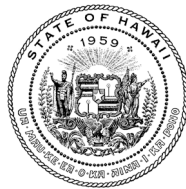


**JOSH GREEN M.D.**  
GOVERNOR

**SYLVIA LUKE**  
LT. GOVERNOR



STATE OF HAWAII  
**DEPARTMENT OF TAXATION**

Ka 'Oihana 'Auhau  
P.O. BOX 259

HONOLULU, HAWAII 96809  
PHONE NO: (808) 587-1540  
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**GARY S. SUGANUMA**  
DIRECTOR

**KRISTEN M.R. SAKAMOTO**  
DEPUTY DIRECTOR

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

**TESTIMONY ON THE FOLLOWING MEASURE:**

H.B. No. 1694, Relating to Sustainable Aviation Fuel Tax Credit

**BEFORE THE:**

House Committee on Transportation

**DATE:** Tuesday, February 3, 2026

**TIME:** 10:30 a.m.

**LOCATION:** State Capitol, Room 430

Chair Kila, Vice-Chair Miyake, and Members of the Committee:

The Department of Taxation (DOTAX) offers the following comments regarding H.B. 1694 for your consideration.

H.B. 1694 adds a new chapter to the Hawaii Revised Statutes (HRS) to create a new nonrefundable "sustainable aviation fuel tax credit" for distributors in the State. The credit is \$1 per gallon of sustainable aviation fuel sold for distribution in the State if the fuel meets the lifecycle greenhouse gas emissions reduction threshold. The credit is increased by two cents for each additional one per cent reduction in carbon dioxide emissions above the lifecycle greenhouse gas emissions reduction threshold and is limited to a maximum of \$2 per gallon.

There is an aggregate cap of \$20,000,000 for all eligible taxpayers per calendar year. If the credit claims exceed the annual cap, the credits are to be proportionally allocated among taxpayers by DOTAX. If a taxpayer's credit is proportionally reduced due to the annual cap being exceeded, the taxpayer may carry forward the amount of the reduction in subsequent years until exhausted, but no credit may be carried forward after the fifth taxable year in which it was originally claimed.

Definitions are included for “lifecycle greenhouse gas emissions,” the “lifecycle greenhouse gas emissions reduction threshold,” and “sustainable aviation fuel.”

Reporting requirements of the taxpayer to the Department of Transportation (DOT) and DOTAX are outlined to claim the credit, including a pre-distribution notice of intent, and notice when actual distribution begins. Post calendar year reporting requirements of the taxpayer to the DOT are outlined, as are the DOT’s acknowledgment and reporting requirements including issuing a confirming certificate to the taxpayer. The taxpayer must submit the confirming certificate with its tax return, subject to DOTAX audit. The taxpayers submitted notices will be available for the public to inspect and copy per chapter 92F, HRS.

Partnerships, S corporations, estate, or trusts eligible for the credit are limited to a partner’s distributive share calculated per the Internal Revenue Code of 1986, section 704(b). All claims for the credit must be filed on or before the twelfth month following the end of the taxable year, or the right to claim the credit is waived.

DOTAX will prepare necessary forms, adopt rules under chapter 91, HRS, as may be necessary to administer the credit, and may request additional supporting documentation from a taxpayer to support a claim.

The bill is effective upon approval and applies to taxable years beginning after December 31, 2025, and will be repealed on December 31, 2035.

DOTAX notes that it is unable to administer the aggregate cap and related provisions in subsection (f). Accordingly, DOTAX requests that if the cap is kept as a provision, that the bill be amended to require a third party to administer the aggregate cap, including the requirement that credits be proportionally allocated if total credits claimed exceed the aggregate cap.

DOTAX also recommends amending the bill to prohibit claiming any other credits under Chapter 235, HRS, for sustainable aviation fuel that is used to claim a credit under the new section.

Lastly, DOTAX requests that the effective date of the bill be amended to apply to taxable years beginning after December 31, 2026, to allow sufficient time for development of new forms, system changes, and notice to taxpayers.

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



P.O. Box 37158, Honolulu, Hawai'i 96837-0158  
Phone: 927-0709 [henry.lifeoftheland@gmail.com](mailto:henry.lifeoftheland@gmail.com)

#### COMMITTEE ON TRANSPORTATION

Rep. Darius K. Kila, Chair

Rep. Tyson K. Miyake, Vice Chair

Tuesday, February 3, 2026

10:30 a.m.

Conference Room 430

HB 1694 Sustainable Aviation Fuel

Comments, Amendments

Aloha Chair Kila, Vice Chair Miyake, and Members of the Committee

Life of the Land is Hawai'i's own energy, environmental and community action group advocating for the people and `aina for 56 years. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

Life of the Land prefers HB 1694 rather than HB 1695.

HB 1694 (Sustainable Aviation Fuel Tax Credit) has strong reasonable public disclosure provisions although one must file via HRS 92F. What isn't clear is how the public learns that something has been filed to ask to request access to the document. This can be remedied by having the relevant agencies post notice.

## Amendments

(1) "Sustainable aviation fuel" means liquid fuel that ... (2) Is derived from biomass resources excluding perennial woody vegetation, waste streams, renewable or zero carbon energy sources, or gaseous carbon oxides."

(2) Before the distribution of any sustainable aviation fuel for the calendar year, the taxpayer shall provide written notice... the amount of tax credits and grants received from sources outside of Hawaii.

## Clarification Needed:

"Lifecycle greenhouse gas emissions reduction threshold" means a reduction in lifecycle greenhouse gas emissions of fifty per cent compared to the fossil fuel for which the renewable fuel is most likely to replace.

This bill should be the vehicle. By contrast, HB 1695 (Relating to Renewable Fuel) appears to have no mechanism for public access to documents. The definition of renewable feedstock adds two new categories: logs and construction and demolition waste. Life of the Land is aware of Hawaii legislative bills to allow for global carbon offsets. Therefore, it must be clear in this bill that the definition of acceptable fuel does not include perennial woody vegetation.

Mahalo  
Henry Curtis  
Executive Director



Testimony of  
**ALASKA AIRLINES and HAWAIIAN AIRLINES**

Before the House Committee on  
**Transportation**

**Tuesday, February 3, 2026**  
**10:30 A.M.**  
**Hawai'i State Capitol, Room 430**

In consideration of  
**HOUSE BILL 1694**  
**RELATING TO SUSTAINABLE AVIATION FUEL TAX CREDIT**

The Honorable Darius Kila Chair  
The Honorable Tyson Miyake, Vice Chair  
Members of the Committee on Transportation

**Re: Testimony in Support of H.B. 1694, Relating To Sustainable Aviation Fuel Tax Credit**

Chair Kila, Vice-Chair Miyake and members of the committee,

On behalf of Alaska Airlines and Hawaiian Airlines, we respectfully submit testimony **in strong support** of House Bill 1694 (H.B. 1694), which establishes a Sustainable Aviation Fuel (SAF) distribution tax credit in Hawai'i.

Aviation is essential to Hawai'i's economy, connectivity, and quality of life, but it is also one of the most challenging sectors to decarbonize. Unlike ground transportation, aviation does not yet have scalable alternatives such as electrification or hydrogen that can be safely deployed for commercial, long-haul, or interisland operations. Together, Alaska Airlines and Hawaiian Airlines are the most fuel-efficient premium carrier in the U.S. and will continue to invest in making our airlines more fuel efficient through a combination of operational practices and fleet renewal. However, to materially reduce aviation emissions over the next several decades, greater availability of affordable Sustainable Aviation fuel is required.

SAF is a certified, **drop-in fuel** that can be blended with conventional jet fuel and used in existing aircraft engines, fueling systems, and airport infrastructure without modification. This makes SAF a technology that can be deployed **today**, rather than a future solution that depends on unproven aircraft or infrastructure. By reducing lifecycle greenhouse gas

emissions while maintaining safety and reliability, SAF allows aviation to decarbonize without disrupting Hawai'i's critical air service.

Importantly, following the Navahine settlement, the State now has a clear legal obligation to meet its climate and sustainability targets. Achieving those targets will require continued work across all major sectors, including transportation and aviation. Given Hawai'i's geographic realities and reliance on air travel, aviation emissions will need to be addressed as part of the State's broader strategy. We will continue to work with HDOT to evaluate and advance a range of options that can meaningfully contribute to progress in this area and support a practical path forward.

H.B. 1694 is thoughtfully structured to address one of the primary barriers to SAF production and use: cost. By providing a performance-based tax credit tied to verified lifecycle emissions reductions, the bill helps narrow the price gap between conventional jet fuel and SAF, while incorporating transparency, reporting, and third-party certification requirements. Just as importantly, the bill sends a clear and credible **market signal** that Hawai'i is serious about SAF deployment. That signal matters to fuel producers, distributors, and infrastructure investors who must make long-term capital decisions before committing to serve the Hawai'i market.

This measure helps create the conditions necessary for SAF to be available, scalable, and usable in Hawai'i. Without policies that send a strong market signal, SAF supply and investment will continue to concentrate elsewhere, making it far more difficult for Hawai'i to meet its climate obligations and secure future fuel availability. This measure enables energy security and economic competitiveness for Hawai'i, alongside longer-term opportunities for aviation decarbonization.

The bill's annual cap, sunset date, and reporting requirements strike an appropriate balance between advancing sustainability goals and protecting the State's fiscal interests. Equally important, the focus on fuel distributed in Hawai'i helps ensure that environmental and economic benefits are realized locally.

Alaska Airlines and Hawaiian Airlines are committed to reducing aviation emissions and supporting Hawai'i's long-term sustainability goals. H.B. 1694 is a pragmatic and necessary step toward aligning those commitments with Hawai'i's legal responsibilities and real-world transportation needs.

For these reasons, we respectfully urge the Committee to **pass H.B. 1694**.

Mahalo for the opportunity to provide testimony.

# TAX FOUNDATION OF HAWAII

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735 Bishop Street, Suite 417

Honolulu, Hawaii 96813 Tel. 536-4587

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SUBJECT: Sustainable Aviation Fuel Tax Credit

BILL NUMBER: HB 1694

INTRODUCED BY: KILA, CHUN, EVSLIN, HASHEM, ILAGAN, KAHALOA, KEOHOKAPU-LEE LOY, KITAGAWA, KUSCH, LOWEN, MARTEN, MIYAKE, MORIKAWA, TAM

EXECUTIVE SUMMARY: Establishes a tax credit for sustainable aviation fuel distribution in Hawai'i to reduce greenhouse gas emissions. Provides \$1 per gallon, increasing by 2 cents per additional 1 per cent emissions reduction, up to \$2 per gallon. Caps total credits at \$20,000,000 annually, with carryover provisions. Requires reporting to ensure transparency and compliance. Applies to taxable years after December 31, 2025, and sunsets on December 31, 2035.

SYNOPSIS: Adds a new section to chapter 235, HRS, to provide for a sustainable aviation fuel import tax credit. The credit amount per taxpayer importing sustainable aviation fuel into the State is to be \$1 per gallon importing for distribution in the State, provided that the fuel meets the lifecycle greenhouse gas emissions reduction threshold.

Specifies that the credit is determined at the entity level and may be allocated to partners, S corporation shareholders, or trust beneficiaries following section 704(b) of the Internal Revenue Code.

No later than 30 days following the close of the taxable year, a taxpayer intending to claim this credit is to submit relevant information to the Department of Transportation with an independent, third-party certification. Within 30 days after the statements are due, DOT will issue a certificate to the taxpayer which is to be filed with the taxpayer's income tax return.

A \$20 million aggregate cap is established for the credit. If the credit claims under this section exceed the total credits allowed for all eligible taxpayers in any given calendar year, the total credits allowed shall be allocated proportionally to each eligible taxpayer.

To the extent that a taxpayer's credit claim is reduced because of the aggregate cap, the amount of the reduction shall be carried forward to be used as a credit in the next subsequent calendar year but shall not be carried over after the fifth taxable year thereafter; provided that the carryover credit is subject to the aggregate cap for the year to which it is carried.

The taxpayer is to provide written notice of intention to begin import of renewable fuels to the Department of Taxation and the Energy Office prior to the start of importation.

The taxpayer is to provide another written notice to the Department of Taxation and the Energy Office within 30 days following the start of importation.

Information received by the Energy Office is to be made publicly available.

All tax credit claims shall be filed before the end of the 12th month following the close of the taxable year for which the credit may be claimed, upon pain of waiver of the right to claim the credit.

EFFECTIVE DATE: Taxable years beginning after December 31, 2025. Credit is repealed on January 1, 2035.

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.

We also have technical comments, as follows:

1. The bill requires that when the aggregate cap is exceeded, all tax credit claims are prorated so that the aggregate cap is met. This is perhaps fairer to the various participants, but may not be administrable because the certifying agency will not be able to certify any credits until ALL credit claims are in the door.
2. The bill states that a taxpayer must apply to the Department of Transportation for the credit within 30 days following the close of the calendar year. That means the taxpayer must fill in the form AND a third party needs to audit or otherwise verify the numbers within that 30 days. We wonder whether that time frame is achievable.

Digested: 2/1/2026





FEBRUARY 3, 2026

## HOUSE BILL 1694

CURRENT REFERRAL: TRN

808-679-7454  
kris@imuaalliance.org  
www.imuaalliance.org  
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Kris Coffield,  
*President*

David Negaard,  
*Director*

Mireille Ellsworth,  
*Director*

Justin Salisbury,  
*Director*

Eileen Roco,  
*Director*

Beatrice DeRego,  
*Director*

Corey Rosenlee,  
*Director*

Amy Zhao,  
*Policy and Partnerships  
Strategist*

### POSITION: SUPPORT WITH AMENDMENTS

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Imua Alliance supports and suggests amendments for HB 1694, relating to sustainable aviation fuel tax credit, which establishes a tax credit for sustainable aviation fuel distribution in Hawai'i to reduce greenhouse gas emissions; provides \$1 per gallon, increasing by 2 cents per additional 1 per cent emissions reduction, up to \$2 per gallon; caps total credits at \$20,000,000 annually, with carryover provisions; requires reporting to ensure transparency and compliance; and applies to taxable years after December 31, 2025, and sunsets on December 31, 2035.

Imua Alliance is a Hawai'i-based organization dedicated to ending all forms of exploitation, including the interconnected emergencies of climate change and sexual violence. According to research conducted by Michael B. Gerrard from Colombia Law School, modern-day slavery tends to increase after natural disasters or conflicts where large numbers of people are displaced from their homes. In the decades to come, says Gerrard, climate change will very likely lead to a significant increase in the number of people who are displaced and, thus vulnerable, to gender abuse.

Aviation is not a marginal emissions source in our state. It is one of the biggest problems we must resolve in the development of a comprehensive clean transportation framework for the islands. According to the Hawai'i Department of Health Clean Air Branch's 2022 greenhouse gas inventory, transportation emissions totaled 10.12 million metric tons CO<sub>2</sub>e in 2022, totaling 49.8% of statewide gross emissions. The same report found that domestic aviation made up 85.7% of transportation emissions and 24.1% of statewide gross emissions (excluding sinks). In other words, decarbonizing aviation is essential if Hawai'i is serious about meeting its climate targets.

It is also important to understand what the state inventory does—and does

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not—capture. The DOH inventory includes interisland flights and domestic interstate flights originating in Hawai'i (e.g., Honolulu to Los Angeles), while excluding international flights. It also does not estimate flights originating outside Hawai'i (e.g., Los Angeles to Honolulu). This means even the very large aviation share reported in the inventory likely understates the full climate impact of visitor air travel associated with Hawai'i's economy.

HB 1694's tax credit—starting at \$1 per gallon with additional value tied to lifecycle emissions performance, capped at \$20 million annually, and sunseting in 2035—is a pragmatic tool to help close the cost gap between SAF and conventional jet fuel and to catalyze private investment and supply-chain buildout in Hawai'i.

That said, to maximize climate integrity and public value, we encourage your committee to clarify strong implementation guardrails in the text of this proposal: (1) rigorous, transparent lifecycle carbon-intensity accounting; (2) clear sustainability standards for feedstocks and land-use impacts; and (3) public reporting on gallons credited, lifecycle reductions achieved, and program outcomes.

HB 1694 already anticipates reporting and compliance. These additional guardrails would ensure the credit delivers real, measurable emissions reductions in a sector where Hawai'i sorely needs action.

With aloha,

*Kris Coffield*

President, Imua Alliance



February 2, 2026

**TESTIMONY IN SUPPORT OF HB 1694  
RELATING TO SUSTAINABLE AVIATION FUEL TAX CREDIT**

House Committee on Transportation (TRN)  
The Honorable Darius K. Kila, Chair  
The Honorable Tyson K. Miyake, Vice Chair

February 3, 2026, 10:30 am  
House Conference Room 430  
State Capitol  
415 South Beretania Street

Chair Kila and Vice Chair Miyake, and Members of the Committee,

Thank you for the opportunity to provide testimony in SUPPORT of HB 1694, Relating to Sustainable Aviation Fuel Tax Credit. We believe this legislation presents an important opportunity to reduce carbon emissions from the aviation sector, while also strengthening the market conditions that can support the development of locally grown renewable feedstocks in Hawai'i.

Pono Pacific is Hawai'i's first and largest private natural resource conservation company, providing land management, restoration services, sustainable agricultural development, renewable energy, and eco-asset development for projects throughout the state. Our work is focused on activating working lands, increasing food security and community engagement, and protecting natural resources to build a more resilient future for Hawai'i.

Since 2023, Pono Pacific has partnered with Par Hawaii to develop a consistent supply of locally grown biofuel feedstocks for renewable fuel production, which could provide farmers with a viable new economic commodity and strengthen Hawai'i's agricultural economy. While HB 1694 does not include specific incentives targeted at agricultural feedstock production, the proposed \$20 million tax credit for Sustainable Aviation Fuel (SAF) could nonetheless create meaningful indirect benefits by enabling Par to produce SAF from locally grown renewable feedstocks, thereby creating additional demand for Hawaii-grown crops.

Throughout 2024 and 2025, Pono Pacific partnered with two of Hawaii's largest food producers, Mahi Pono and Aloun Farms, as well as Meadow Gold Dairies Hawaii, to advance oil crop feedstock cultivation by growing *Camelina sativa* (Camelina) at sites on Hawaii Island, Maui,



Oahu and Kauai. Additionally, Camelina variety trials were conducted in partnership with the Hawaii Agricultural Research Center (HARC). Pono Pacific recently entered into an agreement with HARC to continue trials of Camelina on Oahu through 2026 with the goal of improving both yield per acre and oil content through further research and development.

Camelina is particularly promising because it delivers environmental co-benefits and valuable co-products that support local food systems, including seed cake for animal feed and crop residue that can be used as soil amendments. To date, trial results have been encouraging, averaging approximately 1,200 pounds of seed per acre, and local farmers, ranchers, and feed producers have expressed strong interest in the crop's potential.

Finding viable uses for agricultural lands that promote environmental sustainability while generating positive economic returns is a critical need for Hawai'i. Locally grown biofuel feedstocks such as camelina can be grown in rotation with food crops or on currently fallow land, improving soil health and reducing erosion. Pono Pacific has also engaged with local companies exploring the use of locally produced biochar and organic fertilizers to further enhance soil fertility and carbon retention.

Camelina requires less water and fertilizer than traditional row crops, making it well suited to Hawai'i's diverse landscapes. In addition to supplying low-carbon feedstock for renewable fuels, camelina produces nutritious meal that can be used as feed for cattle and chickens or processed into pellets for aquaculture feed, creating multiple revenue streams from a single crop. By creating a stable demand for these crops and their byproducts, the renewable fuels industry can help revitalize rural communities, create new jobs, and diversify farm income streams across the islands.

SAF can bring meaningful reductions in aviation carbon emissions, with lifecycle emissions up to 50 to 80% lower than conventional jet fuel. Investing in local SAF production is not just economically sound, it's an environmental imperative.

Hawaii needs to be competitive with other states that have already adopted tax credits for liquid 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.

We urge you to pass this legislation and help unlock the potential of locally produced Sustainable Aviation Fuel. Together, we can reduce aviation emissions, strengthen our clean energy economy, and build a cleaner, more prosperous future for Hawai'i. Thank you for your



time and consideration.

Mahalo,

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



February 2, 2026

Representative Darius Kila, Chair  
Representative Tyson Miyake, Vice Chair  
House Transportation Committee  
Hawaii State Legislature

### Support for HB1694

Dear Chair Kila, Vice Chair Miyake and Members of the Committee on Transportation,

Thank you for the opportunity to provide our testimony in support of HB1694 which establishes a Sustainable Aviation Fuel (SAF) distribution tax credit in Hawai'i.

Hawai'i is uniquely dependent on aviation for economic stability, emergency response, and daily connectivity between islands and to the world. At the same time, transportation is the State's largest source of greenhouse gas emissions, and aviation is one of the hardest sectors to decarbonize. Unlike ground transportation, aviation does not yet have scalable alternatives such as electrification or hydrogen that can be deployed safely or reliably.

Sustainable Aviation Fuel is the **only deployable, near-term solution** to meaningfully reduce aviation emissions. SAF is a certified, drop-in fuel that can be used in existing aircraft and airport infrastructure today, without disrupting service or requiring new aircraft technologies.

HB1694 directly addresses the main barrier preventing SAF adoption: cost. By establishing a **performance-based tax credit tied to verified lifecycle emissions reductions**, this bill helps narrow the price gap between conventional jet fuel and SAF while maintaining transparency, accountability, and fiscal safeguards.

Equally important, this measure sends a **clear market signal** that Hawai'i is serious about deploying SAF. That signal is essential for attracting fuel producers, distributors, and infrastructure investment to serve the Hawai'i market. Without it, SAF supply will continue to concentrate elsewhere, making it far more difficult for Hawai'i to meet its climate goals.

This bill is also consistent with the State's legal obligations following the Navahine settlement and aligns with the Hawai'i Department of Transportation Energy Plan, which identifies SAF as the most viable pathway for aviation decarbonization.

For these reasons, we respectfully urge the Committee to pass HB1694.

Sincerely,

A handwritten signature in black ink that reads "Stephanie P. Donoho". The signature is fluid and cursive, with the first name being the most prominent.

Stephanie Donoho, Administrative Director  
Kohala Coast Resort Association





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**Executive Officers**

**Kit Okimoto**, Okimoto Corp., *Chair*  
**Jayson Watts**, Mahi Pono, *Vice Chair*  
**Jill Tamura**, Tamura Super Market, *Secretary/Treas.*  
**Lauren Zirbel**, HFIA, *President and Executive Director*  
**Paul Kosasa**, ABC Stores, *Advisor*  
**Toby Taniguchi**, KTA Superstores, *Advisor*  
**Joe Carter**, Coca-Cola Bottling of Hawaii, Odom, *Advisor*  
**Eddie Asato**, Pint Size Hawaii, *Advisor*  
**Gary Okimoto**, Safeway, *Advisor*  
**Maile Miyashiro**, C&S Wholesale, *Immediate Past Chair*

TO: Committee on Transportation  
FROM: HAWAII FOOD INDUSTRY ASSOCIATION  
Lauren Zirbel, Executive Director

DATE: February 3, 2026  
TIME: 10:30am

RE: HB1694 Relating to Sustainable Aviation Fuel Tax Credit  
Position: Support

The Hawaii Food Industry Association is comprised of two hundred member companies representing retailers, suppliers, producers, manufacturers and distributors of food and beverage related products in the State of Hawaii.

HFIA is in support of this measure. In addition to make air travel more sustainable, locally produced sustainable aviation fuel (SAF) has benefits for our food systems. This project will promote local agriculture. SAF is being made from locally grown camelina, and camelina meal will serve as a high-value livestock feed, providing both energy and protein for our dairy herds while supporting Hawai'i's broader goal of increasing local food security.

Creating SAF for Hawaii has been the result of partnership and shared vision from a number of stakeholders, and is poised to have genuine positive impact for our state. We urge the legislature to support this valuable endeavor by passing this measure. Thank you for the opportunity to testify.





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February 3, 2026

HEARING BEFORE THE  
HOUSE COMMITTEE ON TRANSPORTATION

**TESTIMONY ON HB 1694**  
RELATING TO SUSTAINABLE AVIATION FUEL TAX CREDIT

Conference Room 430 & Videoconference  
10:30 AM

Aloha Chair Kila, Vice-Chair Miyake, 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 HB 1694**, which establishes a tax credit for sustainable aviation fuel distribution in Hawai'i to reduce greenhouse gas emissions. HFB views this measure as part of a broader effort to support renewable fuels that can create new opportunities for Hawai'i's agricultural sector.

Renewable fuel production using locally sourced feedstocks can help diversify agricultural income, create new markets for dedicated energy crops, crop residues, and agricultural byproducts, encourage the productive use of agricultural lands, reduce greenhouse gas emissions, and reduce our dependence on imported oil. For farmers and ranchers, these opportunities can complement their agricultural production while supporting long-term sustainability and economic viability.

HFB has consistently supported the development of renewable fuels that rely on agricultural inputs and generate value-added byproducts, such as livestock and aquaculture feed, that can benefit local ranching, dairy operations, and aquaculture. Creating demand for these feedstocks helps strengthen rural economies and supports agricultural innovation.

HB 1694 focuses on fuel distribution and provides an incentive framework that can help make sustainable aviation fuel more viable in Hawai'i. HFB appreciates the opportunity for agriculture to play a role in this emerging sector and supports the bill as part of a balanced approach to energy diversification and agricultural development.

Thank you for the opportunity to testify.



February 3, 2026

**TESTIMONY IN SUPPORT OF HB 1694  
RELATING TO SUSTAINABLE AVIATION FUEL TAX CREDIT**

House Committee on Transportation  
The Honorable Darius K. Kila, Chair  
The Honorable Tyson K. Miyake, Vice Chair

Tuesday, February 3 at 10:30 a.m.  
State Capitol, Conference Room 430

Aloha Chair Kila, Vice Chair Miyake, and members of the Committee,

Thank you for the opportunity to provide testimony in **SUPPORT** of HB 1694, Relating to Sustainable Aviation Fuel Tax Credit.

My name is Eric Wright and I serve as President of Par Hawaii. Par Hawaii is the largest local supplier of fuels, including various grades of utility fuels, as well as diesel, jet fuel, gasoline and propane.

HB 1694 establishes a tax credit specifically for sustainable aviation fuel (SAF).

We recognize the importance of charting a clean energy future for Hawai'i. As the local producer of fuels for Hawai'i's consumers, we are committed to a part of this future by investing over \$100 million to develop Hawai'i's largest liquid renewable fuels manufacturing facility at its Kapolei refinery. The project which will be completed in Q1 2026 is expected to produce approximately 61 million gallons each year of renewable diesel, sustainable aviation fuel, renewable naphtha and liquified petroleum gases using renewable feedstock.

HB 1694 is critical for fulfilling Hawai'i's climate and energy commitments, including the goal of achieving net-zero emissions by 2045. House Concurrent Resolution 70 adopted in 2025 urges the Department of Transportation to collaborate with key stakeholders to develop policies and incentives promoting SAF production, distribution, and adoption. By supporting local SAF production, Hawai'i can enhance its energy security, reduce reliance on imported fossil fuels, and position itself as a leader in sustainable aviation.

We view HB1694 as another step towards a cleaner, more sustainable future for Hawai'i's aviation sector. We believe it is possible to produce significant amounts of renewable fuel here in Hawai'i, and in a way that supports the local agriculture sector. Par Hawaii has partnered with Pono Pacific, a land management and conservation company, to develop locally grown, oil-yielding crops that will contribute to Hawai'i's clean energy future.

Thank you for allowing Par Hawaii the opportunity to support HB 1694.

February 3, 2026

House Committee on Transportation  
Representative Darius Kila, Chair  
Representative Tyson K. Miyake, Vice Chair

Tuesday, February 3, 2026, 10:30 a.m.  
Conference Room #430 and via video conference



**RE: HB 1694 Relating to Sustainable Aviation Fuel Tax**

Dear Chair Kila, Vice Chair Miyake and members of the Committee,

My name is Kiran Polk, and I am the Executive Director & CEO of the Kapolei Chamber of Commerce. The Kapolei Chamber of Commerce is an advocate for businesses in the Kapolei region including Waipahu, Kapolei, 'Ewa Beach, Nānakūli, Wai'anae and Mākaha. We work on behalf of our members and the broader business community to improve the regional and State economic climate and to help West O'ahu businesses thrive.

The Kapolei Chamber is in **support of HB 1694**, which establishes a Sustainable Aviation Fuel (SAF) distribution tax credit in Hawai'i. The Kapolei Chamber of Commerce represents a diverse cross-section of businesses in West O'ahu and supports policies that promote economic stability, infrastructure readiness, and long-term sustainability. Aviation is essential to Hawai'i's economy and everyday life, providing interisland connectivity, supporting tourism and commerce, and ensuring the movement of goods and emergency services.

At the same time, aviation presents unique challenges in reducing greenhouse gas emissions. Unlike ground transportation, there are currently limited alternatives that can be deployed at scale without disrupting operations or requiring new aircraft technology. **Sustainable Aviation Fuel (SAF) is the only deployable solution that offers a practical, near-term option to reduce emissions using existing aircraft and fueling infrastructure.**

This measure helps address a key barrier to SAF adoption by narrowing the cost difference between conventional jet fuel and SAF through **a performance-based tax credit tied to verified lifecycle emissions reductions**. This approach encourages early adoption while maintaining transparency and fiscal safeguards, without imposing mandates on operators.

From the perspective of Hawai'i's business community, clear and consistent policy signals are important to support planning and investment. Measures such as this can help create a more predictable environment for airlines, fuel suppliers, and related industries that operate in or serve Hawai'i, while advancing the State's broader climate and energy objectives.

For these reasons, the Kapolei Chamber of Commerce **supports HB 1694** and respectfully urges the Committee to pass this measure.

Thank you for this opportunity to provide testimony.

Best,

Kiran Polk  
Executive Director & CEO

**TESTIMONY IN SUPPORT OF HB 1694 RELATING TO SUSTAINABLE AVIATION FUEL TAX CREDIT**

Aloha Chair Darius Kila, Vice Chair Tyson Miyake, and Members of the House Committee on Transportation,

My name is Nahelani Parsons, and I am the Executive Director of the Hawai'i Renewable Fuels Coalition (HRFC). On behalf of our coalition members across the energy, agriculture, labor, and transportation sectors, I offer our **strong support for HB1694**, which establishes a dedicated tax credit for sustainable aviation fuel (SAF) distribution in Hawai'i.

The HRFC is a diverse alliance of stakeholders working to achieve Hawai'i's renewable energy goals. Our founding members include:

- **Hawaiian/Alaska Airlines:** Leaders in adopting Sustainable Aviation Fuel (SAF) to decarbonize the aviation sector.
- **Pono Pacific:** Hawai'i's largest natural resource conservation company, advancing oil crop feedstock cultivation to support renewable fuel production.
- **Par Hawai'i:** The state's largest energy supplier, investing over \$100 million in renewable fuel production technology to strengthen energy security and sustainability.

In addition to these partners, HRFC collaborates with:

Pacific Biodiesel, a local producer of biodiesel. The Hawai'i Farm Bureau, representing 1,800 farm families statewide, to support renewable feedstock cultivation and enhance food and energy security. Ranchers, dairy farmers, and conservationists, such as Meadow Gold and Haleakalā Ranch, contributing to Hawai'i's resilience and self-sufficiency. Airlines for America, which advocates for SAF adoption nationwide to reduce aviation emissions.

**Hawai'i Renewable Fuels Coalition members:**

Airlines for America	Alaska Airlines	Haleakala Ranch
Hawaii Farm Bureau	Hawaii Fuelling Facilities Corp	Hawaiian Airlines
HECO	ITOCHU Corporation	Japan Airlines
Kuilima Farm	Meadow Gold Hawaii	Pacific Biodiesel
Par Hawaii	Pono Pacific	United Steelworkers

**HB1694: Critical to Reducing Aviation Emissions and Strengthening Hawai'i's Economy**

The transportation sector is the largest contributor to greenhouse gas (GHG) emissions in Hawai'i, and aviation accounts for over 50% of that footprint. HB1694 directly advances our ability to reduce aviation-related emissions while enabling economic growth and energy resilience.

**Why SAF Matters for Hawai'i**

- SAF is the only near-term option to decarbonize aviation, and unlike electric vehicles, or alternative types of fuel, it requires no new aircraft or airport infrastructure. A tax credit enacted this year would show a measurable reduction in GHG emissions this year; the impact is immediate.
- Cleaner aviation benefits all Hawai'i residents by reducing emissions from a system that moves our mail, medicine, food, and interisland travel, not just visitors. Following the Navahine settlement, the State has an affirmed legal obligation to reduce GHG emissions and ensure a life-sustaining climate for future generations.
- SAF is \$2 to \$4 more expensive than conventional jet fuel. Federal incentives alone are not sufficient to close this cost gap. State support is essential to remain competitive with jurisdictions like California and Oregon, which already offer similar credits.

**The Economic Opportunity**

HB1694 is not just about reducing emissions, it's about:

- **Creating clean energy jobs** in fuel distribution and logistics.
- **Attracting private investment** to Hawai'i's renewable fuel market.
- **Strengthening supply chain resilience** by reducing dependence on volatile fossil fuel imports.

This bill will ensure Hawai'i remains a viable destination for SAF producers, allowing us to secure local access to a cleaner fuel that supports both our climate mandates and economic recovery.

**Supporting SAF reduces the State Greenhouse Gas Emissions**

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SAF is more costly to produce than renewable diesel due to feedstock yield and processing demands. A higher credit for SAF is necessary to ensure production is viable and to meet aviation-specific climate mandates. Without this incentive, producers will simply prioritize lower-cost fuels, and Hawai'i will fail to reduce aviation emissions, despite having the infrastructure and demand in place.

- **Targeted tax credits unlock market growth and drive costs down.** These incentives are designed to be transitional, helping the market scale, drive costs down over time, and reduce the need for incentives in the future. The Sustainable Aviation Fuel Tax Credit helps bridge early cost gaps, enabling producers, refiners, and distributors to scale production. As volumes grow and supply chains mature, per-unit fuel costs decline over time.
- **Market certainty supports Hawai'i's farmers and landowners.** A stable, long-term tax credit provides the certainty needed to support expanded cultivation of rotational oilseed crops and other renewable feedstocks, allowing farmers to plan, invest, and participate in a growing local market.
- **State incentives are a necessary public-private investment in our future.** While individual producers may claim the credit, the benefits extend statewide across agriculture, energy, logistics, and labor, with program caps ensuring broad participation as the market grows. Without them, investment, agricultural opportunity, and jobs will continue to flow to states with stronger incentives, leaving Hawai'i dependent on imported fuels. HB1694 sends a clear and durable signal to farmers, producers, and investors alike by reinforcing policy certainty and enabling coordinated public-private investment across the full value chain, from farms and feedstock development to refining and distribution, advancing Hawai'i's climate, energy security, and economic development goals.

We respectfully urge the committee to pass HB1694. Mahalo for your continued leadership in building a cleaner, more resilient Hawai'i.

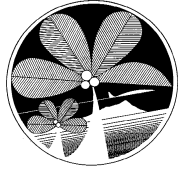
Nahelani Parsons

**Executive Director**

**Hawai'i Renewable Fuels Coalition**

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## AIRLINES COMMITTEE OF HAWAII



Daniel K. Inouye International Airport  
Terminal 1, Third Floor  
300 Rodgers Blvd., #62  
Honolulu, Hawaii 96819-1832  
Phone (808) 838-0011  
Fax (808) 838-0231

Representative Darius Kila, Chair  
Representative Tyson Miyake, Vice Chair  
Committee on Transportation

**RE: HB 1694 – Relating to Sustainable Aviation Fuel Tax Credit – In Support**  
**Tuesday, February 3, 2026; 10:30 a.m.**  
**Conference room 430**

Aloha Chair Kila, Vice Chair Miyake and members of the Committee:

The Airlines Committee of Hawaii (ACH), comprised of 19 signatory carriers that underwrite the State airport system, appreciates this opportunity to submit testimony in strong support of HB 1694, which establishes a tax credit for sustainable aviation fuel (SAF) distribution in Hawaii to reduce greenhouse gas emissions.

HCR 70 was adopted in the 2025 session, requesting the Department of Transportation to facilitate and accelerate the adoption of SAF to decarbonize Hawaii's transportation sector and support the State's climate goals. HB 1694 advances these goals. The production and purchase of SAF is several times more expense than current fuel, therefore, HB 1694 is essential for local SAF adoption.

We ask for your favorable consideration in passing this bill to help achieve a cleaner energy future for Hawaii. Thank you.

Sincerely,

ACH Executive Committee

Brendan Baker

David Sellers

Elizabeth Loomis

Randall Fiertz

Richard Ide

\*ACH members are Air Canada, Air New Zealand, Alaska Airlines, All Nippon Airways/Air Japan, Aloha Air Cargo, American Airlines, China Airlines, Delta Air Lines, Federal Express, Fiji Airways, Hawaiian Airlines, Japan Airlines, Korean Airlines, Philippine Airlines, Qantas Airways, Southwest Airlines, United Airlines, United Parcel Service, and WestJet.



**February 2, 2026**

**TESTIMONY ON HB 1694  
RELATING TO SUSTAINABLE AVIATION FUEL TAX CREDIT**

HOUSE TRANSPORTATION COMMITTEE  
Representative Darius Kila, Chair  
Representative Tyson Miyake, Vice Chair

Conference Room 224  
State Capitol  
415 South Beretania Street

Dear Chairman Kila, Vice-Chairman Miyake and Members of the Committees:

Airlines for America® (A4A), the principal trade and service organization representing the U.S. airline industry, appreciates the opportunity to submit comments in support of HB 1694, relating to the Sustainable Aviation Fuel tax credit. A4A and its member airlines have a strong record of climate leadership and are committed to working collaboratively with policymakers and industry partners to advance sustainable aviation fuel and achieve net-zero carbon emissions 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). The State of Hawai'i has similarly recognized the importance of SAF in reducing carbon emissions from aviation in the Department of Transportation's Energy Security and Waste Reduction Plan. We are pleased to have shared views with Hawai'i on the importance of SAF to emissions reduction by the aviation sector in Hawai'i.

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 under relevant ASTM standards for alternative jet fuel. Work is underway to approve its use at up to 100%. 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 rapidly scale-up SAF production capacity remains the relative cost to jet fuel buyers compared with conventional jet fuel and its production cost compared with Renewable Diesel (RD)<sup>1</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 the same value or

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<sup>1</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.



more value to RD than SAF will continue to inhibit SAF production. For this reason, we appreciate and support the proposed legislation to create a SAF specific tax credit in Hawai'i.

Achieving a 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 – including the Federal Clean Fuel Production Credit (CFPC) – needed to catalyze SAF production. The current Congress and Trump Administration demonstrated their continuing support for SAF by approving extension of the CFPC as part of the One Big Beautiful Bill Act (OBBA) last July. In order to close the economics of SAF, to make production of SAF profitable for producers and affordable for airlines, it requires a combination of both federal and state incentives, just as has been proposed in HB 1694.

Ensuring the sustainability and environmental integrity of feedstocks and 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. We believe HB 1694 is a great way to jump start that process, and we appreciate the leadership role the state intends to play in this space. Please do not hesitate to contact us if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'JMS', with a stylized flourish extending to the right.

Joshua M. Saltzman  
Senior Vice President, Global Government Affairs  
Airlines for America

**TESTIMONY ON HOUSE BILL NO 1694 RELATING TO**  
**SUSTAINABLE AVIATION FUEL TAX CREDIT**

Position: **Support**

To Representative Darius Kila, Chair; Representative Tyson Miyake, Vice Chair; and Members of the Committee on Transportation

Simonpietri Enterprises LLC (SEL) **SUPPORTS** the intention of this measure.

SEL is an O'ahu-based small business developing innovative ways to recycle waste generated in Hawai'i into Renewable Natural Gas (RNG), green hydrogen, Sustainable Aviation Fuel (SAF) and other beneficial recycled-material products for use in Hawai'i.

We are currently in the process of designing a small manufacturing plant – the Aloha Sustainable Materials Recycling and Fertilizer Facility (Aloha SMRFF) - in Campbell Industrial Park to divert over 200 tons per day of construction & demolition (C&D) waste from landfilling along with invasive and pest infested biomass to be converted into fuel and other value-added products. The SMRFF will serve as the pilot plant to our Aloha Carbon project which will divert approximately 2000 tons per day of C&D waste from landfilling and will focus on producing renewable fuels to meet state energy demands. If passed, this measure will incentivize and support small businesses like ours to contribute to the production and distribution of SAF, helping the state reach its climate goals while supporting economic development.

We appreciate the opportunity to testify on this measure, and urge your support for this bill.

Sincerely,



Marie-Joelle Simonpietri  
President

*About Simonpietri Enterprises LLC*

Simonpietri Enterprises is a Kailua, Hawaii-based woman- and veteran-owned small business with ten employees, focused on technical innovation and first-of-kind project development of emerging clean and renewable technologies. Since founding in 2006, we have helped dozens of small and large industrial companies in Hawaii, the continental U.S., Australia, and Canada improve the environmental and economic sustainability of their operations through technical and business advice in renewable energy conversion, waste reduction and re-use, and greenhouse gas lifecycle impact reduction. Simonpietri Enterprises' founder and employees have participated in the strategy, planning, design, financing, development, construction, and energy efficiency/greenhouse gas reduction/sustainability renovation for over \$400 million in new renewable and first-of-kind sustainable fuel projects over the past 15 years. Since launching the Aloha Carbon waste-to-fuel technical development process in August 2020, Simonpietri Enterprises is now developing renewable fuel production facilities in its own right, starting with the Aloha Sustainable Materials Recycling and Fertilizer Facility (SMRFF) in Kapolei, Hawaii to divert wastes generated in Honolulu from landfilling and transform it to renewable fuel,

organic fertilizer, and recycled-material building products.

Comments before  
March 3, 2026 House Committee on  
Transportation  
  
**OPPOSING**  
**House Bills 1694, 1695 and 1986**  
Relating to “Clean Fuels” Subsidies

Mike Ewall, Esq.  
Founder & Executive Director  
Energy Justice Network  
215-436-9511  
mike@energyjustice.net  
[www.EnergyJustice.net](http://www.EnergyJustice.net)

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, members and member groups since our support and involvement was first solicited in 2015.

**Please oppose House Bills 1694, 1695, and 1986.**

**These bills would have the state violate the legal settlement in *Navahine F. v. Hawaii Department of Transportation*.** This settlement requires that the State achieve a goal of zero greenhouse gas emissions across all transportation modes within the State, including ground transportation and sea and air interisland transportation no later than 2045. This is not possible if biofuels or waste-based fuels are part of the mix, as they are not carbon free.

Calling it “clean fuel” or “sustainable aviation fuel” (SAF) does not make it clean. There is not enough land and water to grow a significant amount of biofuels in-state. The biotech industry keeps testifying in favor of biofuels bills because they know genetically modified enzymes and crops will be involved, risking biosecurity if grown or processed in-state. It is clear that most of this “clean fuel” will be imported big ag monocrop (mostly GMO) biofuels from the Americas, and that much of what would come from in-state is from toxic waste-to-fuels schemes like Aloha Carbon’s plan to try to gasify construction and demolition waste in Campbell Industrial Park on O‘ahu... using wood that the Hawaii Natural Energy Institute documented to have 200 times as much arsenic as clean wood.

There are no green alternatives for intercontinental flights and these fall outside of the *Navahine F.* settlement scope and the scope of state laws the settlement aims to enforce. Inter-island flights can best be decarbonized by switching to a combination of electric ferries and electric sea-gliders which can be powered by clean electricity sources like wind and solar. There is no need to be building infrastructure for differently dirty fuels that will involve companies that later lobby to prevent the transition to clean options we can start adopting now.

**Production will not be local:** As was discussed in the 1/29/2025 Joint Hearing on SB 995 before the Senate Energy and Intergovernmental Affairs and Agriculture and Environment Committees, the Department of Agriculture testified to the fact that there simply is not sufficient land or water to have a significant biofuels production industry within the state. This means that most of the production will come from the continent, predominantly the Midwestern states, and from South America, defeating the goal of establishing biofuels as a home-grown industry.

**Competition with food:** The same Senate hearing exposed how growing crops for biofuels in Hawai‘i would take up land and water needed for the state’s own food security goals to have more food grown in-state.

**Genetic engineering:** The Biotechnology Industry Organization regularly submits testimony in favor of biofuels bills, yet fails to be transparent about their motivation. Clearly, they expect to have genetically engineered crops and/or enzymes used for the production of supposedly “sustainable” aviation fuels. This raises many

biosecurity concerns, as well as concerns over increased herbicide spraying, since most genetically modified food crops are modified to withstand increased herbicide use.

**Toxic waste streams as feedstocks:** At least two companies are pursuing goals of producing fuels in the state using contaminated waste streams like construction and demolition waste. This is terribly polluting and even if the toxic metals and dioxins/furans do not end up in the fuel, they'll end up in the air, water, and/or waste byproducts at the in-state production facilities being proposed. More on the toxics concerns below.

**Finances:** The rather costly fuels are not competitive and are inherently quite expensive. If they were truly clean, one could argue that the expense is worth it, but a state mandate would have to be stacked with multiple federal subsidies to make it remotely feasible. However, those [federal subsidies](#) are vanishing as we speak under the Trump administration and [cannot be expected](#) to carry the day.

**Faulty Greenhouse Gas (GHG) accounting:** Biofuels look like a climate solution only because of biases in carbon accounting systems and life cycle assessments. There is a long-standing controversy over whether biofuels production uses more energy than it produces. The incredible amount of fossil fuel resources, land, water, fertilizer, chemicals, and other production systems needed to replace fossil fuels is enough to raise the question over whether it even makes sense to replace fossil fuels with biofuels – fuels that, are still carbon based and will still release GHGs when burned.

The incentives would be based on assessing the fuels for their “lifecycle greenhouse gas emissions.” There are many flaws and biases in greenhouse gas (GHG) accounting that cause plant-based (biomass/biofuels) and waste-based feedstocks to be assumed to be “carbon neutral,” even though there is a credible scientific debate over this controversy going for over two decades. Some of the science shows biofuels such as corn-based ethanol to consume more fossil fuels than they displace. The very existence of a debate over this shows that the “net energy” of biofuels are close enough to 1:1 that there can even be a scientific dispute over it. If biofuels require about as much fossil fuel (to grow, process, and transport) as they displace, there is no point subsidizing them and building new infrastructure to support a system that is not really an improvement.

**Sustainable Aviation Fuel does not exist:** There is no clean or sustainable way to produce a burnable fuel from raw resources and turn it into air pollution when burned. It is inherently not sustainable or circular. There is one approach that comes close to being sustainable or circular, and that is the approach advanced by Feather Fuels and by Twelve Benefit Corporation, one of the companies testifying in favor of “clean fuels” bills. That involves using wind or solar electricity to pull carbon dioxide out of the air, and to also electrolyze water to obtain hydrogen, then use Fischer-Tropsch gas-to-liquids technology to turn the carbon dioxide and hydrogen into a burnable hydrocarbon fuel. This combination of very expensive and energy intensive technologies is rather experimental and has not been done at scale. It could be good to experiment with and prove up as a technology that could make sense in 20 years, but it makes no sense to use clean wind and solar energy on this approach, when wind and solar can decarbonize things much faster and more efficiently if used to replace the burning of oil, biofuels, trash, and trees in the state’s electric grid, and then to eliminate oil and gas in transportation by electrifying that sector. More on this not being the right time below.

## Toxicity concerns

Biofuels are impractical and unaffordable to produce in-state. The main efforts to make “sustainable” aviation fuel in the state involve waste-based fuels. There are plans to gasify construction and demolition debris to make burnable aviation fuels on O’ahu. This is part of 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.

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).

Unlike coal, construction and demolition (C&D) waste is very heterogeneous, which can be comprised of steel, concrete, brick, lumber, plaster, empty paint cans, asphalt, wire, shingles, and much more. Pyrolysis and gasification technologies do not work well on heterogeneous fuels. They break down constantly and operate only in batches. These finicky technologies require very homogeneous fuels. Even those trying to process scrap tires fail repeatedly, because tires are not homogeneous enough for pyrolysis. Even the nation’s top cheerleader for tire burning, a spokesperson for the Rubber Manufacturers Association, once stated that “scores of start-ups have tried and failed to make money from tire pyrolysis. The road is littered with the carnage of people who were trying to make this technology viable.”

These technologies have been unable to operate at commercial scale, and typically are 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 due to “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 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.

Regarding toxic hazards, please see this heavily-cited (92 footnotes) six-page overview I wrote on the [toxic pollution issues associated with construction and demolition \(C&D\) waste incineration](#). While the paper focuses on direct incineration, many of the same principles apply, as the high temperature processes used in WTF technologies still release toxic metals while producing new toxic pollutants such as [dioxins and furans](#), the most toxic chemicals known to science.

C&D waste contains many toxic ingredients. There are chlorine sources in wood treatment chemicals like pentachlorophenol, and in PVC plastics in C&D waste. Painted wood can contain lead and mercury, while

treated wood can contain other toxic metals, namely arsenic, chromium, and copper. [Testimony](#) on House Bill 976 of 2025 from the Hawaii Natural Energy Institute (on pages 43-44 of the testimony packet), affirms high levels of arsenic, chromium and lead in C&D waste, with arsenic concentrations 200 times higher than clean wood. Their research also shows high levels of hydrochloric acid, copper and zinc from C&D waste, but doesn't point out a significant conclusion about this – that numerous [published studies](#) show that copper and zinc serve as catalysts for dioxin formation. [Dioxins](#) are the most toxic chemicals known to science and are formed in processes like those used to make these “sustainable” aviation fuels, where you have hydrocarbons, halogens like chlorine, and medium-high temperatures that are perfect for dioxin formation. These ultratoxic chemicals rapidly bioaccumulate and concentrate in meat and dairy products where 92% of human exposure comes from. Even if these emissions are blown out to sea, they concentrate and come back in the form of seafood.

## **Not the right time**

### **Prioritizing Conservation and Efficiency**

Transportation fuels should first be tackled by prioritizing a reduction in the need for unnecessary travel, then more efficient transportation. After prioritizing these, electrifying transportation is the best solution so that combustible fuels can be avoided entirely. Any system that relies on extraction of resources, burning them up, polluting the air, and having to dispose of wastes is not sustainable. For long-distance flights where electrification may not become possible, perhaps hydrogen has a role, but not until the electric grid is cleaned up and we have *extra* wind and solar available for truly green hydrogen production.

### **No Such Thing as Transition Fuels**

Burnable fuels are not a long-term option, as they are not clean or sustainable, no matter whether they're “biofuels” or waste-based. Any such move is in-between the present and the arrival of clean, non-burn options. Such fuels are often called “transition” fuels. However, the concept of a transition fuel is that we can go from A to B to C, as if B helps us get to C. However, transition fuels have different infrastructure and their own economic weight that causes them to stand in the way of a future transition to clean options.

By the time we finish transitioning the energy sectors that we have clean, non-burn solutions for, long-distance air travel will probably have viable solutions we can focus on to complete the job. However, investments in “differently bad” fuels are an economic investment dead-end, requiring another transition later, wasting time and money needed to do the proper transitions in other energy sectors. In fact, the notion of “transition” fuels is a false one, since it entails investing in infrastructure that could last for 30+ years. No company developing so-called “transition” infrastructure, and trying to amortize their investment, is going to step aside in 5-10 years when something cleaner comes along. They're going to fight to stop the transition to cleaner options to protect their investment. In this sense, it's dangerous to steer resources into false solutions such as waste-based burnable transportation fuels.

### **Prioritizing the Energy Sectors That Have Clean Alternatives**

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). [SB 680](#) aimed 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.

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.

The 2024 *Navahine F. vs. Hawaii Department of Transportation* settlement requires that the state come up with a plan to reach zero emissions in the transportation sector, which requires doing the same in the electricity sector. This bill would violate that requirement by advancing carbon-based fuels instead of investing in the transition needed in the electricity and (certain) transportation sectors to decarbonize properly and in the right order.

Attached is a resolution adopted by the Democratic Party of Hawaii in 2024 in support of an alternatives study, called for in [SB 2369](#), which would look at non-burn alternatives for the transportation and other energy sectors. Such a study would be more appropriate and in line with the state's greenhouse gas (GHG) reduction goals and legal requirements.

Also attached are our 8/31/2025 comments on HDOT's Draft Energy Security & Waste Reduction Plan which explain how greenhouse gas accounting for biofuels is gamed and unreliable, how the plan is insufficient in



many ways, not to mention unaffordable, and how the plan will be ridiculously expensive and environmentally harmful if relying on burnable “alternative” or “sustainable” fuels.

## Democratic Party of Hawai'i Resolution Adopted May 18, 2024

### **2024-15: Urging the Hawai'i State Energy Office to Study Non-Burn Alternatives to Combustible Fuels**

Whereas, It is important to use Hawai'i state taxpayer funds wisely to create the most good without speculative investments, unnecessary subsidies, or promotion of energy technologies or fuels that conflict with the state's climate change goals, or the peoples' constitutional right to a clean and healthful environment under Article XI, Section 9 of the Hawai'i State Constitution; and

Whereas, Energy consumption sectors tracked by the U.S. Energy Information Administration are electricity, transportation, and industrial, commercial and residential heating; and

Whereas, Technology exists to meet the needs of the electricity sector using conservation, efficiency, solar, wind, and energy storage, which can be made as firm as needed with added storage capacity; and

Whereas, Residential and commercial cooking space and water heating needs are easily electrified with existing technology, including ground- and air-source heat pumps and hybrid electric water heaters; and

Whereas, Industrial heating needs are increasingly possible to meet through a combination of concentrated solar, electricity, and—if necessary—green hydrogen sources from wind and solar; and

Whereas, Land-based transportation, even heavy trucking, can now be fully electrified and powered on clean, non-burn, electricity sources; and

Whereas, Ocean-based transportation is now possible to fully electrify, including international cargo ships with batteries, and some with stationary wind masts; and

Whereas, Interisland air travel is possible with electric sea gliders, as Hawaiian Airlines is exploring, while intercontinental air travel is the one sector that is hardest to convert to clean energy, though Airbus aims to bring to market the world's first hydrogen-powered commercial aircraft by 2035; and

Whereas, Combustible carbon-based fuels release greenhouse gasses as well as other harmful air pollutants, and the production of burnable fuels has many other environmental implications, including the use of land for fuel instead of food, water and soil depletion, spread of genetically modified organisms, and—if using waste streams to make fuel—toxic chemical releases and solid waste byproducts; and

Whereas, Technologies to turn waste into fuels are highly speculative, controversial and polluting, and typically fail to operate at a commercial scale, usually falling apart technically, economically, or both; and

Whereas, Climate impacts of biomass and waste-based biofuels can be close to or greater than those from fossil fuels, especially where trees are cleared to grow bioenergy crops; and

Whereas, Investing in "transition" fuels only builds up an economic interest that makes it harder, politically and economically, to move to the next step where burnable fuels are ultimately replaced; and

Whereas, It is wise to spend public funding first on clean, combustion-free solutions that already exist, focusing on energy sectors where those solutions are not yet fully implemented; therefore be it

*Resolved*, That the Democratic Party of Hawai'i urges the Hawai'i State Energy Office to conduct a study of the different energy consumption sectors to determine which can be most quickly and cost-effectively decarbonized through additional public investment in combustion-free alternatives; and be it

*Ordered*, That copies of this resolution shall be transmitted to the offices of the Governor and Lieutenant Governor of the State of Hawai'i, the Hawai'i Chief Energy Officer, and all members of the Hawai'i State Legislature who Democrats.



## Comments on HDOT's Draft Energy Security & Waste Reduction Plan

8/31/2025



Aloha HDOT:

We submit these comment to express our concerns over the fiscal and environmental consequences of the Hawai'i Department of Transportation (HDOT) [Draft Energy Security & Waste Reduction Plan](#) (hereinafter "ESWRP"). We urge HDOT staff, consultants and stakeholders, including members of the Hawai'i Youth Transportation Council to read these comments in full, and to spend time digging into the references and footnotes, as there is much to understand about the wide range of false solutions being advanced by this draft plan.

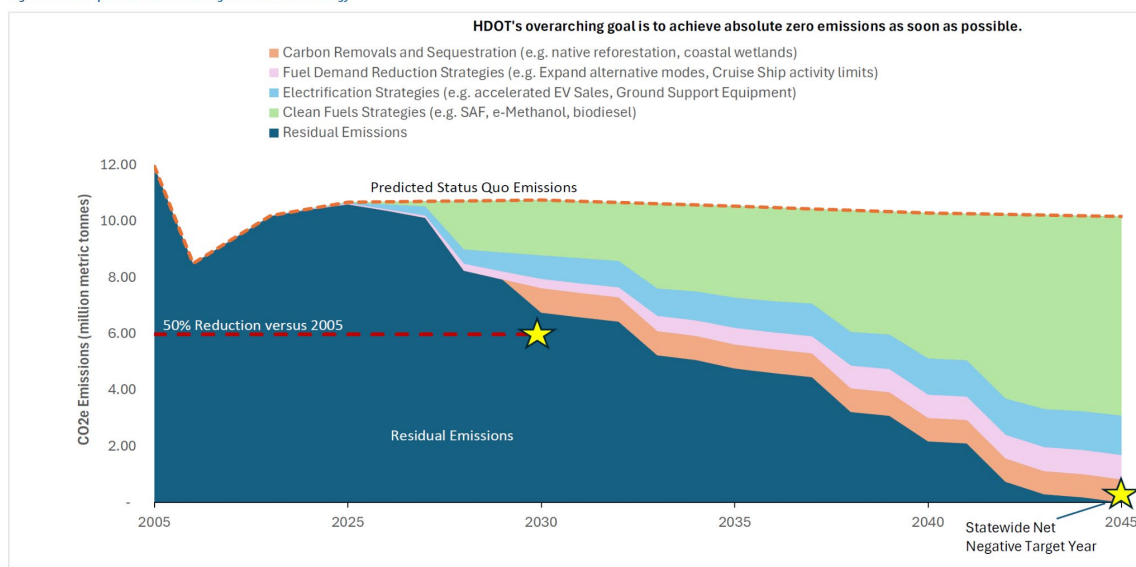
The plan's objective is to meet the goal of zero greenhouse gas (GHG) emissions from the state's "ground transportation and interisland sea and air transportation" systems by 2045, in accordance with state law (HRS § 225P-8)<sup>1</sup> and the *Navahine F. v. Hawai'i Department of Transportation* court settlement.<sup>2</sup>

Sadly, the plan falls short of this goal and advocates for harmful false solutions and for a "double transition" approach that will be far more expensive than necessary by making two (or three?) major industrial transformations within 20 years instead of one, more thoughtful, transition.

**An environmentally-friendly plan should rely on about 40% demand reduction and 60% electrification, which requires that the state's electric grids' capacities be expanded and that combustion-based generation be eliminated.**

**Instead, as the chart below shows, the plan relies about 70% on burnable "clean fuels" (in green) which are far from clean (some are even worse than the fossil fuels they'd replace), only 14% electrification (light blue), only 8% demand reduction (pink), and the remaining 8% is a shortfall (orange) that HDOT wants to make up with controversial "reductions" elsewhere, in violation of the legal settlement.<sup>3</sup> The plan's text states that the shortfall is actually 10%, but the chart in Figure 3-1 shows it to be closer to 8%.<sup>4</sup>**

Figure 3-1. Transportation 2045 Net-Negative Emissions Strategy



<sup>1</sup> <https://law.justia.com/codes/hawaii/title-13/chapter-225p/section-225p-8/>

<sup>2</sup> <https://statecourtreport.org/sites/default/files/2024-07/first-circuit-court-of-hawaii-joint-stipulation-and-order.pdf>

<sup>3</sup> Hawai'i Department of Transportation, "Draft Energy Security & Waste Reduction Plan," (hereinafter "ESWRP") June 27, 2025, p.27, Figure 3-1. <https://hidot.hawaii.gov/wp-content/uploads/2025/06/Draft-ESWRP-6.27.25.pdf>

<sup>4</sup> ESWRP, page 28 states: "The combined strategies are projected to achieve a 90 percent reduction of baseline emissions in 2045, with the remaining 10 percent reduction coming from hard-to-decarbonize sectors addressed by future carbon removal projects."

## Let's not plan to fail

To fulfill legal mandates, the plan must go all the way to zero greenhouse gas emissions by 2045. No plan can guarantee success, but it has to be designed so that it is possible. It's not adequate to start off the plan with this in the first paragraph:

"A sustainable and just intermodal transportation system is one that is ***largely*** powered by clean and locally sourced power, including electricity fueled by renewable energy, ***low-carbon fuels***, and people walking or rolling" (emphasis added).

Furthermore, in the second paragraph of the substance of the plan, on page 14, it states that the plan "aims to lead the state to **net-negative emissions by 2045 and ultimately zero emissions in the transportation sector as soon as possible**" (emphasis added).

"Net" meant "not" (hence the need to meet shortfalls of the mandated zero emissions with reductions outside of the transportation sector), and the "ultimately" (implied to be *after* 2045) reaching zero emissions "as soon as possible," is an admission that this plan aims to push the zero emissions target past 2045, the year mandated in the state law and enforced in the settlement agreement.

Page 90 of the plan states:

"...the reality that currently available SAF [sustainable aviation fuels] has significant remaining lifecycle GHG emissions. Because of these hurdles, despite HDOT's and stakeholders' expected best efforts to reduce GHG emissions, it is anticipated that **achievement of absolute zero GHG emissions will occur after 2045**" (emphasis added).

It is good to see the honesty, but HDOT is still required to have a plan that lands at zero by 2045. As discussed later, this means that sustainable aviation fuels (SAF) must go, as there is not adequate time or money to waste on false solutions that are not zero GHG emissions.

HDOT cannot start off with a plan that expects to miss its mark by 8-10%. Since the "clean" fuels and electricity that make up about another 84% of the plan are not zero GHG emissions sources, the draft plan would miss the mark by far more than 8-10%.

Air travel comprises over half of the GHG emissions this plan aims to reduce. The plan expects 62% of air travel emissions reductions to come from "traditional SAF" by 2045.<sup>5</sup> SAF is not zero emissions and could easily have greater emissions than the jet fuel currently used. Planning for "traditional" SAF to still be used by the 2045 goal is also not in line with the plan's intention to move from "near-term" biofuels options (synonymous with "traditional SAF") to long-term electrofuel options that supposedly have lower or zero GHGs.

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<sup>5</sup> ESWRP, p.69, Table 3-3.

## Avoid greenwashing language

“Clean fuels” and “sustainable aviation fuels” are inappropriate terms. To be more credible and objective, we recommend using “alternative fuels” or “alternative aviation fuels” so that the name itself is not pre-judging that the fuels are clean or sustainable when the plan (in appendix F) even addresses how most of these fuels have downsides that make them not so clean or sustainable.



Similarly, terms like “zero-carbon alternative fuels” (p.18 of the plan) should not be used since nearly every burnable fuel contains carbon and releases it when burned. Fuels that do not contain carbon have other GHG impacts associated with them such as nitrous oxides from burning ammonia, or the indirect effects of leaked hydrogen, which helps methane persist in the atmosphere. When people hear “zero carbon,” it is typically understood to be synonymous with “zero GHG impacts.”

All uses of the words, “clean,” “sustainable,” or “zero” should be searched and reviewed for objectivity. Similarly, assumptions that “renewable” means “clean” or “zero GHG emissions” must be reviewed, as it does not mean that when combustion-based systems are used. The state’s Renewable Portfolio Standard (RPS) law counts as “renewable” the burning of “biomass” (trash, trees and other solid waste and crops), liquid biofuels, and biogas (toxic landfill gases and anaerobic digester gas), none of which are clean or zero-GHG emission, and some of which are worse than the fossil fuels they replace. Nearly half of the energy from the burning of trash comes from fossil fuel sources like plastics made from oil and gas. Even once the 100% renewable electricity by 2045 RPS goal is met, assumptions that this means electricity is GHG-free will be false unless these combustion sources are eliminated from the electric utility’s portfolio.

As the opening of the 2023 Cerulogy report, “Scrutinising the future role of alternative fuels in delivering aviation decarbonisation” states:

“Readers who are used to the discussion of alternative aviation fuels might have noticed that... we have studiously avoided using a term that has become standard in the industry in recent years – SAF, standing for Sustainable Aviation Fuel. Instead, we prefer to say ‘alternative aviation fuel’.... The reason that we prefer not to use the term SAF is because sustainability is a characteristic of a fuel pathway that is at least somewhat subjective (i.e. it depends on which sustainability criteria are considered important), that may change over time (sustainability can be affected by variables outside the control of a fuel producer such as deforestation rates), and that is at least somewhat scale-dependent – one might feel differently about devoting a couple of farms to bioenergy cropping than devoting half of the agricultural area of Europe.”<sup>6</sup>

The report goes on for two pages on this deliberate use of language, and we encourage HDOT to take it to heart as well.

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<sup>6</sup> Malins, C., Scrutinising the future role of alternative fuels in delivering aviation decarbonisation: Part 3 – the pathway to decarbonised aviation,” October 2023. [https://www.aef.org.uk/uploads/2023/11/Cerulogy\\_Alternative-fuels-in-aviation\\_Part-3-decarbonisation\\_Oct2023-1.pdf#page=10](https://www.aef.org.uk/uploads/2023/11/Cerulogy_Alternative-fuels-in-aviation_Part-3-decarbonisation_Oct2023-1.pdf#page=10)

## **Discuss public health impacts in a balanced way**

It is also important to provide balance and not selectively present only benefits and not harms when discussing energy sources that have both. Page 49 of the plan states: “Biodiesel also significantly lowers sulfur oxide (SOx) and particulate matter (PM) emissions, improving air quality for nearby residents.” There is no mention in the body of the report that other pollutants increase, such as nitrogen oxides (NOx) that trigger asthma attacks and volatile organic compounds (VOCs) that can cause cancer. One must reach into Appendix F on page 150 of the PDF to find out that there could be increased NOx emissions from biodiesel “in some cases” – and no mention of other pollutants that could increase, or of the health consequences of exposure to them.

Putting only benefits up front and burying the harms deep in an appendix is a form of greenwashing and misleads readers. The entire document has only one mention of asthma, one mention of respiratory disease and two mentions of cardiovascular disease (in Appendix F on pages 150 and 152 about biodiesel and renewable diesel). Both of these sentences speak in terms of diseases that would be avoided when these biofuels are burned in place of fossil fuels. However, asthma can be aggravated by increases in NOx from biodiesel burning. While there is a slight admission of the possibility of NOx increasing, there is no corresponding statement that it could aggravate asthma... only that respiratory disease could be alleviated. There are zero mentions of cancer or other public health impacts associated with some of the solutions in the plan.

We expect one-sided discussion of topics from corporations advancing their interests, but not from a public agency that is charged with implementing a plan that should benefit the environment and public health.

## **“Transition” fuel approach is politically unrealistic and makes high costs more extreme**

The plan’s “transition” approach is that it aims to build up a biofuels industry that will lobby against the subsequent transition to electrofuels because private corporations do not want to finance and build 30+ year infrastructure just to tear it down in 10-15 years.

In recent years, there has been a phalanx of lobbyists pressing the state legislature to subsidize “clean fuels” and “sustainable aviation fuels.” This includes airlines, the PAR oil refinery, biorefiners, electric utilities, agribusiness interests, the biotechnology industry trade association, fledgling startups aiming to turn waste streams into fuels, and some nonprofits who are aligned with these interests. Should they succeed and build out this industry to grow, import, and refine biofuels and waste-based fuels, which will take several years just to start up, it would make no sense for them to throw out these investments and tear down all of this infrastructure just to facilitate a transition to “electrofuels” in the latter portion of the 20-year plan period.

It can easily take 5-10 years to get a major new infrastructure project like a biorefinery financed and built. Financing typically involves a 10-20 year investment. The lifetime of the infrastructure can be 20-30 years. No business person will go along with tearing down their investment halfway through its operational life if they can avoid it.

Building up a biofuels industry with the intention to switch gears to an electrofuels industry means that all the economic interests invested in the biofuels buildout will use their profits and political power to lobby against the next transition.

Despite this glaring political problem, the plan aims to make two transitions, if not actually needing a third transition after 2045.

The plan would have state taxpayers subsidize building up “low-GHG” biofuels industries in the short term just to tear them down within 20 years to replace them with other burnable “synthetic” and “electrofuels” that are terribly inefficient and purport to be zero GHG, but are not.

As the table below, from the plan, demonstrates, between 2030 and 2045, the plan would build up, then aim to dismantle 35% of the biodiesel industry, 65% of the ethanol industry, and 72% of the renewable LNG industry – both the supply side, as well as the storage and transportation infrastructure using these fuels unless the same infrastructure can run on the electrofuels that replace them.

**Table F-1. Projected Alternative Fuel Demand by Type, Year, and Sector**

Fuel Type	Estimated Demand (2030)	Estimated Demand (2045)	Applicable Sectors
Biodiesel	20 million gallons	13 million gallons	Ground (heavy-duty)
Renewable Diesel	19 million gallons	52 million gallons	Ground and Marine
Ethanol	17 million gallons	6 million gallons	Ground (light-duty)
Renewable Gasoline	Not included	Not included	Ground (light-duty)
Renewable LNG	32 million therms	9 million therms	Marine
SAF	410 million gallons	600 million gallons	Aviation
eSAF	No demand in 2030	110 million gallons	Aviation
BECCS SAF	No demand in 2030	36 million gallons	Aviation
e-Methanol	No demand in 2030	58 million gallons	Marine
e-Ammonia	No demand in 2030	62 million kg	Marine
Green Hydrogen	No demand in 2030	1.6 million kg	Marine

Many examples throughout the plan spell out this intent to make at least two transitions:

Page 24: “Develop the infrastructure and supply chain for bio-/renewable diesel and renewable LNG in the short term, enabling intra- and inter-state vessels to transition to these low-carbon fuels, while planning for a long-term shift to alternative clean fuels such as green methanol, green ammonia, or green hydrogen to fully decarbonize marine operations.”

Page 30: Fig 3-3:

2. **Cruise Vessel:** Non-home ported vessels transitioning to bio-LNG near term and e-fuels longer term
3. **Interisland Operation:** 100% biodiesel by 2030, transitioning to e-fuels by 2045.
4. **Inter-state Operation:** 70% bio-LNG by 2030, shifting to e-fuels by 2045.
5. **Assist Tugs :** 100% biodiesel by 2030, moving to zero emissions by 2045.

Page 49: “Clean marine fuels include biofuels (such as biodiesel or renewable diesel), methanol, ammonia, hydrogen, and bio- LNG, each of which has different technological requirements and operational impacts. Renewable biodiesel offers a drop-in solution for existing diesel engines with minimal modifications, making them an attractive early-stage emissions reduction strategy. In



contrast, LNG, methanol, ammonia, and hydrogen, require engine modifications or entirely new vessel builds, making them longer-term solutions.”

Page 49: “For intra-state marine vessels, the recommended transition strategy starts with low-carbon drop-in fuels such as biodiesel and renewable diesel in the near term, with a goal of fully adopting these fuels across intra- state operations by 2030. Beyond 2030, the transition is expected to shift toward e-methanol and e-LNG, with ammonia adoption beginning in 2035 and green hydrogen introduced post-2040. These alternative fuels will require new vessel designs or engine modifications, making their adoption more complex and capital-intensive.”

Page 52: “In the short term (by 2030), efforts should focus on biodiesel infrastructure, followed by LNG, e-methanol, and ammonia bunkering by 2035, and ultimately hydrogen infrastructure post-2040.”

“Given the higher costs of biodiesel, bio-LNG, e-methanol, ammonia, and hydrogen; financial incentives are critical to encourage adoption.” (ESWRP, p.52)

The high costs of these fuels are admitted throughout the plan, more so in the appendices. Requiring two or more transitions will make an expensive plan far more expensive. Alternative aviation fuels being explored are projected to cost about 2-5 times as much as fossil jet fuel, and this approach of making two transitions within two decades will only magnify the costs to taxpayers and consumers.

Most of these “longer-term solutions” are not genuinely zero GHG emission in their burning or lifecycle, which could necessitate a third transition to full electrification with non-burn renewable electricity sources. It would make more sense to go directly to these solutions as soon as they can be made available, and to focus on what is possible on our way there, such as conservation and efficiency strategies, cleaning up and expanding the grid, and electrifying transportation where we can, as soon as we can.

## **Ensuring Proper GHG Accounting & Modeling**

### Counting emissions from electricity generation

It is unclear whether and how GHG emissions from the electricity sector will be counted. The plan seems to state it both ways. On one hand, it seems as if they’ll be counted:

Page 80 states:

“This GHG inventory boundary includes the following two sources of indirect emissions:

- Emissions from EV electricity consumption until the electricity grid becomes 100 percent renewable
- Upstream emissions from the production of alternative fuels

The inclusion of emissions from electricity production transportation emissions is one deviation from the statewide DOH inventory approach. Because of the carbon-intensive electrical grid in Hawai’i, it would be disingenuous for this Plan to assume

zero GHG emissions from EVs. Therefore, electricity emissions from EVs and other electric non-road equipment are quantified in this Plan.”

Page B-12 reinforces this: “the baseline emissions projection includes emissions from electricity generation needed to charge EVs. ...electricity grid emissions from EVs and equipment were considered in assessing the impact of electrification on the HDOT emissions inventory.”

As the first bullet above states, emissions will be counted from EV electricity *until* the electric grid becomes 100% renewable. This notion is repeated on page 84, where it states “Emissions from EV electricity consumption will be included in this Plan until the electricity grid becomes 100 percent renewable.”

This assumes that “renewable” energy sources are not releasing GHGs. In fact, trash incineration (like the H-POWER incinerator on O’ahu) releases 65% more GHGs per unit of electricity produced than a coal burning power plant, and nearly half of those emissions are from the burning of fossil fuel-derived plastics. Burning trees, as Mahipapa, LLC does on Kaua’i, and as Hu Honua has been trying to do in Pepeekeo on Hawai’i Island for nearly two decades, releases 50% more GHGs per unit of energy than a coal power plant does. Biofuels and biogas combustion are also not without their own GHG emissions. **“Renewable” does not mean GHG-free. It is imperative that all GHGs are counted, including from “renewable” sources.**

Whether electricity emissions are counted at all seems to be contradicted on page 29, where it states, “EVs are assumed to have zero emissions in transportation,” and on page B-11:

### **“Exclusions**

This Plan is written with the assumption that, for purposes of tracking against net-negative and interim GHG reduction targets, transportation emissions are defined using a similar basis as the DOH GHG Inventory. In that inventory, transportation emissions are limited to the fuels consumed by ground vehicles, aircraft, and watercraft. The following briefly describes excluded sources:

- **Upstream impacts of fuel production**, which are included in the Industrial Process and Product Use (IPPU) sector or **excluded entirely for fuels produced outside Hawai’i.**
- Like fuels, **production of concrete, asphalt and steel** is covered under IPPU or **excluded for materials from outside Hawai’i.**
- **Electricity generation**, which is a portion of the Energy sector” (emphasis added).

Is this last bullet really stating that electricity generation will not be counted, even for EVs, contradicting the prior statements in the plan?

The first bullet also contradicts a statement from page 80, which correctly indicates that upstream impacts of fuel production must be counted, even for the bulk of the biofuels that are imported. Page 80 states:

“The other deviation is the inclusion of upstream emissions from the production of alternative fuels. Clean fuels and other alternative fuels vary widely on lifecycle GHG impacts, and **it is very important that this Plan not incentivize use of alternative fuels with high upstream emissions, assume all clean fuels result**

**in zero anthropogenic emissions, or ignore any shift of GHG emissions from Hawai'i tailpipes to international fuel production and processing.** Therefore, similar to the approach with electricity, the reduction pathways in Chapter 3 include pro-rated reductions to account for the estimated lifecycle impacts of fuels. For example, a shift of a group of vehicles from petroleum diesel to biodiesel is not illustrated as a 100 percent reduction in emissions in this roadmap" (emphasis added).

Is the use of the term "anthropogenic" implying that "biogenic" emissions can be ignored?

### Counting Refrigerants

Page 22 of the plan dismisses refrigerants as negligible:

"HDOT acknowledges that there are other GHG pollutants such as hydrofluorocarbons and perfluorocarbons being emitted as a result of transportation such as leakage from vessel and vehicle air conditioning systems. However, these are outside the boundary of the emissions inventory and are also expected to be quite minimal compared to combustion emissions from aviation, marine, and ground transportation vehicles and equipment, and thus negligible."

This should be reconsidered in light of the following:

- Older mobile air conditioning systems may not be factory sealed.
- Unlike stationary units, they get jostled a lot, making leaks inevitable. This study on R134a emissions from vehicles may be useful.<sup>7</sup>
- Refrigerants historically have very high global warming potentials (GWP). R134a was the norm in systems and has a high GWP of 1,526 over 100 years (meaning that it is 1,526 times as potent as CO<sub>2</sub> over that time frame), and a GWP of 4,144 over 20-years, which is a more relevant time frame, and the time frame of this policy.
- Most passenger vehicles built in 2025 use R1234yf instead of R134a. R1234yf is an HFO with an ultra-low global warming potential (GWP100 is less than 1 in AR6), however larger vehicles and trucks have not all changed over. While the amount of R134a will be decreasing over the years, R1234yf produce trifluoroacetic acid (TFA), a single-chain PFAS, which is of greater concern than its GWP value.<sup>8</sup> R1234yf completely breaks down into TFA in 7-10 days' time, which means local concentrations of that "forever chemical" will increase. TFA is being regulated in the EU, but I think the U.S. does not yet recognize it as something to worry about.
- DIY vehicle air conditioner recharging is an activity that should be regulated. Discharging a can of R134a into a leaky system will just cause that R134a to be emitted. Since systems don't necessarily need a whole can, people are likely to throw away partial cans, resulting in contents being expelled into the atmosphere. One way of lowering the environmental impact is to require cans of refrigerant to be filled with "reclaimed," not "virgin," refrigerant. In Washington State, they have banned the use of all small containers (or DIY) of automotive refrigerants. They did that because the R134a in the cans always left over a little bit, and the collective impact of those heels was significant.

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<sup>7</sup> <https://pubmed.ncbi.nlm.nih.gov/11878368/>

<sup>8</sup> <https://naturalrefrigerants.com/experts-sound-the-alarm-about-rising-tfa-levels/>

- New York and California have programs relating to refrigerant recovery and recycling.<sup>9,10</sup> In New York, Part 494 bans the use of small containers of automotive refrigerant containing virgin substances effective January 1, 2027.
- In New York State's 2021 HFC emissions inventory, 15.9% of HFC emissions were from transportation HVAC (which does not include transportation refrigeration). This is more than residential HVAC emissions (10.9%) and commercial HVAC (13.3%), although less than commercial refrigeration (26.8%) and the general category for foams and propellants (29.8%). If Hawaii hasn't done an HFC inventory, the plan should not assume that transportation HVAC emissions are negligible.
- California had a program that charged a \$10 deposit on the DIY cans, but I see [that program has been discontinued](#), in favor of another one, [which pays up to 90% of the cost of professional automotive AC repair](#), for income-eligible residents.

Policies that shift more residents away from DIY cans and toward getting professional help with their automotive AC systems would have long-term benefits. Most shops have a piece of equipment that automatically recovers refrigerant from vehicles, cleans the refrigerant, tests the system for leaks, and recharges the refrigerant (and oil) to precisely the right amount. This is the best practice for long-term vehicle maintenance with environmental benefits for everyone else.

#### Global warming potentials (GWP)

Page 22 states:

“Using global warming potentials (GWP), emissions from these gases are converted to CO<sub>2</sub>e in this report. Only CO<sub>2</sub>e values are presented, as they account for all three GHGs in a standardized measure, with CO<sub>2</sub> comprising the largest share of emissions from the included source categories. All GHG emissions are reported in metric tons.”

GWPs are published by the International Panel on Climate Change (IPCC) through large “Assessment Reports” that come out about every seven years. The most recent data is from IPCC’s Sixth Assessment Report (AR6), which was released in 2021. The plan provides GWPs for 20-year and 100-year time frames, where 20-year GWPs are more appropriate if we’re to avoid climate change tipping points.

Is this plan using AR6 20-year GWP values? Will GWPs be updated as the Seventh Assessment Report (AR7) comes out in 2029 and when future reports come out?

#### The GREET Model: Underestimating Climate Impacts of Biofuels

Page 57 states that “emission factors for these fuels are sourced from the GREET Well-to-Wheel (WTW) Calculator (2022 version).”

“GREET” is the Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) model, a life-cycle analysis tool that calculates the direct greenhouse gas emissions from the production and use of various transportation fuels, such as ethanol and biodiesel.

<sup>9</sup> <https://dec.ny.gov/sites/default/files/2023-12/part494expressterms2023public.pdf>

<sup>10</sup> <https://ww2.arb.ca.gov/resources/fact-sheets/small-containers-automotive-refrigerant-consumer-requirements>

While mentioned only once in the plan, the use of the GREET model is pivotal, as it is proposed to be used as the measuring tool with which different burnable fuels will be considered to be reducing GHG emissions from the transportation sector.

A deciding factor in whether many biofuels are better or worse for the climate than the fossil fuels they replace is indirect land use change (ILUC). Through GREET, ILUC estimates for crop-based fuels are provided by the Global Trade Analysis Project BIO (GTAP-BIO) model which estimates the area of land converted during biofuel production.<sup>11</sup>

Leading climate and biofuels experts have written up a scathing and thorough critique of the GTAP model and how it vastly understates the impact of biofuels on climate change by downplaying ILUC. Authors include Yale professor Steven Berry, who has served as a consultant for the California Air Resources Board relating to ILUC from biofuels, and Princeton Senior Research Scholar Timothy Searchinger, who authored some of the landmark critiques of biogenic carbon neutrality assumptions. They write that “GTAP lacks a credible economic foundation” and “is particularly unable to credibly evaluate land use changes.”<sup>12</sup>

In GTAP, “estimated ILUC carbon losses from a gallon of corn ethanol and soybean biodiesel are extremely low, meaning there is little carbon cost for diverting even vast areas of prime farmland to biofuel production.”<sup>13</sup>

“Of thousands of economic parameters, only a small number claim to have any direct, empirical basis. Of these, few of the cited empirical studies make any use of credible techniques for distinguishing correlation from causation and, most fundamentally, supply from demand.”<sup>14</sup>

“We also review how additional, empirically unsupported decisions added to the model since the first version used for CARB have further reduced the estimated ILUC. As an example, the model makes a pure assumption, without any supporting economic analysis, that most new cropping area will be supplied not by expansion of cropland but by cropping existing cropland more frequently. This assumption also contradicts actual experience in the U.S.”<sup>15</sup>

ILUC, according to these authors, results in emissions that are roughly 3 to 4.5 times the emissions of the fossil fuels that the ethanol or biodiesel is replacing. However, only 10% of these average emissions are accounted for in GTAP’s ILUC estimate used by CARB, and the version used in GREET is even lower. The authors point out that GTAP, as used in GREET, would claim that all the cropland in Iowa can be diverted to biofuel production – or to any other use – with almost no effect on global land use elsewhere and almost no resulting climate consequences.<sup>16</sup>

The models incorrectly assume that converting pasture to cropland will not lead to deforestation to replace the pasture.<sup>17</sup>

Regarding some of the simplistic assumptions made in the model, they write: “This choice is understandable as a research strategy, but it does not produce a model that can be treated

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<sup>11</sup> <https://www.epa.gov/system/files/documents/2022-03/biofuel-ghg-model-workshop-gtap-bio-model-2022-03-01.pdf>

<sup>12</sup> Berry, S., Searchinger, T., & Yang, A., “Evaluating the Economic Basis for GTAP and Its Use for Modeling Biofuel Land Use,” Yale Tobin Center for Economic Policy, March 19, 2024. <https://www.energyjustice.net/fuels/gtap.pdf>

<sup>13</sup> *Id.* at 1.

<sup>14</sup> *Id.* at 2.

<sup>15</sup> *Id.* at 3.

<sup>16</sup> *Id.*

<sup>17</sup> *Id.* at 7.

seriously as a policy tool.”<sup>18</sup> They later point out that GTAP “appear[s] to be picking parameters to fit a narrative.”<sup>19</sup>

Their conclusions include the following:

“To summarize, the structure of the economics of the model produces physically impossible results. Even if the economics were reliable, the imposed adjustment factor generates an inconsistent result and lower ILUC.”<sup>20</sup>

“GTAP is generating results that project the lost carbon from land to generate additional crops for biofuels is only a very small fraction of the average carbon lost to produce these crops in the past. Only with these large reductions in ILUC can a model even project greenhouse gas reductions from these biofuels relative to using fossil shows. By contrast, as shown in Table 1, using this average carbon loss would indicate that crop-based biofuels do not come close to reducing greenhouse gas emissions from transportation over 30 years.”<sup>21</sup>

### The ACERT Model

Page 70 of the plan has a sidebar called “Lifecycle Emissions Analysis” (same title as the one mentioning GREET on page 57) that states:

“This emission inventory considers the use of sustainable aviation fuel as a clean fuel. To determine the emission reduction potential of SAF, an emission reduction factor was established by comparing the emission factor SAF to that of kerosene jet fuel (KJF). For example, KJF has a baseline emission reduction factor of 0 percent and SAF has an emission reduction factor between 65 and 80 percent. Conservatively, SAF was assumed to start at 65% reduction in 2028 and scale up reduction by 5% every five years through 2045. Note that these are some of the preliminary reduction factors assumed for this version of the report and they will be further refined in the final version.”

We ask that HDOT please respond to us to let us know what model was used to come up with these assumptions.

Elsewhere on the same page is mention of the “Airport Carbon And Emission Reduction Tool (ACERT)” which is an apparent misnaming of the “Airport Carbon and Emissions Reporting Tool.”<sup>22</sup> The ACERT model’s assumption on GHG emissions from biomass for electricity is 26 times lower per kilowatthour than EPA and Energy Information Administration (EIA) data shows. It also assumes that trash incinerator GHG emissions per tonne are 56 times lower and that wood/plant burning emissions per tonne are 108 times lower than EPA and EIA data show. How can we trust this airport industry tool on other metrics when they’re so far off on every input data value we spot checked so far?

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<sup>18</sup> *Id.* at 11.

<sup>19</sup> *Id.* at 13.

<sup>20</sup> *Id.* at 17.

<sup>21</sup> *Id.* at 21.

<sup>22</sup> <https://store.aci.aero/form/acert/>

In addition, ACERT uses outdated GWPs from 2014 (AR5)<sup>23</sup> when 2021 (AR6)<sup>24</sup> is available, and uses the 100-year instead of 20-year GWPs, which is inappropriate considering the policy time frame (2045) being 20 years away and the fact that global warming tipping points (already showing up) aren't about to wait for 100 years. They also choose the more optimistic figures with no climate-carbon feedback which allows them to pluck out the 28 number for methane instead of 34, and 265 instead of 298 for nitrous oxide (N<sub>2</sub>O). In fact, if they used the latest science (which was out for two years before the ACERT tool's latest release in 2023), the GWP for methane would be 80-82 (over 20 years), not 28 or 34 (over 100 years).

Finally, some of ACERT's data sources and emissions factors are listed as "Wikipedia," or simply as "Internet." The foundation for GHG accounting in Hawai'i state policy should have a more solid foundation than tools like GREET and ACERT, which are not confidence inspiring!

Making public policy based on deeply flawed models is problematic and results in exaggerated claims of emissions reductions that are illusory, making agencies and politicians look good while we're still cooking the planet and violating legal mandates.

### **Why burnable fuels are false solutions**

All burnable fuels have significant pollution issues, including climate impacts. It is critical to move on from burning things.

The plan includes 10 kinds of burnable fuels. Actually, 11 are listed, but renewable gasoline is not included while all 10 other kinds are part of the plan.

The dominant near-term alternative fuels are corn-based ethanol and soy-based biodiesel that would have to be imported, as Hawai'i has insufficient land and water to produce much in-state.

The U.S. Environmental Protection Agency's website (since before the current administration) states the following:

"Biofuel production and use has drawbacks as well, including land and water resource requirements, air and ground water pollution. Depending on the feedstock and production process, biofuels can emit even more GHGs than some fossil fuels on an energy-equivalent basis."<sup>25</sup>

There are three major congressionally-mandated reports on biofuels as it relates to the federal Renewable Fuels Standard, the last of which is over 1,000 pages long, backing up these concerns in great detail. We encourage HDOT to at least review the 19-page Compilation of Key Findings (Chapter 17) in "Biofuels and the Environment: Third Triennial Report to Congress," starting on page 856 of the PDF file.<sup>26</sup>

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<sup>23</sup> [https://www.climatechange2013.org/images/report/WG1AR5\\_Chapter08\\_FINAL.pdf#page=56](https://www.climatechange2013.org/images/report/WG1AR5_Chapter08_FINAL.pdf#page=56)

<sup>24</sup> [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_FullReport.pdf#page=1034](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf#page=1034)

<sup>25</sup> <https://www.epa.gov/risk/biofuels-and-environment>

<sup>26</sup> <https://assessments.epa.gov/biofuels/document/&deid=363940>



## Counting all the carbon

In addition to the underestimated GHG impacts resulting from indirect land use change (ILUC), there is a tendency to assume that GHG emissions from burning biofuels is simply zero because it's "carbon neutral."

Nearly all of the proposed fuels will still release CO<sub>2</sub> when burned. Assumptions about biogenic carbon neutrality has been repeatedly debunked by climate scientists for over 15 years. It would be good for HDOT to get familiar with these critiques, especially with regard to fuels that involve trees, municipal waste, and construction and demolition waste, where the large time lag between harvesting trees for wood and paper, and the recapture of that CO<sub>2</sub> by newly growing trees, is so long that there is no real "carbon neutrality" in a meaningful time frame.

"Biogenic" CO<sub>2</sub> comes from the burning of paper, food scraps, yard waste, wood, leather, and other materials that ultimately grew from soil. Biogenic carbon dioxide emissions are real CO<sub>2</sub> molecules that warm the atmosphere just like any CO<sub>2</sub> molecule released from the burning of plastics and other materials made from fossil fuels.

A majority of the CO<sub>2</sub> emissions from trash incinerators like H-POWER get erased in most GHG reporting due to outdated assumptions that "biogenic" carbon should not be counted. It is important to recognize that even if HDOT will not look at the science challenging biogenic carbon neutrality assumptions, the fossil fraction of trash-derived fuel must be recognized as fossil, even though the state Renewable Portfolio Standard law brands it "renewable."

The carbon neutrality assumption comes from the notion that this carbon should not be counted because trees and plants regrow, and that this carbon is simply recirculating in the biosphere, as opposed to being "new" carbon in the biosphere that was extracted from underground in the form of coal, oil, or gas.

However, carbon (CO<sub>2</sub> or methane) in the air causes global warming, while carbon in a plant or tree does not. We cannot simply pretend that carbon in a tree is the same as carbon in the air. Carbon in a plant or tree does not warm the climate until burned (or slowly decayed).

This biomass carbon neutrality notion has been debunked by climate scientists since at least 2009. There are two main reasons: double counting, and the time lag problem.

Carbon absorbed by growing plants is already factored into global climate models. The reason why it became a practice not to count carbon emissions in certain sectors was, *when looking at all sectors together*, to avoid double counting when assuming carbon is released when trees are cut down, then counting it again if those trees are burned. However, when looking just at one sector, such as vehicle emissions, it is improper to subtract biogenic carbon as if it has not already been accounted for elsewhere. This becomes an accounting problem.<sup>27</sup>

Should HDOT subtract GHG emissions because of plants and trees that already grew? [This would be the double counting error.] ...or to subtract emissions from plants and trees that they presume will grow later? [This would be speculative, and there is not always a guarantee of trees or crops being replanted, as the Hu Honua court case demonstrated. And then there is the time lag problem...]

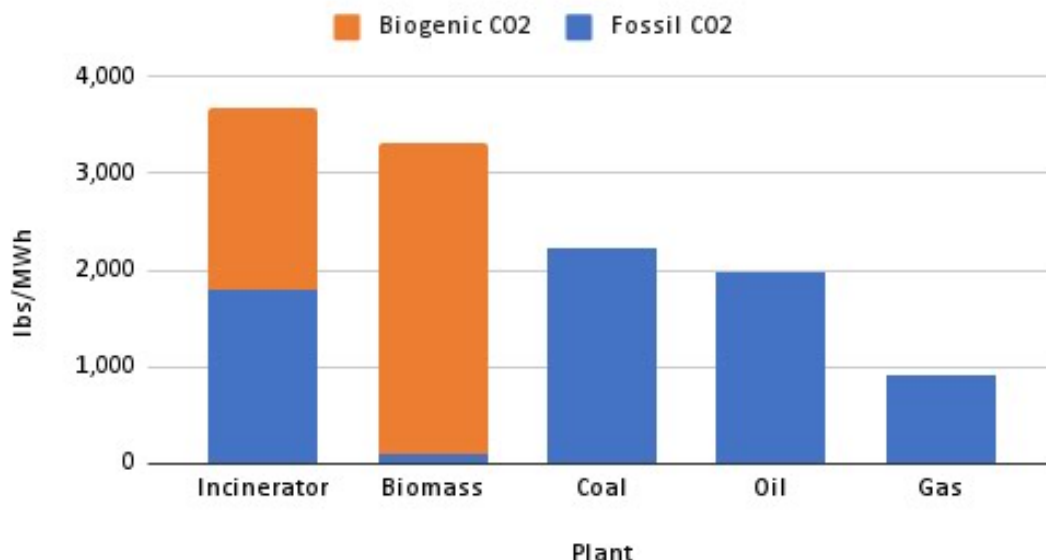
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<sup>27</sup> Searchinger, T. D., Hamburg, S. P., Melillo, J., Chameides, W., Havlik, P., Kammen, D. M., et al. (2009). "Fixing a Critical Climate Accounting Error," *Science*, 326(5952), 527-528. <https://doi.org/10.1126/science.1178797>



Burning trees for electrical power releases 50% more CO<sub>2</sub> per unit of energy than burning coal. Burning trash for power releases 65% more CO<sub>2</sub> per unit of energy than burning coal. The following data is from EPA's Greenhouse Gas Reporting Program:

### Incinerators emit 65% more CO<sub>2</sub> than coal



Growing trees do not instantly reabsorb this extra pulse of carbon. As the Manomet Center for Conservation Sciences documented when studying the issue for the Commonwealth of Massachusetts, it takes newly growing trees around 40-70 years to take up enough carbon to make it equivalent to burning coal.<sup>28</sup> This is not carbon neutrality, but just absorbing that extra CO<sub>2</sub> so that it's as bad as coal burning after several decades. Carbon neutrality would take centuries and is never quite reached, even if trees were replanted and not cut down in that time frame (or burned up in wildfires on a warming planet).

In trying to avoid critical global warming tipping points, we do not have several decades to wait for trees to suck up extra carbon released by burning trash or trees. This carbon must be counted, not discounted as if there's a free pass to release that CO<sub>2</sub> because a slow carbon cycle will eventually suck it back up.

Ironically, it is better for the climate to burn coal and plant trees than to burn trees and plant trees. We are not recommending either. However, this CO<sub>2</sub>-only metric shows the absurdity of allowing biogenic carbon to be offset in this manner.

Burning trash and planting trees (which incinerator corporations are not doing, anyway) often allows the incinerator industry to subtract their emissions. However, if a gas-burning power plant planted trees, that rightfully would not count against their emissions.

<sup>28</sup> Thomas Walker, et. al., "Biomass Sustainability and Carbon Policy Study," Manomet Center for Conservation Sciences Report to the Commonwealth of Massachusetts Department of Energy Resources, June 2010 (Report NCI-2010-03). <https://www.mass.gov/doc/manometbiomassreportfullhirezpdf/download> Executive Summary available at: [https://www.manomet.org/wp-content/uploads/2018/03/Manomet\\_Biomass\\_Report\\_ExecutiveSummary\\_June2010.pdf](https://www.manomet.org/wp-content/uploads/2018/03/Manomet_Biomass_Report_ExecutiveSummary_June2010.pdf)

For further background on biogenic carbon accounting, see these footnotes cited here.<sup>29,30,31,32</sup> We ask that these footnoted references, in full, be considered part of our comments by reference and are to be made part of the decision-making docket.

## Feedstocks

A wide variety of feedstocks exist to make burnable fuels. Every one of them has its own significant problems, many of them rivalling fossil fuels, and all of them just “differently bad.” This includes liquefying and/or gasifying or otherwise cleaning, converting or processing municipal solid waste,<sup>33</sup> sewage sludge,<sup>34</sup> construction and demolition waste,<sup>35</sup> animal wastes,<sup>36</sup> trees,<sup>37</sup> purpose-grown crops,<sup>38</sup> crop wastes,<sup>39</sup> vegetable oils,<sup>40</sup> anaerobic digester gas,<sup>41</sup> landfill gas,<sup>42</sup> algae,<sup>43</sup> and even “thin air” and water with electrofuels that involve direct air capture<sup>44</sup> and “green” hydrogen.<sup>45</sup>

Much has been written on these topics, and we cannot reasonably provide a full exploration of them all in these comments, but please include all of these footnoted reports and the sources within them as part of our comments, as there is much to read and know about each. Please also review our 6-page comments on Senate Bill 1120 here: [https://www.capitol.hawaii.gov/sessions/session2025/Testimony/HCR70\\_HD1\\_TESTIMONY\\_TRN\\_04-01-25\\_.PDF#page=9](https://www.capitol.hawaii.gov/sessions/session2025/Testimony/HCR70_HD1_TESTIMONY_TRN_04-01-25_.PDF#page=9)

On biofuels generally, please review the excellent reports by Biofuelwatch at: <https://www.biofuelwatch.org.uk/category/reports/general-overview/> and <https://www.biofuelwatch.org.uk/category/reports/biofuels-liquid/>

Also, the reports by Aviation Environment Federation: <https://www.aef.org.uk/category/reports-briefings/>

Most critically, on aviation fuel, please read this report in full: [https://www.aef.org.uk/uploads/2023/11/Cerulogy\\_Alternative-fuels-in-aviation\\_Part-3-decarbonisation\\_Oct2023-1.pdf](https://www.aef.org.uk/uploads/2023/11/Cerulogy_Alternative-fuels-in-aviation_Part-3-decarbonisation_Oct2023-1.pdf)

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<sup>29</sup> Biomass Incineration and Climate. <https://energyjustice.net/biomass/climate>

<sup>30</sup> Energy Justice Network comments on EPA WARM Model. [https://downloads.regulations.gov/EPA-HQ-OLEM-2023-0451-0112/attachment\\_1.pdf](https://downloads.regulations.gov/EPA-HQ-OLEM-2023-0451-0112/attachment_1.pdf)

<sup>31</sup> Partnership for Policy Integrity comments on EPA WARM Model. [https://downloads.regulations.gov/EPA-HQ-OLEM-2023-0451-0112/attachment\\_7.pdf](https://downloads.regulations.gov/EPA-HQ-OLEM-2023-0451-0112/attachment_7.pdf)

<sup>32</sup> Landfill Gas <https://energyjustice.net/lfg/> and the articles and links referenced at the top and under “related links,” specifically this report: <https://www.sierraclub.org/sites/www.sierraclub.org/files/landfill-gas-report.pdf>

<sup>33</sup> <http://www.energyjustice.net/incineration>, on waste pyrolysis, see pages 3-7 and the reports footnoted within these recent comments: <https://www.energyjustice.net/ny/Sullivan2025RFPCComments.pdf>

<sup>34</sup> <https://sewagesludgeactionnetwork.com>; <http://www.ejnet.org/sludge>

<sup>35</sup> <https://energyjustice.net/waste/cd/>; <https://energyjustice.net/incineration/cd.pdf>

<sup>36</sup> <https://energyjustice.net/poultrylitter/>

<sup>37</sup> <https://energyjustice.net/biomass/>; <https://energyjustice.net/biomass/woodybiomass.pdf>; <https://energyjustice.net/hi/huhonua.pdf>

<sup>38</sup> <https://energyjustice.net/ethanol/ethanol-factsheet.pdf>; <https://energyjustice.net/biodiesel/biodiesel-factsheet.pdf>

<sup>39</sup> [https://energyjustice.net/ethanol/cellulosic/factsheet\\_cellulosic.pdf](https://energyjustice.net/ethanol/cellulosic/factsheet_cellulosic.pdf) (covers cellulosic ethanol generally)

<sup>40</sup> <https://www.biofuelwatch.org.uk/2025/fat-grab-report/>

<sup>41</sup> <http://www.energyjustice.net/digesters>; <https://zwia.org/composting-and-anaerobic-digestion-policy/>;

[https://www.foodandwaterwatch.org/wp-content/uploads/2024/01/RB\\_2401\\_LCFS\\_Methane.pdf](https://www.foodandwaterwatch.org/wp-content/uploads/2024/01/RB_2401_LCFS_Methane.pdf); [https://foodandwaterwatch.org/wp-content/uploads/2021/04/ib\\_1611\\_manure-digesters-web.pdf](https://foodandwaterwatch.org/wp-content/uploads/2021/04/ib_1611_manure-digesters-web.pdf); <https://www.foodandwaterwatch.org/2024/01/09/the-big-oil-and-big-ag-ponzi-scheme-factory-farm-biogas/>

<sup>42</sup> <http://www.energyjustice.net/lfg>

<sup>43</sup> <https://www.biofuelwatch.org.uk/docs/Microalgae-Biofuels-Myths-and-Risks-FINAL.pdf>;

<https://www.biofuelwatch.org.uk/category/reports/biofuels-liquid/cellulosic-algal-biofuels/>;

<https://www.thenation.com/article/environment/exxon-algae-biofuels/>;

<https://web.archive.org/web/20230323143637/https://www.greentechmedia.com/articles/read/lessons-from-the-great-algae-biofuel-bubble>; <https://www.canarymedia.com/articles/climate-tech-finance/stop-trying-to-make-algae-biofuels-happen>

<sup>44</sup> [https://www.foodandwaterwatch.org/wp-content/uploads/2023/01/FSW\\_2212\\_DirectAirCapture.pdf](https://www.foodandwaterwatch.org/wp-content/uploads/2023/01/FSW_2212_DirectAirCapture.pdf)

<sup>45</sup> <https://www.energyjustice.net/hydrogen/>

As these articles and reports document, in addition to climate change impacts, there are also many other harmful impacts that will come in the form of toxic releases, genetically modified crops and microorganisms, water and soil depletion, chemical use, land use, food insecurity, and – since most of this cannot be produced in-state – a heavy reliance on importing these fuels even while aiming to be energy independent and secure.

Relating to Hawai'i having sufficient land or water to grow biofuels vs. the need to import most of them, as well as concerns relating to whether taxpayers or airline customers should foot the bill for subsidizing these biofuels, we encourage all to watch the 35-minute hearing on Senate Bill 995 of 2025, pertaining to "Sustainable Aviation Fuel Import Tax Credit; Renewable Fuels Production Tax Credit."<sup>46</sup> Senator DeCoite calls up staff from the state Department of Agriculture who make it clear that there is not sufficient land or water available for this purpose. Other testimonies during this hearing are quite eye opening. You can view it here:

<https://www.youtube.com/live/eLQmyLuHOu8?feature=shared&t=283>

As page 51 of the plan admits, most of the envisioned fuels do not exist and are not low-GHG at this point where they do exist:

"While Hawai'i is committed to transitioning marine operations to low- or zero-carbon fuels such as green hydrogen, methanol, and advanced biofuels, many of these alternatives are not yet commercially viable, lack supporting infrastructure in the state, or currently carry high lifecycle carbon intensities due to existing production methods."

This reality is not likely to change for biofuels, though electrofuels (horribly expensive and inefficient at this time) will get cleaner over time as the electric grid gradually shifts to clean, renewable sources.

### Food vs. Fuel; Imports

Page 2 of the plan states "we must decrease our dependence on imported energy and food." The plan also acknowledges the problem on page F-7 where it states: "But if virgin oils such as palm or soybean oil are used extensively, it can create tension with food supply and raise concerns about deforestation and agricultural expansion."

This is a great reason not to grow biofuels in-state.

Hawai'i is dependent on importing about 80-90% of its energy and 80-90% of its food. Using precious land to grow fuel for vehicles necessarily means making the state even more food insecure. As the Department of Agriculture [testimony](#) showed on SB 995 of 2025, there is next to no land or water available to grow fuels in the state, requiring that nearly all reliance on biofuels will mean shipping it in from the continent. The answer is not to grow or import biofuels, but to electrify with local (non-burn) renewable energy production.

### Biotechnology

The biotechnology industry's trade association routinely testifies in favor of biofuels bills in the state legislature. Their testimonies never state why they are so supportive of biofuels, but it is obvious to anyone who knows enough about the industry. The main biofuels currently in

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<sup>46</sup> [https://www.capitol.hawaii.gov/session/measure\\_indiv.aspx?billtype=SB&billnumber=995&year=2025](https://www.capitol.hawaii.gov/session/measure_indiv.aspx?billtype=SB&billnumber=995&year=2025)

production are corn-based ethanol and soy-based biodiesel. As of 2024, 94% of corn grown in the U.S. is grown with genetically modified organisms (GMOs) and 96% of the soy is GMO.<sup>47</sup> This is primarily to withstand higher doses of herbicides, which leads to more herbicide spraying, mainly with Bayer (formerly Monsanto) product, Roundup (glyphosate), which is the subject of many lawsuits now that it is shown that it's not as safe as table salt, and indeed causes cancer. These herbicides have also been tied to harming amphibians, including deformities in frogs born with extra legs and such. There are other food and biofuel crops and trees that industry has been working to make GMO varieties of for many years, which could also be on the horizon for biofuel production in Hawai'i. Read more on the impacts of ethanol and biodiesel production in our factsheets linked in footnote 38.

As living organisms, GMO crops don't always stay where they are planted. There is a history of them contaminating nearby farms of organic farmers, for example. Since the GMO crops are patented intellectual property, there is a brutal history of Monsanto suing farmers whose farms were contaminated with their seed, as if the farmer was stealing the company's property.

Far more disturbing, however, is the biotech industry's other main motivation for supporting biofuels bills. They have long been experimenting with genetic modification of bacteria, algae and enzymes. Algae biofuels have been explored extensively, and have been a huge failure, whether genetically modified or not. Please review the reports in footnote 43 for details. Enzymes have been a part of efforts to make cellulosic ethanol viable... an industry that aims to convert everything from corn husks to pizza boxes to trash into liquid fuels. This industry has also been riddled with failed attempts for 2-3 decades. Genetically modifying bacteria is also linked to biofuels production. Given how impossible it is to contain microbes, and how quickly they can reproduce, having unnatural versions of microbes out in the wild could have unintended and disastrous consequences.<sup>48</sup>

A European company has developed a GMO variety of *Klebsiella planticola* (KP), one of the most common bacteria on the planet, designing it to make alcohol out of plant matter. The idea was to make use of wheat straw, stalks and leaves. A researcher at University of Oregon tested it to see if it could survive in the wild, and found that it readily killed the plant in his experiment while the non-GMO variety did not.<sup>49</sup> If microbes like this were to be able to survive in the wild, the ecological consequences could be unthinkable.

### Waste-based fuels

Some companies are pushing to use gasification or pyrolysis technologies to make burnable fuels from trash, construction and demolition (C&D) debris, and other waste streams. This is toxic and polluting, quite expensive, and has not worked at commercial scale. Please see our comments on the Maui Aloha Aina Project that seeks to turn trash into fuels to barge to O'ahu.<sup>50</sup> As we discuss in our testimonies on "clean fuels" bills,<sup>51</sup> the toxic hazards associated with pyrolysis or gasification of C&D waste are serious, especially where wood treated with copper, chromium and

<sup>47</sup> <https://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-united-states>; <https://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-united-states/recent-trends-in-ge-adoption>

<sup>48</sup> Szyjka, S. et al. (2017). Evaluation of phenotype stability and ecological risk of a genetically engineered alga in an open pond production. *Algal Research*, 24. <http://www.sciencedirect.com/science/article/pii/S2211926417300024>

<sup>49</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0929139398001292> (bypass paywall [here](https://www.gmwatch.org/en/latest-listing/1-news-items/8951-full-story-of-the-dr-elaine-ingham-controversy-over-klebsiella-p)); See also: <https://www.gmwatch.org/en/latest-listing/1-news-items/8951-full-story-of-the-dr-elaine-ingham-controversy-over-klebsiella-p>; <https://www.saynotogmos.org/klebsiella.html>; <https://web.archive.org/web/20071219095433/http://www.purefood.org/ge/klebsiella.cfm>

<sup>50</sup> The project is described here: [https://files.hawaii.gov/dbedt/erp/Doc\\_Library/2025-06-23-MA-DEA-Maui-Aloha-Aina-Project.pdf](https://files.hawaii.gov/dbedt/erp/Doc_Library/2025-06-23-MA-DEA-Maui-Aloha-Aina-Project.pdf) and our comments on this Environmental Assessment are here: <https://www.energyjustice.net/hi/MauiWTFcomments.pdf>

<sup>51</sup> [https://www.capitol.hawaii.gov/sessions/session2025/Testimony/HCR70\\_HD1\\_TESTIMONY\\_TRN\\_04-01-25\\_.PDF#page=9](https://www.capitol.hawaii.gov/sessions/session2025/Testimony/HCR70_HD1_TESTIMONY_TRN_04-01-25_.PDF#page=9)

arsenic is present. For example, Aloha Carbon's plan to try to gasify C&D waste in Campbell Industrial Park on O'ahu would inevitably involve handling treated wood which the Hawaii Natural Energy Institute documented to have 200 times as much arsenic as clean wood.<sup>52</sup>

### Green Hydrogen

Half of the ten fuel pathways involve "green hydrogen" (SAF, eSAF, e-Methanol, e-Ammonia, and green hydrogen itself). Hydrogen is typically extracted from fossil gas, but can come from other hydrocarbons. Green hydrogen involves electrolyzing water to split it with renewable energy into hydrogen and oxygen, which recombine when used in a fuel cell or burned.

Green hydrogen production is very inefficient, and will never be truly "green" until there is excess wind or solar on the grid. Until then, wasting 50-80% of the clean wind or solar energy in the process of splitting water and using the hydrogen fuel makes no sense because it would be better to use that clean energy to displace oil directly on the grid instead of displacing a much smaller amount of oil in a vehicle.

The plan ought to be careful not to over-claim, such as stating that there is no associated carbon emissions from production of green hydrogen if made from renewable sources. After all, burning trash, trees, and other sorts of biomass, biofuels or biogas are all renewable, and all have significant carbon emissions.

There are many other issues with hydrogen. Please review the top articles linked from our <https://www.energyjustice.net/hydrogen> page for good overviews. Also, newer evidence shows that hydrogen can be an indirect greenhouse gas when it inevitably leaks (it's tiny and hard to contain and can embrittle steel pipe).<sup>53</sup>

Long-distance aviation and some industrial heating applications are the only sectors that may need green hydrogen, and both are outside of the scope of this settlement. Prematurely allowing "green" hydrogen in the plan just means more oil burning to make up for the electricity wasted making hydrogen.

### Electrofuels

Direct air capture is another inefficient and wasteful scheme some aim to combine with other energy-wasting ideas (green hydrogen) to make "sustainable aviation fuel" which is specifically promoted in the settlement. Like green hydrogen, it makes no sense to use before the electric grid is 100% powered by non-combustion renewable energy sources and has extra wind and solar to spare. Doing so would release about as much or more CO<sub>2</sub> than it would capture, either directly by using oil-fired power, or indirectly by using up renewables that could be displacing oil-fired power.

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<sup>52</sup> See pages 2-3 in their testimony here:

[https://www.capitol.hawaii.gov/sessions/session2025/Testimony/HB976\\_TESTIMONY\\_EEP\\_01-28-25\\_PDF#page=42](https://www.capitol.hawaii.gov/sessions/session2025/Testimony/HB976_TESTIMONY_EEP_01-28-25_PDF#page=42)

<sup>53</sup> <https://www.canarymedia.com/articles/enn/scientists-warn-a-poorly-managed-hydrogen-rush-could-make-climate-change-worse>; <https://www.dnv.com/article/is-hydrogen-a-greenhouse-gas--243214/>; <https://www.cleangroup.org/initiatives/hydrogen/areas-of-concern/>

## Leaky pipelines

Transportation of hydrogen and methane in existing, leaky gas pipelines risks ongoing GHG releases and should not be allowed.

## **Electrify**

In order to get away from burning things, we need to electrify the transportation sector, and ensure there are zero greenhouse gases from the electricity sector. (The transportation sector cannot become zero emission if it relies on an electricity sector that is still powered, in part, by GHG-emitting combustion sources.) Currently, the state's combustion sources of electricity generation are 66% from oil-burning, plus another 4% from "renewable" burning of trash, trees, and biofuels... all of which need to be eliminated to reach a zero GHG emissions target.

It is not enough to rely on the state's Renewable Portfolio Standard, which requires 100% "renewable" electricity by 2045, since this law includes the burning of "biomass" (trash, trees and other solid waste and crops), liquid biofuels, and biogas (toxic landfill gases and anaerobic digester gas). These fuels have carbon emissions worse than fossil fuels. Several corporations are aiming to expand use of these "bio" fuels, which will undermine the state's climate goals. The state's Renewable Portfolio Standard (RPS) law must be fixed to remove combustion so that these fuels no longer qualify.

It is possible to electrify ground transportation, and sea and air interisland transportation, while decarbonizing the electricity sector, in a clean way that focuses on conservation, efficiency, solar, wind, and energy storage. This can be done reliably, more cheaply, and with fewer environmental impacts than the false solutions in the draft plan.

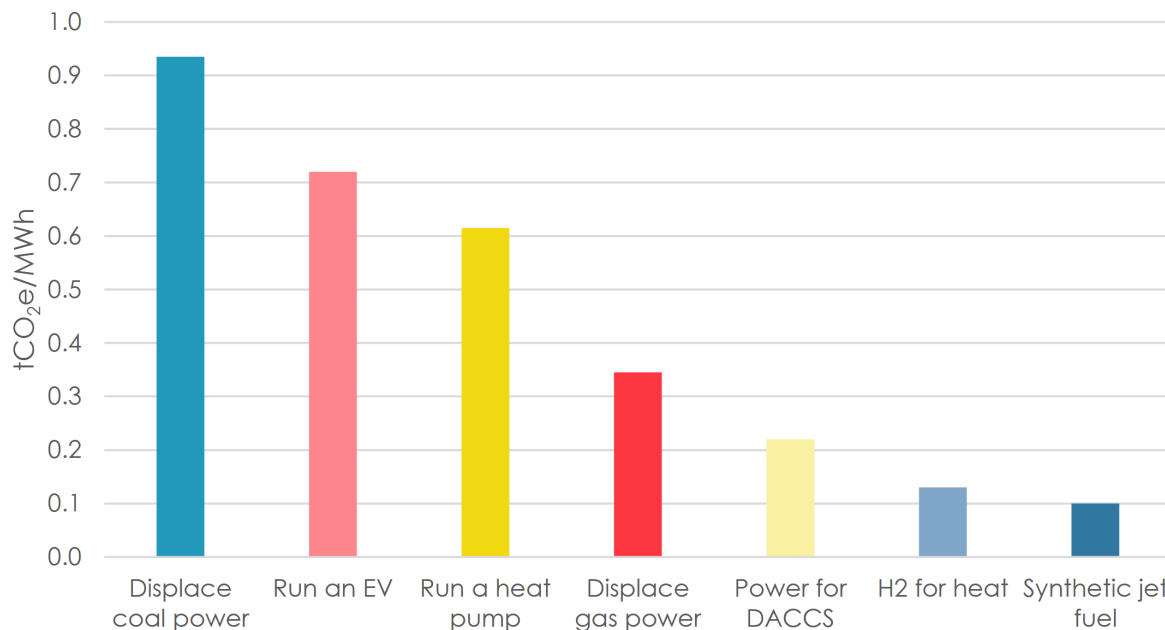
HECO is 64.2% oil generation and 3.3% waste/biofuels as of 2024. Clean (non-combustion) renewable electricity must displace this 67.5% combustion power before wasting energy on "green hydrogen" or electrofuels for planes. Otherwise, you're keeping the grid dirtier and contributing to more GHGs.

HDOT's plan should focus on ensuring an adequate supply of clean electricity by speeding up the process of cleaning up the electric grid while expanding clean renewable generation.

As the chart on the next page demonstrates, it's far more efficient to displace coal or gas power on the grid (oil would be in between those two) than to use clean energy to make hydrogen or jet fuel.<sup>54</sup>

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<sup>54</sup> See page 24 in [https://www.aef.org.uk/uploads/2023/11/Cerulogy\\_Alternative-fuels-in-aviation\\_Part-3-decarbonisation\\_Oct2023-1.pdf](https://www.aef.org.uk/uploads/2023/11/Cerulogy_Alternative-fuels-in-aviation_Part-3-decarbonisation_Oct2023-1.pdf)



**Figure 4** Emission avoidance with 1 MWh of zero carbon electricity in example applications

Clearly, cars and small trucks can be electrified. Heavy trucking, planes and boats are the areas that are less common. However, aside from long-distance air travel, all the rest can be electrified today, and the technology exists.

The plan says, on page 24, that “EVs may not meet the operational needs for some heavy-duty truck applications.” This is outdated information. There are now EV trash trucks and long-haul trucks long enough to do any land distance in Hawai‘i. The longest likely heavy truck trip possible in the state would probably be a trash truck going as much as 130 miles for the longest routes to the West Hawaii Sanitary Landfill from the east side of Hawaii Island. EV semi trucks have ranges of 150-500 miles as of this 2023 article.<sup>55</sup> Specific to trash trucks, Waste Today Magazine writes: “Designed for commercial and residential refuse collection, the Model 520EV can handle up to 1,100 trash bins on a single charge.”<sup>56</sup>

### Avoiding Fraud / Double-Counting

There are plenty of ways to game the system, and not enough safeguards in place. With a state mandate for 100% “renewable” electricity by 2045 and a concurring mandate for zero GHG emissions from the transportation sector by 2045, it could be attractive to allow the same “renewable” electricity (which could be burning trash or trees or could be real renewables like wind and solar) to serve both at the same time. However, this is generally considered double-counting and some states and regional grids have protections against that sort of fraud. HDOT ought to work with the PUC and legislature to ensure that there is no double counting of electrons

<sup>55</sup> <https://www.eesi.org/papers/view/fact-sheet-the-future-of-the-trucking-industry-electric-semi-trucks-2023>

<sup>56</sup> <https://www.wastetodaymagazine.com/news/peterbilt-delivers-ev-trucks-to-waste-connections-of-new-york/>



or emissions attributes when developing any parallel mandate that will inevitably draw on renewable electricity to some degree.<sup>57</sup>

## **Reduce demand**

Demand reduction in both the electricity and transportation sectors must be a priority to help make it reasonable for both sectors to be clean and renewable by 2045. Conservation and efficiency strategies to reduce electricity waste would reduce the amount of new clean renewable energy generation capacity and storage that needs to be added to the grid in order to have enough excess clean electricity to power vehicles.

## **The Elephant in the Air; Stay within the Scope**

According to the pie chart on page 15 of the plan, 53% of the greenhouse gases from the state's transportation sector are from air travel. How much of that 53% is from flights to other U.S. states? HDOT is only required by HRS § 225P-8 and the *Navahine F.* settlement agreement to address interisland air transportation (but not military aviation, nor flights to and from Hawaii).

On page B-11, it states “[p]er the settlement agreement, international marine and aviation activities are not included in the calculations and strategies identified in this Plan, which is also consistent with the DOH GHG Inventory.” Note that it's not just international aviation, but interstate aviation is also excluded. The only marine or air travel that is in the scope is that which is within the state. This is not the time to broaden the scope, making a hard task even harder. Get this right, then once 2045 rolls around, perhaps there will be better options for long-distance air travel. Long-distance container shipping already has electrification piloted, but that's not for HDOT to worry about yet!

### Solving local air travel

Interisland air travel can be electrified through a combination of electric-powered ferries and seaglidors, as the Hawaiian Seaglider Initiative is exploring with the major airlines.<sup>58</sup>

Granted, seaglidors are fairly new, but they now exist and are being tested out. The Regent Seaglider<sup>59</sup> seats 12 people so far, which is 12-15 times fewer than the planes typically used. Hawaiian Airlines uses a Boeing 717 (128 passengers) and Southwest uses a Boeing 737 MAX8 (175 passengers).

To make this possible without congestion, there can be more departure and landing points. HDOT should be working to plan out infrastructure for this as part of this plan.

Also, since many of the flights are surely for tourists, there are many who may not be in such a rush and might opt for a ferry between islands, which would be slower, but likely cheaper. It would allow for whale and dolphin watching and will reduce the numbers who have to be in planes. Prior controversies over the Super Ferry can hopefully be avoided. After all, plenty of cruise ships and

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<sup>57</sup> See discussion of double-counting here: <https://www.aef.org.uk/2025/08/05/double-counting-risks-in-saf-global-supply-chain/>

<sup>58</sup> <https://www.hawaiiseaglider.org/april-press-release>

<sup>59</sup> <https://www.regentcraft.com/seaglidors/viceroy>; see also <https://www.youtube.com/watch?v=gqK0v1qiSV4>, <https://www.youtube.com/watch?v=QVMeSbgdOL0>, and [https://www.youtube.com/watch?v=s-GP\\_0Cud98](https://www.youtube.com/watch?v=s-GP_0Cud98)



cargo ships already go between the islands. Some passenger ships shouldn't make a major difference.

Page 58 contains the plan's only mention of Electric Aircraft, which is a case study of a 3-passenger electric plan for "travel across the island of Maui." This may make sense for emergency medical transportation if electrifying a helicopter doesn't make more sense, but "enable faster and more frequent travel across the island of Maui" should not be a goal as it's simply increasing transportation use, and to what end? Let people drive an EV or take an electric bus. Electric aircraft are needed to get between islands, and the current electric options (sea gliders) can do 12 passengers, four times more than this case study. Why is that not featured in the plan instead?

### **Dangerous "Carbon Removal" Schemes**

Instead of trying to reach zero GHG emissions, as legally required, the plan assumes HDOT will fall short by 8-10%, and aims to make up for this with projects that purport to reduce emissions elsewhere.

Plans to burn trees and other organic material (biochar, BECCS) are also harmful and toxic, and carbon capture and storage technologies do not capture 100% of their CO2 emissions. Biochar (mentioned on page C-3) is an incineration technology (pyrolysis) that is toxic and problematic.<sup>60</sup>

Plans to filter seawater with membranes to remove CO2 would impact any other sea life that is caught up in the process.

"Enhanced rock weathering" would risk spreading metals into the environment while disturbing natural features.

Injecting CO2 into concrete can leak out over time.

Recycling plastic waste into roads (mentioned on page 33) is adding many toxic chemicals to asphalt, making it far more toxic than asphalt already is with the introduction of additives (catalysts, stabilizers, color pigments), PFAS and more.<sup>61</sup>

While not directly mentioned, several sections "pave" the way for Honolulu's plan to recycle toxic H-POWER trash incinerator ash into roads, which would spread toxic chemicals throughout our environment. While there is great controversy in O'ahu over the building of a new (double-lined) landfill over the aquifer, the City and County of Honolulu is pursuing plans to take the same waste (the toxic ash from the H-POWER trash incinerator) and build roads with it over the island. These would be linear unlined landfills, exposing people and the environment to dioxins and toxic metals in the ash. However, this will likely be framed as a strategy for "low carbon concrete."<sup>62</sup> In New York state, the state with the most trash incinerators (ten of them), the toxic chemical content of their incinerator ash is high enough that if placed on the land, it would meet the soil cleanup standards and would be required to be cleaned up.<sup>63</sup>

<sup>60</sup> <https://energyjustice.net/incineration/biochar.pdf>; <https://www.biofuelwatch.org.uk/wp-content/uploads/Biochar-briefing-2024.pdf>; <https://www.biofuelwatch.org.uk/category/reports/biochar/>

<sup>61</sup> <https://pmc.ncbi.nlm.nih.gov/articles/PMC12347778/>

<sup>62</sup> For info on incinerator ash testing, safety and "recycling," see [https://www.capitol.hawaii.gov/sessions/session2025/Testimony/SB438\\_HD2\\_TESTIMONY\\_JHA\\_04-02-25\\_PDF#page=45](https://www.capitol.hawaii.gov/sessions/session2025/Testimony/SB438_HD2_TESTIMONY_JHA_04-02-25_PDF#page=45) or pages 9-12 here starting half-way through page 9: <https://www.energyjustice.net/ny/Sullivan2025RFPCComments.pdf>

<sup>63</sup> <https://www.energyjustice.net/incineration/ashvssoilcleanup.pdf>

The last 8% is a violation of state law and the legal settlement, as it represents GHG emissions that will continue, but are to be compensated by supposed reductions elsewhere.

## **Policy solutions / Legal authority**

Page 3 states: “Establish a market-based mechanism to incentivize the use of clean marine fuels and discourage the use of fossil fuels.” In policy-making, avoid “market-based mechanisms” like carbon fees since they are not guaranteed to be strong enough or specific enough to meet a target. HDOT will not get to zero with policies like “discourage” rather than “ban.”

Page 36 states: “If every new vehicle sold in Hawai‘i was an EV starting in 2030, some gasoline vehicles could remain on the road in 2045.” If the legal authority exists to actually meet the goal of zero, then make this goal mandatory. Also, if it’s close enough to zero, will there really be gas stations left to service the rare people left with gasoline vehicles?

Page 3: “Increase the use of electric vehicles (EVs) statewide by expanding public charging infrastructure, converting transit vehicles to electric, and providing financial incentives for EV adoption.” Can the state set emissions standards? Can it ban sales of gasoline or diesel vehicles?

Page 56 discusses curtailing cruise ships. Will this run into interstate Commerce Clause challenges, or does the state really have the power to mandate it? It would be unrealistic to rely on cruise companies to voluntarily curtail their business.

There are discussions on pages 59 and F-16 on why the state cannot mandate SAF. If that’s the case, then what indirect ways can the state get people out of planes and into the seaglidars and ferries that can be fully electrified? Build it, and making it cheaper, more flexible, and attractive and they will come?

There are several areas in the plan that seem to have been written as if Trump is not president and as if the “One Big Beautiful Bill” had not passed. This includes page 35 where it says that “current federal regulations will spur increasing sales of EVs,” and page 41 where it talks about “securing federal grants” for electric fleets, page 84 where it says HDOT has applied for and received a Clean Materials Grant (is this secured or vulnerable to Trump admin cuts?). Page B-12 also talks about EPA CAFE standards. Were these not recently gutted?

## **Public Involvement**

Page 61 mentions that “HDOT will lead a statewide coalition of airlines, fuel producers, farmers, NGOs, and government agencies to build a shared roadmap for producing, importing, and using sustainable aviation fuel (SAF) in Hawai‘i.” This is mostly the fox in charge of the henhouse. Before involving all of these economic interests, how about revisiting whether SAF makes sense and whether HDOT plans to tackle interstate air travel, even though it’s beyond the scope of the state law and settlement agreement?

There must be more knowledgeable people with critical views involved in the inner circle as this work continues. The small circle of agency staff, industry interests, plaintiffs and youth have clearly not been sufficient to prevent this draft plan from being a laundry list of false solutions.

Page 61 states that in September 2025, a “first coalition meeting” will be held. Will these meetings be open to the public? Please answer this in time for us to participate.

Page 77 states “This strategy represents HDOT’s chosen approach to implement the strategies in this Plan. It is already underway with HDOT engaging key stakeholders to consult on this Plan prior to its release, and regularly communicating and collaborating with Earthjustice, Our Children’s Trust, and Hawai’i Youth Transportation Council.” Please regularly communicate with us as well. Being on the outside trying to look in has not been productive or collaborative.

Page 91 states: “HDOT plans to update the plan annually for the first 5 years after the issuance of the first plan. This will allow for additional analysis as needed, integration of new technologies as they become available, and will reflect progress made by HDOT.”

It’s good to see this. How do we become an integral part of the process rather than a once-per-year opportunity to comment on something already drafted?

## Errata

- Page 16: “four general aviation airports” should say five?
- Fig 3-4: “overacrching” and “aagressive”
- Pages 8 & 70: “Airport Carbon And Emission Reduction Tool” should be “Airport Carbon and Emissions **Reporting** Tool”
- Page F-13: “the climate benefit of renewable LNG hinge” - need ‘s’ on benefit or hinge

## Conclusion

There are many ideas in the HDOT plan that are decent and just need to be scaled up, especially every method to electrify transportation. Public transportation needs to be ramped up a lot, and be fare-free. Trash, recycling and composting collection should be one hauler going to all homes for curbside collection so that we don’t have people doing separate trips to transfer stations in the neighbor islands. Efforts to grow more food (not fuel!) on the islands will increase food security while reducing shipping. Let’s make this all happen... the right way, in the right order, without more combustion, please!

Mahalo nui loa,

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February 3, 2026

**COMMENTS TO  
HB 1694  
RELATING TO SUSTAINABLE AVIATION FUEL TAX CREDIT**

House Committee on Transportation  
The Honorable Darius Kila, Chair  
The Honorable Tyson Miyake, Vice Chair

Tuesday, February 3, 2026, 10:30 a.m.

VIA VIDEOCONFERENCE  
Conference Room 430  
State Capitol  
415 South Beretania Street

Chair Kila, Vice Chair Miyake, and Members of the Committee,

Island Energy Services, LLC ("IES") offers the following comments on HB 1694 which proposes the establishment of a sustainable aviation fuel tax credit program for the State.

- The current language of HB 1694 indicates it is intended to "encourage the production and distribution of sustainable aviation fuel within the state", the State goals are best served by allowing any imported finished sustainable aviation fuel produced outside of Hawai'i to qualify for the same proposed tax credit provided it meets the same lifecycle greenhouse gas emission threshold.

We thank the House Transportation Committee for hearing this bill and thank you for the opportunity to testify.

Albert D.K. Chee, Jr  
Executive Vice President Island Energy Services, LLC

HOUSE OF REPRESENTATIVES  
THE THIRTY-THIRD LEGISLATURE  
REGULAR SESSION OF 2026

COMMITTEE ON TRANSPORTATION

Rep. Darius K. Kila, Chair  
Rep. Tyson K. Miyake, Vice Chair

Rep. Elle Cochran	Rep. Trish La Chica
Rep. Luke A. Evslin	Rep. Christopher L. Muraoka
Rep. Tina Nakada Grandinetti	Rep. Elijah Pierick
Rep. Lisa Kitagawa	

HEARING

DATE: February 3, 2026  
TIME: 10:30 AM  
PLACE: VIA VIDEOCONFERENCE  
Conference Room 430

Public commentor: Ted Metrose (independent)

HB1694 - Tax Credit for the in-State sale of either imported or locally produced Sustainable Aviation (SAF)

Companion Senate Bills: SB2027, SB2375 identical upon initial introduction

Highlights

1. Establishes a \$20 million-dollar tax credit exclusively for SAF sold in the State. No other renewable or sustainable fuels qualify for the tax credit.
2. The tax credit is available for SAF produced either within or outside the State (including foreign counties) providing it is sold in the State.
3. Provides a tax credit of at least \$1 per gallon for SAF which reduces GHG emissions by at least 50% and increases the tax credit by 2 cents for each additional 1 per cent of GHG emissions reduction, up to \$2 per gallon.
4. Applies to taxable years after Dec 31, 2025, and sunsets on Dec 31, 2035.
5. Limits tax credits claimed by all sellers/distributors to \$20,000,000 annually, with carryover provisions for 5 years. In contrast with the existing RFPTC, there is no limit on amount claimed by single person or business entity.
6. If/when claims exceed the (initial) \$20 million-dollar annual cap, tax credits are allocated to distributors based on the amount of SAF sold in State (including the amount sold in prior years for which SAF credit which exceeded the aggregate cap).
7. In contrast with the existing RFPTC, under HB1694 tax credits claimed for the sale/distribution of SAF are non-refundable.

Position: Opposed, unless material revisions are made to/for HB1694, most notably tax credits for SAF should also not be allowed under the RFPTC (HRS 110-235.32).

Tax credits have limited impact and are far too costly to extend or scale

Dedicated tax credits for SAF sold in the State as proposed by HB1694 are clearly superior to those currently embodied by renewable fuel production tax credit (RFPTC) or its amendment as proposed by HB1695. While a tax credit exclusively for SAF sold in the State (as proposed by HB1694) is a far better approach, it will not have the intended impact, principally because less than 3% of the SAF needed will be incentivized by the \$20 million dollar per year public subsidy. Moreover, the publicly funded tax credit program is far too costly to scale up to meet either the current or future demand for SAF. Based on Alaska Airlines testimony in 2025 that about 600 million gallons of conventional jet fuel is consumed annually and assuming an average GHG reduction of 75%, the proposed \$1.50 per gallon tax credit would only provide a sales incentive for 13.3 million gallons of SAF, just 2.2% of the jet fuel currently used by commercial airlines. Taken in isolation as proposed by HB1694, (without consideration of the RFPTC) the \$20 million tax credit dedicated to SAF would cover just 37% of the 36 million gallons of SAF that will soon be produced annually by Par Hawaii Refining and its joint venture partners (Mitsubishi and ENENOS). As stated by Par Hawaii Refining in prior testimony without adequate financial incentive (tax credits) to bridge the gap, the rest of the SAF produced by Par Pacific's recently formed joint venture (Hawaii Renewables LLC) will be shipped out of State to the West Coast, where it commands a higher return.

Par Hawaii Refining provided testimony in 2025 that tax credits of at least \$80 million dollars per year are needed to prevent the renewable fuels that it plans to produce in the Campbell Industrial Park from being exported out of State. Of even greater concern HDOT estimated the demand for SAF in 2030 (just 4 short years from now) would reach 410 million gallons per year. Assuming, as asserted by its strongest advocates that a tax credit of \$1-2/gal is needed to ensure that SAF is made commercially available for sale in Hawaii and not directed to the West Coast, the aggregate value of tax credit for SAF would have to be raised by a factor of 30X to nearly \$615 million dollars per year just to meet HDOT's projected SAF demand in 2030. Clearly the State cannot afford to expend this amount of its tax dollars or have an equivalent loss in tax revenue to completely subsidize the commercial viability and use of SAF in Hawaii. To provide some perspective, according to DOTAX's latest report, in CY2023 the aggregated total of all tax credits including those granted for

social and welfare programs was \$621 million dollars. To pay for or offset the massive cost of tax credits for SAF either State taxes will have to be substantially raised or many of the State's other programs will have to be significantly deprioritized if not entirely abandoned.

In weakly veiled attempt to make it appear as though tax credits will not be that costly or a never-ending burden on taxpayers HB1694 represents the tax credit for SAF will sunset on December 31, 2035, even though its staunchest advocates fully expect SAF (and the need for tax credits) to extend well beyond 2040. In the two prior legislative sessions tax credit bills for SAF and renewable fuels were proposed to extend indefinitely or through (at least) 2045.

Despite its obvious limitations the dedicated tax credit for SAF can be improved upon.

1. With adoption of a dedicated tax credit exclusively for SAF sold within the State, revise the RFPTC to prohibit distributors from alternatively or additionally claiming tax credits for the production or importation of SAF under HRS 235-110.32

To avoid conflicts, disparities and violations of the commerce clause and complexities associated with allocation of tax credit, a separate and dedicated tax credit of \$ 20 million for SAF as proposed by HB1694 should only be allowed if SAF is explicitly excluded from the Renewable Fuel Production Tax Credit (RFPTC) set forth by HRS 235-110.32. While quite similar to HB1694, amendments proposed by HB1695 to expand and significantly raise the RFPTC to \$ 30 million dollars per year specifically for SAF, should be rejected, because HB1694 will provide a dedicated tax credit for SAF which is much cleaner and simpler to implement. Even in advance of its proposed amendment to comply with the commerce clause, the State's existing renewable fuel RFPTC allows the tax credit to be used for renewable fuels which are produced outside of Hawaii. The existing RFPTC specifically states that a taxpayer applying for the tax credit must provide:

"5) The number and location of all renewable fuel production facilities within and outside of the State; and"

Both proposed HB1694 and HB1695 allow tax credits for SAF produced either in-State or out-of-State, consequently the location of the production facility is not an attribute of distinction. There should be no distinction and yet there is dramatic disparity between the maximum valuation of the tax credit (\$2.56/gal vs \$2/gal) and completely different terms for credit qualification, allocation, rollover and refundability. The disparity in credit valuation and terms can neither be reconciled nor

justified. The needless complexity imposed by HB1695 which applies to SAF and all renewable fuels can be eliminated by a tax credit which is dedicated and limited to SAF, as proposed by HB1694.

Particularly since so much SAF will be needed, it is much better for the State to have a separate and single incentive for SAF rather than having two and/or requiring SAF compete for the existing \$20 million dollar or the expanded \$30 million dollar tax credit allocation for all renewable transportation fuels or renewable utility fuels. Moreover, having a SAF tax credit which is the same for imports, and it is for SAF produced within the State will level the playing field, (as required) and ensure greater supply. Fair competition for imported SAF is the most effective means of limiting the cost of SAF sold in the State.

The higher valuation of SAF credits and the refundability benefit that have been proposed for SAF under HB1695 (SB2403) cannot be reasonably justified by the mere possibility of energizing the agriculture industry in Hawaii. HRS 235-110.32 has no mechanism or mandate for the return any portion of the tax credit back to Hawaii farmers and Hawaii does not have enough land to support even 5% of oilseed feedstock that will be needed for SAF, not even factoring in other renewable fuels.

2. Limit the availability of tax credit to only SAF which is used on domestic inter-island flights.

Particularly since \$20 million dollars in tax credits will only cover and provide an extra incentive for less than 3% of the aviation fuel consumed, consistent with the goals and priority established by HRS 225P-8 the dedicated SAF tax credit should only be available for fuel uplifted and used within the State on inter-island flights. Limiting the availability of State tax credits for SAF which is used on inter-island flights should completely insulate the tax credit from challenge by the commerce clause, and it would focus the State's GHG reduction efforts on interisland travel, as required by the Navahine settlement. Although taxpayers would (still) be subsidizing the cost of SAF purchased by the airlines, in theory the price of flying between islands would be somewhat (slightly) lower than it would be otherwise. Then in future years depending upon the success, and the need, the legislature could expand the tax credit program for SAF which is used in any domestic service, assuming of course that it is sold and uplifted in Hawaii.

3. Limit the availability of tax credit to only SAF which is subject to and upon which the State's 4.0% general excise tax has been paid.



To provide additional assurance that the tax credit has the intended effect of reducing in-State emissions additionally or alternatively allow the dedicated SAF tax credit to be claimed only on SAF for which the State's 4 % general excise tax has been imposed. Such a condition would ensure that the state tax credit is not used for SAF consumed by the military, used for international flights or exempted by the foreign trade zone. As currently proposed, neither the definitions or qualifying criteria of distributing, sold for distribution in the State, or sold in the State provide adequate assurance that the tax credits and thus the SAF, would be used to reduce GHG emissions from the State-wide economy.

4. Consideration should be given to giving the tax credit directly to airlines who purchase the SAF in Hawaii for use on domestic flights and exclusively on inter-island flights until the percentage of SAF consumed within the State reaches at least 40%.

As proposed HB1694 is limited to SAF which is smart because tax credits should not be directed to utility fuels. In addition to the extra cost, robust tax credits for utility fuels would discourage CFE alternatives, which the State and most environmental groups prefer.

Given there is considerable support for dedicated SAF credit, why not just give the tax credit for SAF directly to the airlines. The tax credit could be claimed based on the volume of SAF purchased in Hawaii and uplifted in Hawaii for use exclusively on domestic flights. By giving the tax credits for SAF to the airlines, the State can avoid the competition with other States and the constant threat of SAF being produced in Hawaii and exported to the West Coast or perhaps even elsewhere in the Pacific. This approach would be to use Hawaii's location to its advantage. Given how little SAF is likely to be available initially, and the cost, you might also consider further conditioning the availability of the tax credit to SAF which is used entirely within the State. This would more explicitly address the requirement of HRS 225P-8 and help keep Hawaii tax dollars in Hawaii. Then in future years, depending upon the success and the need, expand the tax credit program to SAF which is used in any domestic service, assuming of course that it is sold and uplifted in Hawaii.