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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

February 5, 2025
1:01 P.M.
State Capitol, Room 224
S.B. 1120
RELATING TO TRANSPORTATION

Senate Committee on Transportation and Culture and the Arts
Senate Committee on Agriculture and Environment

The Department of Transportation (DOT) **Supports the intent of S.B. 1120,** that requires the DOT to adopt rules governing a clean fuel standard for alternative fuels in the State and suggests amendments.

The DOT supports a carefully curated and feasible program to govern a clean fuel standard for alternative fuels that reduces the carbon intensity of fuel used in the State while minimizing impacts to cost of living for our residents. If identified as the lead agency to implement the program to establish sustainable, equitable, and economically viable annual carbon intensity standards for alternative fuels; DOT would work with the legislature to establish three (3) to five (5) new positions to be funded by salary savings from all four DOT divisions. The DOT also recommends an additional year and the implementation date of January 1, 2028, to adopt rules pursuant to chapter 91, HRS, governing a clean fuel standard.

DOT is currently developing a Greenhouse Gas (GHG) Reduction Plan to identify immediate actions to reduce GHG emissions, a roadmap for transportation in Hawai'i 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 DOT's G 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.

Testimony of the Oahu Metropolitan Planning Organization

Committee on Transportation and Culture and The Arts
Committee on Agriculture and Environment

Wednesday, February 5, 2025 at 1:00 PM
State Capitol CR 224 & Videoconference

Measure SB1120
Measure Title: Relating to Transportation

Dear Chair Senator Chris Lee, Vice Chair Lorraine R. Inouye, Chair Senator Mike Gabbard, Vice Chair Senator Herbet N. Richards III, and Committee Members,

The Oahu Metropolitan Planning Organization (OahuMPO) **supports Measure SB1120**, which will establish a Clean Fuel Standard aimed at reducing greenhouse gas emissions by incentivizing the production and use of low-carbon fuels. This approach would not only promote cleaner air and improve public health, but it would also offer economic opportunities by stimulating the development of clean fuel technologies and job creation within the industry.

Similar programs in other cities, like California, have reduced their dependence on petroleum-based fuels, while also fostering the growth of renewable fuel sources for cleaner transportation options[1]. As the sector moves toward zero emissions, these efforts have contributed to clean air improvements that bring public health and climate benefits for local communities. The efforts modeled by California have since been mirrored in other cities, such Oregon, British Columbia, and Washington, and considered in Minnesota, New Mexico, and other parts of the Midwest[2].

This initiative aligns with Hawaii's climate goals by reducing vehicle emissions and encouraging more sustainable fuel options. SB1120 is in alignment with the Vision and Goals of the Oahu Regional Transportation Plan (ORTP), reinforcing both state and county commitments to environmental sustainability and public health in the management of the transportation system.

The OahuMPO is the federally designated Metropolitan Planning Organization (MPO) on the island of Oahu responsible for carrying out a multimodal transportation planning

[1]California Air Resources Board. "FAQ: Standardized Regulatory Impact Assessment for the Low Carbon Fuel Standard." California Air Resources Board, https:// https://shorturl.at/06OVh.
[2] Electrification Coalition. Clean Fuel Standards. Electrification Coalition. https://electrificationcoalition.org/resource/clean-fuel-standards/.

process, including the development of a long-range (25-year horizon) metropolitan transportation plan, referred to as the Oahu Regional Transportation Plan (ORTP), which encourages and promotes a safe, efficient, and resilient transportation system that serves the mobility needs of all people and freight (including walkways, bicycles, and transit), fosters economic growth and development, while minimizing fuel consumption and air pollution (23 CFR 450.300).

Mahalo for the opportunity to provide testimony on this measure.

Oahu Metropolitan Planning Organization
707 Richards Street, Suite 200 Honolulu, Hawaii 96813
Telephone: (808) 587-2015 | Fax: (808) 587-2018
www.OahuMPO.org

SB-1120
Submitted on: 2/3/2025 11:23:47 AM
Testimony for TCA on 2/5/2025 1:01:00 PM

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

Comments:

The Biotechnology Innovation Organization (BIO) is the world's largest trade association representing biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and in more than 30 other nations. Our key areas of focus are health biotechnology, industrial and environmental biotechnology, and food and agriculture biotechnology. We are in strong support of SB 1120.

SENATE COMMITTEE ON TRANSPORTATION AND CULTURE AND THE ARTS and AGRICULTURE AND ENVIRONMENT

FEBRUARY 5TH, 2025

SB 1120, RELATING TO TRANSPORTATION

POSITION: SUPPORT

Coalition Earth **supports** SB 1120, relating to transportation, which requires the Department of Transportation to adopt rules governing a clean fuel standard for alternative fuels in the State.

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 hastening our transition to a clean transportation network.** Transportation is our state's largest source of lifecycle greenhouse gas emissions, a fact that is exacerbated by our economic reliance on visitor-related travel. Development of a clean fuel standard is central to reducing the State's direct and indirect greenhouse gas emissions, while also protecting Hawai'i's financial security, public health, and natural resources.

As our nation expands its use of zero-emission vehicles, other states like California, Oregon, and Washington have implemented programs that reduce the carbon footprint of their transportation fuels. To ensure that our local carbon emissions reduction targets are achieved on a timescale that aligns with our clean economy goals, we should establish a clean fuel standard that strengthens community resilience and sustainability, spurs green growth and development, maximizes the potential of emerging clean energy technologies, follows the regenerative principles of a circular economy, and amplifies our carbon reduction efforts.

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.

twelve

Legislative Testimony of S. Derek Phelps
Senate Committee on Transportation and Culture and the Arts
Senate Committee on Agriculture and Environment
February 5, 2025
S.B. No. 1120 (RELATING TO TRANSPORTATION)

Good morning, Chairs Lee and Gabbard, Vice Chairs Inouye and Richards, and distinguished members of the Committees. My name is Derek Phelps. I am Head of Policy & Governmental Affairs for Twelve Benefit Corporation (Twelve). It is my pleasure today to submit this written testimony on Senate Bill No. 1120, introduced by Senators Lee, Chang, and other distinguished members, which would "require the Department of Transportation to adopt rules governing a clean fuel standard for alternative fuels in the State."

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

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

To be clear, our E-Jet is a so-called Power-to-Liquid (PtL) fuel. Technological approaches to the production of PtL fuels can vary, but the common thread among all such fuels is the utilization of the same inputs: CO_2

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

Given these factors, I wish to convey our strong support for SB1120. Hawaii has set ambitious decarbonization goals, including a commitment to 100% renewable energy by 2045 and significant reductions in GHG emissions across all sectors of the economy. By establishing a comprehensive clean fuel standard, such as what is contemplated through this measure, Hawaii would be thoughtfully adopting a market-driven mechanism to achieve emissions reductions while encouraging technological innovation and private-sector investment in clean transportation fuels and clean energy.

SB 1120 and similar policies would directly contribute to Hawaii's decarbonization goals by reducing transportation emissions, fostering local clean fuel markets, and promoting sustainable energy solutions. Furthermore, as we indicated when providing comments on last year's SB2768, a clean fuel standard in Hawaii would be akin to, and would serve to complement, similar policies in mainland jurisdictions such as California, Oregon, New Mexico, and

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

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

Washington, where we are currently building our first AirPlant™, a demonstration-scale facility designed to prove the scalability of our electrochemical technology.

I also wish to note, and convey our appreciation for, the technical change that has been applied to the bill's definition of "alternative fuel." Consistent with our suggestion of last year, the definition has been revised and now expressly includes SAF, fuels from carbon capture and utilization, and electrofuels. This makes it perfectly clear that our E-Jet would constitute an "alternative fuel," as it is both a fuel from carbon capture and utilization and an electrofuel. We thank you for making this revision.

Thank you again for the opportunity to present testimony. We appreciate your attention to this matter.

February 5, 2025

Committee on Transportation and Culture and the Arts

Committee on Agriculture and Environment

Honolulu, HI 96813

Re: SB 1120 Relating to Transportation: Requires the Department of Transportation to adopt rules governing a clean fuel standard for alternative fuels in the State.

Greetings Members of the Committees and staff,

I'm Anthony Willingham, State Government Affairs Manager at Electrify America, and I appreciate the opportunity to testify in support of SB 1120, Requiring the Department of Transportation to adopt rules governing a clean fuel standard. Briefly about Electrify America, we are one of the largest Direct Current Fast Charger ("DCFC") networks in the U.S. and are investing $2 billion over 10 years in Zero Emission Vehicle infrastructure. The intent of this investment is to enable millions of Americans to discover the benefits of electric driving and support the build-out of a nationwide network of ultra-fast community and highway chargers. Electrify America owns and operates over 4,000 chargers across more than 900 stations in 47 states and the District of Columbia. In Hawaii, Electrify America has 12 chargers across 3 stations with additional stations under development.

I'm submitting this testimony in support of a clean fuel standard. Such a policy is perhaps the single most effective means of reducing the carbon intensity of the transportation sector and growing the clean fuels industry while in its nascency. Public DC fast charging stations operate at slim economic margins. Such a volatile economic market disincentivizes the proliferation of fast charging infrastructure which hurts EV drivers at-large, though has a disproportionately negative affect on rural, disadvantaged, and underserved communities. A clean transportation standard helps the clean fuels

industry thrive despite difficult economics by directing investments into the clean-fuel economy without the use of public dollars.

How does a clean transportation standard work? The state would establish a carbon-intensity threshold that decreases over time. Fuels that exceed the standard in a given year would incur deficits; and fuels below the threshold would generate credits. Deficits can be reconciled by lowering the lifecycle carbon intensity of a fuel, often by electrifying or blending with less carbon-intense fuels, or by purchasing credits from credit generators. This self-sustaining market of credits and deficits creates a top-down incentive for fuel producers to decarbonize and bottom-up financial support enabling the clean fuels sector to grow.

A clean transportation standard sparks investment in the clean-fuel economy financed directly by carbon-intense fuels. As an EV charging provider, the additional funding from the credit market would help finance the costs of upgrading existing stations, to accommodate more vehicles and provide faster charging speeds, and the deployment of new ones across the state. Clean transportation standards create genuine market competition among transportation fuels for individuals' fuel dollars; and, in doing so, create a financial incentive to produce cleaner fuels.

The success of a clean transportation standard is well-documented and comes at no cost to the state or the general public. California and Oregon have implemented their programs for the past 14 and 9 years respectively and serve as excellent case-studies for how and why these programs are successful at quickly reducing CO2 emissions. Data from the California Air Resources Board shows that the state's clean transportation program has exceeded its initial emissions-reduction goals; and, in 2023, the state reported that the program has resulted in the replacement of 50% of traditional diesel used in the state with cleaner, renewable fuels. In Oregon, by 2024, the clean transportation standard had prevented the

emission of over 10 million metric tons of CO2, an amount equivalent to the burning of over 10 billion pounds of coal.

Hawaii is part of a growing list of jurisdictions that are taking significant steps toward adopting a clean transportation standard. Such a policy is a proven and robust step forward for Hawaii's clean energy and climate goals and is critical to the reduction of emissions in the transportation sector and to the widespread adoption of electric vehicles.

Electrify America appreciates the opportunity to submit these comments. We would be happy to discuss this matter further and answer any questions the Committee may have.

Respectfully submitted,

/s/ Anthony Willingham
Government Affairs & Public Policy Lead—State
Electrify America, LLC
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Hawaiian Electric

TESTIMONY BEFORE THE SENATE COMMITTEES ON TRANSPORTATION & CULTURE & THE ARTS AND AGRICULTURE & ENVIRONMENT

SB 1120
Relating to Transportation

February 5, 2025
1:01 PM
State Capitol, Conference Room 224

Nicholas O. Paslay
Director, Power Supply Fuels Division
Hawaiian Electric

Aloha Chairs Lee and Gabbard, Vice Chairs Inouye and Richards, and Members of the Committees,

My name is Nicholas O. Paslay and I am testifying on behalf of Hawaiian Electric with comments and offering amendments to SB 1120, Relating to Transportation.

The company supports a clean fuel standard; however, the bill as written doesn't clearly state that renewable fuel used for power generation would be including in the fuel standard and doesn't exempt diesel fuel used for power generation. The company is concerned that if passed as written the result will be higher electric rates for the company's customers. The company respectfully offers the amendments below for the committee's consideration so that renewable fuel used for power generation is also included in the clean fuel standard and diesel used for power generation is exempt to minimize impacts to electric rates.

- On page 5 lines 12-14 (see underscored and strikethrough for amendments) Exemptions for diesel, gasoline, or other fuels used by aircraft, railroad locomotives, military vehicles, <u>power generation</u> and interstate waterborne vessels;

- On page 6 lines 15-19 (see underscored and strikethrough for amendments) Mechanisms whereby alternative fuel can opt in to the clean fuel program to generate credits when it displaces the combustion of gasoline or diesel in off-road, heating, cooling, and ~~temporary~~ power generation;

- On page 8 lines 10-15 (see underscored and strikethrough for amendments) "Alternative fuel" means any fuel that is not gasoline or diesel and is used for transportation or power generation purposes, including but not limited to ethanol, biomass-based diesel, renewable diesel, sustainable aviation fuel, electricity, biomethane, biogasoline, renewable natural gas, fuels from carbon capture and utilization, electrofuels, and hydrogen.

Accordingly, Hawaiian Electric request that the Committees consider adopting the above amendments. Thank you for this opportunity to testify.

Par Hawaii

February 5, 2025

TESTIMONY PROVIDING COMMENTS TO SENATE BILL 1120

RELATING TO TRANSPORTATION

Senate Committee on Transportation and Culture and the Arts
The Honorable Chris Lee, Chair
The Honorable Lorraine Inouye, Vice Chair

Senate Committee on Agriculture and Environment
The Honorable Mike Gabbard, Chair
The Honorable Herbert M. "Tim" Richards, III, Vice Chair

Wednesday, February 5, 2025, 1:01 pm
Conference Room 224 & Videoconference

Chairs Lee and Gabbard, Vice Chairs Inouye and Richards, and members of the Committees,

Thank you for this opportunity to submit written testimony offering comments on SB 1120, Relating to Transportation. My name is Eric Wright and I serve as President of Par Hawaii. Par Hawaii is the largest local supplier of fuels, including various grades of utility fuels, as well as diesel, jet fuel, gasoline and propane.

SB 1120 would require the Hawaii State Energy Office (HSEO) to adopt rules governing a clean fuel standard for gasoline and diesel in the State. The bill would be similar to policies in West Coast jurisdictions, including California, Washington, and Oregon.

We recognize the importance of charting a clean energy future for Hawaii. As the local producer of fuels for Hawaii's consumers, we are committed to a part of this future by investing $90 million to develop Hawaii's largest liquid renewable fuels manufacturing facility at its Kapolei refinery. The project — to be commissioned in 2025 — is expected to produce approximately 61 million gallons each year of renewable diesel, sustainable aviation fuel, renewable naphtha and liquified petroleum gases using renewable feedstock.

We have three principal comments on SB 1120:

- Implementing and administering a clean fuel standard (CFS) is a significant undertaking. It is important that a broad range of stakeholders are heard from and consulted to avoid unintended consequences of this legislation.

- Hawaii's energy landscape is significantly different than that of mainland states. We have much higher demands for aviation fuel and liquid fuels for power generation. It is important that a Hawaii CFS take into account the unique needs of our state.
- The cost to produce renewable fuels for transportation is well above that of fossil fuels. While there are Federal programs in place to partially bridge the gap, state level incentives are also required to make renewable fuels competitive with fossil fuels. We believe that a clean fuel standard should be paired with an expansion of the Hawaii renewable fuels production tax credit (HRS 235-110.32). This is particularly important because it can take years for the CFS credit market to develop to the point where it is serves as an effective long-term incentive for renewable fuels.

We believe it is possible to produce significant amounts of renewable fuel here in Hawaii, and in a way that supports the local agriculture sector. Par Hawaii has partnered with Pono Pacific, a land management and conservation company, to develop locally grown, oil-yielding crops that will contribute to Hawaii's clean energy future.

In summary, we believe it is important to proceed cautiously and thoughtfully on a Hawaii CFS. We look forward to participating in this dialogue.

Thank you for allowing Par Hawaii the opportunity to present these comments for the Committee's consideration.

COMMENTS FOR SB1120
RELATING TO TRANSPORTATION

Senate Committee on Transportation and Culture and the Arts
The Honorable Chris Lee, Chair
The Honorable Lorraine Inouye, Vice Chair

Senate Committee on Agriculture and Environment
The Honorable Mike Gabbard, Chair
The Honorable Tim Richards, Vice Chair

Wednesday, February 5, 1:01 pm
VIA VIDEOCONFERENCE &
Conference Room 224
State Capitol
415 South Beretania Street

Chairs Lee and Gabbard, Vice Chairs Inouye and Richards and members of the Committees,

Thank you for the opportunity to provide comments on Senate Bill 1120, which requires the Department of Transportation to adopt rules governing a clean fuel standard for alternative fuels in the State.

Senate Bill 1120's intent is to serve Hawaii policy seeking to create a diverse fuel supply in the direction of lower GHG emissions from within the local transportation sector. Island Energy Services offers the following comments:

1. LCFS is an equitable mechanism to lower carbon intensity of fuel down among end users.

   IES believes that CFS programs are a more equitable way to drive carbon intensity down rather than tax-based programs. CFS programs burdens the users of the fuel rather than unfairly burdening the taxpayers of Hawaii. We would suggest a system that burdens the users of the fuel or a market-based solution similar to CFS programs found on the U.S. West Coast, Canada, and currently being considered by a number of other states.

2. Imports will need to be part of the fuel solution with economic drivers that provide incentives to attract competitive imported supply.

In-State Biofuels vs. Imports - We very much support in-state production of biofuels, however in-state biofuels production will likely be very limited. From E3's April 2023 Report Hawai'i Pathways to New Zero - An Initial Assessment of Decarbonization Scenarios discusses "Decarbonized fuels could be locally produced in the State of Hawai'i from a variety of biogenic feedstocks. The two general categories of feedstocks are 1) biomass residues from agricultural, forestry, and municipal waste; and 2) dedicated energy crops." All of these sources of biogenic feedstocks will be limited. For example, reliance on dedicated in-state energy crops will require a tremendous amount of land. Energy grass is a higher yielding crop that can produce 7.5 barrels of biodiesel per acre annually.[1] In order to produce 10,000 barrels per day of biofuel (or less than 10% of Hawai'i's current fossil fuel demand), nearly 500,000 acres of land is required. For reference, Oahu totals 386,000 acres. Hawai'i will need to import substantial amounts of renewable fuel to meet their goals. Production of in-state biofuels is only a small part of the solution.

3. Hawaii should be aligning carbon regulations with the other western states and Canada (CA, OR, WA, BC) given its geographic location and market dynamics to create a level playing field.

   Carbon pricing is needed to put Hawai'i on a level playing field with other states and countries that have or will have carbon pricing programs. To date, LCFS or CFS programs have been the most popular form of carbon pricing. LCFS programs have been established in California, Oregon, Washington, and New Mexico, as well as British Columbia.

IES is a locally managed and headquartered integrated logistics and retail fuel supplier providing over 20% of the liquid energy needs of the State of Hawai'i. Our operations extend across all islands with major assets on Oahu, Maui, Kauai, and Hawaii Island. At IES, our local workforce of 285 employees takes tremendous pride in serving our customers safely, environmentally responsibly, reliably, efficiently with cost competitive products and services. Whether you and or your goods are moving by air, land, or sea, IES is there to support island residents now and into the future. As for the future, IES is collaborating with other partners to transition Hawai'i's energy supply to ever cleaner sources of energy including, biofuels such as renewable fuels for electrical power generation, ground and marine transportation and sustainable aviation fuel (SAF) for airplanes.

We thank the Hawaii State Legislature for hearing this bill and thank you for the opportunity to testify.

Albert D.K. Chee, Jr.
Vice President

Growth Energy™
Expanding America's Bioeconomy

February 5, 2025

Honorable Chris Lee
Chair
Senate Committee on Transportation and Culture and the Arts
Hawai'i State Capitol
415 South Beretania St.
Honolulu, HI 96813

Honorable Mike Gabbard
Chair
Senate Committee on Agriculture and Environment
Hawai'i State Capitol
415 South Beretania St.
Honolulu, HI 96813

RE: Senate Bill 1120

Chairs Lee and Gabbard:

We appreciate the opportunity to provide comments on Senate Bill 1120, which will establish a clean transportation fuel standard for the state of Hawai'i. Growth Energy is the world's largest association of biofuel producers, representing 97 U.S. plants that each year produce 9.5 billion gallons of renewable fuel; 127 businesses associated with the production process; and tens of thousands of biofuel supporters around the country. Together, we are working to bring better and more affordable choices at the fuel pump to consumers, improve air quality, and protect the environment for future generations. We remain committed to helping our country diversify our energy portfolio, grow more green energy jobs, decarbonize our nation's energy mix, sustain family farms, and drive down the costs of transportation fuels for consumers.

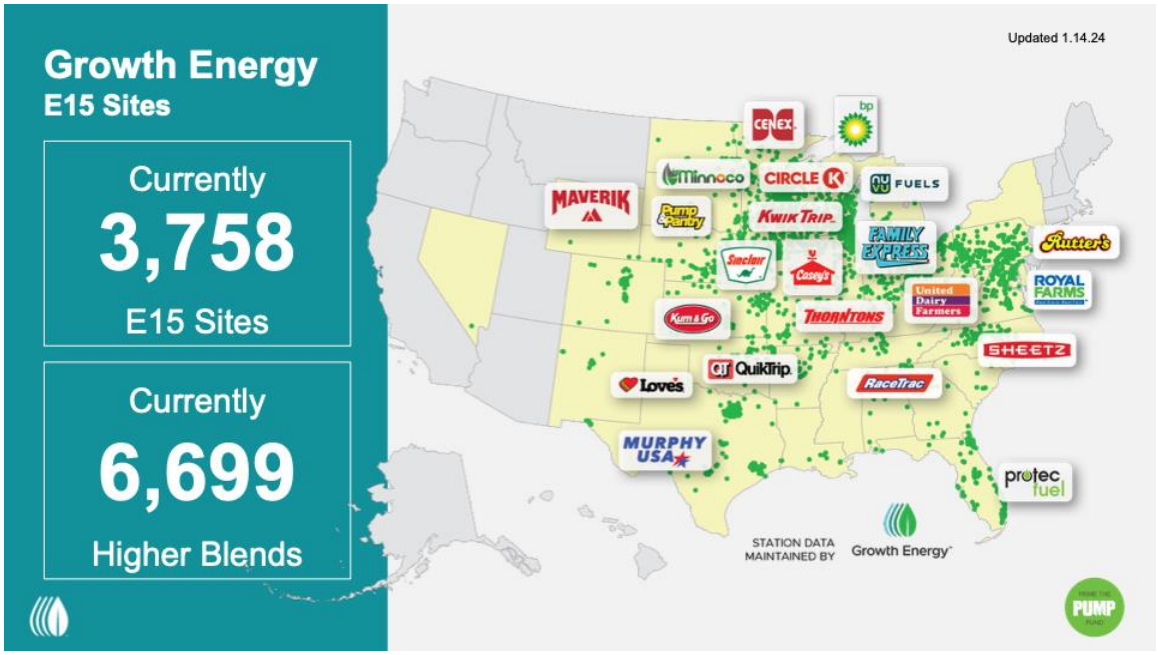
Growth Energy strongly advocates for the role low carbon biofuels and higher biofuel blends can play in Hawai'i's efforts to reduce the carbon intensity of transportation fuels. We urge members of the House Committee on Transportation to consider the ability of bioethanol to help Hawai'i fuel standard's goal of reducing greenhouse gas (GHG) emissions. A primary solution for decarbonizing the liquid transportation fuel supply is the promotion of the additional use of bioethanol.

Today, nearly all gasoline in Hawai'i– and across the United States – is blended with 10 percent ethanol. E15, a blend consisting of 15 percent bioethanol, has been approved for use by the U.S. Environmental Protection Agency (EPA) in all passenger vehicles model year 2001 and newer, more than 96 percent of the vehicles on the road today, and is now for sale at more than 3,700 locations in 33 states.

According to recent data from Environmental Health and Engineering, today's bioethanol reduces GHG by nearly 50 percent compared to gasoline and can provide even further GHG

reductions with additional readily available technologies.[1] Ethanol has a proven history of contributing to GHG reductions in an existing low carbon fuel standard (LCFS): according to the Transportation Energy Institute, ethanol is responsible for 31% of GHG reductions in California's LCFS, the largest percentage among fuel sources.[2]

The potential for fuels with higher blends of ethanol to reduce GHGs are further illustrated in a national analysis showing more than 62,000 tons in GHG reduction in Hawai'i alone if E10 gasoline was replaced with E15.[3] This is the GHG reduction equivalent of removing 13,600 vehicles from the state's private vehicle fleet just by using a higher ethanol-blend fuel, without impacting a single Hawai'i driver. These emissions reductions come with meaningful consumer cost-savings. During the summer of 2023, E15 was sold at 15 cents less per gallon where available on average nationwide. In some locations, we saw E15 selling consistently for as much as 60 cents less per gallon than E10.



Bioethanol's other environmental benefits are also noteworthy. As has been researched by the University of California, Riverside and the University of Illinois at Chicago, the use of more bioethanol and bioethanol-blended fuel reduces harmful particulates and air toxics such as carbon monoxide, and benzene.[4]

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[1] https://iopscience.iop.org/article/10.1088/1748-9326/abde08/pdf
[2] https://www.transportationenergy.org/wp-content/uploads/2023/07/Decarbonizing-Combustion-Vehicles_FINAL.pdf
[3] http://www.airimprovement.com/reports/national-e15-analysis-final.pdf
[4] University of California Riverside: Comparison of Exhaust Emissions Between E10 CaRFG and Splash Blended E15

Regarding SB 1120, we applaud the inclusion of provisions requiring the use of the Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) model developed by the U.S. Department of Energy's Argonne National Laboratory. GREET is the most accurate tool to examine the life-cycle greenhouse gas emissions of all fuels and considers a wide range of carbon reduction processes and technologies that bioethanol production can utilize. It is the gold standard for measuring the emissions-reducing power of farm-based feedstocks and biofuels and incorporates up-to-date science that more accurately scores lifecycle carbon intensity (CI) for corn bioethanol and other renewable fuels.

Additionally, we applaud the bill's commitment to technology neutrality within the standard. The ability for all fuels to compete without a program improperly favoring one technology over another is critical to meaningful GHG reductions. Along with technology neutrality must come the ability of biofuels to utilize the wide range of on-farm and biorefinery practices that can drive the carbon intensity (CI) for bioethanol to zero and eventually achieve a net-negative CI score. A recent study by the Energy Futures Initiative (EFI) demonstrated the incredible decarbonization potential of bioethanol.[5]

EFI's study analyzed the lifecycle carbon emissions of corn bioethanol and the opportunities at every stage of its production, including corn production. EFI's research showed that "ready to adopt and relatively low-cost measures" currently available will allow bioethanol to "reach net-zero emissions by midcentury." The range of decarbonization measures and their adoptability and CI reduction potential are below.

On-Farm Decarbonization Measures

		CI Reduction Potential	Cost	Feasibility: Widespread Adoption	Feasibility: Readiness for Adoption
Corn Yield Improvement		.7%	< zero	High	Near Term
Climate Smart Ag Practices	No-Till Farming	6%	< zero	High	Near Term
	4R Nitrogen Management	4%	< zero	High	Near Term
	Enhanced Efficiency Fertilizers	4%	< zero	Medium	Near Term
	Cover Crops	45%	$24 to $64/$tCO_2$	Medium	Near Term
Use Low-Carbon Fertilizers	Blue Ammonia-Based Fertilizers	10%	$29 (with 45Q) to $100/$tCO_2$	Medium	Mid Term
	Green Ammonia-Based Fertilizers	10%	$0 (with 45Z) to $526/$tCO_2$	Medium	Mid Term
Use Renewable Diesel in Farm Machinery		<4%	$127 to 139/$tCO_2$	Medium	Near Term
Use Renewable Diesel for Corn Transport		<2%	$127 to 139/$tCO_2$	Medium	Near Term

Growth Energy

2

[5] https://efifoundation.org/foundation-reports/a-strategic-roadmap-for-decarbonizing-ethanol-in-the-united-states/

Biorefinery Decarbonization Measures

		CI Reduction Potential	Cost	Feasibility: Widespread Adoption	Feasibility: Readiness for Adoption
Ethanol Yield Improvement		6%	< zero	High	Near Term
Fermentation CCUS		57%	-$48 (with 45Q) to $37/ton CO_2	High	Near Term
Carbon-Free Electricity Use		6%	-$49 (PPAs) to $180/ton CO_2 (RECs)	High	Near Term
Use Low-Carbon Fertilizers	Fuel Switching to Hydrogen	37%	$124 (with 45V) to $412/ton CO_2	Medium	Long Term
	Fuel Switching to RNG	32-160%	$76 to $220/t$CO_2$	Medium	Mid Term
	Biomass CHP	37%	< zero	Medium	Mid Term
	Hydrogen CHP	37%	$71 (with 45V) to $376/t$CO_2$	Medium	Long Term
	RNG CHP	32-160%	$57 to 201/t$CO_2$	Medium	Mid Term
	CCUS - Thermal Energy Generation	37%	$21 (with 45Q) to 106/t$CO_2$	Medium	Mid Term
Renewable Diesel Use in Ethanol Delivery		<2%	$127 to 139/t$CO_2$	Medium	Near Term

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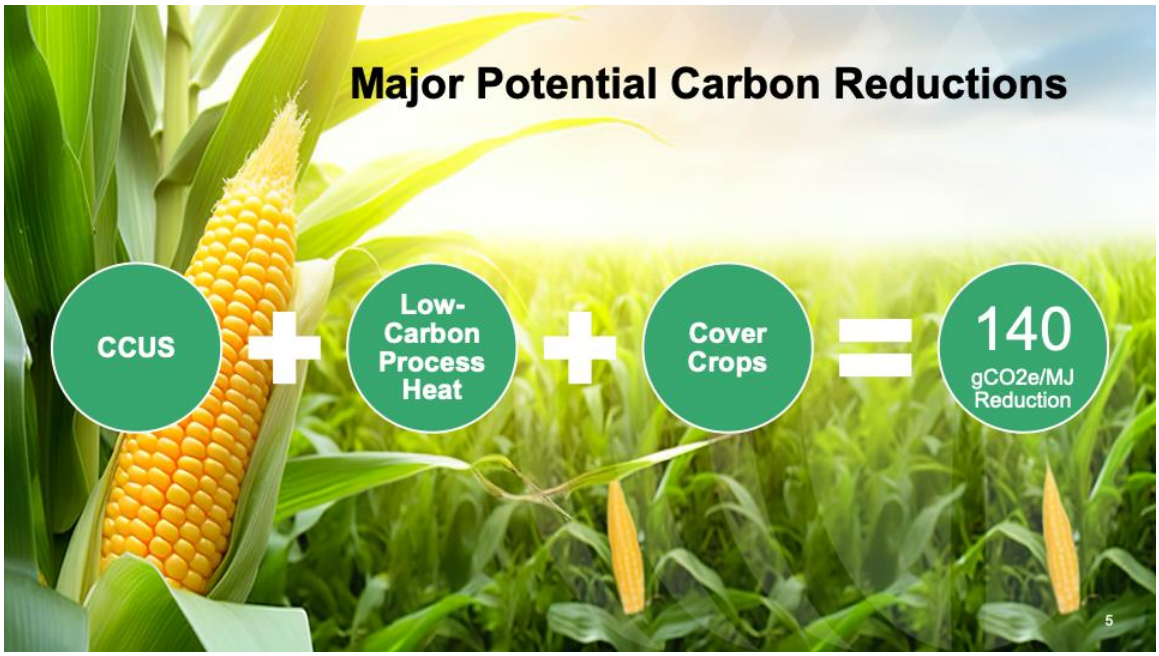
3

Among these measures are carbon capture, utilization and storage (CCUS), replacing process heat at the biorefinery with low-carbon process fuels, and planting cover crops on corn farms. EFI's data indicates that these three practices alone can account for up to 140gCO2e/MJ reduction in CI for corn bioethanol. With the average CI for bioethanol being 53.6gCO2e/MJ, implementation of those three practices could result in a CI score of -86.4gCO2e/MJ.



The consideration of biofuels, particularly bioethanol, is a crucial component to a clean fuel standard, one which can have an immediate impact on carbon emissions reductions as future decarbonization technologies are developed. We hope the committee recognizes the role bioethanol can play in reducing GHGs, providing a more cost-effective option for consumers, and help Hawai'i meet its ambitious decarbonization goals. Thank you and we look forward to any questions you may have.

Sincerely

Chris Bliley
Senior Vice President of Regulatory Affairs
Growth Energy

Senate Committee on Transportation and Culture and The Arts
Senator Chris Lee, Chair
Senator Lorraine R. Inouye, Vice-Chair

Senate Committee on Agriculture and Environment
Senator Mike Gabbard, Chair
Senator Herbert M. "Tim" Richards, III, Vice-Chair

February 5, 2025
1:01 p.m.
Conference Room 224

Thank you for the opportunity to submit testimony in strong support of SB 1120. My name is Cristina Cornejo and I am the Sr. Public Affairs Manager for Neste, the world's leading producer of sustainable aviation fuel and renewable diesel.

A Clean Fuel Standard (CFS) for Hawaii is an essential policy that will enable the state to meet its decarbonization goals, while reducing air and water pollution from the use of fossil fuels in our transportation system. Similar CFS programs have been implemented in California, Oregon, Washington, and Canada. Most recently, New Mexico enacted a CFS in March 2024 that begins in 2026. In addition, there are currently more than 10 additional states considering CFS policies, due to their effectiveness.

SB 1120 is NOT a mandate, nor is it a tax credit, but rather it is an incentive program designed to promote the decarbonization of all transportation fuels. CFS policies drive the adoption of lower-carbon transportation technologies, resulting in advanced competition and a diversity of fuel options for consumers. As an example, consumers in California have gone from 2 fuel types (gasoline and diesel) to more than 7 fuel types (gasoline, diesel, renewable diesel, electric, ethanol, biodiesel, hydrogen, and renewable compressed natural gas). This policy also drives substantial new investments in electric vehicle charging and hydrogen infrastructure at no cost to taxpayers.

One crucial element of a CFS is that it is a technology neutral policy that allows consumers to decide what fuels work best for them and their businesses. All transportation fuels can partake in a clean fuels market and the policy is flexible enough to allow for new technologies that will come online in the future, such as algae from the Pacific Ocean.

Another key component of SB 1120 is that it utilizes an independent third-party, science-based evaluation for all transportation fuels. The policy uses the GREET model, which was created by Argonne National Laboratory and is the worldwide standard methodology to calculate the carbon

intensity of a given fuel. This model assesses fuel on a well-to-wheel basis and considers the full life cycle of a fuel to determine its carbon intensity (CI) score. This ensures that all fuels are scored on an equal playing field and the winners are those fuels with the lowest possible carbon intensity score. It incentivizes cleaner fuels while letting technologies compete.

In conclusion, a clean fuel standard is the most effective policy in reducing carbon emissions from the transportation sector by incentivizing the production and availability of lower carbon fuels. The State of Hawaii deserves access to cleaner fuels and protection of its treasured natural resources. SB 1120 is a significant piece of the decarbonization puzzle and we at Neste are proud to support this pivotal policy.

Cristina Cornejo, Sr. Public Affairs Manager, Neste

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Neste Background

Neste uses science and innovative technology to transform waste and other resources into renewable fuels and circular raw materials. The company creates solutions for mitigating climate change and accelerating a shift to a circular economy. Being the world's leading producer of sustainable aviation fuel (SAF) and renewable diesel and a forerunner in developing renewable and circular feedstock solutions for polymers and chemicals, the company aims to help its customers to reduce their greenhouse gas emissions by at least 20 million tons annually by 2030.

Neste is committed to reaching carbon-neutral production by 2035 and will reduce the carbon emission intensity of sold products by 50% by 2040. Neste has also set high standards for biodiversity, human rights and the supply chain. The company has consistently been included in the CDP and the DJSI lists of the world's most sustainable companies.