TESTIMONY OF
THE DEPARTMENT OF THE ATTORNEY GENERAL
KA ʻOIHANA O KA LOIO KUHINA
THIRTY-THIRD LEGISLATURE, 2025

ON THE FOLLOWING MEASURE:
H.B. NO. 1459, RELATING TO SUSTAINABLE AVIATION FUEL.

BEFORE THE:
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

DATE: Tuesday, February 4, 2025 **TIME:** 9:00 a.m.

LOCATION: State Capitol, Room 325

TESTIFIER(S): Anne E. Lopez, Attorney General, or
Marjorie A. Lau, Deputy Attorney General

Chair Lowen and Members of the Committee:

The Department of the Attorney General (Department) offers the following comments on this bill.

The purpose of the bill is to establish requirements for the use of sustainable aviation fuel (SAF) in all intrastate flights to advance Hawaii's climate goals, enhance energy security, and position Hawaii as a leader in SAF adoption. To achieve this, the bill adds a new section to chapter 261E, Hawaii Revised Statutes (HRS), requiring that any commercial airline operating intrastate airline flights in the State utilize at least 10% of SAF in such flights beginning January 1, 2030. The SAF requirement would increase annually by five percentage points until January 1, 2045, at which time 100% of SAF will be required for all intrastate flights.

While the bill's objectives are commendable, its SAF requirement may be found to be federally preempted under section 233 of the Clean Air Act (CAA) (42 U.S.C. § 7573) (section 233), which expressly prohibits states from enforcing emission standards for aircraft unless they are identical to federal standards.

In *People of State of Cal. v. Department of the Navy*, 624 F.2d 885 (9th Cir. 1980), the Ninth Circuit Court of Appeals clarified the scope of section 233 preemption regarding aircraft emissions. *See Id.* at 888. In *California*, the state brought a suit claiming that emissions from the defendant's jet engine test cells violated state air quality standards adopted under the CCA. *See Id.* at 886. The court held that section

233 "was not intended to be preclusive of all state regulation of the field of aircraft engines" and “if the state pollution regulations can be met without affecting the design, structure, operation, or performance of the aircraft engine, then the state emission regulations are not preempted by s 233[.]” *Id.* at 888.

Unlike the regulations upheld in *California*, the SAF requirement in this bill directly impacts the composition of fuel used in aircraft engines, potentially affecting engine performance and operation. Therefore, it is likely preempted under section 233 of the CAA. Furthermore, limiting the SFA requirement to “intrastate” flights does not necessarily shield it from preemption, as federal law applies uniformly to aviation regulations across all state jurisdictions.

The Department respectfully asks the Committee to consider alternative approaches to promote SAF uses. Thank you for the opportunity to testify.

Testimony of
ALASKA AIRLINES and HAWAIIAN AIRLINES

Before the House Committee on
ENERGY & ENVIRONMENTAL PROTECTION

Tuesday, February 4, 2025
9:00 A.M.
Hawai'i State Capitol, Room 325

In consideration of
HOUSE BILL 1459
RELATING TO SUSTAINABLE AVIATION FUEL

The Honorable Nicole Lowen, Chair
The Honorable Amy Perruso, Vice Chair
Members of the Committee on Energy & Environmental Protection

Re: **Testimony in Support of House Bill 1459, Relating To Sustainable Aviation Fuel**

Aloha Chair Lowen, Vice Chair Perruso, and members of the Committee on Energy & Environmental Protection,

Alaska x Hawaiian Airlines submits this testimony in **opposition** to H.B. 1459, which seeks to establish a state mandate for the use of sustainable aviation fuel (SAF) in all intrastate flights. While we are committed to reducing carbon emissions and advancing SAF production and usage, this bill presents serious concerns regarding federal preemption.

Federal Preemption Under the Airline Deregulation Act (ADA): The ADA expressly prohibits states from regulating an airline's prices, routes, or services.[1] Mandating fuel types directly impacts airline operations, costs, and pricing—areas reserved for federal oversight. Courts have consistently ruled that state-imposed regulations affecting airline fuel consumption, environmental policies, and operational decisions fall under the exclusive jurisdiction of the U.S. Department of Transportation (DOT).[2]

Conflict with Federal Aviation Administration (FAA) Authority: Aviation regulation is exclusively federal, with the FAA overseeing safety and operational standards, including fuel certification, emissions standards, and SAF policies. The FAA and Environmental Protection Agency (EPA) already regulate

[1] See **49 U.S.C. § 41713** (Airline Deregulation Act preemption clause).

[2] See ***Rowe v. N.H. Motor Transp. Ass'n***, 552 U.S. 364, 370 (2008) (holding that the Federal Aviation Authorization Administration Act's (FAAAA) preemption provision is similarly worded to the ADA, and the same preemption analysis generally applies to both); ***Air Transport Ass'n of Am. v. City & County of San Francisco***, 266 F.3d 1064, 1072 (9th Cir. 2001) (holding that state and local regulations affecting airline operations are preempted under the ADA because they relate to airline "prices, routes, or services"); ***Morales v. Trans World Airlines, Inc.***, 504 U.S. 374, 378 (1992) (finding that the ADA preempts state enforcement of airline advertising regulations as they relate to rates, routes, and services).

aviation emissions under the Clean Air Act.[3] A state-imposed SAF mandate conflicts with existing federal frameworks and disrupts national and international regulatory consistency.

Challenges with SAF Availability and Cost: While we are committed to incorporating SAF into our operations, its availability remains extremely limited, and production capacity is still developing. A state-level mandate—especially one with escalating requirements—would create an undue financial and logistical burden on airlines operating in Hawaiʻi. Premature enforcement of SAF use would lead to increased operational costs and could lead to unintended consequences such as significantly higher fares and potential service reductions in intrastate routes.

Alternative Approaches to SAF Adoption: Rather than imposing state mandates that violate federal preemption, we encourage collaboration with the aviation industry, state leaders, and federal agencies to develop incentive-based programs that support SAF production and importation in Hawaiʻi. We commend recent committee discussions on HB 976 which proposes:

- **Enhanced Renewable Fuels Production Tax Credit:** Expands credit values and introduces additional incentives for low-emission renewable fuels to spur economic activity and SAF production in Hawaiʻi's agricultural sector.

- **Sustainable Aviation Fuel Import Tax Credit:** Provides a $1 per gallon credit for imported SAF, ensuring it remains competitive while meeting stringent greenhouse gas emissions reduction thresholds.

- **Accountability and Transparency:** Requires detailed reporting on renewable fuels production, importation, and lifecycle emissions, ensuring robust oversight and stakeholder confidence.

Conclusion: For these reasons, we oppose H.B. 1459 and urge the committee to reconsider this approach. We remain committed to working with the State of Hawaiʻi on sustainable aviation initiatives that align with federal regulations, industry feasibility, and local production goals.

Mahalo for the opportunity to submit testimony, and we look forward to continued discussions on SAF deployment in Hawaiʻi.

[3] See **42 U.S.C. § 7571** (Clean Air Act provision granting EPA authority over aircraft engine emissions); ***Massachusetts v. EPA*****,** 549 U.S. 497, 528 (2007) (confirming EPA's authority under the Clean Air Act to regulate greenhouse gas emissions, including from aircraft).

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

FEBRAURY 4TH, 2025

HB 1459, RELATING TO SUSTAINABLE AVIATION FUEL

POSITION: SUPPORT

Coalition Earth **supports** HB 1459, relating to sustainable aviation fuel, which sets standards for sustainable aviation fuel adoption for intrastate travel airlines by certain times.

According to a report produced by the Hawai'i Climate Change Mitigation and Adaptation Commission, global sea levels could rise more than three feet by 2100, with more recent projections showing this occurring as early as 2060. In turn, over the next 30 to 70 years, approximately 6,500 structures and 19,800 people statewide will be exposed to chronic flooding. Additionally, an estimated $19 billion in economic loss would result from chronic flooding of land and structures located in exposure areas. Finally, approximately 38 miles of coastal roads and 550 cultural sites would be chronically flooded, on top of the 13 miles of beaches that have already been lost on Kaua'i, O'ahu, and Maui to erosion fronting shoreline armoring.

As we work to reduce carbon emissions and stave off the worst consequences of climate change, we must begin preparing for the adverse impact of sea level rise on our shores. We are now quantifying the speed at which we must act. We cannot continue to develop the 25,800-acre statewide sea level rise exposure area–one-third of which is designated for urban use–without risking massive structural damage and, potentially, great loss of life.

Just two years ago, we witnessed the impact of the climate emergency on our shores. On August 8, 2023, wildfires swept across Maui and killed at least 100 people, making it one of the nation's deadliest natural disasters. The spread of the fires has been attributed to climate change conditions, such as unusually dry landscapes and the confluence of a strong high-pressure system to the north and Hurricane Dora to the south. The wildfires destroyed over 2,200 structures, including numerous residential buildings, historic landmarks, and school facilities. In September 2023, a report from the United States Department of Commerce estimated the total economic

damage of the wildfires to be roughly $5.5 billion. Investing in renewable energy generation could not be more urgent, given the growing threat of climate catastrophes to our island home.

Therefore, **our state should take steps to accelerate our transition to a clean energy economy and continue our fight against climate change, including by requiring the use of sustainable aviation fuel.** This is especially important in light of the islands' carbon-intensive visitor industry. In 2019, for example, Civil Beat reported that flights to and from Hawai'i from all over the world produced approximately 6.3 million tons of carbon, which is the equivalent of the CO2 produced by generating electricity for almost 1.1 million homes in a year.

As an island state that is heavily reliant on air transportation and a robust tourist economy, we need to take action to ensure that air travel related to our state aligns with our goal of reducing our economy's carbon footprint. Jet fuel consumption for the islands is 17 million barrels–or 740 million gallons–per year between civilian and military consumption. To reduce our reliance on fossil fuels, we should seize the opportunity to invest in local sustainable fuel production, which can be derived from both plant and animal materials, ranging from cooking oil and plant oils to agricultural residues as well as municipal waste and waste gases.

While the cost of producing sustainable aviation fuel is currently higher than the cost of conventional fuels, the long-term benefit of transitioning to a clean economy outweighs the price of transforming the energy systems that power our carbon-intensive visitor industry. **Moreover, we cannot simply rely on industrial incentives to buttress positive environmental outcomes. Instead, such incentives must always be coupled with mandates that ensure commercial entities will take actions that firmly align with our state's overall climate resilience goals.**

Coalition Earth is a nongovernmental organization that works to preserve the well-being of people and our planet. We champion policies that advance climate resilience, clean energy, public health, and economic fairness for working families. Contact us at info@coalitionearth.org.

Airlines for America®

We Connect the World

February 3, 2025

Testimony on House Bill 1459 Relating to Sustainable Aviation Fuel

COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION
Rep. Nicole E. Lowen, Chair
Rep. Amy A. Perruso, Vice Chair

Chair Lowen, Vice Chair Perruso and Members of the Committee on Energy and Environmental Protection:

Airlines for America (A4A) is the trade association for the leading U.S. passenger and cargo airlines.[1] We applaud the State of Hawai'i and its industry for the significant and ongoing efforts to develop locally produced sustainable aviation fuel (SAF) and look forward to collaborating with the State of Hawai'i to get SAF off the ground. However, on the grounds of federal preemption, we write to express strong opposition to the proposal in House Bill 1459 to establish requirements for airlines' use of SAF.

U.S. Airlines' Strong Record on Climate and Sustainability

As the Committee considers important legislative proposals to address carbon pollution and meet the State's commitment to achieve a net-negative carbon economy by 2045, we highlight the U.S. airlines' strong record on addressing aviation pollution. Most importantly, A4A and our members are fully committed to reducing the climate impact of aviation and achieving net-zero carbon emissions by 2050.

As an industry, we have achieved this strong environmental record by driving and deploying technology, operations, infrastructure and sustainable aviation fuel (SAF) advances to provide safe and vital air transport as efficiently as possible within the constraints of the air traffic management system. For the past several decades, airlines have dramatically improved their fuel efficiency and reduced their CO_2 emissions by investing billions in fuel-saving aircraft and engines, innovative technologies like winglets (which improve aerodynamics) and cutting-edge route-optimization software. Despite our strong record, A4A and our member airlines are not stopping there.

On March 30, 2021, A4A announced a significant strengthening of our climate commitments.[2] Together with our member carriers, we pledged to work across the aviation industry and with government leaders in a positive partnership to achieve net-zero carbon emissions by 2050.[3] With consistent analyses showing that tremendous quantities of SAF must be deployed for the industry to meet its climate goals, A4A members pledged to work with the government and other stakeholders to make 3 billion gallons of cost-competitive SAF to be available to U.S. aircraft operators in 2030.[4]

Our airlines' efforts to further reduce GHG emissions are designed to limit their fuel consumption, GHG contribution and potential climate change impacts responsibly and effectively, while allowing commercial aviation to continue serving as a key contributor to the U.S., global, Hawai'ian and local economies.

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[1] A4A's members are Alaska Air Group, Inc.; American Airlines Group, Inc.; Atlas Air Worldwide Holdings, Inc.; Delta Air Lines, Inc.; FedEx Corp.; Hawaiian Airlines; JetBlue Airways Corp.; Southwest Airlines Co.; United Airlines Holdings, Inc.; and United Parcel Service Co. Air Canada is an associate member.

[2] *See* https://www.airlines.org/news/major-u-s-airlines-commit-to-net-zero-carbon-emissions-by-2050/.

[3] On October 4, 2021, the International Air Transport Association and its member airlines followed suit by also committing to achieve net-zero carbon emissions by 2050. *See* https://www.iata.org/en/pressroom/2021-releases/2021-10-04-03/.

[4] *See* https://www.airlines.org/news/u-s-airlines-announce-3-billion-gallon-sustainable-aviation-fuel-production-goal/; https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/09/fact-sheet-biden-administration-advances-the-future-of-sustainable-fuels-in-american-aviation/; *and* https://www.energy.gov/eere/bioenergy/sustainable-aviation-fuel-grand-challenge.

Federal Law Governs Airlines' Use of Aviation Fuel

As proposed, HB 1459 would require "any commercial airline operating intrastate flights the State" to use SAF starting in 2030 and annually increase the usage rate until the airline achieves one hundred percent (100%) SAF usage by 2045. The bill also requires a state regulatory regime of monitoring, reporting, certification, penalties and incentives for SAF usage.

A4A reminds the State of Hawai'i that, pursuant to the Airline Deregulation Act of 1978 (ADA), "a State . . . may not enact or enforce a law, regulation, or other provision having the force and effect of law related to a price, route, or service of an air carrier that may provide air transportation . . . ." 49 U.S.C. § 41713. The Supreme Court of the United States has held that this preemption clause should be given broad construction.[5] Moreover, the United States Court of Appeals for the Ninth Circuit has applied this broad preemption to airlines' intrastate flights.[6] The use of aviation fuel, including an airline's selection of fuel type, is inextricably related to airlines' rates, routes and services. Thus, the ADA preempts state regulation of airlines' fuel usage, including for intrastate flights in Hawai'i. The legislature should accordingly strike sections (a), (b), (e) and (f) of the proposed new section to Chapter 261E of the Hawai'i Revised Statutes.

We encourage the legislature and other interested parties to work together on measures to increase in-state production and deployment of SAF as a constructive alternative to unnecessary and federally preempted aviation fuel regulation. As an example, we note the introduction of House Bill 976 and Senate Bill 995, "Sustainable Aviation Fuel Import Tax Credit; Renewable Fuels Production Tax Credit", which call for the introduction of incentives to support the production and use of SAF and other renewable fuels in Hawai'i. A4A and its members support HB976 and SB995.

Thank you for your consideration.

Sean Williams
VP, State and Local Government Affairs
swilliams@airlines.org

[5] *See Morales v. Trans World Airlines*, 504 U.S. 374, 391 (1992).
[6] *See Huges Air Corp. v. Public Utilities Com'n*, 644 F.2d 1334, 1337 (9th Cir. 1981) ("The preemption provision preempts states from regulation the intrastate activities of any carrier 'having authority under Title IV.'").

HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
February 4, 2025, 9:00 A.M.
Conference Room 325 and videoconference

TESTIMONY IN STRONG SUPPORT OF HB 1459

Aloha Chair Lowen, Vice Chair Perruso, and members of the Committee:

Blue Planet Foundation **strongly supports HB 1459**, which establishes a phased requirement for the use of sustainable aviation fuel (SAF) for intrastate flights, positioning Hawai'i as a leader in clean aviation and advancing the state's critical climate and energy goals.

As an island state, Hawai'i is uniquely dependent on air travel, with aviation emissions representing a significant portion of our carbon footprint. Transitioning to sustainable aviation fuel is not only a necessary step to reduce greenhouse gas emissions but also an opportunity to foster local innovation, enhance energy security, and create new economic opportunities in Hawai'i's clean energy sector.

Why This Bill Matters

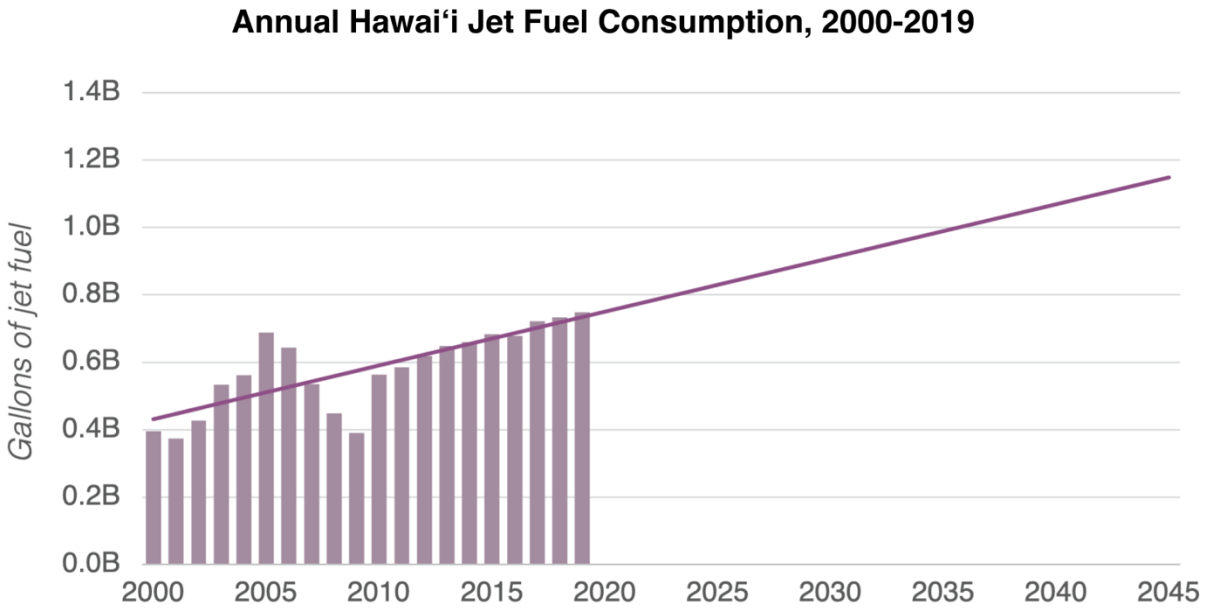
- **Reduces Hawai'i's Carbon Pollution:** Aviation remains one of the largest and most difficult sectors to decarbonize, but SAF offers a viable and scalable solution to reducing lifecycle emissions from air travel. The mandate set forth in HB 1459 ensures a responsible and measured transition toward 100% SAF by 2045.

- **Supports Local Economic Development:** Hawai'i has the potential to become a hub for sustainable fuel production, leveraging local agriculture, waste-to-fuel technologies, and emerging biofuel industries. This bill will stimulate investments in research, development, and production of SAF, creating jobs and reducing reliance on imported fossil fuels.

- **Enhances Energy Security:** By fostering in-state SAF production, this bill aligns with Hawai'i's broader energy independence strategy, reducing exposure to volatile global fuel markets while strengthening our resilience.

- **Aligns with the State's Climate Commitments:** Hawai'i has set ambitious targets to achieve a net-negative carbon economy by 2045. Given that aviation accounts for the

largest portion if Hawai'i's carbon emissions, transitioning to SAF is essential to meeting these climate goals.



Key Provisions Blue Planet Supports

- **Mandatory SAF adoption starting at 10% in 2030, with gradual annual increases leading to 100% by 2045.** This phased approach ensures a predictable transition for airlines while accelerating emissions reductions.

- **Collaboration with stakeholders, including airlines, fuel producers, and federal agencies, to expand SAF infrastructure and secure funding.** A coordinated effort is necessary to scale SAF production and deployment effectively.

- **Appropriation of $5 million to support SAF development and incentives.** This investment will help catalyze early adoption, attract private capital, and jumpstart local SAF production.

Recommended Enhancements

While HB1459 is a strong and necessary step, Blue Planet Foundation encourages consideration of additional provisions, including:

1. **Incentives for Early Adoption** – Offering incentives for airlines that surpass SAF requirements ahead of schedule.

2. **Support for In-State SAF Production** – Establishing policies that prioritize locally sourced SAF, ensuring that Hawai‘i maximizes economic and environmental benefits.

3. **Research and Development Funding** – Expanding financial and technical support for SAF innovation, particularly for feedstocks suited to Hawai‘i’s climate and resources.

Conclusion and Suggested Amendment

HB1459 represents a critical opportunity for Hawai‘i to lead in clean aviation, reduce harmful emissions, and drive sustainable economic growth. Blue Planet Foundation strongly urges the Legislature to pass this measure to accelerate the transition to cleaner skies and a more resilient, carbon-free Hawai‘i.

Thank you for the opportunity to provide testimony.

twelve

Legislative Testimony of S. Derek Phelps
House Committee on Energy & Environmental Protection
February 4, 2025
H.B. No. 1459 (RELATING TO SUSTAINABLE AVIATION FUEL)

Good morning, Chair Lowen, Vice Chair Perruso, and distinguished members of the Committee. My name is Derek Phelps. I am Head of Policy & Governmental Affairs for Twelve Benefit Corporation (Twelve). It is my pleasure today to submit this written testimony on House Bill No. 1459, introduced by Representatives Hussey, Grandinetti, and other distinguished members, which would "establish requirements for the use of sustainable aviation fuel (SAF) in all intrastate flights to advance Hawaii's climate goals, enhance energy security, and position Hawaii as a leader in the adoption of sustainable aviation practices."

Founded in 2015 and based in Berkeley, California, Twelve is a high-tech start-up that has developed a breakthrough electrochemical technology that transforms carbon dioxide (CO_2) into useful hydrocarbon products such as fuels and chemical feedstocks, effectively turning what is typically considered a waste gas into a useful resource.

As I have previously testified to this Committee, we are currently focused on the production of SAF, which we refer to as our E-Jet®. That is because the domestic airline industry, consistent with the federal government's SAF Grand Challenge, is striving for 3 billion gallons of domestic SAF production by 2030.

To be clear, our E-Jet is a so-called Power-to-Liquids (PtL) fuel.

Technological approaches to the production of PtL fuels can vary, but the common thread among all such fuels is the utilization of the same inputs: CO_2 that is either captured from an industrial source (e.g., an ethanol fermentation plant) or obtained from direct air capture; water; and a renewable source of electricity (e.g., solar, wind, hydropower) that is used to create clean hydrogen through the electrolysis of that water. Notably, we expect our E-Jet fuel, which has been tested and validated under a grant from the U.S. Air Force,[1] to reduce lifecycle greenhouse gas (GHG) emissions by up to 90% in comparison to conventional, petroleum-based jet fuel.[2]

This brings me to the aspect of H.B. 1459 on which we wish to comment. Under section 2 of the bill, subsection (g) of the new provision that would be added to Chapter 261E would define the term "sustainable aviation fuel" to mean "ASTM International D7566-compliant renewable aviation turbine fuel derived from biofuels, as defined in section 269-91, and with a greenhouse gas lifecycle carbon intensity lower than the baseline for jet fuel defined by the International Civil Aviation Organization." HRS section 269-91, in turn, currently defines "biofuels" as "liquid or gaseous fuels produced from organic sources such as biomass crops, agricultural residues and oil crops, such as palm oil, canola oil, soybean oil, waste cooking oil, grease, and food wastes, animal residues and wastes, and sewage and landfill wastes."

Limiting SAF to aviation turbine fuels that are "derived from biofuels," as

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[1] *See* https://www.af.mil/News/Article-Display/Article/2819999/the-air-force-partners-with-twelve-proves-its-possible-to-make-jet-fuel-out-of/.

[2] For more on Twelve and carbon transformation, please visit our website at https://www.twelve.co/. Further information on PtL SAF, including how it compares to other types of SAF, can be found in the *Know Your SAF* report posted at https://www.twelve.co/post/know-your-saf.

that term is currently defined, would appear to have the effect of excluding Twelve's E-Jet (and any other PtL aviation fuel), even though our E-Jet is indeed D7566-compliant and reduces lifecycle GHG emissions by up to 90 percent. Therefore, we respectfully request that the Committee amend section 2 of the bill by deleting from the SAF definition the phrase "derived from biofuels, as defined in section 269-91." Alternatively, the Committee could incorporate into section 2 the definition of SAF that we believe it adopted just last week as part of H.B. 976, which definition is as follows:

> 'Sustainable aviation fuel' means liquid fuel that:
>
> (1) Consists of synthesized hydrocarbons and meets the requirements of the American Society for Testing and Materials International Standard D7566 or D1655; and
>
> (2) Is derived from biomass resources, waste streams, renewable or zero carbon energy sources, or gaseous carbon oxides.

This definition, by expressly referencing gaseous carbon oxides, would leave no doubt that PtL SAF is encompassed within it.

We appreciate your attention to this matter.

HB-1459
Submitted on: 2/3/2025 10:37:48 AM
Testimony for EEP on 2/4/2025 9:00:00 AM

Submitted By	Organization	Testifier Position	Testify
Gene Harrington	Biotechnology Innovation Organization	Support	Written Testimony Only

Comments:

The Biotechnology Innovation Organization (BIO) is the world's largest trade association representing biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and in more than 30 other nations. Our key areas of focus are health biotechnology, industrial and environmental biotechnology, and food and agriculture biotechnology. We support HB 1459.

This bill is an important piece of renewable energy legislation that can help diversify Hawai‘i’s economy, protect the environment, combat climate change, and strengthen Hawai‘i’s position as a leader in a national transition to clean fuels. Mahalo for the opportunity to testify.

HB-1459
Submitted on: 1/28/2025 6:13:09 PM
Testimony for EEP on 2/4/2025 9:00:00 AM

Submitted By	Organization	Testifier Position	Testify
Douglas Perrine	Individual	Support	Written Testimony Only

Comments:

Hawaii cannot achieve its climate emission goals without regulating aviation fuel. HB1459 establishes a good framework for that process and deserves our full support.

LATE

Environmental Caucus of
The Democratic Party of Hawai‘i

February 4, 2025

Testimony in Opposition to HB1459: Relating to Sustainable Aviation Fuel

To: Chair Lowen, Vice Chair Perruso, and Members of the House Committee on Energy & Environmental Protection

From: Melodie Aduja and Alan Burdick, Co-chairs, Environmental Caucus of the Democratic Party of Hawaii

Date: February 4, 2025, 9:00 a.m.

Re: HB1459: Relating to Sustainable Aviation Fuel

Position: Strong Opposition

Dear Chair Lowen, Vice Chair Perruso, and Members of the House Committee on Energy & Environmental Protection,

We, Melodie Aduja and Alan Burdick, Co-chairs of the Environmental Caucus of the Democratic Party of Hawaii, strongly oppose HB1459, which seeks to set standards for sustainable aviation fuel adoption for intrastate travel airlines by certain times and appropriates funds for this purpose. While the intention to promote sustainable aviation fuel is commendable, this bill poses significant concerns that need to be addressed.

Key Concerns with HB1459:

1. **Environmental Impact**: The production and use of sustainable aviation fuel can still have negative environmental impacts, including land use changes, deforestation, and greenhouse gas emissions. It is crucial to ensure that the adoption of sustainable aviation fuel does not lead to unintended environmental consequences.
2. **Economic Feasibility**: The cost of producing and implementing sustainable aviation fuel can be prohibitively high. This could lead to increased costs for airlines and, ultimately, higher ticket prices for consumers. It is important to consider the economic feasibility and potential financial burden on both airlines and passengers.
3. **Technological Readiness**: The technology for sustainable aviation fuel is still in its early stages of development. There are concerns about the scalability and reliability of this technology to meet the demands of the aviation industry. It is essential to ensure that the technology is mature and reliable before mandating its adoption.
4. **Alternative Solutions**: There are other ways to reduce the environmental impact of aviation, such as improving fuel efficiency, optimizing flight routes, and investing in

electric or hybrid aircraft. These alternatives should be considered alongside sustainable aviation fuel to achieve the best environmental outcomes.

5. **Locally-Produced Fuels**: The bill does not require that sustainable aviation fuels be locally produced. This could result in the importation of fuels, which may negate some of the environmental benefits due to transportation emissions and other factors.
6. **Competition with Food Security**: Locally-grown biofuel crops should not compete with food security. It is essential to ensure that the production of biofuels does not compromise the availability of food resources.
7. **Genetic Engineering and Toxic Waste**: The bill should ensure that biofuels are not produced using genetically engineered crops or from toxic waste streams such as construction and demolition waste. These practices could have negative environmental and health impacts.

Arguments Against HB1459:

1. **Comprehensive Environmental Assessment**: Before adopting sustainable aviation fuel standards, a comprehensive environmental assessment should be conducted to evaluate the potential impacts and ensure that the benefits outweigh the drawbacks.
2. **Economic Impact Analysis**: An economic impact analysis should be performed to assess the financial implications for airlines and consumers. This analysis should consider the cost-effectiveness of sustainable aviation fuel compared to other alternatives.
3. **Technological Development and Support**: Investment in research and development is necessary to advance the technology for sustainable aviation fuel. Supporting technological innovation will help ensure that the fuel is viable and effective in reducing environmental impacts.
4. **Holistic Approach**: A holistic approach to reducing aviation's environmental impact should be adopted. This includes considering a range of solutions, such as fuel efficiency improvements, route optimization, and the development of electric or hybrid aircraft.

In conclusion, we urge the Committee to reject HB1459 in its current form. While we support the goal of reducing aviation's environmental impact, we believe that a more comprehensive and balanced approach is needed. We recommend conducting thorough assessments and considering alternative solutions to achieve the best outcomes for both the environment and the economy.

Thank you for the opportunity to testify in strong opposition to this legislation.

Sincerely,

Melodie Aduja and Alan Burdick
Co-chairs, Environmental Caucus of the Democratic Party of Hawaii

Comments before
February 4, 2025 House Committee on Energy and Environmental Protection

LATE

OPPOSING
House Bill 1459
Relating to Sustainable Aviation Fuels

Mike Ewall, Esq.
Founder & Director
Energy Justice Network
215-436-9511
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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 who first sought our support in 2015. Since mid-2022, we have supported residents in forming the Hawai'i Clean Power Task Force and Kōkua nā 'Āina to address numerous energy and waste issues in the state.

Aside from the federal preemption issues raised by the Attorney General and other testimonies, we must stand in opposition to House Bill 1459 as it is currently worded because it opens the door to too many unsustainable fuels schemes masquerading as green solutions. We have many concerns:

Production will not be local: HB 1459 has a preamble about locally-produced fuels, but does not require that the fuel be locally produced. 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. See: https://www.youtube.com/live/eLQmyLuHOu8?si=T4l-6FFwZu5ybYjz&t=857 This means that most of the production will come from the continent, predominantly the Midwestern states, defeating the goal of this bill and failing to subsidize Hawaiian economies.

Competition with food: The same recent 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. This bill has no language to attempt to avoid food vs. fuel competition.

Genetic engineering: The Biotechnology Industry Organization regularly submits testimony in favor of these 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 controversary 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.

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 (for disclosure, this is a company associated with this bill's prime sponsor) and by Twelve Benefit Corporation, one of the companies testifying in favor of this bill. 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

The bill does nothing to ensure that waste-based fuels are not used. 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. It was first used by Nazi Germany, then by South Africa’s Apartheid regime.

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

Unlike coal, construction and demolition (C&D) waste is very heterogenous, 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 heterogenous fuels. They break down constantly and operate only in batches. These finicky technologies require very homogenous fuels. Even those trying to process scrap tires fail repeatedly, because tires are not homogenous 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 also have been unable to operate at commercial scale, usually relegated to unregulated garage-scale pilot projects that go nowhere. This trend has led the nation’s leading incinerator-promoting solid waste consulting outfit, GBB, to classify the technology as “high” risk – because, as they present to waste industry conferences, of “previous failures at scale, uncertain commercial potential; no operating experience with large-scale operations” (pyrolysis) and “limited operating experience at only small scale; subject to scale-up issues” (gasification).

Hawai‘i has been targeted in recent years by quite a few fly-by-night companies aiming to cash in on state and federal subsidies to satisfy the desire for sustainable aviation fuels while making waste streams go “away.” Companies like Aloha Carbon and Yummet prey upon uninformed

public officials who don't have time to research the track record of this industry, the toxic hazards associated with it, or the better alternatives available.

As far as the toxic hazards go, 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: https://www.energyjustice.net/incineration/cd.pdf 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 the House companion bill from the Hawaii Natural Energy Institute (on page 41 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 fron 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 aims to clean up the RPS starting by removing solid fuel combustion sources, which will speed up the implementation of solar, wind, and energy storage.

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

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.