

JOSH GREEN M.D.  
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STATE OF HAWAII  
DEPARTMENT OF TAXATION

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**TESTIMONY OF  
GARY S. SUGANUMA, DIRECTOR OF TAXATION**

**TESTIMONY ON THE FOLLOWING MEASURE:**

S.B. No. 3360, Relating to Renewable Fuel.

**BEFORE THE:**

Senate Committee on Energy, Economic Development, and Tourism

**DATE:** Tuesday, February 6, 2024

**TIME:** 1:01 p.m.

**LOCATION:** State Capitol, Room 229

Chair DeCoite, Vice-Chair Wakai, and Members of the Committee:

The Department of Taxation ("Department") offers the following comments regarding S.B. 3360 for your consideration.

S.B. 3360 makes significant changes to the Renewable Fuels Production Tax Credit (RFPTC) in section 235-110.32, Hawaii Revised Statutes (HRS). The bill increases the annual dollar amount that may be claimed from 20 cents to 35 cents per 76,000 British thermal units (BTUs) of renewable fuels produced and sold for distribution in the State, adds an additional \$1 to the credit amount per gallon of renewable fuels produced from renewable feedstock locally grown or recycled in the State, and adds another \$1 to the credit amount per gallon of renewable fuels produced with lifecycle greenhouse gas emissions at least 75 percent below that of fossil fuels. The bill also changes the per-taxpayer credit cap from a set amount of \$3,500,000 per taxable year to 75 percent of the total amount of RFPTC credits allowed in a taxable year, increases the credit's aggregate cap from \$20,000,000 to \$80,000,000 per taxable year and provides that if a taxpayer's credit is reduced because the aggregate cap is reached in a given tax year, the taxpayer may claim a credit for the amount of the reduction in the subsequent year.

Additionally, S.B. 3660 extends the time period during which the RFPTC may be claimed by a taxpayer by amending the definition of "credit period" from 10 to 20 consecutive years and provides that any taxpayer that previously claimed RFPTC credits would be reset for tax years beginning after December 31, 2023. The measure also extends the Hawaii State Energy Office's (HSEO) deadline to issue certificates from 30 to 60 days after the taxpayer's statement is due, and adds a new requirement for HSEO to determine whether the lifecycle greenhouse gas emissions for each type of qualified fuel produced by the taxpayer is under 75 percent lower than the lifecycle greenhouse gas emissions of fossil fuels. The bill also adds definitions for "lifecycle greenhouse gas emissions" and "locally grown". S.B. 3660 is effective upon approval and would apply to taxable years beginning after December 31, 2023.

The Department defers to HSEO regarding its ability to certify the RFPTC with these proposed changes, but requests that these certification requirements be maintained. The Department does not have the subject-matter expertise in renewable energy necessary to certify these credits, nor does it have the administrative capability to track aggregate caps.

The Department further notes that the measure's amendment to section 235-110.32(a) at page 4, lines 4-6, which provides that "any taxpayer who previously claimed credits under this chapter shall be reset for tax years beginning after December 31, 2023," is ambiguous. If the intent of this provision is to allow taxpayers who previously claimed the RFPTC credit to be eligible to claim the RFPTC credit for a single 20-year period beginning in tax year 2024, the Department suggests amending the provision to read as follows:

Each taxpayer, together with all of its related entities as determined under section 267(b) of the Internal Revenue Code and all business entities under common control, as determined under sections 414(b), 414(c), and 1563(a) of the Internal Revenue Code, shall not be eligible for more than a single [~~ten-year~~] credit period[-]; provided that for taxable years beginning after December 31, 2023, a taxpayer may be eligible to claim the credit for a single credit period notwithstanding any claim made by the taxpayer for the credit under this section for taxable years beginning before January 1, 2024.

Thank you for the opportunity to provide comments on this measure.



**TESTIMONY OF  
THE DEPARTMENT OF THE ATTORNEY GENERAL  
KA 'OIHANA O KA LOIO KUHINA  
THIRTY-SECOND LEGISLATURE, 2024**

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**ON THE FOLLOWING MEASURE:**

S.B. NO. 3360, RELATING TO RENEWABLE FUEL.

**BEFORE THE:**

SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM

**DATE:** Tuesday, February 6, 2024      **TIME:** 1:01 p.m.

**LOCATION:** State Capitol, Room 229 and Videoconference

**TESTIFIER(S):** Anne E. Lopez, Attorney General, or  
Winston I. Wong, Deputy Attorney General

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Chair DeCoite and Members of the Committee:

The Department of the Attorney General provides the following comments regarding this bill.

This bill proposes to update the renewable fuels production tax credit established by section 235-110.32, Hawaii Revised Statutes, to incentivize locally grown, produced, generated, or collected renewable fuel.

Taxpayers who produce renewable fuels are provided an additional credit value of \$1 per gallon for renewable fuels “produced from renewable feedstock locally grown or recycled.” Page 3, lines 7 through 10 (emphasis added). “Locally grown” is defined as “renewable feedstock that is grown, produced, generated, or collected in the State.” Page 6, lines 10 through 11.

This bill could be subject to challenge as violating the Commerce Clause of the United States Constitution, which provides that Congress shall have the power to “regulate Commerce . . . among the several States.” U.S. Const. art. I, § 8, cl. 3. “Though phrased as a grant of regulatory power to Congress, the Clause has long been understood to have a 'negative' aspect that denies the States the power unjustifiably to discriminate against or burden the interstate flow of articles in commerce.” *Or. Waste Sys., Inc. v. Dep’t of Env’tl. Quality*, 511 U.S. 93, 98 (1994). This negative aspect of the Commerce Clause is known as the Dormant Commerce Clause; this doctrine prohibits states from “advancing their own commercial interests by curtailing the movement of

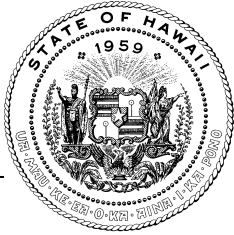
articles of commerce, either into or out of the state," *Fort Gratiot Sanitary Landfill, Inc. v. Mich. Dep't of Nat. Res.*, 504 U.S. 353, 359 (1992) (internal brackets omitted), to address "economic protectionism," i.e., "regulatory measures designed to benefit in-state economic interests by burdening out-of-state competitors." *Dep't of Revenue of Ky. v. Davis*, 553 U.S. 328, 337 (2008).

A tax credit may violate the Dormant Commerce Clause if it is "facially discriminatory, discriminatory in effect, or discriminatory in purpose." See *DIRECTV v. Utah State Tax Comm'n*, 364 P.3d 1036, 1040 (Utah 2015). For example, in *Bacchus Imports Ltd. v. Dias*, 468 U.S. 263 (1984), the United States Supreme Court struck down an exemption from the liquor tax for sales of okolehau and fruit wine brewed in Hawaii from locally grown products upon finding that the exemption bestowed a commercial advantage on locally produced products; see also *New Energy Co. of Ind. v. Limbach*, 486 U.S. 269 (1988) (holding that ethanol tax credit for each gallon of ethanol sold, but only if ethanol produced in Ohio, violated Dormant Commerce Clause).

Similar to the situation in *Bacchus Imports*, the proposed tax credit may be challenged under the Commerce Clause because it could be construed by a court as bestowing a commercial advantage on products using "locally grown" feedstock insofar as the credit encourages and incentivizes the purchase and use of such products versus products manufactured with the same ingredients grown outside of the State.

Based on the foregoing, we respectfully ask that these concerns be addressed. Accordingly, we recommend deleting the following: (1) in section 1 of the bill, page 1, lines 13-14, the phrase "locally sourced firm"; (2) also in section 1, page 2, line 3, the phrase "locally sourced firm"; and lines 6-7, "to incentivize locally grown, produced, generated, or collected renewable fuel"; (3) in section 235-110.32(a), HRS, as amended by section 2(1) of the bill, the wording on page 3, line 7, from the word "provided" up to the word "State" on line 10; and (4) in section 235-110.32(o), HRS, as amended by section 2(4) of the bill, page 6, lines 10-11, the definition of "locally grown" feedstock. These changes would resolve the Department's constitutional concerns.

Thank you for the opportunity to provide comments.



# HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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Testimony of  
**MARK B. GLICK, Chief Energy Officer**

before the  
**SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM**

Tuesday, February 6, 2024  
1:01 PM  
State Capitol, Conference Room 229 and Videoconference

Providing Comments on  
**SB 3360**

**RELATING TO RENEWABLE FUEL.**

Chair DeCoite, Vice Chair Wakai, and Members of the Committees, the Hawai'i State Energy Office (HSEO) provides comments on SB 3360, which 1) updates the Renewable Fuels Production Tax Credit (RFPTC) to incentivize locally grown, produced, generated, or collected renewable fuel; 2) extends the credit period from ten to twenty consecutive years; and 3) increases the total amount of tax credits allowed to \$80,000,000 in any calendar year.

HSEO's comments are guided by its mission to promote energy efficiency, renewable energy, and clean transportation to help achieve a resilient, clean energy, decarbonized economy.

HSEO appreciates the intent of the proposal to expand the RFPTC, which is a significant financial incentive for renewable fuel producers and contributes to achieving greater energy security for Hawai'i. HSEO recommended in the recent HSEO Act 238 Report the following actions to improve the efficacy of the RFPTC: 1) requiring renewable fuel to meet an established lifecycle carbon intensity threshold; 2) lowering the production minimum to allow for smaller renewable fuels producers to take advantage of the tax credit; and 3) removing or extending the 10-year eligibility limit as

desirable means to expand the RFPTC.<sup>1</sup> HSEO appreciates that the recommendations of the Act 238 report are reflected in this bill.

HSEO recommends the following changes SB 3360, distinguished in **bold**.

Rationale for each change is provided below:

Section 2. Item 1 (a)

For each taxpayer producing renewable fuels, the annual dollar amount of the renewable fuels production tax credit during the [~~ten-year~~] credit period shall [~~be~~] include an amount equal to **20 ~~35~~** cents per seventy-six thousand British thermal units of renewable fuels using the lower heating value sold for distribution in the State; provided that the taxpayer's production of renewable fuels is not less than ~~two~~ **one** billion five hundred million British thermal units lower heating value of renewable fuels per calendar year; provided further that there shall be an additional credit value of ~~\$1.00 per gallon-15 cents per seventy-six thousand British thermal units of renewable fuels using the lower heating value~~ for renewable fuels produced from renewable feedstock locally grown or recycled in the State; ~~provided further that there shall be an additional credit of \$1.00 per gallon for renewable fuels produced with lifecycle greenhouse gas emissions at least seventy-five per cent below that of the fossil fuels;~~ provided further that the tax credit shall only be claimed for fuels with lifecycle emissions at least seventy-five per cent below that of fossil fuels in which the renewable fuel is most likely to replace.

HSEO suggests lowering the threshold of the RFPTC to support smaller producers of renewable fuel who may not meet the production threshold of 2.5 billion British thermal units using the lower heating value. This was a recommendation also discussed in the Act 238 report.<sup>2</sup> While HSEO supports increasing the credit for renewable fuels producers, HSEO believes the current credit amount of 20 cents per

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<sup>1</sup> Hawai'i State Energy Office (2023). Hawai'i Pathways to Decarbonization, Act 238 Report to the 2024 Hawai'i State Legislature (Act 238 Report). (Page 11)

<sup>2</sup> Hawai'i Pathways to Decarbonization Act 238 (SLH 2022) Report to the 2024 Hawai'i State Legislature (p.99). [https://energy.hawaii.gov/wp-content/uploads/2024/01/Act-238\\_HSEO\\_Decarbonization\\_Report.pdf](https://energy.hawaii.gov/wp-content/uploads/2024/01/Act-238_HSEO_Decarbonization_Report.pdf)

76,000 Btu using lower heating value (LHV) is adequate to incentivize the production of renewable fuels with imported feedstock and the additional credit of 15 cents per 76,000 Btu LHV may be best suited for fuels produced using local feedstock.

Further, HSEO recommends consistent units of energy be used for the tax credit, as gallons may not be the most appropriate for certain fuel types, such as natural gas which is more commonly measured in units of volume. Accordingly, the use of the British thermal unit (btu) derived using the lower heating value is an appropriate metric to compare energy sources, or fuels, on an equal basis, and consistency allows for easier accounting and verification.

Relating to subsection (d) amendments, HSEO recommends the following changes, distinguished in **bold**:

"(d) Within [~~thirty~~] sixty calendar days after the due date of the statement required under subsection (c), the Hawaii state energy office shall:

(1) Acknowledge, in writing, receipt of the statement;

(2) Issue a certificate to the taxpayer reporting the amount of renewable fuels produced and sold, the amount of credit that the taxpayer is entitled to claim for the previous calendar year, and the cumulative amount of the tax credit during the credit period; and

(3) Provide the taxpayer with a determination of whether the lifecycle greenhouse gas emissions for each type of qualified fuel produced is lower than that of fossil fuels[-] and whether the lifecycle greenhouse gas emissions for each type of qualified fuel produced is seventy-five per cent lower than that of the **fossil fuel in which the renewable fuel is most likely to replace.**"

HSEO suggests specifying the comparative fossil fuel be the fossil fuel in which the renewable fuel is most likely to replace. HSEO believes this clarification is needed as different fossil fuels exhibit different carbon intensities.

"Lifecycle greenhouse gas emissions" means the aggregate attributional core lifecycle greenhouse gas emissions values

including upstream emissions, midstream emissions, transportation emissions, and generation or operational emissions. utilizing the most recent version of Argonne National Laboratory's Greenhouse gasses, Regulated Emissions, and Energy use in Technologies (GREET) Model, inclusive of agricultural practices and carbon capture sequestration.

Regarding requiring the use of the GREET model, HSEO advises that while HSEO uses the GREET model to verify the emissions analysis after submittal and has included reference to the model in its guidance documents for the credit, the GREET model may not be the best accounting tool to capture lifecycle emissions in certain circumstances. For example, there are occasions when renewable fuels producers may have completed a more individualized and comprehensive GHG analysis and submitted it to another regulatory agency for fuel contracts to the utility.

Finally, guidance from the Environmental Protection Agency (EPA) renewable fuels program suggests that sequestration activities, unrelated to the production of the fuels, not be included in the lifecycle analysis.<sup>3</sup> The lifecycle assessment of fuel production should not include activities that are unrelated to the fuel lifecycle (e.g., offset projects) or emissions associated with physical and organizational infrastructure (e.g., facility construction, employees commuting to the facility). Accordingly, HSEO recommends only onsite sequestration activities directly related to the production of the fuels, e.g. soil amendments and climate-smart agricultural practices be included in the emissions analysis. These activities would automatically be included in the upstream emissions analysis, therefore HSEO recommends removing language referencing carbon capture sequestration to avoid potential misinterpretation.

Thank you for the opportunity to testify.

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<sup>3</sup> US Environmental Protection Agency (2023). Lifecycle Analysis of Greenhouse Gas Emissions under the Renewable Fuel Standard. Available at: <https://www.epa.gov/renewable-fuel-standard-program/lifecycle-analysis-greenhouse-gas-emissions-under-renewable-fuel#:~:text=The%20EPA's%20assessment%20of%20fuel,employees%20commuting%20to%20the%20facility>).





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February 5, 2024

TESTIMONY ON SB 3360, RELATING TO RENEWABLE FUEL

SUPPORT

Senator Lynn DeCoite, Chair  
Senator Glenn Wakai, Vice Chair  
Committee on Energy, Economic Development, and Tourism  
Hearing: February 6, 2024, at 1:01 PM, Conf Room 229

Aloha Chair DeCoite, Vice Chair Wakai, and Members of the Committee,

Pacific Biodiesel supports SB 3360 which updates the renewable fuels production tax credit and incentives increased production of firm renewable energy.

The bill has widespread support from:

- (1) Farmers who will benefit from incentives for locally grown cover crops used to produce 2<sup>nd</sup> Generation Biofuels.
- (2) Environmentalists that understand 2<sup>nd</sup> Generation Advanced Biodiesel reduces greenhouse gas emissions by 85% compared to its fossil fuel equivalent.
- (3) Public Utilities that require more firm renewable energy to meet the 100% renewable energy mandate by 2045.
- (4) Biofuel Producers that are ready to make new investments to increase production that require long term planning and financing.

## I. Bill highlights.

- A. New investments are needed to incentivize existing producers 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 the renewable fuels production tax credit succeeded in promoting local investments in cleaner fuels and moving us closer to energy independence and security. Continuing this credit sends the correct signal for new and continued investments in this firm renewable energy.
  - Amends Subsection 235-110.32(a), Hawaii Revised Statutes, to raise the tax credit from 20 cents to 35 cents per seventy-six thousand British thermal units of renewable fuels using the lower heating value sold for distribution in the State.
  - Amends Subsection 235-110.32(f), Hawaii Revised Statutes, to raise the total amount of tax credits allowed under this section from \$20,000,000 to \$80,000,000.

*renewable • sustainable • community-based*

- Amend Subsection 235-110.32(a), Hawaii Revised Statutes, to provided that taxpayers who have previously claimed credits under this chapter shall be reset for tax years beginning after December 31, 2023.
  
- B. We believe that increased incentives must be justified by increased benefits to the State. Therefore, we support the creation of a tiered system of tax credits that incentivizes: 1) renewable fuels produced from renewable feedstock **locally grown or recycled in the State of Hawaii** and 2) renewable fuels produced with lifecycle greenhouse gas emissions at least **75% below that of fossil fuels**.
  - Amends Subsection 235-110.32(a), Hawaii Revised Statutes, to provide an additional credit value of \$1.00 per gallon for renewable fuels produced from renewable feedstock locally grown or recycled in the State of Hawaii.
  - Amends Subsection 235-110.32(a), Hawaii Revised Statutes, to provide an additional credit value of \$1.00 per gallon for renewable fuels produced with lifecycle greenhouse gas emissions at least 75 per cent below that of fossil fuels.
  
- C. A 20-year plan ensures that Hawaii’s firm energy needs can be met with firm renewable energy by 2045. To ensure sustainable inventories of locally sourced firm renewable energy for electric utility companies' renewable portfolio standards, long term planning that includes incentives, are essential for investment and development of locally sourced firm, renewable energy production. With twenty years remaining to reach the mandate that one hundred percent of our electricity be generated by renewable sources of energy by 2045, **we must update the renewable fuels production tax credit with a 20-year plan to ensure that our firm energy needs can be met with renewable firm energy by 2045.** The Hawaii State Energy Office agrees that the 10-year period should be expanded to 20 years or removed entirely.
  - Amend Subsection 235-110.32(o), Hawaii Revised Statutes, to define the credit period as twenty consecutive years instead of ten consecutive years.
  
- D. The individual cap should be raised to encourage increased production while also protecting smaller producers.
  - Amend Subsection 235-110.32(a), Hawaii Revised Statutes, to change the individual tax credit limit from \$3,500,000 to 75% of the total tax credit amount.

## **II. Response to issues raised by the Attorney General in previous testimony regarding locally grown feedstock.**

- A. Growing biofuel feedstocks locally is widely supported by farmers because it helps to create new agricultural jobs, encourages healthier soils resulting in increased food production, and does not compete with food crops when using oil seed cover crops. The proposed tax incentives for local renewable fuel production are not just an economic stimulus package; they represent a strategic investment in Hawaii’s future.
  
- B. We appreciate the Attorney General’s concern regarding incentives related to local feedstock and the commerce clause. However, we believe the proposed law could stand up to the increased scrutiny due to health and safety concerns related to the climate

crisis this bill seeks to address. The history of commerce clause jurisprudence evidences a distinct difference in approach where the state is seeking to exercise its public health and safety powers, on the one hand, as opposed to attempting to regulate the flow of commerce. Hawaii has well established health and safety concerns related to sea level rise, ozone layer depletion, and global warming.

- C. The unique combination of Hawaii’s energy vulnerability, limited renewable options, and the minimal impact of the tax credit on interstate commerce, coupled with its substantial local benefits and alignment with national goals, also provides a compelling case for upholding its legality under the Commerce Clause. (see testimony from Pono Pacific who analyze the commerce clause issue thoroughly).
- D. A simple solution to the Attorney General’s concern may be to expressly mention these concerns as a justification for the bill.

### **III. Major investments are needed in firm renewable energy to meet Hawaii’s mandate to reach 100% renewable energy by 2045.**

- A. 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 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.
- B. Speaking for the liquid biofuels industry, it is well known that the cost to move from 70% to 100% renewables will be extremely expensive using any other technology. Biodiesel can cost effectively optimize battery sizing by providing firm renewable power, quickly dispatched at any time. Fast-start, efficient diesel engines – when fueled with clean biodiesel – are enabling higher penetration of intermittent PV and wind assets while maintaining grid stability. 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.

- C. 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.

Our locally produced 2<sup>nd</sup> Generation biodiesel is produced from recycled used cooking oil from Hawaii and recycled used cooking oil from the mainland. Increasing production using locally grown or recycled feedstock is our goal, and that goal is becoming reality at our new project on Kauai. Pacific Biodiesel and other companies need this incentive to increase local production with from local feedstock over the next 20 years. That is how we achieve energy independence.

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



February 6, 2024

**TESTIMONY IN SUPPORT WITH AMENDMENTS ON SB 3360  
RELATING TO RENEWABLE FUELS**

Senate Committee on Energy, Economic Development, and Tourism (EET)  
The Honorable Lynn DeCoite, Chair  
The Honorable Glenn Wakai, Vice Chair

February 6, 2024, 1:01 PM  
House Conference Room 229  
Hawaii State Capitol 415 South Beretania Street

Chair DeCoite, Vice Chair Wakai, and members of the Committee,

Thank you for the opportunity to provide testimony in **support with amendments** of SB 3360, Relating to Renewable Fuels.

This measure is similar to SB 2574 which establish incentives for local production of renewable fuels in Hawaii including Sustainable Aviation Fuel (SAF).

Transportation emissions account for over 50% of Hawaii's GHG emissions.<sup>1</sup> Electrifying the vehicle fleet will reduce emissions as the electric grid becomes greener. However, there are limited options available to address emissions with trucks and other heavy-duty vehicles. The aviation sector faces particular challenges.

States on the US West Coast have started to address these challenges by introducing incentives for the use of low carbon fuels. In California, as reported by the California Air Resources Board, over 50% of diesel demand is now met by Renewable Diesel (RD). RD is a low-carbon fuel produced by processing used cooking oil, animal fats and vegetable oils. Similarly, there are small but growing volumes of renewable fuels for the aviation sector. This product is called Sustainable Aviation Fuel (SAF), and it is produced in a similar process and from the same feedstocks as RD<sup>2</sup>.

These liquid renewable fuels are critical to meeting Hawaii's clean energy goals. This was a key finding in the recent Act 238 Hawaii Decarbonization Pathway Study which calls for

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<sup>1</sup> [https://health.hawaii.gov/cab/files/2023/05/2005-2018-2019-Inventory\\_Final-Report\\_rev2.pdf](https://health.hawaii.gov/cab/files/2023/05/2005-2018-2019-Inventory_Final-Report_rev2.pdf) (Pages 26-27 document Transportation sector emissions of 10.68 MT of CO2 equivalent in the most recent reporting period of 2019. Total net emissions were 19.42 MT CO2 equivalent.)

<sup>2</sup> RD and SAF are produced from the same feedstocks as biodiesel but have superior properties including serving as drop-in replacements for traditional diesel and jet fuel.

RD and SAF to be a significant part of Hawaii's fuel supply beginning later this decade.<sup>3</sup> See the chart in Appendix A.

The good news is that Hawaii companies are stepping up to meet the need for these fuels. However, the cost to produce these fuels is significantly higher than the cost of fossil fuels, and additional financial incentives are required to initiate and sustain the production of these fuels. States on the US West Coast have had success in bringing renewable fuels to the market, but it has required state-level financial incentives of up to \$1.00-2.00 per gallon. Without action, these desirable renewable fuels will be produced and delivered to other markets including the West Coast.

Together with Hawaiian Airlines and Pono Pacific, a Hawaii-based land conservation and management company, and with input from a broad range of stakeholders, we developed a proposal that became SB 2574 to foster the production of renewable fuel in Hawaii. SB 2574 would have significantly expanded the existing Hawaii renewable fuels production tax credit to provide the incentives needed to bring these fuels to market in Hawaii.

**While SB 2574 has many elements that support local production of renewable fuels, it should be amended to address several important items:**

1. Aviation fuel is approximately 40% of Hawaii's total fuel demand, and its single largest segment. The Act 238 report identified a large need for SAF. However, SAF will not be economically available in Hawaii without additional incentives, because SAF costs more to produce than biodiesel or RD. We strongly recommend an additional incentive of \$1.00 per gallon to bridge the production costs of SAF, as proposed in HB 2296 and clarify that eligible fuel must be produced and sold in Hawaii.

We offer for your consideration amendments on pages 2-5.

For each taxpayer producing renewable fuels, the annual dollar amount of the renewable fuels production tax credit during the [~~ten-year~~] credit period shall [~~be~~] include an amount equal to [~~20~~] 35 cents per seventy-six thousand British thermal units of renewable fuels using the lower heating value produced and sold for distribution in the State; provided that the taxpayer's production of renewable fuels is not less than two billion five hundred million British thermal units of renewable fuels per calendar year; provided further that the amount of the tax credit claimed under this section by a taxpayer shall not exceed [~~\$3,500,000~~] seventy-five per cent of the total amount of tax credits allowed under this section per taxable year; provided further that there shall be an additional credit value of \$1.00 per gallon for renewable fuels produced from renewable feedstock

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<sup>3</sup> <https://energy.hawaii.gov/what-we-do/clean-energy-vision/decarbonization-strategy/>

locally grown or recycled in the State; [renewable fuels produced with lifecycle greenhouse gas emissions at least seventy five per cent below that of fossil fuels] provided further that there shall be an additional credit of \$1.00 per gallon for the production of sustainable aviation fuel as defined in section 235-110.32; provided further that the tax credit shall only be claimed for fuels with lifecycle emissions below that of fossil fuels. No other tax credit may be claimed under this chapter for the costs incurred to produce the renewable fuels that are used to properly claim a tax credit under this section for the taxable year.

2. The current law is unclear on what happens when the annual aggregate cap is reached. Part (f) instructs the State Energy Office to cease issuing credit certificates once the annual aggregate cap is reached. Rather than a creating a “first come, first served” scenario, Section 235-110.32, (f) should be amended to make it clear that credits will be allocated proportionally if the credits in a given year exceed the annual cap.

We offer language to clarify that credits will be allocated proportionally if the credits in a given year exceed the annual cap on page 5, lines 5-17.

"(f) The total amount of tax credits allowed under this section shall not exceed [~~\$20,000,000~~] \$80,000,000 for all eligible taxpayers in any calendar year. In the event that the credit claims under this section exceed [~~\$20,000,000~~] \$80,000,000 for all eligible taxpayers in any given calendar year, the [~~\$20,000,000~~] \$80,000,000 shall be [~~divided between all~~] allocated proportionally to each eligible taxpayers for that year in proportion to the total amount of renewable fuels produced by all eligible taxpayers. [~~Upon reaching [~~\$20,000,000~~] \$80,000,000 in the aggregate, the Hawaii state energy office shall immediately discontinue issuing certificates and notify the department of taxation.~~] In no instance shall the total dollar amount of certificates issued exceed [~~\$20,000,000~~] \$80,000,000 per calendar year."

Mahalo for allowing Par Hawaii to share our comments in support of SB 3360.

## Act 238 Hawaii Decarbonization Pathway Study

- December 2023 Act 238 Pathways to Decarbonization Study modeled 3 scenarios
- **Study finds that renewable liquid fuels are critical to Hawaii reaching its decarbonization goals**
- Recommends an expansion of renewable fuels production tax credit

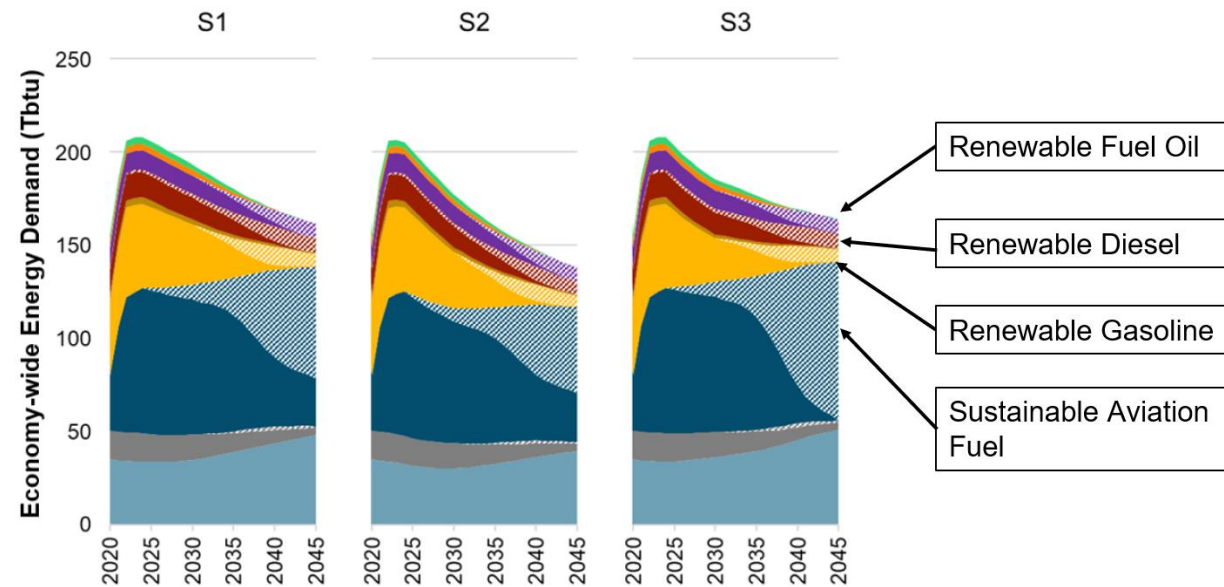


Figure 54 Economywide energy demand from 2020 through 2045 (excludes fuels combusted for electricity generation)





February 6, 2024

**TESTIMONY ON SB 3360  
RELATING TO RENEWABLE FUEL**

Senate Committee on Energy, Economic Development, and Tourism  
The Honorable Lynn DeCoite, Chair  
The Honorable Glenn Wakai, Vice Chair

February 6, 2024, 1:01pm  
Conference Room 229  
State Capitol 415 South Beretania Street

Chair DeCoite, Vice Chair Wakai, and members of the Committee,

Thank you for the opportunity to provide comments on SB 3360, Relating to Renewable Fuel.

This bill expands on the renewable fuels production tax credit with a higher base credit value, incremental value for locally produced or recycled feedstock, incremental value if the lifecycle emissions intensity of the renewable fuel achieves a 75 percent reduction compared to conventional fuels, the elimination of the restrictive \$3.5 million cap per producer, and a significant increase to the annual cap for the program. While we are supportive of these changes, we believe the bill should be amended to address several items, the most important of which is the need to provide incremental value for sustainable aviation fuel (SAF) compared to renewable diesel (RD), in order to close the relative margin gap between RD and SAF. Without this incremental value, producers will not have incentive to produce SAF, and there is risk that aviation emissions, which comprise approximately half of Hawaii's transportation emissions, will not be addressed with this tax credit.

Aviation emissions represent a very small part of overall global carbon emissions. Nonetheless, aviation represents a higher proportion of Hawaii's fossil fuel usage, given our unique dependence on air transportation and relatively limited utilization of road fuel. Within Hawaii, it is worth noting that aviation fuel usage is driven predominantly (estimated about 90%) by long-haul travel; with its short flight distances, the intrastate flying on which our community depends drives relatively little fuel consumption. In order to address the existential threat of human-caused climate change, airlines in the U.S. have all committed to reach net-zero in the decades to come.

Sustainable aviation fuel (SAF) is widely viewed as the most promising technology to advance aviation decarbonization. The U.S. airline industry has pledged to work with government leaders and other stakeholders to make 3 billion gallons of cost-competitive SAF available to U.S. aircraft operators in 2030. SAF is a drop-in fuel, meaning that it works with existing aircraft engines, pipelines, and storage infrastructure, as long as it is blended up to 50% with conventional jet fuel. SAF can bring meaningful reductions in aviation carbon emissions, with lifecycle emissions intensity up to 50 to 80% lower than conventional jet fuel.

While SB 3360 has many elements that support local production of renewable fuels, it should be amended to address several important items:



- Include additional value of \$1.00 per gallon if the renewable fuel is SAF. This is needed in order to 'level the playing field' between SAF and renewable diesel (RD). SAF is currently inherently less profitable for producers than RD for a number of reasons: RD has a higher physical fuel value, higher yield, lower infrastructure costs and more revenue from certain federal programs. For these reasons, additional value is needed for SAF in order to ensure some production volume is allocated to SAF.
- Include a lifecycle greenhouse gas emissions intensity reduction threshold that must be met in order to qualify for the tax credit. While the bill provides for additional value if the lifecycle emissions intensity achieves a 75 percent reduction, the base credit value can be obtained as long as the fuel has 'lifecycle emissions below that of fossil fuels.' We believe the base value should only be available if the carbon intensity meets an acceptable threshold.
- Modify "first come, first served" mechanism to a pro-rated model to enable more equitable distribution of the credit among multiple producers/importers.
- While we understand the current State budget realities, we believe the aggregate annual cap should be \$100 million. This higher amount will encourage more supply and bring Hawaii closer to its renewable energy goals. If necessary, the higher cap could be phased in over 2-3 years.

Without these modifications, there is reasonable concern that the bill as proposed will not drive the incremental production, importation and uptake of biofuels needed to materially contribute to the state's decarbonization goals.

Mahalo,

Alanna James  
Managing Director, Sustainability Initiatives  
Hawaiian Airlines

**SB-3360**

Submitted on: 2/5/2024 12:32:58 PM

Testimony for EET on 2/6/2024 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jolie Ryff	Individual	Oppose	In Person

Comments:

The Hawaii Clean Power Task Force opposes SB3360. While the notion of promoting locally manufactured or generated renewable fuel appears promising at first glance, our apprehension lies in the specifics outlined in the bill's definition of "renewable feedstocks," which incorporates biomass and municipal solid wastes. It doesn't matter whether its "biofuels" or waste-based fuels, burnable fuels are not clean or sustainable and certainly are not a long-term option. Transitioning to different burnable fuels in air travel is a false solution.

The incentive, in part, based on evaluating fuels with regard to their "aggregate attributional core lifecycle greenhouse gas emissions." Greenhouse gas (GHG) accounting suffers from various flaws and biases, resulting in the assumption of "carbon neutrality" for plant-based (biomass/biofuels) and waste-based feedstocks.

There is an array of experimental incinerator-like technologies that aim to convert waste into fuels. These waste-to-fuels (WTF) technologies usually start with pyrolysis or gasification – technologies that, when the resulting gases are burned, are defined and regulated by EPA as municipal waste combustors (waste incinerators). Additionally, when fuels are burned off-site in land vehicles or for air travel, they are not subject to the sorts of air pollution controls that can be applied to a centralized facility with a single smokestack.

These technologies often struggle to reach commercial scale and are typically confined to unregulated pilot projects at a garage scale that rarely progress. There are four distinct methods for biofuel production. Among the approved aviation biofuels, three out of the four do not seem technically and economically feasible with current knowledge and technological advancements. The only mature technology for producing aviation biofuels is hydrotreating of vegetable oils and animal fats (HVO), a method that has not yet seen approval by the international standards organization, ASTM (American Society for Testing and Materials).

Recognizing the potential for this type of aviation fuel to establish a new market for vegetable oils, there is a concern that this legislation may inadvertently encourage Hawaii's agricultural sector to shift its much-needed focus from local food production to the production of renewable fuel using crops grown in Hawaii. We know that Hawaii currently imports the majority of its food leaving the islands particularly vulnerable to economic disruptions. The state's Aloha+ Challenge reports that local food production is on a downward trend, suggesting the need for considerable improvement before the 2030 deadline, which highlights a commitment to doubling local food production for local consumption. The concern arises from the potential shift in focus within the agricultural sector. The fear is that the appeal of the growing renewable fuel market

might draw resources away from cultivating crops for local consumption, exacerbating the existing challenges in achieving self-sufficiency. There is argument that biofuel feedstocks do not compete with food crops when using seed oil cover crops, but maximum environmental benefit from cover crops comes when the biomass is not harvested. Thus, missed opportunities for ecosystem services must be considered

Furthermore, lessons from the past, such as the international food price rise of 2007/08, should not be ignored. In 2011, experts warned about the unintended consequences of biofuel support policies in the United States and the European Union, which contributed to a demand shock and played a significant role in the escalation of global food prices. This historical context suggests the importance of carefully considering the potential impacts of legislation promoting renewable aviation fuel, especially in an agricultural landscape as unique and sensitive as Hawaii's.

Many other impacts would also need to be evaluated, such as the use of genetically modified crops (usually accompanied by increased use of toxic herbicides), soil depletion, and excessive use of freshwater resources that Hawaii cannot afford. Additionally, biomass resources in Hawaii and Tropical Regions remain understudied. There is generally insufficient information in the open literature detailing their performance and behavior undergoing conversion processes relevant to alternative jet fuel production.

Because burnable fuels are not long-term sustainable options, they are often called “transition” fuels. These transitional fuels come with distinct infrastructure and economic implications that impede the shift towards cleaner alternatives in the future. Investing in these interim fuels represents an economic dead-end, necessitating another transition later on, thereby consuming valuable time and resources that could be better allocated to proper transitions in other energy sectors. The Clean Power Task Force strongly advises a reevaluation of the proposed allocation of \$80 million per year for subsidizing “renewable fuels,” as suggested by this bill. It is recommended that these funds be redirected toward investments in alternative energy for more effective utilization.

# TAX FOUNDATION OF HAWAII

126 Queen Street, Suite 305

Honolulu, Hawaii 96813 Tel. 536-4587

BSUBJECT: INCOME TAX, Renewable Fuels Production Tax Credit Enhancement

BILL NUMBER: HB 2767, SB 3360

INTRODUCED BY: HB COCHRAN; SB by DECOITE

EXECUTIVE SUMMARY: Updates the Renewable Fuels Production Tax Credit to incentivize locally grown, produced, generated, or collected renewable fuel. Extends the credit period from ten to twenty consecutive years. Increases the total amount of tax credits allowed to \$80,000,000 in any calendar year.

SYNOPSIS: Amends section 235-110.32, HRS, to raise the credit from 20 to 35 cents per 76,000 BTU of renewable fuels produced and sold for distribution in the State. Removes the \$3.5 million aggregate cap on the credit but specifies that the credit awarded to any one taxpayer shall not exceed 75% of the total amount of credits awarded in the year. Adds a \$1 per gallon credit for renewable fuels produced from locally sourced renewable feedstock. Adds a \$1 per gallon credit for production of renewable fuels produced with lifecycle greenhouse gas emissions at least seventy-five per cent below that of fossil fuels. Increases the time within which the Hawaii State Energy Office is given to respond to a request for certification from 30 to 60 days. Raises the aggregate credit cap from \$20 million to \$80 million. Increases the credit period from 10 to 20 consecutive years.

Adds a definition of “lifecycle greenhouse gas emissions” as the aggregate attributional core lifecycle greenhouse gas emissions values utilizing the most recent version of Argonne National Laboratory's Greenhouse gasses, Regulated Emissions, and Energy use in Technologies (GREET) Model, inclusive of agricultural practices and carbon capture sequestration.

Adds a definition of “locally grown” as renewable feedstock that is grown, produced, generated, or collected in the State.

EFFECTIVE DATE: Upon approval; applicable to taxable years beginning after December 31, 2023.

STAFF COMMENTS: Act 202, SLH 2016, enacted a renewable energy production credit with a five-year life. The credit sunset on December 31, 2021. The credit was revived by Act 16, SLH 2022 with an aggregate cap of \$20 million.

While the idea of providing a tax credit to encourage such activities may have been acceptable a few years ago when the economy was on a roll and advocates could point to credits like those to encourage construction and renovation activities, what lawmakers and administrators have learned in these past few years is that unbridled tax incentives, where there is no accountability or limits on how much in credits can be claimed, are irresponsible as the cost of these credits goes far beyond what was ever intended. Instead, lawmakers should encourage alternative energy

production through the appropriation of a specific number of taxpayer dollars. The State could directly purchase energy, or it could give a subsidy to developers. Then, lawmakers would have a better idea of what is being funded and hold the developers of these alternate forms of energy to a deliberate timetable or else lose the funds altogether. A direct appropriation would be preferable to the tax credit as it would: (1) provide some accountability for the taxpayers' funds being utilized to support this effort; and (2) not be a blank check.

There is also a constitutional issue. The bill applies an additional credit for fuel from "locally grown" feedstock which is defined as grown, produced, generated, or collected in the State. This restriction could be unconstitutional under the Commerce Clause of the Constitution because the same preferential tax treatment is not allowed for competing products from other States. *See In re Hawaiian Flour Mills, Inc.*, 76 Haw. 1, 868 P.2d 419 (1994); *Bacchus Imports, Inc. v. Dias*, 468 U.S. 263 (1984); Hawaii Tax Information Release No. 93-4. In *Hawaiian Flour Mills*, the Hawaii Supreme Court determined that a general excise tax exclusion for locally grown, raised, or caught agricultural, meat, or fish products for consumption out-of-state violated the Commerce Clause of the United States Constitution. The Court found that appellant Hawaiian Flour Mills, Inc. was entitled to the exemption from the general excise tax on its sales of fresh food products to be consumed out-of-State by persons engaged in interstate or foreign commerce, whether or not the fresh food products were locally grown, raised, or caught.

Digested: 1/30/2024



February 5, 2024

**TESTIMONY IN SUPPORT OF SB 3360  
RELATING TO RENEWABLE FUEL**

Senate Committee on Energy, Economic Development, and Tourism (EET)  
The Honorable Lynn DeCoite, Chair  
The Honorable Glenn Wakai, Vice Chair

February 6, 2024, 1:01 pm  
Seante Conference Room 229  
State Capitol 415 South Beretania Street

Chair DeCoite and Vice Chair Wakai, and members of the Committee,

Thank you for the opportunity to provide testimony in SUPPORT of SB 3360, Relating to Renewable Fuel. We believe that the proposed legislation presents a win-win opportunity for our state, our environment, and our agricultural sector.

Pono Pacific is the state leader in land management with over 20+ years of experience across the Hawaiian Islands with an emphasis on conservation lands, agriculture, and renewable energy. Pono Pacific has partnered with Par to develop a supply of locally grown feedstocks for biofuel production. Locally grown feedstocks will provide farmers with a viable economic commodity to supply the refinery and help put idle lands to work. SB 3360 will help Hawaii farmers compete against imported feedstocks by providing an additional credit of \$1 per gallon for renewable fuels produced from locally grown renewable feedstocks.

Finding viable uses for agriculture lands that will encourage sustainability in our environment and that produce positive economic cash flow for Hawaii is a critical need. Locally grown biofuel feedstocks offer significant benefits for our farmers. These crops can thrive on marginal land, improving soil health and reducing erosion. They require less water and fertilizer than traditional row crops. By creating a demand for these crops, the renewable fuels industry can revitalize rural communities, create new jobs, and diversify farm income streams.

We believe this bill should be amended to also provide credits for the production of sustainable aviation fuel (SAF). Par Hawaii has publicly committed to spend significant



capital retrofitting its Kapolei refinery to produce renewable fuels, including SAF. Transitioning to SAF, derived from renewable sources like energy crops, presents a crucial step towards decarbonizing air travel. SAF can bring meaningful reductions in aviation carbon emissions, with lifecycle emissions intensity up to 50 to 80% lower than conventional jet fuel. Investing in local SAF production is not just economically sound, it is an environmental imperative.

Hawaii needs to be competitive with other states that have already adopted tax credits for SAF and other renewable fuels and provide local production and consumption with the necessary advantages to succeed, especially as the industry is just starting to get off the ground. Initially to be competitive, local SAF production will need government support.

Growing biofuel feedstocks locally helps to create new agricultural jobs, encourage food production through infrastructure synergies, and does not compete with food crops when using oil seed cover crops. Pono Pacific believes these feedstocks will be able to provide a quality biofuel product and usable byproducts (such as animal feed) to help support Hawaii's sustainability goals, and agricultural, ranching and dairy sectors of the local economy.

The production and distribution of SAF is not just about farms; it is about building a robust green energy infrastructure within our state. From biofuel refineries to logistics companies, the entire chain creates high-paying jobs, attracts investment, and boosts Hawaii's overall economic output. Investing in local SAF production positions us as a leader in the burgeoning clean aviation fuel market, attracting further investment and innovation.

Renewable fuels face a financial hurdle and cost more to produce than conventional alternatives. This bill, along with the requested amendments, proposes a strategic set of tax incentives tailored to incentivize local renewable fuel production and imports of renewable fuels into Hawaii. These incentives will empower us to cultivate energy independence, foster economic growth, and create a sustainable future for our islands. Incentives and credits, therefore, are not a perpetual need but a bridge to get biofuel production to maturity and scale when it can compete successfully against traditional petroleum-based fuels.

The proposed tax incentives for local renewable fuel production are not just an economic stimulus package; they represent a strategic investment in Hawaii's future. By supporting our farmers, fostering clean energy innovation, and building a more sustainable aviation industry, we can secure a brighter future for generations to come.





Importantly, the proposed tax incentives, and specifically the additional \$1 credit for renewable fuels produced from locally grown renewable feedstock, does not run afoul of the Commerce Clause. Hawaii’s biofuel tax credit aligns with the Biden administration’s goals for clean energy transition and climate change mitigation, potentially paving the way for collaboration and federal support. The pertinent legal question is whether promoting energy security through biofuels produced from locally grown sustainable feedstock is a “legitimate public purpose.” Unlike most states, Hawaii’s geographic isolation significantly amplifies its vulnerability to fuel price fluctuations and supply disruptions. This unique dependency on imported fossil fuels necessitates innovative solutions tailored to its specific context.

The U.S. Supreme Court has stated: “As long as a State does not needlessly obstruct interstate trade or attempt to ‘place itself in a position of economic isolation,’ it retains broad regulatory authority to protect the health and safety of its citizens and the integrity of its natural resources.” *Maine v. Taylor*, 477 U.S. 131, 151 (1986) (quoting *Baldwin v. G.A.F. Seelig, Inc.*, 294 U.S. 511, 527 (1935)). Based on this principle, the legal test is not whether the law “allow[s] for companies outside of Hawaii to be qualified.” Under the U.S. Supreme Court’s legal test, a tax credit is valid if it “serves a legitimate local purpose” and this purpose could not be served as well by other available means, even if the tax credit favors Hawaii taxpayers over other taxpayers in interstate commerce. *Id.* at 138 (quoting *Hughes v. Oklahoma*, 441 U.S. 322, 336 (1979)). The substantial local benefits of the tax credit (energy security, environmental protection, economic development) protect the health and safety of the people of Hawaii and clearly outweigh the minimal burden on interstate commerce.

The unique combination of Hawaii’s energy vulnerability, limited renewable options, and the minimal impact of the tax credit on interstate commerce, coupled with its substantial local benefits and alignment with national goals, provides a compelling case for upholding its legality under the Commerce Clause. Recognizing and supporting Hawaii’s innovative approach to energy security paves the way for a more sustainable energy future for the nation as a whole.

We urge you to amend and pass this legislation and unlock the immense potential of locally produced SAF. Together, we can build a cleaner, more prosperous future for all. Thank you for your time and consideration.

Mahalo,



Chris Bennett  
Vice President of Sustainable Energy Solutions  
Pono Pacific Land Management, LLC

Comments before  
February 6, 2024 Senate Committee on Energy and  
Environmental Protection Hearing

**OPPOSING**  
**Senate Bill 3360**

Relating to Renewable Fuels Production Tax Credit

Mike Ewall, Esq.  
Founder & Director  
Energy Justice Network  
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Aloha Honorable Committee members. Energy Justice Network is a national organization supporting grassroots groups working to transition their communities from polluting and harmful energy and waste management practices to clean energy and zero waste solutions. In Hawai'i, we've been working with residents who first sought our support in 2015. Since mid-2022, we have supported residents in forming the Hawai'i Clean Power Task Force and Kokua na Aina to address numerous energy and waste issues in the state.

We must stand in opposition to Senate Bill 3360 because it would subsidize burnable fuels that, in many ways, are as bad as, or worse than, the status quo – wasting taxpayer money that could better be spent on clean, non-burn energy solutions that are cheaper and safer.

**Cost:** Both Pono Pacific and PAR Refinery admitted in their testimony on the House companion bill that these fuels are quite costly. PAR states: “the cost to produce these fuels is significantly higher than the cost of fossil fuels.” If the environmental and health impacts of “renewable” fuels were not so high, perhaps the cost would be worth it. That is not the case.

**Alternatives are a better deal:** As Hawaiian Airlines' testimony points out, renewable diesel is likely to eat up the subsidy, because aviation fuel cannot compete. If fuels are going to end up in land-based vehicles and in HECO's oil-burning power plants, that investment simply diverts resources that could be going to non-burn alternatives that are already readily available. And if the fuels were actually going to go into aircraft, it's still a waste of resources since more climate, health and environmental impacts can be reduced by completing the job of cleaning up the other energy sectors that are still largely running on oil. [See our recommendations on the next page for converting SB 3360 to a study bill to look at how \\$80 million per year can be better spent.](#)

**Biotech crops and trees:** The biotechnology industry's trade association is supporting this bill for a reason. It's bad enough that the state suffers from many invasive species. However, inviting genetically modified crops and trees to be monocropped for fuel production is asking for trouble. On top of the normal concerns with monocrop agriculture – water and soil depletion, herbicides, fertilizer runoff, etc. – biotech crops and trees risk increasing chemical use, and more rapid resource depletion when designed for quick growth.

**Food vs. fuel:** Hawaii is already highly dependent on food imports, with very little grown in the state for local consumption. Attempts to address this will be aggravated when land is increasingly used for fuel production. Pono Pacific argues that agrofuels do not compete with food crops when using oil seed cover crops. However, the need for easy harvesting to reduce costs does not lend itself to a cover crop approach. It demands an industrialized monocrop approach.

**Waste-based fuels:** This policy supports turning municipal solid waste (trash) and industrial wastes into burnable fuels. There is an array of experimental incinerator-like technologies that aim to convert waste into fuels. These waste-to-fuels (WTF) technologies usually start with pyrolysis or gasification – technologies that, when the resulting gases are burned, are defined and regulated by EPA as municipal waste combustors (waste incinerators). Typically, these two-stage technologies will replace the second stage (burning the gases) with a liquefaction stage, to make liquid fuels to be burned elsewhere. This is known as Fischer-Tropsch gas-to-

liquids technology, named after the two German scientists who developed the ability to make oil from coal by gasifying, then liquefying it. It was first used by Nazi Germany, then by South Africa's Apartheid regime.

These are toxic and dangerous technologies that are experimental and often fail both technically and economically. When fuels are burned off-site in land vehicles or for air travel, they are not subject to the sorts of air pollution controls that can be applied to a centralized facility with a single smokestack. Even when such a facility burns the gasified waste on-site with the full complement of air pollution control devices, waste incineration is still [dirtier](#) than burning coal for the climate as well as for most other air pollutants. This is even *with* all four air pollution control systems that waste incinerators should have (note that H-POWER's two older burners are missing half of these four control systems, though their third burner has all four).

These technologies also have been unable to operate at commercial scale, usually relegated to unregulated garage-scale pilot projects that go nowhere. This trend has led the nation's leading incinerator-promoting solid waste consulting outfit, GBB, to classify the technology as "high" risk – because, as they present to waste industry conferences, of "previous failures at scale, uncertain commercial potential; no operating experience with large-scale operations" (pyrolysis) and "limited operating experience at only small scale; subject to scale-up issues" (gasification).

Hawai'i has been targeted in recent years by quite a few fly-by-night companies aiming to cash in on state and federal subsidies to satisfy the desire for sustainable aviation fuels while making waste streams go "away." Companies like Aloha Carbon, BioEnergy Hawaii LLC, Hawaii Federated Industries / Feather Fuels / Shake Energy Collaborative PBC, Next Level Solutions Group, and Yummet prey upon uninformed public officials who don't have time to research the track record of this industry, the toxic hazards associated with it, or the better alternatives available.

**RECOMMENDATION:** convert SB 3360 to a study bill to evaluate how \$80 million a year can best be used to reduce greenhouse gas emissions from the energy sector. As classified by the U.S. Energy Information Administration, there are [three sectors of energy consumption](#): electricity, transportation, and heating. Transportation can be broken down into land, sea, and air. Heating is broken down in federal energy reporting as industrial, residential, and commercial/institutional sectors of use.

Just as there are preferable non-burn solutions for every waste management need, there are clean non-burn solutions for nearly every energy sector, though long-distance commercial passenger aviation is not there yet.

Cleaning up these energy sectors should start with solutions we already have, without trying to solve the most unsolvable sector by replacing one type of burnable fuel (petroleum-based aviation fuel) with differently bad burnable fuels (crop-based biofuels) or even more hazardous types of burnable fuels (waste-based fuels).

Since the way to clean up the transportation and heating sectors is to electrify them so that they can run on wind and solar without burning anything, it's critical to clean up the electricity sector first, and faster, since electricity demand will grow as the other energy sectors are electrified. Electricity production is easiest to fully transition to non-burn technologies – mainly solar and wind with energy storage, which are becoming the cheapest options over time. The state's renewable portfolio standard (RPS) aims to transition the electricity sector to "renewable" sources by 2045, but still counts some combustion sources as renewable – the worst of them being solid fuel combustion (burning of trash and trees). [HB 2786](#) / [SB 2102](#) aims to clean up the RPS starting by removing solid fuel combustion sources, which will speed up the implementation of solar, wind, and energy storage.

The heating sector is dominated by industrial heating, which is increasingly possible to electrify, while residential and commercial space heating and cooking needs are easily electrified. Electric stoves and heat pumps for space heating can be incentivized if replacing a combustion system.

The transportation sector is easily electrified for land-based travel. International shipping is now possible with [electric ships](#) (see also [here](#) and [here](#)). The hardest sector to make non-burn is long-distance air travel, though inter-island air travel can now be electrified with [sea gliders](#), as Hawaiian Airlines has been exploring.

While waiting for good non-burn solutions to powering long-distance air travel, let's focus where we have good alternatives:

- 1) end combustion in the electricity sector, which is mostly oil in Hawai'i, but also some burning of trash, trees, and biofuels; replace with conservation, efficiency, solar, wind, and energy storage.
- 2) electrify any heating needs... most use is industrial sector, but also help transition residential or commercial sectors where cooking and space heating is done with combustible fuels (mainly gas made from oil).
- 3) end combustion use for land-based vehicles by reducing vehicle use, having better (and fare-free) electrified public transit, and electrifying other land vehicles.
- 4) replace inter-island air travel with electric sea gliders, and electrify shipping, which is now possible.

**PROPOSAL:** make this a study bill to look at how far \$80 million per year can go if applied to each of the following sectors:

- Conservation and efficiency in the electricity sector
- Conservation and efficiency in the heating sectors (residential, commercial, and industrial)
- Conservation and efficiency in the transportation (land, sea, air) sectors
- Wind, solar, and storage to decarbonize the electricity sector
- Electrifying transportation (land, sea, inter-island air)
- Electrifying heating (residential, commercial, and industrial)
- Burnable liquid fuels

We expect that most of the first six options will fare better than investing in burnable liquid fuels, and will also have lower health, climate, and environmental impacts because combustion is being avoided, along with the need to have production systems that extract and burn up resources.

Finally, it's important to evaluate systems not just on the basis of climate impacts (greenhouse gas emissions), but on the other impacts that they have in terms of other consequences for land, sea, and air. And when evaluating biofuels systems, the conventional assumptions around carbon neutrality need to be challenged, based on the science from the past 15 years showing that biomass is not "carbon neutral."

Mahalo nui loa for your willingness to rework this bill to put scarce public resources into more strategic paths forward.

Statement of  
**Brigadier General Stanley J. Osserman Jr. (USAF Ret.), President**  
Tigershark, LLC  
Before the  
**Senate Committee on Energy, Economic Development and Tourism**  
6 February 2024  
1:01 pm  
State Capitol Conference Room #229  
In consideration of  
**SB3360**  
**Relating to Renewable Fuel**

Chair DeCoite

30 January 2024

Vice Chair Wakai and Distinguished Committee Members:

I stand in strong support to this bill.

As the former director of the Hawaii Center for Advanced Transportation Technologies (HCATT; 2013 to 2019), Hawaii Department of Business, Economic Development and Tourism (DBEDT), I continue to serve our state by promoting clean, renewable energy solutions. This testimony is NOT being given for compensation of any kind from commercial, political or private sources. I am presenting to you today as a concerned “Life-Long” citizen of the State of Hawaii with extensive professional experience in energy systems, retail and wholesale business, military matters, international commerce, aviation, construction, maritime operations, and public safety, among others. My goal is to help our government leaders make good strategic choices.

I have studied and worked with The U.S. Dept. of Energy’s National Labs, organizations and companies trying to “electrify” transportation and I have learned a great deal about the manufacture of synthetic and other fuels that are critical to future aircraft and oceangoing shipping as well. When I was at HCATT we designed a microgrid that will be commissioned next month at Hickam. In the original design of that microgrid, we included hydrogen as the energy source for all of the flightline vehicles and support equipment for the Hawaii Air National Guard’s 154<sup>th</sup> Wing (which operates the F-22 Raptor and the KC -135R Air to Air tanker), but the role of hydrogen went far beyond the role in fuel cells to make electricity. Hydrogen is also one of the most versatile ways to safely store large volumes of energy for long duration. Pure hydrogen can be burned in gas turbine engines as fuel. Airbus is currently testing commercial aircraft, using hydrogen as the energy source. They plan on placing into operation by 2035! Another little-known fact is that hydrogen can be combined with CO<sub>2</sub> to produce liquid fuels very similar to current liquid fuels used in many transportation applications today. Likewise ammonia (NH<sub>3</sub>) can also be used in gas turbine engines and is one of the fuels being considered

for future jet powered military and commercial jets and large cargo ships, because it is cleaner burning and easier to store and transport than liquid hydrogen and gaseous hydrogen.

All these factors are related to the critical importance of SB3360 in that competitive local sourcing and manufacture of military and commercial fuels directly impact our two biggest economic drivers, tourism, and the military. Jet aircraft arriving from around the world do not carry fuel to return to their port of origin. Those fuels are purchased here because the price for carrying that fuel is too dear and the aircraft cannot manage the extra weight, and in most cases, do not have capacity to carry that “return trip” fuel.

Local production of fuels, be it from organic plant matter or electrolyzed hydrogen to make biofuels and other “synthetic” fuels needs to be part of our economy, and bills like SB3360 facilitate that end! We are late to need in developing and building this infrastructure, so initiatives like SB3360 are critical to move Hawaii forward in clean, sustainable fuels.

Brigadier General, Stanley J. Osserman Jr. (USAF Ret.)

President, Tigershark, LLC



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February 6, 2024

HEARING BEFORE THE  
HOUSE COMMITTEE ON ENERGY & ECONOMIC DEVELOPMENT, AND TOURISM

**TESTIMONY ON SB 3360**  
RELATING TO RENEWABLE FUEL

Conference Room 229 & Videoconference  
1:01 PM

Aloha Chair DeCoite, Vice-Chair Wakai, and Members of the Committee:

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 supports SB 3360**, which updates the Renewable Fuels Production Tax Credit to incentivize locally grown, produced, generated, or collected renewable fuel, extends the credit period from ten to twenty consecutive years, and increases the total amount of tax credits allowed to \$80,000,000 in any calendar year.

Renewable energy is important to the State's energy goals. Biofuels 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.

Thank you for this opportunity to testify on this important subject.





**February 6, 2024**

**TESTIMONY ON SB 3360  
RELATING TO RENEWABLE FUEL**

COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM  
Senator Lynn DeCoite, Chair  
Senator Glenn Wakai, Vice Chair

Conference Room 229  
State Capitol  
415 South Beretania Street

Dear Chair DeCoite, Vice Chair Wakai, and Members of the Committee:

Thank you for the opportunity to provide comments on SB 3360, Relating to Renewable Fuel. Airlines for America<sup>®</sup> (A4A) is the principal trade and service organization of the U.S. airline industry<sup>1</sup>. A4A and its members have a strong climate change record and are committed to working across the aviation industry and with government leaders in a positive partnership to achieve net-zero carbon emissions by 2050, which parallels the Biden administration's goal to achieve net-zero greenhouse gas emissions in the aviation sector by 2050.

Airlines, governments and other aviation stakeholders have recognized that achieving net-zero aviation emissions by 2050 will require a very rapid transition from conventional (fossil) jet fuel to sustainable aviation fuel (SAF). SAF is a drop-in fuel, meaning that it works with existing aircraft engines, pipelines, and storage infrastructure, as long as it is blended up to 50% with conventional jet fuel and qualified to the relevant ASTM standards for alternative jet fuel. Work is underway to approve uses up to 100% SAF. SAF can bring meaningful reductions in aviation carbon emissions, reducing lifecycle emissions intensity of fuel up to 80% compared to conventional jet fuel today, with future pathways having potential for 100% reductions.

The primary impediment to rapid scale up of SAF production capacity remains the relative cost to jet fuel buyers of SAF compared to conventional jet fuel, and the relative cost of production of SAF compared to Renewable Diesel (RD)<sup>2</sup>. SAF is typically produced at the same production facilities as RD, but because the production economics of RD are more favorable, RD production volumes are substantially higher. Incentives such as tax credits that provide more value to SAF are one way to increase SAF production and use. Conversely, tax credits that provide more value to RD than SAF will further inhibit SAF production.

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<sup>1</sup> A4A's members are: Alaska Airlines, Inc.; American Airlines Group Inc.; Atlas Air, Inc.; Delta Air Lines, Inc.; Federal Express Corporation; Hawaiian Airlines, Inc.; JetBlue Airways Corp.; Southwest Airlines Co.; United Airlines Holdings, Inc.; and United Parcel Service Co. Air Canada, Inc. is an associate member.

<sup>2</sup> Note that Renewable Diesel and Biodiesel are not the same fuels. Neither Renewable Diesel or Biodiesel can be used in aircraft. However, SAF, RD, and Biodiesel can utilize same or similar feedstocks.

Achieving this rapid transition to SAF requires industry and government to work in partnership, at both the federal and state levels, to expand SAF production capacity across the country. A4A and our members strongly support tax incentives – in particular the SAF Blenders Tax Credit (BTC) – needed to catalyze SAF production. The Biden administration also strongly advocated for the enactment of these kinds of incentives, and we are thankful for the critical support the administration provided to ensure enactment of the SAF-BTC and Clean Fuels Production Credit (CFPC) – as well as other tax incentives like the Clean Hydrogen Credit – that will provide support vital to successfully engendering exponential growth in domestic SAF production through 2030.

Ensuring the sustainability and environmental integrity of feedstocks and the production technology pathways is critical to the continued recognition and acceptance of SAF to achieve the carbon emissions reduction ambitions of aviation. We support establishing strong and robust sustainability and technical requirements based on objective criteria and the latest scientific research. A4A and its members are feedstock and technology neutral for SAF production, we firmly believe that any production pathway that can meet robust technical and sustainability requirements should be eligible for incentive programs, such as this proposal.

A4A and our member airlines value our partnership with the State of Hawai'i and believe there is a unique opportunity to jointly develop a market for cost competitive SAF. Thank you for your consideration of our feedback. Please do not hesitate to contact us if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'S Williams', is positioned below the word 'Sincerely,'.

Sean Williams  
Vice President, State and Local Government Affairs  
[swilliams@airlines.org](mailto:swilliams@airlines.org)

# Hawaii Bioeconomy Trade Organization

**THE SENATE**  
THE THIRTY-THIRD LEGISLATURE  
REGULAR SESSION OF 2024

## Senate & House Committees EET & EEP

### TESTIMONY FOR BILL NOs. SB 3360 & HB 2767

Position: **Comments**

To the Honorable Senator Lynn DeCoite, Chair; Senator Glenn Wakai, Vice Chair; Honorable Representative Nicole Lowen; Chair, Representative Elle Cochran, Vice Chair and Members of the Committees:

HBETO in general can be supportive to the intent of this measure, however, we feel that it is both necessary and important to add/revise with this valuable language:

shall be [~~divided between all~~] allocated proportionally to each eligible taxpayers [~~for that year~~] in proportion to the total amount of renewable fuels [~~produced by all eligible taxpayers~~] tax credits under this section for the calendar year.

In the case of sustainable aviation fuel, there shall be an additional 100 cents per gallon for fuel consumed in flights originating from and within the state.

Thank you for your consideration of this testimony.

Regards,

Carl Campagna  
Executive Director  
carl@hawaii.bioeconomy.org