clearway Energy Group, as well as research into Sustainable Aviation Fuels by the Hawai'i Natural Energy Institute. The bill would support the growth of local biofuels production as a potential source of required firm renewable energy by building on the continued leadership of Pacific Biodiesel in a manner that could be replicated and expanded locally. The bill appropriately calls for cooperation among state agencies with roles and responsibilities concerning contaminated land and agricultural production.

HSEO's energy strategy includes strategies such as phytoremediation to improve the availability and health of agricultural lands. Phytoremediation relies on vegetation to

pull toxins out of the soil, and this bill would focus on increasing biofuel production from the otherwise inedible crop. These biofuels can be used to significantly reduce the carbon footprint of electricity generation, heavy duty transportation, and aviation. While this approach to biofuel production will not completely displace the need for imported fuels given the limited available land in Hawai'i, this bill would fund important next steps to deepen our understanding of this resource and support the balanced growth of this sector. The work required by this bill would also enable the state to better understand the potential and appropriate balance and subsidies of biofuel crops to become an active land management strategy for large parcels vis-a-vis other agricultural uses.

Thank you for the opportunity to testify.



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February 12, 2024

TESTIMONY ON SB 2675, RELATING TO RENEWABLE ENERGY AND FOOD SECURITY

SUPPORT

Senator Lynn DeCoite, Chair
Senator Glenn Wakai, Vice Chair
Committee on Energy, Economic Development, and Tourism

Senator Mike Gabbard, Chair
Senator Herbert M. "Tim" Richards, III, Vice Chair
Committee on Agriculture and Environment

Hearing: February 13, 2024, at 1PM, Conf Room 229

Aloha Chairs DeCoite and Gabbard, Vice Chairs Wakai and Richards and Members of the Committees,

Pacific Biodiesel supports SB 2675 which facilitates the private sector's development of renewable energy projects that also support agricultural food production.

Local production of 2nd Generation Advanced Biodiesel produced from recycling used cooking oil and oilseed cover crops is not subject to the same environmental and agricultural concerns as 1st Generation Biofuels. 2nd Generation biofuel technologies have been developed to enable the use of non-food biofuel feedstocks because of concerns to food security caused by the use of food crops for the production of 1st Generation biofuels. In addition, smaller biodiesel plants are much more flexible with the types of feedstocks they can use. Pacific Biodiesel's multiple feedstock technology creates a high quality, stable fuel supply and enables farmers, renderers, and used cooking oil collectors to utilize more of their locally available resources. This flexibility means different types of agricultural feedstocks can be grown in an area, utilizing crop scenarios that may be healthier for the soil; additionally, more use can be made of secondary or fallow land, minimizing the displacement of food crops. Smaller scale production also precludes the use of imported oil feedstocks from recently deforested lands, especially former rainforests, which are causing growing concern about the environmental impacts of biodiesel.

All Renewable Energy proposals must compare "Life Cycle" emissions that include the total amount of greenhouse gases emitted throughout a product's existence including its production, use, and disposal. Tailpipe emissions are included in life cycle emissions as are battery manufacturing, recycling, and disposal.

New investments are needed to incentivize existing producers of biofuels to increase production of firm renewable energy and to encourage new producers to begin production. The production tax credit gives a very important incentive to invest further in firm renewable fuel production in Hawaii. Past investments in renewable fuels succeeded in promoting local investments in cleaner fuels and moving us closer to energy independence and security. Continuing this support sends the correct signal for new and continued investments in this firm renewable energy.

Hawaii's utility companies rely on and need more of Pacific Biodiesel's locally produced firm renewable energy. HRS section 269-92(a) requires each electric utility company that sells electricity for consumption in the State to establish a renewable portfolio standard of forty percent of its net electricity sales by

renewable • sustainable • community-based

December 31, 2030, seventy percent of its net electricity sales by December 31, 2040, and one hundred percent of its net electricity sales by December 31, 2045. In order for electric utility companies to meet the required renewable portfolio standards by 2045, an indispensable component of the electric utility companies' renewable portfolio standard must include sufficient locally sourced firm renewable energy sources to offset the intermittent nature of wind and solar power renewable energy.

Biodiesel allows for an immediate reduction of greenhouse gas emissions. Our biodiesel is a 100% renewable Advanced Biofuel that is a crucially important firm renewable power source in Hawaii to back up other renewables on the grid. And, more importantly now than ever, Hawaii's locally produced biodiesel is supporting energy security in our island state and reducing reliance on imported fossil fuel. **It is a direct replacement for petroleum diesel fuel that can be used right now in any diesel engine without modification, helping to reduce greenhouse gas emissions by 86% compared to petroleum diesel.** The diesel engine is NOT the problem. Petroleum diesel FUEL – fossil fuel – used in efficient diesel engines is the problem. **Biodiesel has one of the lowest carbon footprints of any fuel.** A California Air Resources Board (CARB) report* shared findings that total greenhouse gas (GHG) reductions from biomass-based diesel were three times the total reductions from electric vehicles. In Hawaii, where the carbon intensity of our electricity grid is significantly higher than the US average, the assumption would be an even greater GHG reduction with the use of 100% biodiesel compared to EVs charged by an electricity grid that is currently only 30% powered by renewables.

Unfortunately, Hawaii is rushing to support electrification while ignoring the many environmental and economic benefits of biofuels. We cannot and should not sit back and wait for a 100% zero emission future. The State must get serious, soon, about requiring a lifecycle GHG reduction analysis on its “zero emission” strategies before Hawaii spends millions on electrification.

The further we move towards our goal of 100% renewable, the more critical firm energy like liquid biofuel sources will be. At Pacific Biodiesel's refinery on Hawaii Island, we produce 6 million gallons per year of premium distilled biodiesel – the equivalent of 220 MWh per DAY of 100% renewable energy for Hawaii. **But, building up the supply is a long process. We must accelerate implementation and support additional local production now to meet expanding demand in the future and to ensure that our firm energy needs can be met with firm renewable energy by 2045.**

Mahalo,

Sincerely,



Robert A. King, President
Pacific Biodiesel Technologies, LLC



Food+ Policy Internship 2024

food@purplemaia.org

February 12, 2024

To: Chairs Decoite and Gabbard, Vice Chairs Wakai and Richards, and honorable members of the Senate Committees on Energy, Economic Development, and Tourism and Agriculture and Environment

Subject: **Support of SB2675**

Hawaii Food+ Policy is in **support of bill SB2675**, collaborating the Hawai'i State Energy Office, the Department of Agriculture, and the Department of Land and Natural Resources to facilitate private sectors' development of renewable energy projects that also support agricultural food production. This will be critical in defeating hunger within the state while simultaneously supporting local farmers/food providers. Food digestion technologies such as anaerobic food digesters have become a popular, cost effective option for recycling food and green waste into renewable natural gas (captured as methane) and producing nutrient rich fertilizer, according to [RTS.com](https://www.rts.com). SB2675 will make room for further research, funding, and technical assistance from federal resources to achieve local renewable energy and food goals. Such an opportunity will reduce Hawaii's reliability on imports for energy and food, one of the many goals outlined in the Aloha+Challenge. Providing more locally provided foods will reduce the need for imports which will only get more expensive as the cost for gas and transportation of items globally will continue to increase. Hawai'i has tremendous potential to feed its citizens from its own lands and uplift them from hunger; this bill will be an advantageous tool in achieving this.

Food+Policy kindly asks that you **pass bill SB2675**.

Mahalo for your time,

Kawika Kahiapo + Hawaii Food+ Policy Team

The Food+ Policy internship develops student advocates who learn work skills while increasing civic engagement to become emerging leaders. We focus on good food systems policy because we see the importance and potential of the food system in combating climate change and increasing the health, equity, and resiliency of Hawai'i communities.

In 2024, the cohort of interns are undergrads and graduate students from throughout the UH System. They are a mix of traditional and nontraditional students, including parents and veterans, who have backgrounds in education, farming, public health, nutrition, and Hawaiian culture.



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February 13, 2024

HEARING BEFORE THE
SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM
SENATE COMMITTEE ON AGRICULTURE AND ENVIRONMENT

TESTIMONY ON SB 2675
RELATING TO RENEWABLE ENERGY AND FOOD SECURITY

Conference Room 229 & Videoconference
1:00 PM

Aloha Chairs DeCoite and Gabbard, Vice-Chairs Wakai and Richards, and Members of the Committees:

I am Brian Miyamoto, Executive Director of the Hawai'i Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,800 farm family members statewide and serves as Hawai'i's voice of agriculture to protect, advocate and advance the social, economic, and educational interests of our diverse agricultural community.

The Hawai'i Farm Bureau provides comments on SB 2675, which requires the Hawaii State Energy Office, in collaboration with the Department of Agriculture and Department of Land and Natural Resources, to facilitate the private sector's development of renewable energy projects that also support agricultural food production, establishes within the Hawaii State Energy Office a three-year Phytoremediation Biofuels Pilot Program to be conducted by the Hawaii State Energy Office in collaboration with the Department of Agriculture and Department of Land and Natural Resources and requires a report to the Governor and Legislature, and makes appropriations and establishes a position within the Hawaii State Energy office to serve as an interagency liaison.

Renewable energy is important to the State's energy goals. Agriculture can play a critical role in helping Hawai'i reach the goal of one hundred percent renewable energy by 2045, help to diversify Hawai'i's economy and agricultural sector, reduce greenhouse gas emissions, and reduce our dependence on imported oil.

HFB supports the production of dedicated energy crops, crop residues, and agricultural wastes into economically and environmentally sustainable biofuels and value-added by-products such as livestock feed. The renewable fuels production tax credit is an important incentive for the production of locally grown renewable fuels and supports the state's clean energy and carbon reduction goals.

Nationwide, there is an ongoing struggle between solar developers and farmers. Land that is best for solar installations is often land needed to grow crops or raise animals. The ideal tract of land for solar development is flat, dry, unshaded, close to transmission infrastructure and customers, accessible to installers and maintenance, and in an area with plenty of sunshine. All of these characteristics are associated with farmland. Prime farmland may be particularly attractive for solar development.

When a piece of land is developed for a solar installation, it is very unlikely to be reverted to agricultural land, even when the lease to a solar company eventually runs out. Flattening and compacting the land, as well as other changes, tend to ruin the land for future farming. Rising demand for solar energy could swallow up huge swaths of farmland as struggling farmers may be coerced into selling or leasing to these developments. This is because leasing land for solar development can be more profitable, per acre, than producing any crop. Furthermore, the consistent revenue stream from solar leases may be an attractive alternative to the typical risks that farmers take to produce food; i.e. insects, diseases, floods, drought, fickle market, transportation costs, etc.

Acknowledging this potential crisis, some states and counties have banned new solar developments on agricultural lands. Others have implemented strict policies such as tax penalties and permit hurdles to ensure no or minimal impact on farmland. In some states, the state Department of Agriculture must certify that the project will not materially affect the status of any prime farmland. California, the national leader in both solar production and crop sales, imposes an expensive conversion penalty for converting farmland to solar. California policy is to favor solar development on “land that is not valuable habitat, open space, or farmland.”

The Hawai'i Farm Bureau believes that renewable energy development on agricultural lands is allowed provided that the primary activity of the agricultural energy enterprise is agricultural activity.

Thank you for the opportunity to testify on this measure.

SB-2675

Submitted on: 2/9/2024 12:25:07 PM

Testimony for EET on 2/13/2024 1:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Jacqueline S. Ambrose	Individual	Support	Written Testimony Only

Comments:

Aloha,

RELATING TO RENEWABLE ENERGY AND FOOD SECURITY.

Requires the Hawaii State Energy Office, in collaboration with the Department of Agriculture and Department of Land and Natural Resources, to facilitate the private sector's development of renewable energy projects that also support agricultural food production.

Establishes within the Hawaii State Energy Office a three-year Phytoremediation Biofuels Pilot Program to be conducted by the Hawaii State Energy Office in collaboration with the Department of Agriculture and Department of Land and Natural Resources and requires a report to the Governor and Legislature.

Makes appropriations and establishes a position within the Hawaii State Energy office to serve as an interagency liaison.

SB-2675

Submitted on: 2/9/2024 4:18:17 PM

Testimony for EET on 2/13/2024 1:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Caroline Azelski	Individual	Support	Written Testimony Only

Comments:

In support of [SB2675](#). Thank you.

SB-2675

Submitted on: 2/10/2024 11:11:58 AM

Testimony for EET on 2/13/2024 1:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Regina Gregory	Individual	Support	Written Testimony Only

Comments:

support