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DAVID Y. IGE
GOVERNOR

MARY ALICE EVANS
DIRECTOR
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Statement of
MARY ALICE EVANS
Director, Office of Planning
before the
HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE
Tuesday, February 16, 2021
2:00 PM
State Capitol, Conference Room 329

in consideration of
HB 683, HD1
RELATING TO SUSTAINABLE AVIATION FUEL.

Chair Johanson, Vice Chair Kitagawa, and Members of the Committee:

The Office of Planning supports the intent of this measure and offers the following **comments**. The purpose of HB 683, HD1 is to establish the sustainable aviation fuel program to provide matching grants to any small business in Hawai'i that is developing products related to sustainable aviation fuel or commercial aviation operations greenhouse gas reduction. The measure specifies moneys for the program are from legislative appropriations out of the environmental response, energy, and food security tax.

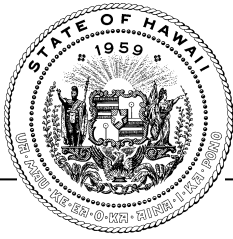
The Office of Planning and its newly established Statewide Sustainability Program is actively working on the sustainable development and climate adaptation of the state to meet the needs of the present without compromising the ability of future generations of Hawai'i to meet their own needs.

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 provided to the Hawai'i State Legislature and is also available online at the Office of Planning's website. Through this publication, the Office of Planning recommended the adoption of alternative fuels in transportation to reduce Hawai'i's greenhouse gas emissions to meet Hawaii's laudable Zero Emissions Clean Economy Target by 2045.

The Office of Planning notes that the U.N. has declared this 2020-2030 decade as the "Decade of Action" to achieve the 2030 Sustainable Development Goals in alignment with the goals of the U.N. Paris Agreement. These international initiatives have significantly impacted markets and corporations to reduce greenhouse gas emissions, including [Boeing's recent commitment to transition its commercial aircraft to be ready to fly 100% on sustainable aviation fuels by 2030.](#)

HB 683, HD1 supports these greenhouse gas reduction efforts through the exploration and investment of a sustainable aviation fuel program in Hawai'i. 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 683, HD1.



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

DAVID Y. IGE
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SCOTT J. GLENN
CHIEF ENERGY OFFICER

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Testimony of
SCOTT J. GLENN, Chief Energy Officer

before the
HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE

Tuesday, February 16, 2021
2:00 PM
State Capitol, Conference Room 329

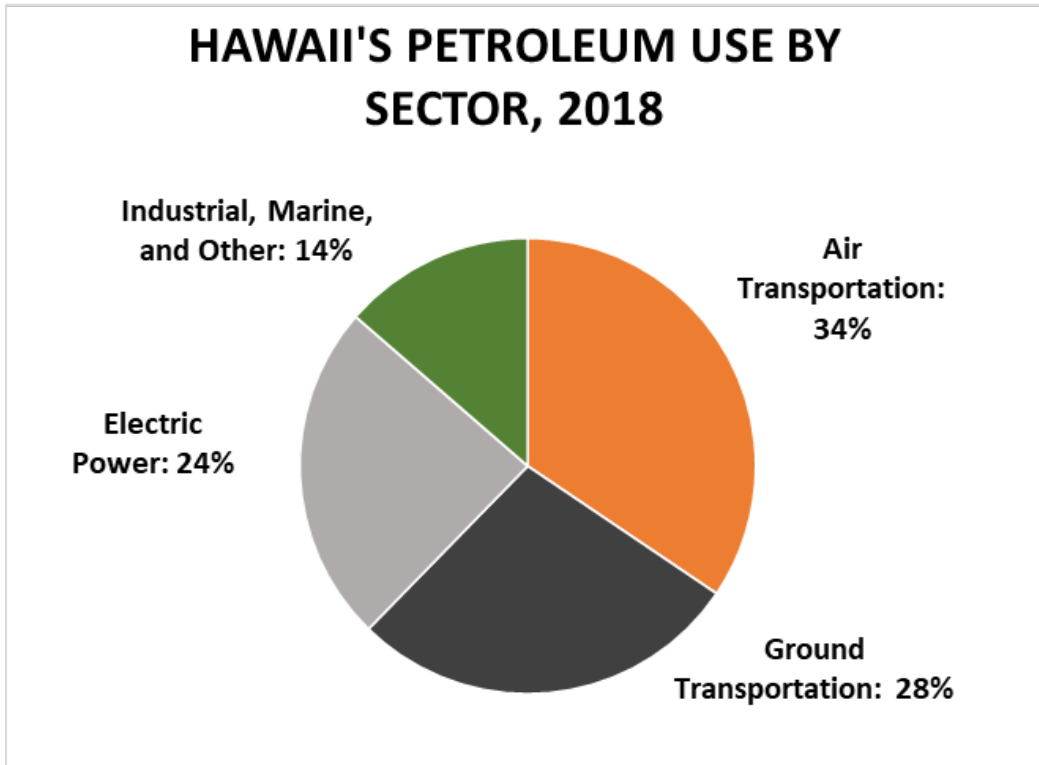
In support of
HB 683 HD1
RELATING TO SUSTAINABLE AVIATION FUEL.

Chair Johanson, Vice Chair Kitagawa, and Members of the Committee, the Hawaii State Energy Office (HSEO) supports HB 683, HD1, which authorizes the State's High Technology Development Corporation (HTDC) to provide matching grants for any small business in the State that is developing products related to sustainable aviation fuel or greenhouse gas reduction from commercial aviation operations, provided it does not supplant the priorities in the Administration's budget. HSEO defers to HTDC regarding administration of the program.

Hawaii is dependent on aviation for its economy and way of life. The impacts of COVID-19 on tourism and subsequently on the production of jet fuel and other fossil fuels produced in Hawaii underscores the importance of aviation and aviation fuel to a thriving Hawaii.

Furthermore, greenhouse gas emissions from air travel need to be addressed since jet fuel has historically been one of the largest sources of Hawaii's greenhouse gas emissions.

As shown in the figure, the air transportation sector uses more petroleum than either ground transportation or electric power generation.



Greenhouse gas reduction in aviation operations and the development of sustainable aviation fuels provide many opportunities for innovation. Hawaii is well positioned to develop solutions and to continue to be a leader in the promotion of sustainable aviation fuels, building upon the success of the Federal Green Initiative For Fuels Transition – Pacific (GIFTPAC), which was based in Hawai'i from 2009-2019, followed by the Hawaii Aviation and Climate Action Summit in 2019.

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

HSEO looks forward to successful developments in this important area.

Thank you for the opportunity to testify.



HB 683, HD 1, RELATING TO SUSTAINABLE AVIATION FUEL

FEBRUARY 16, 2021 · HOUSE COMMERCE AND
CONSUMER PROTECTION COMMITTEE · CHAIR
REP. AARON LING JOHANSON

POSITION: Support.

RATIONALE: Imua Alliance supports HB 683, HD 1, relating to sustainable aviation fuel, which establishes the sustainable aviation fuel program to provide matching grants to any small business in Hawai'i that is developing products related to sustainable aviation fuel or greenhouse gas reduction from commercial aviation operations; and specifies that funds for the program are from legislative appropriations out of the environmental response, energy, and food security tax.

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, like seawalls.

Furthermore, according to research conducted by Michael B. Gerrard from Columbia Law School, modern-day slavery tends to increase after natural disasters or conflicts where large numbers of

people are displaced from their homes. In the decades to come, says Gerrard, **climate change will very likely lead to a significant increase in the number of people who are displaced and, thus vulnerable, to human trafficking.** While the Paris Climate Agreement of 2015 established objectives to limit global temperature increases and several international agreements are aimed at combating modern-day slavery, it is highly uncertain whether they will be adequate to cope with the scale of the problem that is likely to occur as a result of climate change.

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.

Therefore, we should take steps to accelerate Hawai'i's efforts to address climate change and develop a clean economy, including by working to reduce greenhouse gas emissions from air transportation related to our tourist industry. **In 2019, 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.** For the sake of our keiki, we cannot afford to wait to solidify strategies to preserve our island home for generations to come.

Kris Coffield · Executive Director, Imua Alliance · (808) 679-7454 · kris@imuaalliance.org



Written Statement of
Len Higashi
Acting Executive Director
Hawaii Technology Development Corporation
before the
House Committee On Consumer Protection & Commerce
Tuesday, February 16, 2021
2:00 o.m.
Videoconference

In consideration of
HB683, HD1
RELATING TO SUSTAINABLE AVIATION FUEL.

Chair Johanson, Vice Chair Kitagawa, and Members of the Committee.

The Hawaii Technology Development Corporation (HTDC) offers **comments** on HB683 HD1 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 greenhouse gas reduction from commercial aviation operations. Specifies that moneys for the program are from legislative appropriations out of the environmental response, energy, and food security act.

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. HTDC supports the intent of this initiative to reduce emissions through local innovation provided it does not supplant the priorities in the Administration's budget.

Thank you for the opportunity to offer these comments.

HB-683-HD-1

Submitted on: 2/15/2021 12:26:58 PM

Testimony for CPC on 2/16/2021 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Climate Protectors Hawaii	Climate Protectors Hawaii	Support	No

Comments:

To: The Honorable Aaron Ling Johanson, Chair,

The Honorable Lisa Kitagawa, Vice Chair, and Members of the

House Committee on Consumer Protection and Commerce

From: Climate Protectors Coalition

Hearing Date: Tuesday, February 16, 2021, 2:00 pm

Position: STRONG SUPPORT of HB682 HD1 RELATING TO SUSTAINABLE AVIATION FUEL!

Aloha Chair Johanson, Vice Chair Kitagawa, and Consumer Protection and Commerce Committee members:

The Climate Protectors Coalition is a group focused on reversing the climate crisis. As a tropical island State, Hawaii will be among the first places harmed by the global climate crisis, with more intense storms, loss of protective coral reefs, food insecurity, and rising sea levels destroying our shorelines. We must do all we can to reduce our carbon footprint and become at least carbon neutral as soon as possible. The planet faces an existential climate crisis and we must act now! Scientists have made clear that we are part of the last generation that can stop or at least mitigate the devastating impacts of climate change. If we are to solve the climate crisis, it will require **all of us** working together. Hawaii can and should be a leader in showing the world the way forward towards a safe and sustainable climate and future. The sooner we inspire others to take action and lead by example, the better off the future will be for our children.

One of the areas where Hawaii can make the most progress in reducing greenhouse gas emissions is in decarbonizing aviation fuel. HB683 HD1 would:

- (1) Establish 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 greenhouse gas reduction from commercial aviation operations; and

(2) Specify that monies for the program are from legislative appropriations out of the Environmental Response, Energy, and Food Security Tax.

Greenhouse gas emissions from air travel have historically been one of the largest sources of Hawaii's greenhouse gas emissions. This measure positions the State to continue to be a leader in the promotion of sustainable aviation fuels by providing opportunities for greenhouse gas reduction in aviation operations and the development of sustainable aviation fuels.

HB683 HD1 will help substantially in reducing greenhouse gases, addressing our existential climate crisis, and saving costs for the State. Please pass this bill!

Mahalo for the opportunity to testify in **strong support** of this very important legislation.

Climate Protectors Coalition (by Ted Bohlen)



Airlines for America®

We Connect the World

Testimony

**Written Testimony of Airlines for America
in Support of House Bill 683 H.D. 1 Relating to Sustainable Aviation Fuel**

**Submitted by Nancy N. Young
Vice President, Environmental Affairs**

Airlines for America® (A4A) appreciates the opportunity to provide written testimony in support of House Bill (HB) 683, as amended by the Committee on Economic Development (HB 683 HD 1),¹ which would establish the Sustainable Aviation Fuel program.² 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 Hawaii State Legislature to adopt this legislation and enable the Hawaii Technology Development Corporation to proceed to implementation expeditiously.

By way of background, the U.S. airlines are a very small contributor of man-made GHG emissions. Before COVID-19 struck, we were transporting a record 2.5 million passengers and 58,000 tons of cargo per day,³ while contributing just 2 percent of our nation's GHG emissions.⁴ Indeed, our members have been and remain keenly focused on fuel efficiency and GHG emissions savings. For the past several decades, the U.S. airlines have dramatically improved fuel efficiency and reduced GHG emissions by investing billions in fuel-saving aircraft and engines, innovative technologies like winglets (which improve aerodynamics), and cutting-edge route-optimization software. As a result, the U.S. airlines have improved their fuel efficiency over 135 percent since 1978, saving over 5 billion metric tons of carbon dioxide (CO₂), which is equivalent to taking more than 27 million cars off the road on average in *each* of those years. Taking a more recent snapshot, data from the Bureau of Transportation Statistics confirm that the U.S. airlines improved their fuel- and CO₂-emissions efficiency by 40 percent between 2000 and 2019.

But the U.S. airlines are not stopping there. Since 2009, we have been active participants in a global aviation coalition that committed to 1.5 percent annual average fuel efficiency improvements through 2020, with goals to achieve carbon-neutral growth beginning in 2020 and

¹ Available at https://www.capitol.hawaii.gov/session2021/bills/HB683_HD1_.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.

³ See <https://www.airlines.org/dataset/a4a-presentation-industry-review-and-outlook/#>.

⁴ See U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018* (April 2020) at Table ES-6: U.S. Greenhouse Gas Emissions Allocated to Economic Sectors (p. ES-25); Table 2-13: Transportation-Related Greenhouse Gas Emissions (p. 2-33). Available at: <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf>.

a 50 percent net reduction in CO₂ emissions in 2050, relative to 2005 levels.⁵ The initiatives the U.S. airlines are undertaking to further reduce GHG emissions are designed to limit responsibly and effectively 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., state, and local economies as our nation works to recover from the devastating COVID-19 crisis.

The availability of sustainable aviation fuel (SAF) in significant quantities is a key pillar to the achievement of the aviation industry's goals, and A4A and its members have been working hard to lay the groundwork for the establishment of a viable SAF industry. SAF is particularly critical to the industry's GHG reduction strategy as aviation, unlike ground transportation, cannot electrify in the near-term and is therefore reliant on 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 petroleum-based jet fuel, through our Commercial Aviation Alternative Fuels Initiative[®] (CAAFI), a public-private partnership with the Federal Aviation Administration and other stakeholders that is working to ensure the development and deployment of SAF,⁶ as well as other programs. However, as SAF currently tends to be considerably more expensive than traditional jet fuel and there is very little supply, we need complementary government policies to make SAF commercially viable and to scale up supply. This is where the program proposed in HB 683 HD 1 could help. By establishing a grant program for small businesses in Hawaii developing products related to SAF or commercial aviation GHG reduction, the State would help those 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 683 HD 1 – 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.

While we support the bill and urge the legislature to adopt it and forward it to the Governor for his signature, we would like to take this opportunity to provide a suggested revision to the legislative finding in section 1(6) of the bill. This legislative finding pertains to the International Civil Aviation Organization's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation, better known by its acronym, CORSIA. In addition, we offer technical suggestions with respect to the provisions in section 2 on the "Hawaii jet fuel baseline carbon intensity" and the proposed definition of the term "sustainable aviation fuel."

The finding in section 1(6) states that CORSIA "requires commercial airlines to reduce [GHG] emissions by fifty per cent below 2005 levels by 2050." This is not quite accurate. As indicated above, the 50% GHG reduction by 2050 is an industry-wide target; it is not a requirement of

⁵ 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>.

⁶ For more on CAAFI, see <http://caafi.org/>.

CORSIA, which is slated to run through 2035 and is designed to help aviation achieve its carbon-neutral goal beginning in 2020. Consistent with this, we respectfully request that section 1(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 legislative text in section 2 of the bill, having linked the legislative findings in part to CORSIA, we appreciate the proposal to also link the “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 for purposes of the Sustainable Aviation Fuel program, both as a technical matter and should the State wish to establish a baseline that would not put SAF at a policy disadvantage to other alternative/renewable fuels (e.g., renewable diesel). Thus, to the extent the State of Hawaii locks that in – the carbon intensity of conventional jet fuel -- for purposes of the SAF program, we would note that it would be appropriate for the State to consider setting a higher conventional jet fuel carbon intensity baseline to further incentivize SAF under other State programs.

Although we generally support the definition of “sustainable aviation fuel” set forth in section 2, we recommend that the term “renewable” be stricken from the second line in the definition. Additionally, 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 promising feedstocks for certain SAF 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 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 express our strong support for the creation of the Sustainable Aviation Fuel program and urge you to approve HB 683 HD 1. Thank you for your consideration.

HB-683-HD-1

Submitted on: 2/15/2021 9:16:08 PM

Testimony for CPC on 2/16/2021 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Max Castanera	Individual	Support	No

Comments:

Aloha,

Please consider passing HB 683 to improve green energy in commercial aviation - one of the largest contributors towards greenhouse gas production in our state. Mahalo for your time.