



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
Senate Committee on Energy, Economic Development, and Tourism
Friday, March 13, 2020 at 2:45 p.m., Rm 414

By
Bonnie Irwin
Chancellor
University of Hawai'i at Hilo

HB 1910 HD2 – RELATING TO SUSTAINABLE AVIATION FUEL

Chair Wakai, Vice Chair Taniguchi, and members of the Committee:

Thank you for the opportunity to submit testimony on HB 1910 HD2. The University of Hawai'i at Hilo (UH Hilo) writes in strong support of this bill which promotes development and adoption of renewable and sustainable aviation fuels. These fuels are essential to Hawai'i's continuing economic vitality, while simultaneously providing solutions for global climate change challenges.

This bill establishes a sustainable aviation fuels program in the High Technology Development Corporation (HTDC) and appropriates funds for grants to businesses in Hawai'i developing sustainable aviation fuels and (or) complementary technologies to reduce greenhouse gas emissions in the aviation sector.

Although UH Hilo will not obtain funds directly from this program, nor does it currently expect to be collaborating with companies that are near-term recipients of these HTDC grants, we applaud the Legislature for its leadership in supporting renewable fuels, greenhouse gas reduction technologies, and innovation in Hawai'i.

UH Hilo's College of Agriculture, Forestry, and Natural Resource Management (CAFNR) seeks to expand applied research and educational programs in the bioeconomy (renewable, sustainable fuels and chemicals) that create economic development and career opportunities for Hawai'i's people while accelerating adoption of environmentally beneficial technologies for Hawai'i and the Tropics. Aviation fuel is a primary target, due to its central importance to Hawai'i's well-being, current greenhouse gas emissions, and new technologies that enable bio-based fuels with superior performance.

We join the Legislature in the common goal of advancing renewable, sustainable aviation fuels for the environment's and Hawai'i's benefit.

We support this bill, and thank you for the opportunity to provide this testimony.

DAVID Y. IGE
Governor

JOSH GREEN
Lt. Governor



PHYLLIS SHIMABUKURO-GEISER
Chairperson, Board of Agriculture

MORRIS M. ATTA
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

TESTIMONY OF PHYLLIS SHIMABUKURO-GEISER
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT,
AND TOURISM

MARCH 13, 2020
2:45 P.M.
CONFERENCE ROOM 414

HOUSE BILL NO. 1910, HOUSE DRAFT 2
RELATING TO SUSTAINABLE AVIATION FUEL

Chairperson Wakai and Members of the Committee:

Thank you for the opportunity to testify on House Bill 1910 HD2. This measure establishes the sustainable aviation fuel program within the Hawaii Technology Development Corporation to provide matching grants to any small business in Hawaii that is developing products related to sustainable aviation fuel or commercial aviation operations greenhouse gas reduction. Funding is to be appropriated by the Legislature from the Environmental Response, Energy, and Food Security Tax (Section 243-3.5). The Department of Agriculture has strong concerns and offers comments.

The Agricultural Development and Food Security Special Fund (Section 141-10) is fully committed to the nine purposes for which the Special Fund may be expended. These nine purposes directly target agricultural production and processing such as agricultural resources, agricultural research, agricultural equipment, plant quarantine, promotion and marketing of agricultural products, water testing, and other activities "...intended to increase agricultural production or processing that may **lead to reduced importation of food, fodder, or feed from outside the State.**" (emphasis added)

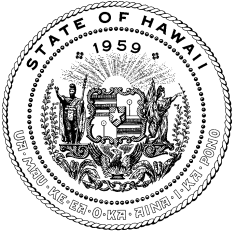
The Department respectfully submits that developing products related to sustainable aviation fuel or commercial aviation operations greenhouse gas reduction, while laudable and supportive of the State's many environmental initiatives, do not align with the agricultural production and processing focus of the Food Security Special Fund.



Page 2

The Department recommends that the proposed grant program be funded by other more appropriate sources which have been established for such purposes.

Thank you for the opportunity to testify on this measure.



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

235 South Beretania Street, 5TH Floor, Honolulu, HI 96813 | energy.hawaii.gov

DAVID Y. IGE
GOVERNOR

SCOTT J. GLENN
CHIEF ENERGY OFFICER

(808) 587-3807

Testimony of **SCOTT J. GLENN, Chief Energy Officer**

before the
SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM
Friday, March 13, 2020
2:45 PM
State Capitol, Conference Room 414

In SUPPORT of **HB 1910, HD2** **RELATING TO SUSTAINABLE AVIATION FUEL.**

Chair Wakai, Vice Chair Taniguchi, and Members of the Committee, the Hawaii State Energy Office (HSEO) supports HB 1910, HD2, which establishes a sustainable aviation fuel program in the High Technology Development Corporation and appropriates funds for grants to businesses in Hawaii developing sustainable aviation fuels or aviation greenhouse gas reduction, provided that its passage does not replace or adversely impact priorities indicated in the Executive Budget.

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

This is a very important area for innovation, and Hawaii is uniquely positioned to develop solutions and to continue to be a leader in the area of sustainable aviation fuels, building upon the success of the Federal initiative, headquartered in Hawaii, known as the Green Initiative For Fuels Transition – Pacific (GIFTPAC) from 2009-2019, and the recent Hawaii Aviation and Climate Action Summit, which convened national and international leaders in the field of sustainable aviation fuels here in Hawaii at the end of 2019.

Greenhouse gas emissions from air travel are a particularly significant area to address, since jet fuel is one of the largest sources of Hawaii's greenhouse gas emissions.

We look forward to successful developments in this important area.

Thank you for the opportunity to testify.



Written Statement of
Len Higashi
Acting Executive Director
Hawaii Technology Development Corporation
before the
Senate Committee On Energy, Economic Development, & Tourism
Friday, March 13, 2020
2:45 p.m.
State Capitol, Conference Room 414

In consideration of
HB1910, HD2
RELATING TO SUSTAINABLE AVIATION FUEL.

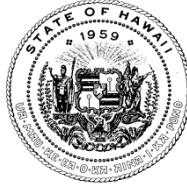
Chair Wakai, Vice Chair Taniguchi, and Members of the Committee.

The Hawaii Technology Development Corporation (HTDC) offers **comments** on HB1910, HD2 that establishes the sustainable aviation fuel program to provide matching grants to any small business in Hawaii that is developing products related to sustainable aviation fuel or commercial aviation operations greenhouse gas reduction.

As part of HTDC's vision to create 80,000 new innovation jobs in Hawaii earning \$80,000 or more by 2030, HTDC supports initiatives aimed at growing tech and innovation jobs. HTDC's Hawaii Center for Advanced Transportation Technologies has previously piloted various hydrogen fuel technology demonstrations. HB1910, HD2 requires a company match and provides guidance for HTDC to administer the program. HTDC supports this initiative provided it does not supplant the priorities in the Administration's budget.

Thank you for the opportunity to offer these comments.

DAVID Y. IGE
GOVERNOR



LATE

TESTIMONY BY:

JADE T. BUTAY
DIRECTOR

Deputy Directors
LYNN A.S. ARAKI-REGAN
DEREK J. CHOW
ROSS M. HIGASHI
EDWIN H. SNIFFEN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

March 13, 2020
2:45 p.m.
State Capitol, Room 414

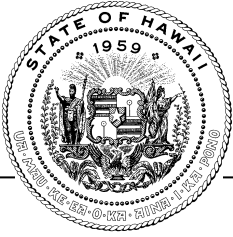
H.B. 1910, H.D. 2
RELATING TO SUSTAINABLE AVIATION FUEL.

Seante Committee Energy, Economic Development and Tourism

The Department of Transportation **supports** the intent this bill to establish the sustainable aviation fuel program by appropriating environmental response, energy, and food security tax revenues to provide grants to any business in Hawaii that is developing products related to sustainable aviation fuel or aviation greenhouse gas reduction.

The DOT welcomes renewable energy opportunities this program may bring in advancing Hawaii clean energy future by reducing Hawaii's dependence on fossil fuels.

Thank you for the opportunity to provide testimony.



**OFFICE OF PLANNING
STATE OF HAWAII**

LATE

DAVID Y. IGE
GOVERNOR

MARY ALICE EVANS
DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <http://planning.hawaii.gov/>

Statement of
MARY ALICE EVANS
Director, Office of Planning
before the
SENATE COMMITTEE ON ENERGY, ENVIRONMENT, AND TOURISM
Friday, March 13, 2020
2:45 PM
State Capitol, Conference Room 414

in consideration of
HB 1910, HD 2
RELATING TO SUSTAINABLE AVIATION FUEL.

Chair Wakai, Vice Chair Taniguchi, and Members of the Senate Committee on Energy, Economic Development, and Tourism:

The Office of Planning **supports** the intent of this measure. The purpose of HB 1910, HD 2 is to establish the sustainable aviation fuel program to provide grants to any business in Hawai'i that is developing products related to sustainable aviation fuel or aviation greenhouse gas reduction.

The Office of Planning has been actively working on sustainable development and climate adaptation to meet the needs of the present without compromising the ability of future generations to meet their own needs.

The Office of Planning recently published in December 2019 the *Feasibility and Implications of Establishing a Carbon Offset Program for the State of Hawai'i*. The publication was electronically provided to the Hawai'i State Legislature. The publication may also be found at the Office of Planning's website:

http://files.hawaii.gov/dbedt/op/sustainability/feasibility_and_implications_of_establishing_a_carbon_offset_program_for_the_state_of_hawaii_finalweb.pdf

Through this publication, the Office of Planning recommended that regardless of the use of offsets, the state government should take all actions at its disposal with appropriate financial consideration, to explore and implement all feasible greenhouse gas reduction measures. The *Feasibility and Implications of Establishing a Carbon Offset Program for the State of Hawai'i* report also recommended the adoption of alternative fuels in transportation.

HB 1910, HD 2 supports these greenhouse gas reduction efforts through the exploration and investment of a sustainable fuel program. The Office of Planning looks forward to supporting the Hawai'i Technology Development Corporation in these sustainable and climate adaptive endeavors. Mahalo for the opportunity to submit testimony in support of HB 1910, HD 2.



March 11, 2020

To: The Senate Committee Members on Energy, Economic Develop, and Tourism
The Honorable Glenn Wakai, Chair
The Honorable Brian T. Taniguchi, Vice Chair

Re: Strong Support of HB1910 HD2, Relating to Sustainable Aviation Fuel

Hrg: March 13, 2020 at 2:45 PM at Capitol Room 414

The Hawaii Public Health Association (HPHA) is a group of over 600 community members, public health professionals and organizations statewide dedicated to improving public health. HPHA also serves as a voice for public health professionals and as a repository for information about public health in the Pacific.

HPHA strongly supports HB1910 HD2, which would establish the sustainable aviation fuel (SAF) program to provide matching grants to small businesses in Hawaii developing products related to sustainable aviation fuel or aviation greenhouse gas reduction and appropriates funds.

The movement towards sustainable aviation fuel has taken off not only within the mainland United States but also in the European Union, the Netherlands, the United Kingdom, and Norway. The International Energy Agency (IEA) in their World Energy Outlook (WEO) has highlighted that the world's need for fuel will double within 50 years. Developing this capacity locally contributes to reducing fossil fuel impacts on our islands and the health of our communities while providing sustainable new business opportunities.

The effect of shifting to SAF not only has an economic impact but most importantly an environmental impact. The Union of Concerned Scientists noted in a July 2008 publication titled *The Hidden Costs of Fossil Fuels* which was updated in August 2016 that in 2014 approximately 78 percent of US global warming emissions were energy-related emissions. Burning fossil fuels also emit other pollutants including sulfur dioxide, nitrogen oxides, particulate matter, and mercury. The individual health effects of these include respiratory ailments or lung tissue damage. Actions that reduce climate change can dramatically improve health. Choices we make now will determine the magnitude of climate impacts faced in the future.

We believe that shifting to SAF would catalyze not only economic opportunities in the development of sustainable fuels but as more locally-based aviation businesses, but also will lead to a gradual alleviation of current energy-related emissions.

Thank you for the opportunity to provide testimony on important health issues affecting people in Hawaii.

Respectfully submitted,

Tenaya Jackman, MPH
Climate Change Legislative Sub-Committee Chair
Hawaii Public Health Association

HAWAII STATE SENATE
REGULAR SESSION OF 2020
ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM
March 13th, 2020

TESTIMONY ON HOUSE BILL NO. 1910 HD 2, RELATING TO SUSTAINABLE AVIATION FUEL

Position: **Support**

To the Honorable Glenn Wakai, Chair; the Honorable Brian T. Taniguchi, Vice Chair; and Members of the Committee:

We strongly support this bill, which establishes the Sustainable Aviation Fuel program within the Hawaii Technology Corporation as a modest matching funds program, for small business to help commercial airlines serving Hawaii reduce the greenhouse gas intensity of their operations.

Our company was the convener for the first-ever Hawai'i Aviation and Climate Action Summit, which was held December 3rd 2019. At this Summit, which was free and open to the public, nearly 100 representatives from major airlines, local fuel and transportation industry leaders, environmental advocates, and officials from the State of Hawaii met to discuss actions to be taken to reduce the greenhouse gas (GHG) emissions from international airlines serving Hawaii. Attendees reviewed the mandate established by the International Civil Aviation Organization (ICAO)'s Carbon Offset and Reduction Scheme for International Aviation (CORSIA). CORSIA, the aviation equivalent of the Paris Climate Accord, applies to all international flights including those to and from Hawaii, and requires commercial airlines to reduce the GHG intensity of their operations by 50% below 2005 levels by 2050. The program becomes mandatory for most developed countries' airlines in 2022.

At the Summit, attendees voted to rank several potential state policy measures to facilitate sustainable aviation fuel production in Hawaii for airlines serving Hawaii. Applying barrel tax funds to support infrastructure investments received the top ranking. Expanding HTDC's matching funding program was the most popular mechanism in the afternoon workshop. These and other findings and recommendations are [published online at www.simonpietri.com](http://www.simonpietri.com).

Simonpietri Enterprises is a small sustainable business firm focused on technical innovation and first-of-kind project development. We help established and emerging industrial companies improve the environmental and economic sustainability of their operations through renewable energy conversion, waste reduction and re-use, and greenhouse gas lifecycle impact reduction. Simonpietri Enterprises is the voluntary convener of the Federal Aviation Administration's public-private Commercial Aviation Alternative Fuels Initiative (www.CAAFI.org) focal for Hawai'i, and serves as an industry advisory committee member of the Federal Aviation Administration's Aviation Sustainability Center of Excellence on renewable aviation fuel production and certification (www.ascent.aero).

Sincerely,



Joelle Simonpietri
President



183 Pinana St., Kailua, HI 96734 • 808-262-1285 • info@350Hawaii.org

To: The Senate Committee on Energy, Economic Development, and Tourism
From: Brodie Lockard, Founder, 350Hawaii.org
Date: Friday, March 13, 2020, 2:45 pm

In strong support of HB 1910 HD2

Dear Chair Wakai, and members:

350Hawaii.org's 6,000 members strongly support HB 1910 HD2.

According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. That was a 26% increase over 2013 [1].

Global air travel into and out of Hawaii alone in 2017 produced as much CO₂ as generating electricity for almost 1.1 million homes for a year [1].

Transportation has become the largest portion (29%) of total U.S. greenhouse gas emissions [2], and airplane flights are drawing increasing attention as a considerable contributor.

Flyers' 102,465 flights every day around the globe emit enormous amounts of CO₂ [3]. Because plane emissions involve other states and countries, they can't be easily regulated.

Renewable energy is now the cheapest form of new electricity generation across two thirds of the world [4]. Electric vehicles are spreading and receiving much attention. Electric planes are coming [5]. Pilots can make small changes in the way they operate aircraft, having a big impact on reducing fuel use and carbon emissions [1].

But currently, planes spew close to a billion metric tons of carbon dioxide every year, and they need to be far cleaner.

Please pass this bill and let Hawaii help reign in this increasing source of GHG emissions.

Brodie Lockard
Founder, 350Hawaii.org

- [1] <https://www.civilbeat.org/2019/08/air-travels-carbon-footprint-takes-a-big-environmental-toll-in-hawaii/>
- [2] <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>
- [3] <https://garfors.com/100000-flights-day-html/>
- [4] <https://thinkprogress.org/renewables-now-cheaper-than-new-coal-or-gas-across-two-thirds-of-the-world-c4980412cb53/>
- [5] <https://www.youtube.com/watch?v=1srmGS282bQ>

HB-1910-HD-2

Submitted on: 3/11/2020 11:24:35 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Climate Protector	Testifying for Climate Protectors Coalition	Support	No

Comments:

HB-1910-HD-2

Submitted on: 3/12/2020 12:29:38 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Diane Ware	Testifying for Volcano Action Network	Support	No

Comments:

Dear Chair Wakai, and members:

The Volcano Action Network strongly supports HB 1910 HD2. We are very concerned about our future and the planet.

According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. That was a 26% increase over 2013 [1].

Global air travel into and out of Hawaii alone in 2017 produced as much CO2 as generating electricity for almost 1.1 million homes for a year [1].

Transportation has become the largest portion (29%) of total U.S. greenhouse gas emissions [2], and airplane flights are drawing increasing attention as a considerable contributor.

Flyers' 102,465 flights every day around the globe emit enormous amounts of CO2 [3]. Because plane emissions involve other states and countries, they can't be easily regulated.

Renewable energy is now the cheapest form of new electricity generation across two thirds of the world [4]. Electric vehicles are spreading and receiving much attention. Electric planes are coming [5]. Pilots can make small changes in the way they operate aircraft, having a big impact on reducing fuel use and carbon emissions [1].

But currently, planes spew close to a billion metric tons of carbon dioxide every year, and they need to be far cleaner.

Please pass this bill and let Hawaii help reign in this increasing source of GHG emissions.

Respectfully,

Diane Ware for Volcano Action Network, P. O Box 698 Volcano HI 96785

HB-1910-HD-2

Submitted on: 3/11/2020 9:51:35 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
John Nix	Individual	Support	No

Comments:

Dear Chair Wakai, and members:

As one of 350Hawaii's 6,000 members, I strongly support HB 1910 HD2.

According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. That was a 26% increase over 2013 [1].

Global air travel into and out of Hawaii alone in 2017 produced as much CO2 as generating electricity for almost 1.1 million homes for a year [1].

Transportation has become the largest portion (29%) of total U.S. greenhouse gas emissions [2], and airplane flights are drawing increasing attention as a considerable contributor.

Flyers' 102,465 flights every day around the globe emit enormous amounts of CO2 [3]. Because plane emissions involve other states and countries, they can't be easily regulated.

Renewable energy is now the cheapest form of new electricity generation across two thirds of the world [4]. Electric vehicles are spreading and receiving much attention. Electric planes are coming [5]. Pilots can make small changes in the way they operate aircraft, having a big impact on reducing fuel use and carbon emissions [1].

But currently, planes spew close to a billion metric tons of carbon dioxide every year, and they need to be far cleaner.

Please pass this bill and let Hawaii help reign in this increasing source of GHG emissions.

Dr. John and Debra Nix, Kihei

HB-1910-HD-2

Submitted on: 3/11/2020 11:05:05 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
tlaloc tokuda	Individual	Support	No

Comments:

To: The Senate Committee on Energy, Economic Development, and Tourism

From: Tlaloc Tokuda

Date: Friday, March 13, 2020, 2:45 pm

In strong support of HB 1910 HD2

Dear Chair Wakai, and members:

As one of 350Hawaii’s 6,000 members, I strongly support HB 1910 HD2.

According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. That was a 26% increase over 2013 [1].

Global air travel into and out of Hawaii alone in 2017 produced as much CO2 as generating electricity for almost 1.1 million homes for a year [1].

Transportation has become the largest portion (29%) of total U.S. greenhouse gas emissions [2], and airplane flights are drawing increasing attention as a considerable contributor.

Flyers' 102,465 flights every day around the globe emit enormous amounts of CO2 [3]. Because plane emissions involve other states and countries, they can't be easily regulated.

Renewable energy is now the cheapest form of new electricity generation across two thirds of the world [4]. Electric vehicles are spreading and receiving much attention. Electric planes are coming [5]. Pilots can make small changes in the way they operate aircraft, having a big impact on reducing fuel use and carbon emissions [1].

But currently, planes spew close to a billion metric tons of carbon dioxide every year, and they need to be far cleaner.

Please pass this bill and let Hawaii help reign in this increasing source of GHG emissions.

Mahalo,

Tlaloc Tokuda,

Kailua Kona HI 96740

[1] <https://www.civilbeat.org/2019/08/air-travels-carbon-footprint-takes-a-big-environmental-toll-in-hawaii/>

[2] <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>

[3] <https://garfors.com/100000-flights-day-html/>

[4] <https://thinkprogress.org/renewables-now-cheaper-than-new-coal-or-gas-across-two-thirds-of-the-world-c4980412cb53/>

[5] <https://www.youtube.com/watch?v=1srmGS282bQ>

HB-1910-HD-2

Submitted on: 3/12/2020 5:24:12 AM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Mary Morioka	Individual	Support	No

Comments:

Control and decrease the source of GFG emissions. It's a no-brainer.

HB-1910-HD-2

Submitted on: 3/12/2020 7:02:43 AM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Caroline Kunitake	Individual	Support	No

Comments:

Dear Chair Wakai, and members:

As one of 350Hawaii's 6,000 members, I strongly support HB 1910 HD2.

This bill establishes the sustainable aviation fuel program to provide matching grants to any small business in Hawaii that is developing products related to sustainable aviation fuel or commercial aviation operations greenhouse gas reduction. I think this is a creative way to promote small business in Hawaii while supporting aviation and greenhouse gas reduction.

According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. That was a 26% increase over 2013 [1].

Global air travel into and out of Hawaii alone in 2017 produced as much CO2 as generating electricity for almost 1.1 million homes for a year [1].

Transportation has become the largest portion (29%) of total U.S. greenhouse gas emissions [2], and airplane flights are drawing increasing attention as a considerable contributor.

Flyers' 102,465 flights every day around the globe emit enormous amounts of CO2 [3]. Because plane emissions involve other states and countries, they can't be easily regulated.

Renewable energy is now the cheapest form of new electricity generation across two thirds of the world [4]. Electric vehicles are spreading and receiving much attention. Electric planes are coming [5]. Pilots can make small changes in the way they operate aircraft, having a big impact on reducing fuel use and carbon emissions [1].

But currently, planes spew close to a billion metric tons of carbon dioxide every year, and they need to be far cleaner.

Please pass this bill and let Hawaii help reign in this increasing source of GHG emissions.

[1] <https://www.civilbeat.org/2019/08/air-travels-carbon-footprint-takes-a-big-environmental-toll-in-hawaii/>

[2] <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>

[3] <https://garfors.com/100000-flights-day-html/>

[4] <https://thinkprogress.org/renewables-now-cheaper-than-new-coal-or-gas-across-two-thirds-of-the-world-c4980412cb53/>

[5] <https://www.youtube.com/watch?v=1srmGS282bQ>

Mahalo,

Caroline Kunitake

HB-1910-HD-2

Submitted on: 3/12/2020 7:50:39 AM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
donald erway	Individual	Support	No

Comments:

HB-1910-HD-2

Submitted on: 3/12/2020 11:53:44 AM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Mark K.Wilson III	Individual	Support	No

Comments:

HB-1910-HD-2

Submitted on: 3/12/2020 12:00:24 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Steven Costa	Individual	Support	No

Comments:

HB-1910-HD-2

Submitted on: 3/12/2020 12:08:25 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Ava Fedorov	Individual	Support	No

Comments:

Dear Chair Wakai, and members:

As one of 350Hawaii's 6,000 members, I strongly support HB 1910 HD2.

According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. That was a 26% increase over 2013 [1].

Global air travel into and out of Hawaii alone in 2017 produced as much CO2 as generating electricity for almost 1.1 million homes for a year [1].

Transportation has become the largest portion (29%) of total U.S. greenhouse gas emissions [2], and airplane flights are drawing increasing attention as a considerable contributor.

Flyers' 102,465 flights every day around the globe emit enormous amounts of CO2 [3]. Because plane emissions involve other states and countries, they can't be easily regulated.

Renewable energy is now the cheapest form of new electricity generation across two thirds of the world [4]. Electric vehicles are spreading and receiving much attention. Electric planes are coming [5]. Pilots can make small changes in the way they operate aircraft, having a big impact on reducing fuel use and carbon emissions [1].

But currently, planes spew close to a billion metric tons of carbon dioxide every year, and they need to be far cleaner.

Please pass this bill and let Hawaii help reign in this increasing source of GHG emissions.

Sincerely,

Ava Fedorov

[1] <https://www.civilbeat.org/2019/08/air-travels-carbon-footprint-takes-a-big-environmental-toll-in-hawaii/>

[2] <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>

[3] <https://garfors.com/100000-flights-day-html/>

[4] <https://thinkprogress.org/renewables-now-cheaper-than-new-coal-or-gas-across-two-thirds-of-the-world-c4980412cb53/>

[5] <https://www.youtube.com/watch?v=1srmGS282bQ>

HB-1910-HD-2

Submitted on: 3/12/2020 2:36:28 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Jeremy Garrett	Individual	Support	No

Comments:

Air travel is a major source of carbon dioxide emissions. We need to invest in the development of cleaner fuel alternatives. Please pass this measure.

LATE



Environmental Caucus of The Democratic Party of Hawai‘i

Friday, March 13, 2020

House Bill 1910, HD 2
Testifying in Support

Aloha Chair Wakai, Vice Chair Taniguchi, and Members of the Committee on Energy, Economic Development, and Tourism:

The Environmental Caucus of the Democratic Party of Hawaii stands in support of HB 1910, HD 2. This measure establishes the sustainable aviation fuel program to provide matching grants to any small business in Hawaii that is developing products related to sustainable aviation fuel or commercial aviation operations greenhouse gas reduction, and appropriates funds.

The purpose of this Act is to support the greenhouse gas lifestyle reduction of commercial aviation in the State by establishing a sustainable aviation fuel program within the Hawaii technology development corporation.

Flights to and from Hawaii from the western U.S. produced 2.3 million tons of carbon in 2017. Flights to and from Hawaii from all over the world, produced approximately 6.3 million tons. This is the equivalent of the CO₂ produced by generating electricity for almost 1.1 million homes in a year, according to the EPA. To capture that much carbon annually would take about 7.4 million acres of forest, more than the total 4.1 million acres of land in the Hawaiian Islands. In Hawaii, these negative environmental impacts have been largely ignored.

A 2019 report by Honolulu’s sustainability office estimated aviation accounted for 13% of O`ahu’s carbon emissions. The Elemental Excelsator, a business development organization that works with innovative renewable energy and transportation companies, among others, estimates the percentage at more than 20%. Hawaii’s aviation industry outpaces all other sectors in its petroleum use. The industry gobbled up 30.2% of the petroleum used in Hawaii in 2017, the State Energy Office reported in July 2019 using the most available data. This compared to 28.4% for ground transportation and 24.5% for electric power.

Globally, an increasing focus is on the aviation industry’s role in managing the environmental effects of tourism. According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. This was a 26% increase over 2013, when flights accounted for 710 million tons.

Internationally, the United Nations International Civil Aviation Organization is promoting a plan to cap the growth of aviation carbon emissions starting in 2021. Known as the Carbon Offsetting and Reduction Scheme for International Aviation, or CORSIA, the plan has received support from the world's major carriers, including the U.S. Industry.

The Elemental Excelsior is also seeking to develop market-based solutions to carbon emissions by helping finance and advise promising companies that can help solve the problem.

One of these companies, Ampaire, has begun testing a small electric airplane that can be used for short flights within the islands. The plan is to begin testing flights between Kahului to Hana, Maui, around the beginning of 2020 in partnership with Mokulele Airlines.

Additional market-based solutions are necessary for research and innovations to reduce carbon emissions by the aviation industry. The passage of this measure would assist in this extremely valuable environmental endeavor.

For these reasons, we urge you to vote favorably on this bill which establishes the sustainable aviation fuel program to provide matching grants to any small business in Hawaii that is developing products related to sustainable aviation fuel or commercial aviation operations greenhouse gas reduction, and appropriates funds.

Mahalo for the opportunity to testify,

/s/ Melodie Aduja

Melodie Aduja
Co-Chair, Green New Deal
Environmental Caucus
Democratic Party of Hawaii
Email: legislativepriorities@gmail.com

<https://www.civilbeat.org/2019/08/air-travels-carbon-footprint-takes-a-big-environmental-toll-in-hawaii/>

LATE

HB-1910-HD-2

Submitted on: 3/12/2020 6:39:21 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
katherine kazlauskas	Testifying for 350hawaii.org	Support	No

Comments:

To: The Senate Committee on Energy, Economic Development, and Tourism

From: **Katherine Kazlauskas**

Date: Friday, March 13, 2020, 2:45 pm

In strong support of HB 1910 HD2

Dear Chair Wakai, and members:

As one of 350Hawaii's 6,000 members, I strongly support HB 1910 HD2.

According to the International Air Transportation Association, an international trade group that represents 290 carriers, domestic and international flights in 2018 emitted around 895 million metric tons of carbon dioxide in 2018. That was a 26% increase over 2013 [1].

Global air travel into and out of Hawaii alone in 2017 produced as much CO2 as generating electricity for almost 1.1 million homes for a year [1].

Transportation has become the largest portion (29%) of total U.S. greenhouse gas emissions [2], and airplane flights are drawing increasing attention as a considerable contributor.

Flyers' 102,465 flights every day around the globe emit enormous amounts of CO2 [3]. Because plane emissions involve other states and countries, they can't be easily regulated.

Renewable energy is now the cheapest form of new electricity generation across two thirds of the world [4]. Electric vehicles are spreading and receiving much attention. Electric planes are coming [5]. Pilots can make small changes in the way they operate aircraft, having a big impact on reducing fuel use and carbon emissions [1].

But currently, planes spew close to a billion metric tons of carbon dioxide every year, and they need to be far cleaner.

Please pass this bill and let Hawaii help reign in this increasing source of GHG emissions.

[1] <https://www.civilbeat.org/2019/08/air-travels-carbon-footprint-takes-a-big-environmental-toll-in-hawaii/>

[2] <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>

[3] <https://garfors.com/100000-flights-day-html/>

[4] <https://thinkprogress.org/renewables-now-cheaper-than-new-coal-or-gas-across-two-thirds-of-the-world-c4980412cb53/>

[5] <https://www.youtube.com/watch?v=1srmGS282bQ>

Katherine Kazlauskas



Airlines for America®

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LATE

Testimony

**Supplemental Written Testimony of
Airlines for America in Support of House Bill 1910
Relating to Sustainable Aviation Fuel
Submitted by Nancy N. Young
Vice President, Environmental Affairs**

Airlines for America® (A4A) appreciates this opportunity to provide supplemental written testimony to the Senate in support of HB 1910 HD 2,¹ which would establish the Sustainable Aviation Fuel program and complement the aviation industry's efforts to reduce its greenhouse gas (GHG) emissions while supporting Hawaiian businesses and energy security within the State.² Our earlier written testimony to the House, which was based on HB 1910 HD 1, is attached for your convenience.

Although we continue to support the bill and urge the Hawaii State Legislature to adopt it and forward it to the Governor for his signature, we are supplementing our earlier testimony to provide proposed suggested revisions to two of the legislative findings in section 1 of HB 1910 HD 2 that were not in HB 1910 HD 1. These legislative findings pertain to the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation, better known by its acronym, CORSIA. In addition, we offer technical suggestions with respect to the proposed "Hawaii jet fuel baseline carbon intensity" and "sustainable aviation fuel" definitions.

With respect to the legislative findings, we note that under the agreement made by the 193 countries party to the United Nations' International Civil Aviation Organization (ICAO), CORSIA's offsetting obligation is being implemented in stages. Beginning in 2021, offsetting will be required for international flights to/from those countries (of which there are currently 81, including the U.S.) that have agreed to participate in the three-year pilot phase (2021-2023) and three-year first phase (2024-2026) of CORSIA. The offsetting obligation becomes mandatory for flights to/from all countries except the least developed countries beginning in 2027. Thus, we respectfully request that the finding in subsection (5) be revised to read as follows (with proposed additions in underline and proposed deletions in strikethrough):

(5) In ~~2022-2021~~, a number of these international flights will ~~begin to come under the mandate become~~ subject to the offsetting requirements established by the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), with virtually all international flights becoming subject to CORSIA offsetting in 2027;

¹ Available at https://www.capitol.hawaii.gov/session2020/bills/HB1910_HD2_.PDF.

² A4A is the principal trade and service organization of the U.S. airline industry. A4A's members are: Alaska Airlines, Inc.; American Airlines Group; Atlas Air, Inc.; Delta Air Lines, Inc.; Federal Express Corporation; Hawaiian Airlines; JetBlue Airways Corp.; Southwest Airlines Co.; United Continental Holdings, Inc.; and United Parcel Service Co. Air Canada is an associate member.

The finding in subsection (6) states that “CORSIA requires commercial airlines to reduce greenhouse gas emissions by fifty per cent below 2005 levels by 2050.” This, too, is not quite accurate. We are proud to note that the 50% GHG reduction is an industry-wide target, not a requirement of CORSIA, which is slated to run through 2035.³ Consistent with this, we respectfully request that subsection 6 be revised to read as follows:

(6) Commercial airlines have committed to reducing their greenhouse gas emissions by fifty per cent below 2005 levels in 2050;

Turning to the definitions in the legislative text, having linked the legislative findings in part to CORSIA, we appreciate the proposal to also link the proposed “Hawaii jet fuel baseline carbon intensity” to the baseline established by ICAO. While that is a well-supported technical baseline, we note that a higher baseline could be considered, both as a technical matter and should the State wish to establish a baseline that would not put sustainable aviation fuel at a policy disadvantage to other alternative/renewable fuels. Thus, to the extent the State of Hawaii locks that in – the carbon intensity of conventional jet fuel -- for purposes of this legislation, we would note that it would be appropriate for the State to consider setting a higher baseline to further incentivize sustainable aviation fuel under other State programs.

Also, while we generally support the definition of “sustainable aviation fuel” proposed in the bill, we seek confirmation that the list of materials from which such fuel can be derived, as set out in the cross-referenced section 269-91, is broad enough to include waste gases and captured gaseous carbon oxides, which are a promising renewable feedstock for certain sustainable aviation fuel production processes. Section 269-91 notes that both “municipal solid waste” and other “solid waste” are eligible materials. Even though not “solid” per se, the U.S. Environmental Protection Agency long ago confirmed that so-called “solid wastes” can be gases. Accordingly, to the extent that the State of Hawaii plans to use the list of materials in section 269-91 to define what may meet the sustainable aviation fuel definition, we would urge the State to ensure that waste gases are included.

With these minor revisions and additional considerations, we reiterate our support for the creation of the Sustainable Aviation Fuel program. Thank you for your consideration.

³ See A4A, “A4A’s Climate Change Commitment,” available at <https://www.airlines.org/a4as-climate-change-commitment/>; A4A, “Airlines Fly Green,” available at <https://www.airlines.org/airlines-fly-green/>; see also Air Transport Action Group, “Climate Change,” available at <https://www.atag.org/our-activities/climate-change.html>; International Air Transport Association, “Improving Environmental Performance,” available at <https://www.iata.org/en/programs/environment/>.



Airlines for America®

We Connect the World

Testimony

**Written Testimony of Airlines for America in Support of House Bill 1910
Relating to Sustainable Aviation Fuel
Submitted by Nancy N. Young
Vice President, Environmental Affairs**

Airlines for America® (A4A) appreciates this opportunity to provide written testimony in support of HB 1910, as amended, which would establish the Sustainable Aviation Fuel program.¹ This bill would complement the aviation industry's efforts to reduce its greenhouse gas (GHG) emissions while supporting Hawaiian businesses and energy security within the State. We urge the legislature to adopt this legislation and enable the Hawaii Technology Development Corporation to proceed to implementation expeditiously.

By way of background, the aviation industry has a strong climate change record and a continuing commitment to further reduce its climate impact. Between 1978 and the end of 2018, the U.S. airlines improved their fuel efficiency by more than 130 percent, saving nearly 5 billion metric tons of carbon dioxide (CO₂) – equivalent to taking more than 26 million cars off the road on average in each of those years. And we carried 42 percent more passengers and cargo in 2018 than in 2000, while emitting only 3 percent more CO₂.

As a result, the U.S. airlines account for only 2 percent of the nation's GHG inventory, while representing over 5 percent of GDP. Even so, we are committed to limiting and further reducing these emissions. In 2009, our industry established a stepwise set of emissions targets: an annual average 1.5 percent fuel efficiency improvement through 2020, carbon-neutral growth from 2020 onward, and a 50 percent net reduction in CO₂ emissions in 2050 relative to 2005 levels. The initiatives our airlines are undertaking to further address GHG emissions are designed to responsibly and effectively limit their fuel consumption, GHG contribution, and potential climate change impacts, while allowing commercial aviation to continue to serve as a key contributor to the U.S. and state and local economies.

The availability of sustainable aviation fuel (SAF) in significant quantities is a key pillar to the achievement of the industry's goals, and A4A and its members have been working hard to lay the groundwork for the establishment of a SAF industry. SAF is particularly critical to the aviation industry's GHG reduction strategy as aviation, unlike ground transportation, cannot electrify in the near-term and is therefore reliant upon liquid fuels.

The aviation industry has created the foundation for airline deployment of SAF, which results in an up to 80 percent reduction in GHG emissions relative to fossil-based jet fuel, through our Commercial Aviation Alternative Fuels Initiative² (CAAFI) and other programs. However, as SAF currently tends to be considerably more expensive than traditional jet fuel and there is very little

¹ A4A is the principal trade and service organization of the U.S. airline industry. A4A's members are: Alaska Airlines, Inc.; American Airlines Group; Atlas Air, Inc.; Delta Air Lines, Inc.; Federal Express Corporation; Hawaiian Airlines; JetBlue Airways Corp.; Southwest Airlines Co.; United Continental Holdings, Inc.; and United Parcel Service Co. Air Canada is an associate member.

supply, we need complementary government policies to make SAF commercially viable and scale up supply. This is where the program proposed in HB 1910 could help. By establishing a grant program for businesses in Hawaii developing products related to SAF or aviation GHG reduction, the State would help local businesses participate in the development of a new, green industry while supporting the aviation sector's efforts to meet its rigorous climate goals. Further, the bill's requirement that projects supported through such grants be economically viable and beneficial to the State while reducing GHG emissions will ensure that any State funding is well spent.

The aviation industry and alternative fuels suppliers and supporting businesses are on the cusp of creating a viable SAF industry. But steady government partnership – such as that contemplated in HB 1910 – is needed in the near term to provide policy support to help get SAF over the cusp. With sustained support, SAF will literally get off the ground.

We urge you to approve HB 1910 and to move towards implementation. Thank you for your consideration.

² Additional detail on CAAFI and on its initiatives and progress are available on the CAAFI website at www.caafi.org.

LATE

HB-1910-HD-2

Submitted on: 3/12/2020 8:50:47 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Sherry Pollack	Individual	Support	No

Comments:

LATE

HB-1910-HD-2

Submitted on: 3/13/2020 1:23:51 PM

Testimony for EET on 3/13/2020 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Laura Gray	Individual	Support	No

Comments: