LATE *Testimony submitted late may not be considered by the Committee for decision making purposes.

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STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF TRANSPORTATION | KA 'OIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

April 1, 2025
10:00 A.M.
State Capitol, Room 430 Videoconference

H.C.R 70, H.D. 1 / H.R. 63, H.D. 1
REQUESTING THE DEPARTMENT OF TRANSPORTATION TO FACILITATE AND ACCELERATE THE ADOPTION OF SUSTAINABLE AVIATION FUELS TO DECARBONIZE HAWAI'I'S TRANSPORTATION SECTOR AND SUPPORT THE STATE'S CLIMATE GOALS

House Committee on Transportation

The Department of Transportation (DOT) **supports** H.C.R 70, H.D. 1 and H.R. 63, H.D. 1, that requests HDOT to work with the Hawaii State Energy Office and industry partners on adoption of Sustainable Aviation Fuel and submit a report to the legislature on the progress made in facilitating the adoption and acceleration of sustainable aviation fuels, including any proposed legislation to further support this effort.

HDOT is currently developing a Greenhouse Gas Reduction Plan to identify immediate actions to reduce GHG emissions, a roadmap for transportation in Hawaii to meet the State's net-zero GHG emissions target by 2045, and a long-term plan to reach zero emissions in the transportation sector. Although the specific strategies and benchmarks of HDOT's Greenhouse Gas Reduction Plan are still in development, we expect that increased clean fuels in all sectors will be a significant component of our Plan. For example, based on our initial calculations, it does not appear possible to reach the State's ambitious GHG reduction goals for the Aviation portion of the Transportation Sector without a significant increase in Sustainable Aviation Fuel use.

Thank you for the opportunity to provide testimony.

Environmental Caucus of
The Democratic Party of Hawai‘i

March 30, 2025

TESTIMONY IN OPPOSITION TO HR63, HD1 / HCR70, HD1: REQUESTING THE DEPARTMENT OF TRANSPORTATION TO FACILITATE AND ACCELERATE THE ADOPTION OF SUSTAINABLE AVIATION FUELS

TO: Chair Darius K. Kila, Vice Chair Tina Nakada Grandinetti, Members of the Committee on Transportation

DATE: Tuesday, April 1, 2025 **TIME:** 10:00 a.m.

PLACE: Conference Room 430 and videoconference

FROM: Environmental Caucus of Hawaii

Dear Chair Kila, Vice Chair Grandinetti, and Members of the Committee,

We respectfully oppose HR63, HD1 / HCR70, HD1, which requests the Department of Transportation to facilitate and accelerate the adoption of sustainable aviation fuels (SAF) to decarbonize Hawaii's transportation sector and support the State's climate goals. While the goal of reducing aviation emissions aligns with Hawaii's commitment to sustainability, this resolution overlooks critical aspects of Hawaii's unique environmental, social, and economic landscape.

Key Points of Concern:

1. **Feasibility and Cost**: The adoption of SAF is hindered by its nascent stage and high costs. Hawaii's isolated geography and reliance on tourism exacerbate the financial impact, as airlines and consumers would bear increased costs in an already challenging economic environment.
2. **Environmental Considerations**: The production of SAF often relies on feedstocks, such as biofuels and waste oils, which can contribute to deforestation, habitat loss, and competition with food production. Hawaii's fragile ecosystems require careful consideration to prevent unintended environmental consequences.
3. **Social and Equity Impacts**: Hawaii's communities, particularly Native Hawaiian populations and low-income residents, face disproportionate challenges related to climate change and economic inequities. Prioritizing SAF adoption risks sidelining grassroots initiatives and equitable climate solutions, which are more directly aligned with the needs and priorities of local communities.

4. **Economic Context**: Hawaii's economy, heavily reliant on tourism and imports, is particularly vulnerable to disruptions. Investing in SAF may divert resources away from more systemic solutions, such as improving transportation infrastructure, expanding renewable energy sources, and fostering community-led sustainability initiatives.
5. **Long-Term Effectiveness**: SAF represents a transitional technology rather than a definitive solution to aviation emissions. Resources and policies should be directed toward innovations with greater long-term benefits, such as electric or hybrid aircraft, and strategies to reduce aviation dependence overall.

Hawaii's environmental, social, and economic landscape demands thoughtful, holistic approaches to decarbonization that prioritize equity, sustainability, and resilience. While SAF technology may play a role in global aviation's future, adopting it prematurely risks undermining Hawaii's broader climate goals and the well-being of its communities.

Thank you for the opportunity to testify in opposition to this resolution.

Respectfully submitted,

Melodie Aduja and Alan Burdick
Co-Chairs, Environmental Caucus of Hawaii

HOUSE COMMITTEE ON TRANSPORTATION

APRIL 1, 2025

HCR 70/HR 63, HD1, REQUESTING THE DEPARTMENT OF TRANSPORTATION TO FACILITATE AND ACCELERATE THE ADOPTION OF SUSTAINABLE AVIATION FUELS TO DECARBONIZE HAWAIʻI'S TRANSPORTATION SECTOR AND SUPPORT THE STATE'S CLIMATE GOALS

POSITION: SUPPORT

Coalition Earth **supports** HCR 70/HR 63, HD1, which requests the Department of Transportation to facilitate and accelerate the adoption of sustainable aviation fuels to decarbonize Hawai'i's transportation sector and support the state's climate goals.

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 prioritizing 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.***

March 31, 2025

TESTIMONY IN SUPPORT OF HCR 70 HD1 / HR 63 HD1 REQUESTING THE DEPARTMENT OF TRANSPORTATION TO FACILITATE AND ACCELERATE THE ADOPTION OF SUSTAINABLE AVIATION FUELS TO DECARBONIZE HAWAIʻI'S TRANSPORTATION SECTOR AND SUPPORT THE STATE'S CLIMATE GOALS

House Committee on Transportation (TRN)
The Honorable Darius Kila, Chair
The Honorable Tina Grandinetti, Vice Chair

April 1, 2025, 10:00am
Conference Room 430
State Capitol 415 South Beretania Street

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

Thank you for the opportunity to provide testimony in STRONG SUPPORT of HCR 70 HD1/HR 63 HD1, which urges the Department of Transportation to facilitate and accelerate the adoption of sustainable aviation fuels (SAF) to decarbonize Hawaiʻi's transportation sector and support the state's climate goals.

Pono Pacific is Hawaiʻi's first and largest private natural resource conservation company providing land management, restoration services, sustainable agricultural development, renewable energy, and eco-asset development for large and small-scale projects throughout the state. Pono Pacific's expertise creates a more resilient future by promoting industries that activate working lands, increase food security and community engagement, and protect natural resources. Since 2023, Pono Pacific has partnered with Par Hawaii to develop a consistent supply of feedstocks for biofuel production across the state. Locally grown feedstocks will provide farmers with a viable economic commodity to supply the refinery, help stimulate growth in the agricultural economy and mitigate future wildfires by putting currently fallow lands back into production.

Over the past year and a half, Pono Pacific has partnered with two of Hawaii's largest food producers, Mahi Pono and Aloun Farms, as well as Meadow Gold Dairies Hawaii, to advance oil crop feedstock cultivation by growing *Camelina sativa* (Camelina) at sites on Hawaii Island, Maui, Oahu and Kauai. Additionally, Camelina variety trials have been conducted in

partnership with the Hawaii Agricultural Research Center (HARC). Camelina is of specific interest due to environmental co-benefits identified in planting, and coproducts generated that stabilize local food systems (e.g. seed cake used for animal feed, and crop residue used for soil amendments). The results from these crop trials have been very encouraging, both in the yield per acre produced, as well as the enthusiastic reaction from farmers and ranchers.

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

Par Hawaii has publicly committed to spending significant capital, approximately $100M, retrofitting its Kapolei refinery to produce liquid renewable fuels, including Sustainable Aviation Fuel (SAF). Transitioning to SAF, derived from renewable sources like energy crops, presents a crucial step towards decarbonizing air travel. SAF can bring meaningful reductions in aviation carbon emissions, with lifecycle emissions up to 50 to 80% lower than conventional jet fuel. Investing in local SAF production is not just economically sound, it's an environmental imperative.

Hawai‘i is committed to achieving net-zero emissions by 2045 under the Hawai‘i Clean Energy Initiative and has enacted zero-emission transportation goals under Act 226 (2023). The *Navahine v. Hawai‘i Department of Transportation* settlement agreement recognizes the constitutional right of Hawai‘i’s youth to a life-sustaining climate and requires the State to develop a comprehensive Greenhouse Gas Reduction Plan within one year.

HCR 70/ HR 63 is critical to fulfilling these commitments. By urging the Department of Transportation to collaborate with key stakeholders, including the Hawai‘i State Energy Office, major airlines, and fuel producers, HCR 70/ HR 63 lays the groundwork for:

- Developing policies and incentives to promote SAF production, distribution, and adoption.

- Integrating SAF into the state's Greenhouse Gas Reduction Plan to ensure aviation plays a role in decarbonization.

- Enhancing energy security and economic resilience by supporting local SAF production and reducing reliance on imported fossil fuels.

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

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

Mahalo,

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

Comments before
April 1, 2025 House Committee on Transportation

OPPOSING
House Concurrent Resolution 70 and House Resolution 63

Relating to Studying "Clean Fuels" Subsidies

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

Please oppose HCR 70 and HR 63.

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

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

HBC 70 and HR 63 focus on the one sector (aviation fuels) where there are no green alternatives for intercontinental flights and where inter-island flights can best be decarbonized by switching to a combination of electric ferries and electric sea-gliders which can be powered by clean electricity sources like wind and solar. There is no need to be building infrastructure for differently dirty fuels that will involve companies that later lobby to prevent the transition to clean options we can start adopting now.

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

Competition with food: The same Senate hearing exposed how growing crops for biofuels in Hawai'i would take up land and water needed for the state's own food security goals to have more food grown in-state.
Genetic engineering: The Biotechnology Industry Organization regularly submits testimony in favor of biofuels bills, yet fails to be transparent about their motivation. Clearly, they expect to have genetically engineered

crops and/or enzymes used for the production of supposedly "sustainable" aviation fuels. This raises many biosecurity concerns, as well as concerns over increased herbicide spraying, since most genetically modified food crops are modified to withstand increased herbicide use.

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

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

Faulty Greenhouse Gas (GHG) accounting: Biofuels look like a climate solution only because of biases in carbon accounting systems and life cycle assessments. There is a long-standing 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.

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

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

Toxicity concerns

The resolutions explicitly talk up "agricultural waste, used cooking oils, and algae" as feedstocks, but these are impractical and unaffordable in-state. The main efforts to make "sustainable" aviation fuel in the state involve waste-based fuels. There are plans to gasify construction and demolition debris to make burnable aviation fuels on Oʻahu. This is part of an array of experimental incinerator-like technologies that aim to convert waste into fuels. These waste-to-fuels (WTF) technologies usually start with pyrolysis or gasification – technologies that, when the resulting gases are burned, are defined and regulated by EPA as municipal waste combustors (waste incinerators). Typically, these two-stage technologies will replace the second stage (burning the gases) with a liquefaction stage, to make liquid fuels to be burned elsewhere. This is known as Fischer-Tropsch gas-to-liquids technology, named after the two German scientists who developed the ability to make oil from coal by gasifying, then liquefying it.

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

Unlike coal, construction and demolition (C&D) waste is very 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 have been unable to operate at commercial scale, and typically are garage-scale pilot projects that go nowhere. This trend has led the nation's leading incinerator-promoting solid waste consulting outfit, GBB, to classify the technology as "high" risk due to "previous failures at scale, uncertain commercial potential; no operating experience with large-scale operations" (pyrolysis) and "limited operating experience at only small scale; subject to scale-up issues" (gasification).

Hawaiʻi has been targeted in recent years by quite a few fly-by-night companies aiming to cash in on state and federal subsidies to satisfy the desire for sustainable aviation fuels while making waste streams go "away." Companies like Aloha Carbon and Yummet prey upon uninformed public officials who don't have time to research the track record of this industry, the toxic hazards associated with it, or the better alternatives.

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

C&D waste contains many toxic ingredients. There are chlorine sources in wood treatment chemicals like pentachlorophenol, and in PVC plastics in C&D waste. Painted wood can contain lead and mercury, while treated wood can contain other toxic metals, namely arsenic, chromium, and copper. Testimony on House Bill 976 from the Hawaii Natural Energy Institute (on pages 43-44 of the testimony packet), affirms high levels of arsenic, chromium and lead in C&D waste, with arsenic concentrations 200 times higher than clean wood. Their research also shows high levels of hydrochloric acid, copper and zinc 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 aimed to clean up the RPS starting by removing solid fuel combustion sources, which will speed up the implementation of solar, wind, and energy storage.

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

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

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

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

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

Attached is a resolution adopted by the Democratic Party of Hawaii in 2024 in support of an alternatives study, called for in SCR106 / SR87, which would look at non-burn alternatives for the transportation and other energy sectors. Such a study would be more appropriate and in line with the state's greenhouse gas (GHG) reduction goals and legal requirements.

Democratic Party of Hawai‘i Resolution Adopted May 18, 2024

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

April 1, 2025

TESTIMONY IN SUPPORT TO
HCR 70 HD1/HR 63 HD1
REQUESTING THE DEPARTMENT OF TRANSPORTATION
TO FACILITATE AND ACCELERATE THE ADOPTION OF
SUSTAINABLE AVIATION FUELS TO DECARBONIZE
HAWAIʻI'S TRANSPORTATION SECTOR AND SUPPORT THE
STATE'S CLIMATE GOALS.

House Committee on Transportation
The Honorable Darius Kila, Chair
The Honorable Tina Grandinetti, Vice Chair

Tuesday, April 1, 2025, 10:00 am

VIA VIDEOCONFERENCE
Conference Room 430
State Capitol
415 South Beretania Street

Chair Kila, Vice Chair Grandinetti and members of the Transportation Committee,

Island Energy Services supports a collaborative effort to integrate sustainable aviation fuel adoption into the Greenhouse Gas Reduction Plan required by the Navahine v. Hawai'i Department of Transportation settlement as directed by HCR 70 HD1/HR 63 HD1. Furthermore, in recognizing that importation of sustainable aviation fuel will be required to meet Hawaii's present and growing demand for aviation fuel, entities that import fuel will play a significant role, and therefore should be specifically named and included in HCR 70/HR63 (please see requested addition to page 2 of HCR 70 HD1/HR 63 HD1 below):

BE IT FURTHER RESOLVED that the Department of Transportation is requested to work in collaboration with the Hawai'i State Energy Office, major airlines serving Hawai'i, fuel producers, fuel importers, and other stakeholders to establish policies,

incentives, and infrastructure to support the production, distribution, and use of sustainable aviation fuels in the State; and

From integrity, active community support, and protecting our ʻāina, we are championing Hawaii's energy future in a way that is sensitive to our community. Island Energy Services delivers fuel to Oʻahu, Maui, Hawaiʻi Island and Kauaʻi distributed through a network of branded retail locations and product distribution terminals statewide.

Mahalo for the opportunity to testify.

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