



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

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GOVERNOR

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DEPUTY DIRECTOR

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Statement of
LUIS P. SALAVERIA
Director
Department of Business, Economic Development, and Tourism
before the
HOUSE COMMITTEE ON FINANCE
Tuesday, March 1, 2016
3:00 p.m.
State Capitol, Conference Room 308

in consideration of
HB 2085 HD1
RELATING TO ENERGY.

Chair Luke, Vice Chair Nishimoto, and Members of the Committee.

The Department of Business, Economic Development & Tourism (DBEDT) respectfully offers comments on HB 2085, HD1, which aims to reduce and ultimately eliminate Hawaii's dependence on imported fossil fuels for electrical generation and ground transportation by 2045. The HD 1 increases the timeline from 2030 to 2045 and includes additional reporting requirements.

DBEDT supports the intent of this bill to decarbonize the transportation sector. Consistent with Act 38, 2015, DBEDT convened transportation stakeholders in a series of meetings culminating in the HCEI Transportation Energy Analysis (HTEA) report last year. The report identified nearly 100 potential tactics that could contribute to reducing petroleum consumption in the transportation sector, thoroughly analyzed 38 tactics, and recommended 22 tactics that could potentially provide 72 million gallons a year reduction in fossil fuel consumption by 2030. The recommended tactics are not exhaustive, however they identify the potential and means by which petroleum consumption could be reduced based on achievable, economically feasible actions.

DBEDT has concerns regarding the transportation goals of HB 2085, HD1 to ultimately achieve a 99% reduction in annual sales of diesel oil and gasoline for use in ground transportation by 2045 ("less than one million gallons by 2045"). Per the International Council

for Clean Transportation (ICCT), the average life of a car/light truck class vehicle in Hawaii is seventeen years. In order to meet the goals of HB 2085, HD1, Hawaii would need to replace virtually all on road fossil fuel vehicles in this class with electric vehicles (all-battery electric or hydrogen) by 2045. To achieve this goal all new vehicles sold in Hawaii from 2028 onward would need to be all-battery electric vehicles or hydrogen fuel cell vehicles. For perspective, as noted in The Alliance of Automobile Manufacturers February 9, 2016, HB 2085 testimony “the California Air Resources Board (ARB) believes the state of California’s 2050 GHG reduction targets can be met if, in the light duty market, 100% of new vehicles sold in the State in 2050 are plug-in hybrid electric vehicles, battery electric vehicles, or hydrogen fuel cell vehicles.”

In addition, DBEDT notes that its expanding responsibilities in comprehensive planning for the transition of Hawaii’s integrated energy ecosystem will increase resource requirements. Evidence of this is in the additional requirements to satisfy HB 2085 HD1 Section 2 (c) (4). Expanding reporting requirements to incorporate recommendations including benchmarks and timelines is simply one of the necessary and increasing demands required to achieve Hawaii’s energy policy.

DBEDT also recommends removing the mention of “fossil” in Section 2, Section 4, and Section 5. As the most isolated population center on the planet, energy security is a key component. Pursuing energy independence by developing Hawaii’s indigenous renewable resources provides many benefits including energy security and environmental stewardship. DBEDT recommends thoughtful planning to reduce dependence on all imported fuels, to ensure Hawaii remains focused on the critical objective of energy independence.

Thank you for the opportunity to provide these comments regarding HB 2085, HD1.

Bernard P. Carvalho, Jr.
Mayor



George K. Costa
Director

Nadine Nakamura
Managing Director

OFFICE OF ECONOMIC DEVELOPMENT

County of Kaua'i, State of Hawai'i

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**Before the House Committee on Finance
Tuesday, March 1st, 2016
Conference Room 308
3:00 p.m.**

IN SUPPORT OF HB 2085 RELATING TO ENERGY

Chair Luke, Vice Chair Nishimoto, and members of the committee,

The County of Kauai supports HB 2085, which establishes 2045 as the target date for eliminating the use of fossil fuel in the ground transportation sector. Although some critics of this bill may call it an arbitrary target, a great deal of evidence exists that demonstrates the contrary. The legislature has frequently cited climate change and greenhouse gas mitigation as an important driver to our actions in moving toward clean energy. At COP21 in Paris in December of last year, over 190 Countries including the US agreed that our global goal with regards to climate change should be:

"holding the increase in global average temperature to well below 2°C above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels."

The obvious next question for policy makers, should we accept the above, is *what level of emissions reductions is required to achieve this goal?* In [the US submittal to the UNFCC](#) leading up to COP 21, the United States answered this question as follows:

"Substantial global emission reductions are needed to keep the global temperature rise below 2 degrees Celsius, and the 2025 target is consistent with a path to deep decarbonization. This target is consistent with a straight line emission reduction pathway from 2020 to deep, economy-wide emission reductions of 80% or more by 2050. The target is part of a longer range, collective effort to transition to a low-carbon global economy as rapidly as possible." (emphasis added)

The pathway to decarbonization in Hawaii's ground transportation sector contains many unknowns, both in terms of technology and cost. Recent [analysis by ICCT in conjunction with DBEDT](#) and Hawaii stakeholders provides a conservative and necessarily incomplete, yet nonetheless very useful baseline of what is possible over the short term. The authors of the report state in the executive summary that:

*“Moreover, this initial list is not the actual roadmap for action, but a scientific analysis of strategies and tactics that do not include all potentially beneficial and cost-effective actions.”
(executive summary p. 5)*

The ingredient lacking at the outset of this report was a clear and measurable target date for the elimination of fossil fuels in ground transportation. We simply cannot create a ‘roadmap for action’ without knowing where it is we are going. Such a target should not be set based on feasibility as determined by a group of energy wonks, but should instead be set by leaders who understand the larger picture as it relates to global climate change.

What combination of technologies and system changes can get us to 100%? How will we track our progress? How will we enforce the reduced use of fossil fuels? How will we pay for it? These are all very important questions, but without a clear goal, they are very difficult to determine.

We ask that you set this long term goal based on the definitive scientific evidence around the need to mitigate climate change. Our communities, businesses, and institutions can then come together and begin to address the many energy policy questions that will arise as a result.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Sullivan". The signature is fluid and cursive, with a large initial "B" and "S".

Ben Sullivan
Energy and Sustainability Coordinator
Office of Economic Development
County of Kauai



AMERICANS FOR DEMOCRATIC ACTION

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PO. Box 23404

Honolulu

Hawai'i 96823

Feb. 28, 2016

TO: Honorable Sylvia Luke, Chair; Honorable Scott Nishimoto, Vice Chair; and Members of the House Finance Committee

RE: HB 2085 HD1 Relating to Energy SUPPORT

HEARNG DATE: March 1.

Americans for Democratic Action is a national organization founded in the 1950s by leading supporters of the New Deal and led by Patsy Mink in the 1970s. We are devoted to the promotion of progressive public policies.

ADA Hawaii Chapter supports HB 2085 as it aims to reduce and ultimately eliminate Hawaii's dependence on imported fossil fuels for electrical generation and ground transportation by 2045. To reduce the problems of global warming, we should pass this bill and all bills that will reduce carbon emissions.

Thank you very much for considering the concerns of the Hawaii Chapter of Americans for Democratic Action.

Sincerely,

John Bickel
President



HOUSE COMMITTEE ON FINANCE

March 1, 2016, 3:00 P.M.

Room 308

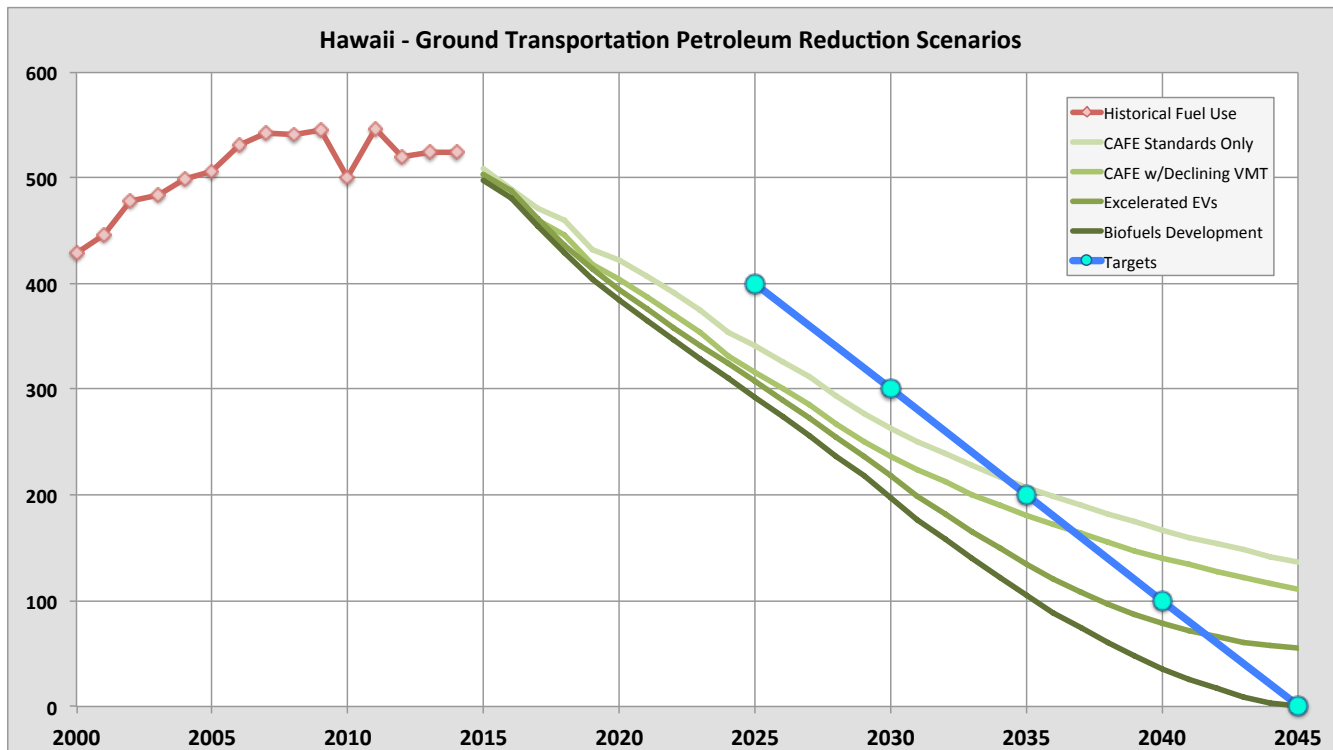
(Testimony is 6 pages long)

TESTIMONY IN SUPPORT OF HB 2085 HD1

Aloha Chair Luke, Vice Chair Nishimoto and members of the Committee:

Blue Planet Foundation strongly supports HB 2085 HD1, which sets a target of reducing the use of petroleum-based fuels for ground transportation to less than one million gallons annually by the year 2045. Blue Planet Foundation also urges the committee to re-insert the interim petroleum reduction targets for 2025 (less than 400 million gallons), 2030 (less than 300 million), 2035 (less than 200 million), and 2040 (less than 100 million) that were in the original version of the bill.

Blue Planet Foundation’s Analysis of Potential Petroleum Reduction Scenarios:



With the passing of the 100% renewable portfolio standard last year, the state has shown its considerable commitment to moving Hawaii beyond fossil fuels. The reduction and elimination of imported fossil fuels will lead Hawaii to a stronger, more resilient economy and will ensure that Hawaii is doing its part to minimize the negative impacts of greenhouse gas induced climate change.

The targets in the original version of this bill will serve as a guide to the land use and transportation policies of state and county agencies and will send a powerful message to vehicle fleet owners, car dealers, and the general public that we are moving away from petroleum-based ground transportation. This will lead to more rapid adoption of clean transportation technologies such as electric vehicles; fuel cell vehicles powered by hydrogen, and locally sourced biodiesel and biofuels.

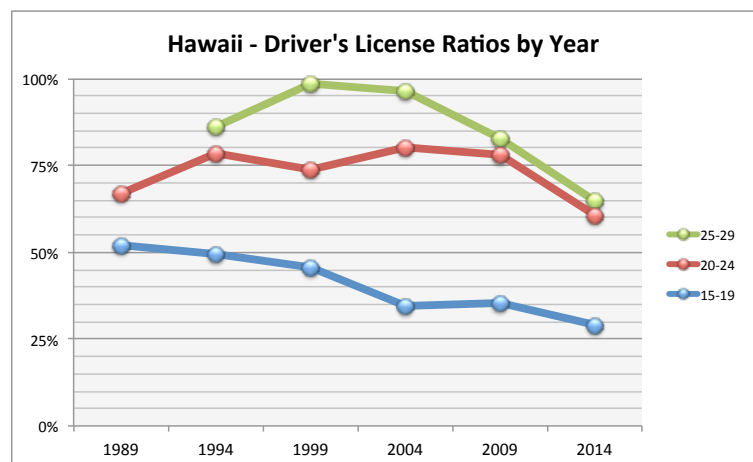
Blue Planet Foundation believes that the targets outlined in the original version of this bill are achievable. To demonstrate this we have analyzed and modeled several key trends (discussed below) as petroleum reduction scenarios displayed in the chart on the first page of this testimony.

1. The number of drivers in Hawaii is decreasing and the number of cars will follow this trend.

Over the last ten to fifteen years, the state is experiencing a dramatic shift in which young people are getting their driver's licenses in much lower ratios. Based on population and driver's license data made available by DBEDT, in 1989, over 50% of the state's 15 to 19 year old population had their licenses and by 2014 that number had fallen to just 29%.

The proportion of the state's 20 to 24 year-olds with licenses fell from 80% in 2004 to just 61% in 2014; and the proportion of the state's 25 to 29 year olds with licenses fell from 99% in 1999 to just 65% in 2014. The same trends are occurring nationally.

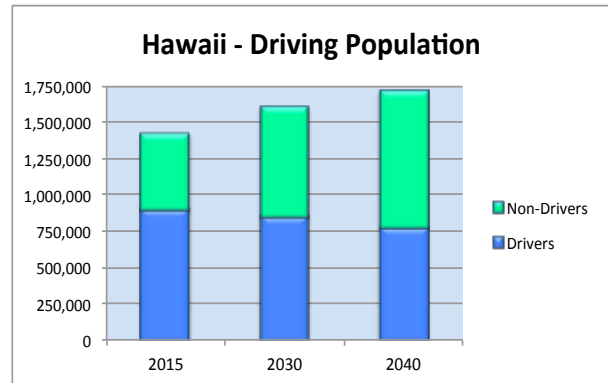
While the state's population increased by 72,844 people from 2011 to 2014, the number of



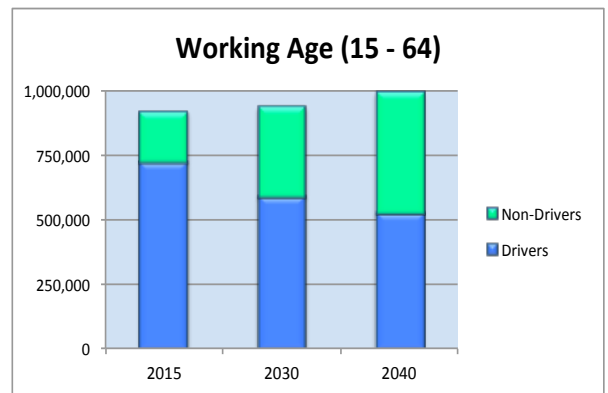
driver's licenses in force actually decreased by 12,443; meaning that there was an increase in non-drivers of 85,287 during that three year period alone.

Projecting Forward

Blue Planet Foundation did a rudimentary population analysis, applying the recent trend of decreasing driver's licenses conservatively to DBEDT's age cohort population projections to 2040. Our analysis indicates that if these trends continue the total number of licensed drivers in the state could fall by over 125,000 persons by 2040 while the non-driving population explodes by 418,000.



The increase of non-drivers is likely to be even more dramatic in the working age population (15 to 64) where the number of drivers could decrease by 196,000 while the number of non-drivers increases by 268,000. This would mean that while people without driver's licenses make up only 21% of a the state's 15 to 64-year-old population today, that ratio could rise to nearly half (47%) by 2040.



For the purposes of our analysis we assumed that the number of registered vehicles per licensed driver will follow the observed historical ratio roughly 1.20 vehicles per licensed driver. This will lead to an overall reduction in the number of registered vehicles from 1.26 million today to approximately 880,000 in 2045.

- The Obama administration's CAFE standards will require automakers to average approximately 54.5 MPG by 2025. This will force all automakers to dramatically increase the number of EVs they sell as well as the average fuel economy of all their vehicles.**

The Corporate Average Fuel Economy (CAFE) standards are regulations first enacted by the U.S. Congress in 1975, in the wake of the Arab Oil Embargo, to improve the average fuel economy of cars and light trucks produced for sale in the United States.

The most recent update to these CAFE standards passed in 2012, will require the average fuel economy of new vehicles sold in the US to increase from roughly 35.5 MPG in 2016 to 54.5 MPG in 2025.

For our analysis we modeled the number of cars on Hawaii's roadways and the total average fuel economy for the entire vehicle fleet based on the following vehicle ages: 21% less than five years old, 34% from 6 to 10 years old, 24% from 11 to 15 years old, 12% from 16 to 20 years old, and 9% being over 20 years old. These numbers were based on an analysis of average vehicle age done by the US Department of Labor.

Using these inputs, the CAFE standards to 2025, and a projection of continued increases to those standards, we estimated that average fuel economy of all Hawaii's vehicles would grow steadily from 21 MPG today to 33 MPG in 2030 and 55 MPG in 2045.

3. More transportation alternatives and better land use policies will lead to reduced miles driven per vehicle.

In addition to decreasing number of drivers and vehicles, the increase in alternative transportation options such as Honolulu's rail system, expanded bus service on all islands, bikeshare, carsharing, Uber/Lyft, will likely lead to a meaningful shift of trips from auto to non-auto transportation modes.

Along with better land use policies such transit-oriented development, these trends should lead to reduced miles driven annually per car and even those who continue to own and drive cars have shorter distances to travel and will more frequently utilize alternative modes.

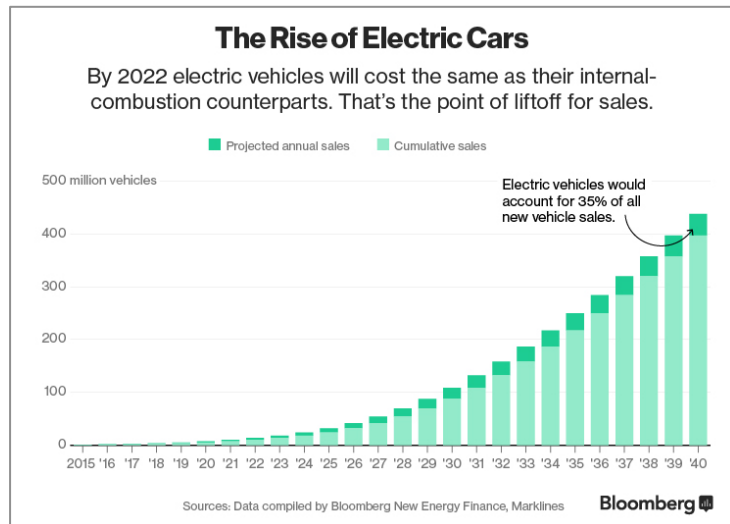
In recent years the average vehicle in the state has driven approximately 9,000 miles per year. In 2014, this number fell to 8,400. With the increase in transportation alternatives and better land use policies, we believe this number could fall to less than 7,000 miles per year per vehicle by 2045.

4. Analysts believe that EVs will be as cheap as gas-powered vehicles by 2022.

In an article published last week, a new analysis by Bloomberg New Energy Finance (BNEF) found that EV battery prices fell 35 percent last year and are on a trajectory to make unsubsidized electric vehicles as affordable as gasoline cars within the next six years.

At their annual press conference last week Honda CEO Takahiro Hachigo announced that Honda plans to make plug-in hybrid versions of all their major models after 2018. He went on to say that *“We will strive to make two-thirds of our overall unit sales from plug-in hybrid/hybrid vehicles and zero-emissions vehicles such as, FCVs [fuel cell vehicles] and battery EVs by around 2030.”*

Hawaii is well-suited for the large-scale adoption of electric vehicles because electric batteries perform well in our year-round warm climate and since our island geography restricts the distances we need to drive, range anxiety is less of an issue than in other locations. Hawaii is already in the top three states by proportion of registered vehicles that are electric and we have the highest ratio of electric charging stations to population of any state.



For our analysis on page 1 of this testimony, we assumed that zero-emission vehicles (electric and hydrogen fuel cell vehicles) would increase steadily, reaching 22% of new sales by 2025, 67% by 2030 and 100% by 2036.

While this is aggressive growth, we believe that such growth is possible in Hawaii with the right set of supportive policies given the growth in EV models on the market, the falling price for batteries and the S-curve growth patterns observed for other technologies such as cell-phones.

5. Hawaii has sufficient capacity to produce enough biofuels to offset more than all of the diesel and gasoline used in ground transportation in the state today.

In a report commissioned by DBEDT in 2010, the consultant firm Black & Veatch Corporation performed a detailed analysis of the potential for biofuel production in the state of Hawaii.

The report found that the maximum theoretical capacity of biofuel production in the state was equal to the equivalent of 848 million gallons of “green gasoline” or 779 million gallons of “green diesel” per year (see chart below). This is significantly more than the total amount of petroleum used in ground transportation in Hawaii today.

Table 1-6. Maximum Theoretical Hawai'i Biofuel Production Potential.					
Feedstock	Biofuel 10 ¹² Btus/yr	Ethanol million gal/yr	Green Gasoline equivalent million gal/yr	Green Diesel equivalent million gal/yr	Green Jet Fuel equivalent million gal/yr
Energy Crops	101	1,202	786	722	751
Cellulosic Wastes	8	95	62	57	59
Total:	109	1,297	848	779	810

Source: DBEDT (2010). "The Potential For Biofuels Production in Hawaii"

The report also concluded that "...it should be quite achievable for biofuels produced from in-state resources to displace 20 percent [over 100 million gallons per year] of the gasoline and diesel fuel needed for vehicle transportation in Hawai'i. This could be accomplished using about 10 percent of available agricultural land for energy crop production to supply the required biomass feedstock."

For the purposes of our analysis on page 1, we assumed a steady increase in biodiesel and biofuels reaching approximately 55 million gallons per year petroleum equivalent by the year 2045. According to the report referenced above, producing this amount of biofuels would require roughly 5% of available agricultural land for biofuel feedstock. Remaining gasoline and diesel-powered vehicles could be converted to run on these biofuels.

Conclusion

As we showed in our analysis above, we believe the petroleum reduction targets in the original version of this bill are achievable.

We urge the committee to re-instate the interim targets from the original version of the bill and to pass the bill.

Thank you for this opportunity to testify.

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 29, 2016 8:35 AM
To: FINTestimony
Cc: chevryriderhhh@gmail.com
Subject: Submitted testimony for HB2085 on Mar 1, 2016 15:00PM

HB2085

Submitted on: 2/29/2016

Testimony for FIN on Mar 1, 2016 15:00PM in Conference Room 308

Submitted By	Organization	Testifier Position	Present at Hearing
Chris Wells	Individual	Oppose	No

Comments: Unneeded Overregulation.

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From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 27, 2016 10:13 AM
To: FINTestimony
Cc: mendezj@hawaii.edu
Subject: *Submitted testimony for HB2085 on Mar 1, 2016 15:00PM*

HB2085

Submitted on: 2/27/2016

Testimony for FIN on Mar 1, 2016 15:00PM in Conference Room 308

Submitted By	Organization	Testifier Position	Present at Hearing
Javier Mendez-Alvarez	Individual	Support	No

Comments:

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LATE



Chamber of Commerce HAWAII

The Voice of Business

**Testimony to the House Committee on Finance
Tuesday, March 1, 2016 at 3:00 P.M.
Conference Room 308, State Capitol**

RE: HOUSE BILL 2085 HD 1 RELATING TO ENERGY

Chair Luke, Vice Chair Nishimoto, and Members of the Committee:

The Chamber of Commerce Hawaii ("The Chamber") **provides comments on** HB 2085 HD 1, which aims to reduce and ultimately eliminate Hawaii's dependence on imported fossil fuels for electrical generation and ground transportation by 2045.

The Chamber is Hawaii's leading statewide business advocacy organization, representing about 1,000 businesses. Approximately 80% of our members are small businesses with less than 20 employees. As the "Voice of Business" in Hawaii, the organization works on behalf of members and the entire business community to improve the state's economic climate and to foster positive action on issues of common concern.

The bill provides that prior to the initiation of any activities authorized under this bill, the department of business, economic development, and tourism shall develop a plan of action with the intent of promoting effective prioritization and focusing of efforts consistent with the State's energy programs and objectives.

We suggest that the following be a requirement of the "Plan of Action:"

This plan of action must include, at a minimum, an economic analysis of the cost to business, consumers, and government in order to transition from imported fossil fuels for electrical generation and ground transportation by 2045. This economic analysis also include various specific incentives or subsidies required from government in order to accomplish this transition by 2045. Finally, the economic analysis should contain calculations on the number of years it will take for the State to realize an economic benefit from its investment in non-fossil fuel alternatives for electrical generation and ground transportation.

We believe that this economic analysis is specifically required for policy makers, and the public to assess the required upfront investment in non-fossil fuel alternatives to accomplish this mandate.

Thank you for the opportunity to testify.



LATE

46-063 Emepela Pl. #U101 Kaneohe, HI 96744 · (808) 679-7454 · Kris Coffield · Co-founder/Executive Director

**TESTIMONY FOR HOUSE BILL 2085, HOUSE DRAFT 1, RELATING TO
ENERGY**

**House Committee on Finance
Hon. Sylvia Luke, Chair
Hon. Scott Y. Nishimoto, Vice Chair**

**Wednesday, March 1, 2016, 3:00 PM
State Capitol, Conference Room 308**

Honorable Chair Luke and committee members:

I am Kris Coffield, representing IMUAlliance, a nonpartisan political advocacy organization that boasts over 350 members. On behalf of our members, we offer this testimony **in strong support of** House Bill 2085, HD1, relating to energy.

Last year, lawmakers passed a measure calling for a 100 percent renewable portfolio standard and committing Hawai'i to a completely sustainable future. To accomplish this goal, we must move beyond fossil fuels, thereby minimizing our state's greenhouse gas and climate change footprint.

Ground transportation uses roughly the same amount of petroleum, annually, as electricity in the islands: 28 percent of our imported total, according to The Blue Planet Foundation. Thus, the fuel reduction targets outlined in this bill will guide a transition from petroleum-based ground transportation to renewable technology, accelerating clean energy adoption by the transportation sector. Electric vehicles, fuel cell vehicles powered by hydrogen, and local biofuels can and should be part of this transition.

Our islands naturally promote the use of electric vehicles because, as Blue Planet states, "electric batteries perform well in our year-round warm climate and our island geography restricts the distances we need to drive." Hawai'i ranks in the top three states by proportion of registered electric vehicles and has the highest per-capita ratio of electric charging stations in the country, an achievement on which we must build. As the cost of electric vehicles decreases because of escalating demand

and technological advancement, their embracement by the public will expand and new, more efficient technologies will emerge. Moreover, ground transportation is largely unclean, in part, because of a lack of public and private clean energy investment in ground transportation industries. Economically speaking, requiring the elimination of petroleum in ground transportation incentivizes investment in hydrogen-powered and electric vehicles—as our policies change, so must the market adapt. This measure could accelerate growth in clean energy investment by rapidly—and by mandate—expanding the untapped ground transportation market.

Climate change is the moral crisis of our time. As we craft a sustainable future for ourselves and our children, we must place clean energy at the top of our to-do list. Mahalo for the opportunity to testify **in support** of this bill.

Sincerely,
Kris Coffield
Executive Director
IMUAlliance

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, March 01, 2016 8:40 AM
To: FINTestimony
Cc: lisamarten@hawaii.rr.com
Subject: Submitted testimony for HB2085 on Mar 1, 2016 15:00PM

HB2085

Submitted on: 3/1/2016

Testimony for FIN on Mar 1, 2016 15:00PM in Conference Room 308

Submitted By	Organization	Testifier Position	Present at Hearing
Lisa Marten	Individual	Support	No

Comments: Dear Chair and Committee members, Please support HB 2085. We have set goals for our state to produce clean electricity and now need to do so for transportation. Only by being a part of the solution and being a role model for other places can we hope to slow and reverse climate change. Thank you, Lisa Marten

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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