

TESTIMONY OF  
JAMES P. GRIFFIN, Ph.D.  
CHAIR, PUBLIC UTILITIES COMMISSION  
STATE OF HAWAII

TO THE  
HOUSE COMMITTEE ON  
FINANCE

February 22, 2019  
11:00 a.m.

Chair Luke and Members of the Committee:

**MEASURE:** H.B. No. 550 HD1

**TITLE:** RELATING TO RENEWABLE ENERGY.

**DESCRIPTION:** Requires the Public Utilities Commission to study the feasibility of implementing renewable portfolio standards to encourage the use of renewable energy by gas utility companies. Amends the renewable portfolio standard interim goals for 2030 and 2040 to accelerate the adoption of renewable energy. Appropriates funds. (HB550 HD1)

**POSITION:**

The Public Utilities Commission offers the following comments for consideration.

**COMMENTS:**

With respect to the provisions to modify the electricity renewable portfolio standard (“RPS”), the Public Utilities Commission (“Commission”) recently completed a report to the Legislature on the Renewable Portfolio Standard, which was submitted on December 27, 2018, and is available on the Commission’s website (<https://puc.hawaii.gov/reports/legislature/>).

Overall, the State of Hawaii is on track to achieve the near-term RPS goals. However, there is greater uncertainty regarding longer-term goals, particularly regarding integration of future renewable energy projects and when and where such projects can be constructed and brought online. That said, should the Legislature increase interim RPS targets, the Commission will continue to work closely with the State’s electric utilities and other stakeholders in order to implement the RPS policy.

With respect to the proposed requirement to study the feasibility of implementing renewable portfolio standards to encourage the use of renewable energy by gas utility companies, the Commission is supportive of conducting a feasibility study, provided that the accompanying appropriation will cover the cost of the study.

However, in considering the scope of the proposed study, the Commission is concerned that the proposed scope may require a substantial commitment of funds, and respectfully recommends that Section 2 of the bill be modified to focus the study on key questions in the consideration of establishing a gas RPS, including the technical feasibility and potential cost of achievement of a gas RPS.

As such, the Commission recommends that within Section 2, item (3) be retained, but that items (1), (2), (4), and (5) be removed. Item (3) refers to the scope of the proposed study, but the other items appear to refer to a gas RPS which has not yet been established. These items could be inserted at a later date, after consideration of the study proposed by this measure, if the Legislature subsequently establishes an RPS for gas utilities.

In addition, the Commission recommends that for item (3) within Section 2, the scope of the proposed study be focused on sub-items (A), (C), and (D). This would provide the Commission the flexibility to conduct the proposed study in a timely manner and at a reasonable cost.

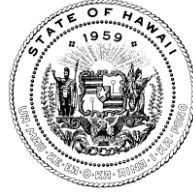
Accordingly, the Commission respectfully recommends Section 2 would be modified to read:

“§269- Renewable gas portfolio standards study. The public utilities commission shall:

- (1) Use funds from the public utilities special fund to contract with the Hawaii natural energy institute of the University of Hawaii to conduct independent studies to be reviewed by a panel of experts from entities such as the United States Department of Energy, National Renewable Energy Laboratory, Hawaii gas utility companies, environmental groups, and other similar institutions with the required expertise. These studies shall include findings and recommendations regarding:
  - (A) The capability of Hawaii's gas utility companies to achieve renewable portfolio standards in a cost-effective manner;
  - (B) The technical feasibility of establishing renewable portfolio standards for gas

utility companies in Hawaii; and  
(C) Unregulated gas sales and what requirements are needed for the transition of gas that is unregulated to a renewable energy source.”

Thank you for the opportunity to testify on this measure.



DAVID Y. IGE  
GOVERNOR

JOSH GREEN  
LT. GOVERNOR

**STATE OF HAWAII  
OFFICE OF THE DIRECTOR  
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS**

335 MERCHANT STREET, ROOM 310

P.O. BOX 541

HONOLULU, HAWAII 96809

Phone Number: 586-2850

Fax Number: 586-2856

cca.hawaii.gov

CATHERINE P. AWAKUNI COLÓN  
DIRECTOR

JO ANN M. UCHIDA TAKEUCHI  
DEPUTY DIRECTOR

**Testimony of the Department of Commerce and Consumer Affairs**

**Before the  
House Committee on Finance  
Friday, February 22, 2019  
11:00 a.m.  
State Capitol, Conference Room 308**

**On the following measure:  
H.B. 550, H.D. 1, RELATING TO RENEWABLE ENERGY**

Chair Luke and Members of the Committee:

My name is Dean Nishina, and I am the Executive Director of the Department of Commerce and Consumer Affairs' (Department) Division of Consumer Advocacy. The Department appreciates the intent of and offers comments on this bill.

The purpose of this bill is to require the Public Utilities Commission (Commission) to study the feasibility of implementing renewable portfolio standards to encourage the use of renewable energy by gas utility companies and to amend the renewable portfolio standard goals for 2030 and 2040 to accelerate the adoption of renewable energy by electric utility companies.

The Department continues to support the State's goal of 100% renewable energy on its electric grids by 2045, and so the Department supports the proposal to modify the existing Renewable Portfolio Standards (RPS) calculation in Hawaii Revised Statutes (HRS) section 269-91 by eliminating "sales" from the calculation beginning in 2030. This modification will eliminate the existing "loophole" that could allow the State to

achieve a 100% RPS but still have a significant contribution from fossil-fueled generation sources, as well as possibly allow for more than 100% of generation from renewable energy.

If the RPS calculation is modified as proposed, this would mean that the corrected calculation will automatically require more grid-connected renewable energy than is currently required. The Department also notes that, pursuant to HRS section 269-95, the Commission is already tasked to evaluate the RPS every five years to determine whether, using the best information available at the time, the RPS can be cost-effectively achieved. Given the uncertainty of various factors, such as future technology and its costs, land availability, and grid security and resiliency concerns, it may be prudent to rely upon the results of this recurring study to determine future modifications to RPS interim goals.

The Department appreciates H.D. 1's measured approach to investigate the feasibility of creating an RPS for gas utilities, as well as the existing regulatory structure. The proposed study, as well as the provision for funding for the Commission to conduct the study, would analyze, among other things, the capability of gas utility companies to achieve any RPS in a cost-effective manner, as well as the potential impact on reliable service and the impact on consumers. The Department also appreciates the requirement that the study analyze unregulated gas sales and the requirements needed to transition those unregulated operations to a renewable energy source. This requirement is important to ensure that an RPS for regulated gas sales does not encourage a business model for a regulated gas utility to shift more gas sales to the unregulated market, as well as address market concerns that unregulated gas providers might seek to take advantage of an RPS for only regulated gas sales.

Thank you for the opportunity to testify on this bill.



DAVID Y. IGE  
GOVERNOR

MIKE MCCARTNEY  
DIRECTOR

## DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804  
Web site: [www.hawaii.gov/dbedt](http://www.hawaii.gov/dbedt)

Telephone: (808) 586-2355  
Fax: (808) 586-2377

Statement of  
**MIKE MCCARTNEY**  
Director

Department of Business, Economic Development, and Tourism  
before the  
**HOUSE COMMITTEE ON FINANCE**

Friday, February 22, 2019  
11:00 AM  
State Capitol, Conference Room #308

In consideration of  
**HB 550, HD 1**  
**RELATING TO RENEWABLE ENERGY.**

Chair Luke, Vice Chair Cullen, and members of the Committee. The Department of Business, Economic Development, and Tourism (DBEDT) offers **supports the intent** on HB 550, HD1, which amends the renewable portfolio standards (RPS) interim goals for 2030 and 2040 to accelerate the adoption of renewable energy and requires the Hawaii Public Utilities Commission (PUC) to study the feasibility of implementing RPS to encourage the use of renewable energy by gas utility companies.

DBEDT offers the following comments. DBEDT sees merit in the proposed acceleration of the RPS. We caution that there is greater uncertainty in the achievability of the 2040 and 2045 goals, due to concerns about the ability of utilities to accommodate increasing proportions of variable generation, development of new renewable sources and community acceptance. Should the Legislature increase interim RPS targets, DBEDT would stand ready to work with stakeholders to realize the targets.

DBEDT agrees with the provision on page 9, lines 7-13 requiring that all electric grid-connected energy systems shall be one hundred percent renewable energy systems by December 31, 2045.

Although not currently part of this bill, DBEDT supports the establishment of an RPS for gas utility companies of 100% by 2045 with appropriate interim goals. Should the Legislature move forward with a renewable gas portfolio standards study, DBEDT advises that the appropriate framework be established. For example, instead of requiring the PUC to “study the feasibility of implementing renewable portfolio standards to encourage the use of renewable energy by gas utility companies” (page 4, lines 3-4) the study should evaluate the statewide renewable gas potential, how it compares to current and projected statewide gas requirements, and appropriate gas utility RPS targets. Moreover, in evaluating the technical feasibility of establishing RPS for gas utilities, the study should look towards feedstocks available in Hawaii in support of our energy security not the procurement and importation of biogas as suggested in page 7, lines 7-8.

Thank you for the opportunity to testify.



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented Before the  
House Committee on Finance  
Friday, February 22, 2019 at 11:00 a.m.

By  
Richard Rocheleau, Director  
Hawai'i Natural Energy Institute  
And  
Michael Bruno, PhD  
Vice Chancellor for Research  
University of Hawai'i at Mānoa

### HB 550 HD1 – RELATING TO REWEWABLE ENERGY

Chair Luke, Vice Chair Cullen and members of the committee:

The Hawai'i Natural Energy Institute (HNEI) supports the intent of this bill and provides the following comments.

Section 2 of this bill would require the Public Utilities Commission to contract with HNEI to conduct studies to determine the feasibility and capability of Hawai'i's gas utility companies to achieve renewable portfolio standards in a cost-effective manner. HNEI supports conducting such a study but strongly suggests limiting the scope of the study to those issues directly relevant to achieving an RPS such as:

- costs and availability of appropriate renewable gas feedstock sources;
- technical feasibility, cost and carbon impacts for those potential resources identified by the study;
- permitting approvals; and
- customer impacts.

Other issues could be addressed pending information and resources to do so.

HNEI also strongly agrees that the electric utility RPS definition should be based on grid connected generation, instead of sales. This new definition would more accurately reflect the relative amount of renewable energy in the system. We believe this change is necessary to also eliminate confusion in regard to progress against the RPS goals and to maintain public confidence in the RPS.

The initial version of this bill specifically amended the definition of “renewable portfolio standard”, in HRS section 269-91, to mean the amount of renewable electrical energy generated compared to the total electrical energy generated. The current draft of the bill does not contain this amended definition. We recommend that this definition be clarified to eliminate vagueness and any potential confusion.

Section 3 of the bill increases the electric utility renewable portfolio standard interim goals for 2030 and 2040 to 65% and 85%, respectively. HNEI supports accelerating Hawai'i's RPS targets to levels that are technically and economically feasible. However, HNEI would like to point out that just changing the definition of RPS, as discussed above, would increase the amount of renewable generation necessary to meet the current 2030 target by a significant, but currently undetermined amount. In light of this, and the substantial effort put forth to develop the utility's Power Supply Improvement Plans, HNEI recommends adopting the new definition this year, and tabling consideration of changing the RPS interim goals until next year.

Thank you for the opportunity to comment on HB 550 HD1.





## Testimony to the House Committee on Finance

Tuesday, February 22, 2019 11:00 a.m.  
Conference Room 308, State Capitol  
RE: House Bill 550 HD1 – Relating to Renewable Energy

Chair Luke, Vice Chair Cullen and Members of the Finance Committee

Hawaii Gas **respectfully opposes** this bill and provides the following **comments** to HB 550 HD1:

HB550 HD1 has been amended to:

- (1) Require the Public Utilities Commission to study the feasibility of implementing renewable portfolio standards to encourage the use of renewable energy by gas utility companies; and
- (2) amend the electric renewable portfolio standard interim goals for 2030 and 2040 to accelerate the adoptions of renewable energy.

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HG is appreciative that legislature recognizes the **complexity** of establishing a renewable portfolio standard on the gas utility, as well as the consideration for the impact on customers, especially given that nearly half our state’s population is living paycheck to paycheck or are living below the poverty line (according to the ALICE study commissioned by Aloha United Way). The impacts of policy decisions must be well studied to help mitigate any unintended consequences on consumers, climate and other state policy initiatives like affordable housing.

HG supports an appropriate and objective study to explore the feasibility of implementing a renewable portfolio standard for gas utilities. However, the current language in HB 550 HD1 dangerously presumes the outcome of that study, putting the cart before the proverbial horse as it proscribes a mandated outcome (imposing the same 100% RPS by 2045 for the gas utility as for the electric utility, without regard to the fundamental differences in their operations and objectives) for the Hawaii Public Utilities Commission (HPUC) to carry out. We would also note that the State’s electric utility RPS was formulated and adjusted over a number of years based on studies specific to the issues at hand and “real world” experience acquired in Hawaii along the way. Hawaii’s original renewable portfolio goal for electric utilities was enacted into law in 2001 (Act 272), and turned into a true renewable portfolio standard in 2004 (Act 95) – the 100% by 2045 goal for electric utilities was not codified into law until 2015 (Act 97), giving the electric utilities a period of roughly 44 years from the imposition of an initial RPS to achieve 100% renewable power for electric generation. Further the 100% goal was codified at a time (2015) when roughly 20% of the State’s electrical generation was from renewable sources. The currently proscribed outcome in HB550 HD1 would give Hawaii Gas less than 25 years (approximately 55% of the time) to achieve the same goal. Further, Hawaii’s electric utilities benefitted in the RPS’ early years from the ability to utilize both customer-sited generation (rooftop solar), independent power producers, aggressive federal and state tax incentives and “conserved energy” towards meeting their RPS goals – it is hardly practical to expect distributed generation of gaseous fuel supply to play a part in the gas utility achieving any RPS, nor an industry of independent renewable gas producers to be developed overnight, nor conservation initiatives without consumer incentives such as rebates.



We are also strongly concerned that HG’s unregulated gas sales are being included in the prescribed study for a gas RPS and are unclear how the HPUC would have oversight over an unregulated business and ensure a level playing field for this entity versus its competitors who are unregulated and who would not be subject to an RPS.

**Before implementing an RPS on the gas utility, HG respectfully recommends that the legislature consider the integration of energy systems in the state and to first decide on integrated policy objectives, so that there is clarity on the impact of an RPS on the gas utility:**

- Determine overall policy objectives and trade-offs including but not limited to
  - Is the state focused on reducing greenhouse gas emissions? How much? By When?
  - Is the state focused on creating affordable energy prices and affordable housing for customers?
  - Is the state focused on ensuring resiliency and planning for climate change?
  - Is the state focused on the pursuit of renewable energy at any cost to ratepayers?
  - Is the state focused on developing a sustainable and balanced approach?
- Determine impact on refineries and other entities as part of Hawaii’s connected energy ecosystem, i.e. Unlike mainland gas utilities, HG currently produces the majority of its gas from a waste byproduct of the refinery process.
- Consider existing policies in place, such as Carbon Neutral by 2045, etc. and whether they need to be modified or enhanced.
- Determine mechanisms needed to drive policy objectives – Renewable portfolio standard is just one mechanism. Other examples are carbon tax, carbon sequestration, financial incentives or subsidies, favorable policies to develop new industry growth, farmer incentives, land acquisition incentives, water policies, etc.
- Determine best mechanism or combination of mechanisms to achieve the policy objectives and ensure no conflict or clear prioritization between these policies.
- Conduct cost-benefit analysis on the entity or entities that will be subject to mechanism or mechanisms.
- Conduct economic analysis on impact to customers.
- Determine reasonable timeframe to implement the mechanism and the associated milestones.

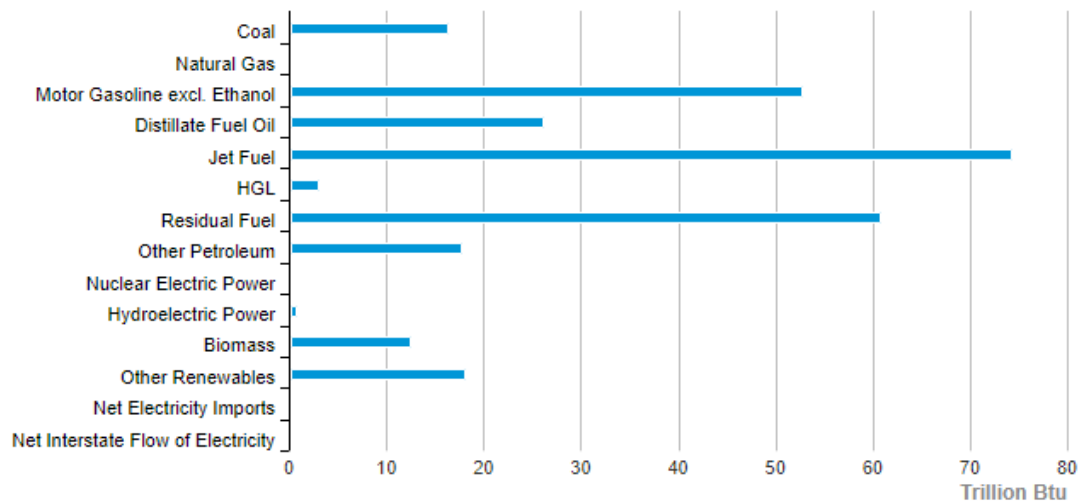
HG similarly believes that any study would benefit from a review of other frameworks for increasing RNG and study what is working and what is not working and how they can be adapted for Hawaii. Unlike mainland gas utilities, which predominately use natural gas, HG makes its gas, which is called synthetic natural gas (SNG) from a waste byproduct of Hawaii’s refinery process. As HG displaces more of its SNG product with renewable natural gas, the refinery will need to find an alternative use for this byproduct, which could include exporting off island or flaring, thereby potentially causing more carbon emissions. This is just one example of the complexities that need to be carefully studied.

Studying the placement of a mandate without fully understanding the feasibility of imposing such a requirement on a utility that operates far differently and is not a ubiquitous energy supplier as electric utilities denies our ratepayers and other stakeholders the opportunity for fair policy making. **We need to do the hard work and HG is willing to collaboratively work with the state and other interdependent energy stakeholders on a system-wide energy plan to help manage this transition to renewable energy without creating economic inequities and unintended consequences.**



Hawaii Gas has been serving customers throughout the state for 115 years. **HG represents less than 2% (two percent) of Hawaii’s energy demand and our facilities account for 1/3 of 1% of direct greenhouse gas emissions.** HG supports efforts to curb greenhouse gas emissions and has been doing just that. With committed projects to date, HG expects to have reduced the equivalent of over 100,000 barrels per year of imported oil to the state once fully implemented.

### Hawaii Energy Consumption Estimates, 2016

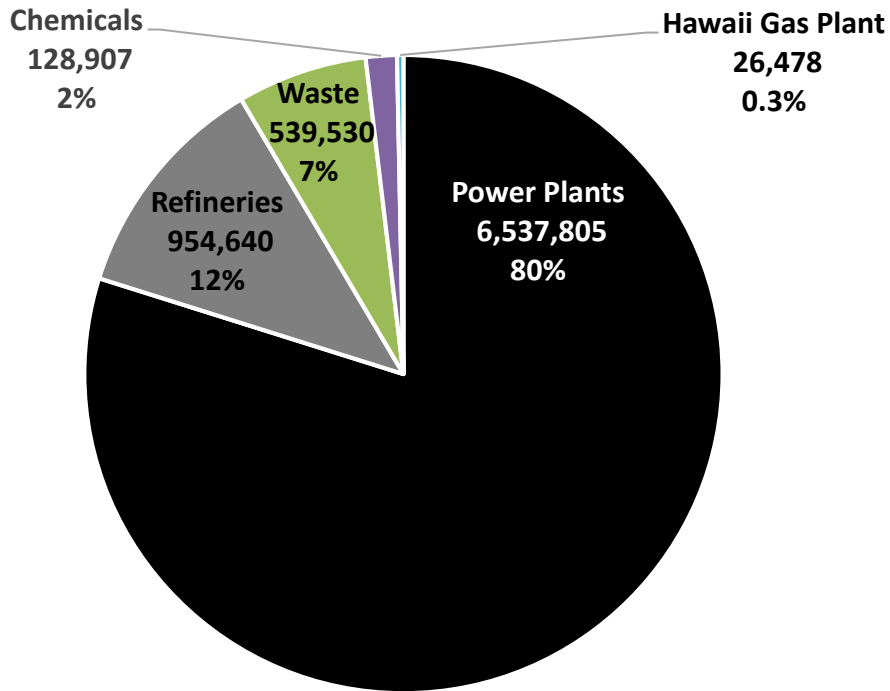


Source: Energy Information Administration, State Energy Data System

### Data

Last Update: January 17, 2019 | Next Update: February 21, 2019

**State of Hawaii - Direct Greenhouse Gas Emissions Reported by Sector in Metric Tons of CO<sub>2</sub>e**  
**Data Reported to EPA as of August 19, 2018**



**Hawaii Gas is forging ahead with its transition towards more renewable energy as evidenced by HG’s clean energy initiatives, including:**

- Recent dedication of the state’s first renewable natural gas production facility at the City and County’s Honouliuli Wastewater Treatment Plant in Ewa Beach;
- Dedication of Waihonu Solar Farm in Central Oahu in 2016, producing 6.5 MW of electricity to provide power to approximately 1,000 homes; and
- Production of hydrogen through the manufacturing of synthetic natural gas from naphtha and recycled wastewater from Honouliuli wastewater treatment plant

**It took over five years from conception to operation to develop the state’s first RNG production facility with the City and County of Honolulu due to issues such as procurement, regulatory approvals and technical requirements. We continue to explore future development of RNG from municipal waste facilities and landfills, however, with similar hurdles . Hawaii Gas is also pursuing the procurement of locally produced renewable natural gas, but there is currently no existing reliable source that can produce the scale necessary to service the energy needs of our entire state. Alternatively, to import a costly product creates issues such as ratepayer impacts, dependency on outside sources and reliability of sourcing.**



We welcome the opportunity for a study to consider the physical resource limitations, industry technical issues, lack of policy initiatives, competing state policy priorities and significant potential consequences to ratepayers that need to be considered before imposing mandates on a gas utility.

### Physical Resources Limitations

- Lack of Local Supply – Very limited developable biogas resources currently exist in Hawaii (from wastewater treatment plants and landfills). The vast majority of this gas resource is currently unavailable to HG. Other sources of biogas deployed in renewable gas projects globally (e.g., animal waste, crop waste, food waste diversion) – are inadequate or scarce in Hawaii<sup>1</sup>;
- Alternatively, producing local energy crops present issues with lack of land, water and farmers;
- **Any study needs to evaluate all of the potential waste sources that HG could use and develop policies for HG or independent producers to obtain access to these sources.**

### Policy Limitations and competing state initiatives

- Unlike other renewable energy technologies, renewable natural gas has limited federal and state incentives that would help offset capital cost projects and provide savings to customers;
- We encourage policy makers to create a master plan to balance the use of resources such as land and water rights for state priorities such as renewable energy, affordable housing and local food production;
- Other states, such as California realize that imposing an RPS on a gas utility is not prudent and instead have focused on creating financial incentives for biogas producers which supply renewable fuels to gas utilities (\$40 million allocated in 2018) and rate recovery regulations for distribution companies;
- Less than one percent of RNG developed in the U.S. Mainland is used by utility customers because there are few federal or state resources available to encourage RNG production. Over 99 percent of RNG projects in the Mainland exist for non-utility, transportation according to the Coalition For Renewable Natural Gas; the production of RNG for transportation is stimulated by federal incentives;
- Electric and gas utilities are different in fundamental ways. While the electric utilities have the flexibility to utilize different fuels for generation, different power producers with different fluctuating inputs and different power plants, gas utilities do not have the same flexibility by nature of the technology utilized.
- Existing Policy mandates are redundant to this proposed legislation and must be taken into account:
  - Senate Resolution 143, SD1 requesting DBEDT to report to the Legislature on How to Incorporate Renewable Fuels into the Hawaii Clean Energy Initiative

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<sup>1</sup> [https://www.americanbiogascouncil.org/State%20Profiles/ABCBiogasStateProfile\\_HI.pdf](https://www.americanbiogascouncil.org/State%20Profiles/ABCBiogasStateProfile_HI.pdf)



- Act 15 (2018)–Makes Hawaii carbon neutral by 2045 and establishes a Greenhouse Gas Sequestration Task Force – State Office of Planning - underway
- Act 16 (2018) Creates a Framework for Carbon Offset Program that allows for carbon credits through global carbon sequestration protocols – State Office of Planning - underway
- Businesses like HG mandated by regulatory policies to develop pathways to meet deadline in most economical and sustainable way for our customers

**Significant potential consequences to ratepayers if an RPS is imposed on the gas utility with no clear pathway to achieving the RPS**

- Nearly 48% of Hawaii households are struggling to make ends meet<sup>2</sup> or are living below the poverty level, an increase in utility costs will add financial burden for families;
- Renewable natural gas costs are higher than existing sources, and we must balance end costs to customers to keep rates affordable;
- Lack of financial incentives at the Federal and State levels portend continued high costs;
- Highly portable, disaster-resistant fuels such as natural gas and propane also play critical roles in shoring up homeowner resiliency and redundancies in the event of natural disasters. In 2018, HG assisted residents on Kauai’s North Shore recover from historic floods, as well as supported the displaced residents from Hawaii Island with natural gas and propane for cooking and water heating needs;
- Natural gas also played a major role in the recovery efforts in 1982 Hurricane Iwa and 1992 Hurricane Iniki
- We can learn from Puerto Rico’s Hurricane Maria recovery as they chart a pathway to integrate 100% renewable energy and build more resiliency into the island’s grid system. Power generation plans incorporate a percentage of natural gas to be integrated with solar, wind power and battery storage in various scenarios that permit the retirement of Puerto Rico’s coal-fired units.

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<sup>2</sup> <https://www.auw.org/sites/default/files/pictures/AUW-ALICE%20Fact%20Sheet%20FINAL.PDF>



HG supports a fair, unbiased, study to determine the feasibility and consequences of imposing a renewable gas portfolio standard on the gas utility within the state. However, we believe that establishing a clear understanding of the policy objectives first will lead to a better outcome for Hawaii and the community. In addition, because many of the existing policies are coordinated through DBEDT; and, primarily the Hawaii State Energy Office (HSEO), HG believes that it would be more efficient for the HSEO to lead this preliminary work.

Furthermore, we have concerns that the scope of this study described in HB 550 HD1 is much broader than the original purpose of HB 550. The study described in HB 550 HD1 goes beyond uses of gas for grid-connected electrical energy. The study includes all gas end uses, including HG's propane business, which is not regulated by the Hawaii Public Utilities Commission, so it is unclear the extent to which resultant recommendations could be implemented on that business.

**Because of these complexities, we support a well thought out process and study (such as described above) to support HG's efforts to include more cost-effective renewable natural gas into its fuel mix.**

Thank you for the opportunity to testify on HB 550 HD1.

Sincerely,

Jeannine A. Souki  
Director, Government Affairs and Communication

**TESTIMONY BEFORE THE  
HOUSE COMMITTEE ON FINANCE**

**H.B. No. 550, HD1**

**Relating to Renewable Energy**

Friday, February 22, 2019  
11:00 am, Agenda Item #29  
State Capitol, Conference Room 308

Chris Lau  
Manager, Corporate Energy Planning  
Hawaiian Electric Company, Inc.

Chair Luke, Vice Chair Cullen, and Members of the Committee,

My name is Chris Lau and I am testifying on behalf of Hawaiian Electric Company and its subsidiary utilities Maui Electric Company and Hawai'i Electric Light Company (collectively, the "Companies") in support of the intent of section 2 and in opposition to section 3 and of H.B. No. 550, HD1.

H.B. No. 550, HD1, Section 2 requires the Public Utilities Commission to study the feasibility of an RPS for the gas utilities. The RPS study will examine many issues including the ability of the gas utilities to achieve an RPS in a cost effective manner, how unregulated gas sales can transition to renewable energy sources, and interim renewable targets before 100% in 2045. The Companies support the intent of this part of the bill and offer the following comments for consideration:

- We suggest that a gas RPS of 100% by 2045 be adopted today to be consistent with State energy policy.
- We support the PUC study objective to examine incremental RPS targets prior to 2045 and suggest that the study further examine whether targets



that are consistent with the electric utility RPS for 2030 and 2040 are reasonable.

Hawaiian Electric Companies oppose section 3 of H.B. No. 550 H.D. 1, which proposes to changes the definition of RPS for electric utilities and increases the interim RPS targets in 2030 and 2040. Our concerns lie with the RPS target increases in 2030 from 40% to 65% and in 2040 from 70% to 85%. Such large increases in RPS requirements may be uneconomical as RPS achievement is driven by the market through distributed PV adoption and third party project development. At higher levels of RPS, reliably operating an electric system that is primarily composed of renewable resources will also require additional integration resources. The Companies understand that the 100% RPS in 2045 remains the long term goal to be achieved and appreciate the flexibility that the current RPS law provides in achieving this goal.

Accordingly, the Hawaiian Electric Companies oppose H.B. No. 550, HD1 in its current form. Thank you for this opportunity to testify.



# HAWAII TEAMSTERS AND ALLIED WORKERS, LOCAL 996

Affiliated with the International Brotherhood of Teamsters

1817 Hart Street  
Honolulu, Hawaii 96819-3205

Telephone: (808) 847-6633  
Fax: (808) 842-4575

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Testimony to the House Finance Committee

Friday, February 22, 2019 11 a.m.  
Conference Room 308, State Capitol

RE: HB 550 HD1 – Relating to Renewable Energy

Chair Luke, Vice Chair Cullen and Members of the House Finance Committee

The Hawaii Teamsters and Allied Workers, Local 996 stands in support of HB 550 HD1 with these comments.

We support a study in respect to the complexities of the gas utility related to electric generation. However, the scope of the study into unregulated utility businesses brings concern. Studies have shown RPS standards on electric utilities have increased utility and non-utility costs for consumers, and could consequently have the same negative effect on gas consumers. Furthermore, no other state has implemented RPS on gas utilities.

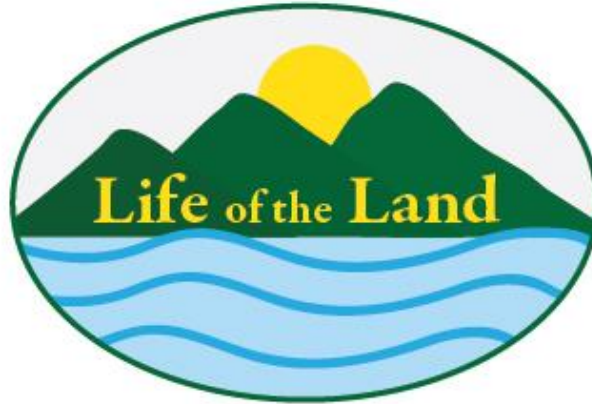
Gas based technologies have been an affordable, reliable, and resilient energy and plays a very small but vital role in Hawai'i. Gas utility provides less than 2% of energy in the state, and its facilities account for 3/10<sup>th</sup> of 1% of greenhouse emissions in Hawaii. Gas utility have shown efforts of procuring new sources of clean renewable energy with the use of methane from Honouliuli waste water treatment plant, and conversion of naphta (a waste product of petroleum) from the gas refinery, and converting these by-products into clean gas. If a study is to be considered, we ask the focus would be solely on its intended regulation on gas utilities related to electric generation, and not into the unregulated gas industry to avoid unintended rate increases for ratepayers.

If a study is not done, the utility should not be forced into any mandate which ignores the industry's complexity that would come with hefty costs lacking benefits to consumers at a time where majority of Hawai'i households face financial uncertainty.

Thank you for the opportunity to testify on HB 550 HD1

Sincerely,

Cody Sula  
Government Affairs Liaison  
Hawaii Teamsters and Allied Workers, Local 996



P.O. Box 37158, Honolulu, Hawai`i 96837-0158  
Phone: 927-0709 henry.lifeoftheland@gmail.com

COMMITTEE ON FINANCE  
Rep. Sylvia Luke, Chair  
Rep. Ty J.K. Cullen, Vice Chair

Friday, February 22, 2019  
TIME: 11:00 A.M.  
PLACE: Conference Room 308

HB 550, HD1 RELATING TO RENEWABLE ENERGY.

**SUPPORT**

Aloha Chair Luke, Vice Chair Cullen, and Members of the Finance Committee

Life of the Land is Hawai`i's own energy, environmental and community action group advocating for the people and `aina for 49 years. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

This bill in its current form is better than nothing but could be a lot better.

(A) The bill fixes the definition of Renewable Portfolio Standards

**Life of the Land's Question:** In the HECO-NextEra merger proceeding, Life of the Land filed an Information Request. "Does HECO believe that an RPS of 100 percent is the same thing as requiring all grid-based electricity to come from renewable energy resources?"

**HECO responded to LOL-IR-234 on June 15, 2015:** *“Suppose that sales are 100 GWh and that 35 GWh of those sales come from renewable energy and 65 GWh come from fossil fuels. Suppose further that behind the meter generation provides 80 GWh of energy directly to customers behind the meter and therefore is not recorded as sales. In this case*

*Total Renewable Electrical Energy = 35 GWh + 80 GWh = 115 GWh*

*Total Sales = 100 GWh*

*RPS percent = (115/100) X 100 = 115%”*

HECO was the second entity to recognize that our analysis was correct, that the current RPS definition manipulates the term “percentage”. The first was Gregg Kinkley, Deputy Attorney General for DBEDT, former Consumer Advocate, and former Commissioner on the Public Utilities Commission.

(B) There is still a problem with definitions

Burning coal and oil at H-POWER makes renewable electricity.

Renewable energy includes “Hydrogen produced from renewable energy sources” but biofuels made from any source are renewable. Biofuels used to exclude the portion made from fossil fuel, but the law was changed to lure ethanol companies to Hawai`i.

(C) The Gas Company owners are climate change deniers.

Life of the Land intervened in Gas Company proceedings before the Hawai`i Supreme Court. We asked questions about the availability of renewable fuels.

The Gas Company dodged question after question, refusing to document their statements that climate change is a hoax and that renewable fuels are unavailable. Our appeal is before the Hawai`i Supreme Court.

Hawai`i Gas (2019): There is no existing reliable source that can produce the scale necessary to entirely service the energy needs of our entire state. We respectfully oppose this legislation.<sup>1</sup>

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<sup>1</sup> [https://www.capitol.hawaii.gov/Session2019/Testimony/HB550\\_TESTIMONY\\_EEP\\_01-29-19\\_.PDF](https://www.capitol.hawaii.gov/Session2019/Testimony/HB550_TESTIMONY_EEP_01-29-19_.PDF)

Southern California Gas Company: “A new study shows that replacing less than 20 percent of the traditional gas supply with RNG captured from sources like dairies, wastewater treatment plants and landfills can achieve greenhouse gas (GHG) emissions reductions.”<sup>2</sup>

MarketWatch (2018): Pacific Gas and Electric Company (PG&E), and the national nonprofit organization Energy Vision, jointly hosted the free one-day conference, "The Power of Waste: Renewable Natural Gas (RNG) for California."<sup>3</sup>

Stanford University (2018): The 17,000 potential [Renewable Natural Gas] RNG production sites in the United States have the capacity to generate 8-12 million tons of methane equivalents annually, enough to power 3 million homes or displace 2.5 billion gasoline gallon equivalents (2% of US annual transportation energy demand). Managing and turning these emissions into a resource is not only essential but also economically viable.<sup>4</sup>

GE (2019): Natural gas is considered the transition fuel to a decarbonized future, but renewable gas—mainly hydrogen—is gaining attention as the way to reach 100 percent renewable energy.<sup>5</sup>

This bill proposes to study whether the Gas Company should reduce their fossil fuel and climate change footprints, and then for the PUC to require compliance in two-years.

We thank the previous committee for expanding the list of the groups that can “review” the study to be done by the UH “independent” entity that serves as a home for retired HECO engineers.

Life of the Land believes that any study should be done simultaneously to mandating the Gas Company get on board with state policy.

Mahalo

Henry Curtis  
Executive Director

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<sup>2</sup> <https://www.socalgas.com/smart-energy/renewable-gas/what-is-renewable-natural-gas>

<sup>3</sup> <https://www.marketwatch.com/press-release/renewable-natural-gas-leaders-to-share-expertise-on-developing-biogas-projects-at-power-of-waste-conference-2018-09-12>

<sup>4</sup> <https://stanford.app.box.com/s/6lfnipidxeouc4ix4rwg1xz7w0m8tdq>

<sup>5</sup> <https://www.ge.com/power/transform/article.transform.articles.2019.jan.a-carbon-free-future>



Healthy Climate  
Communities

## **Testimony in support of HB550**

### **HOUSE COMMITTEE ON FINANCE**

#### **Hearing Friday, February 22, 2019 11:00 a.m.**

Aloha Chair Luke, Vice Chair Cullen and Committee Members,

I am writing in strong support of HB550.

HB550 is about closing loopholes that prevent us from reaching State goals to have 100% renewable energy for power and to become carbon neutral. Currently the way renewable portfolio standards (RPS) are calculated inflates the reported percentage of renewable energy. Under the current RPS definition, Hawaii could achieve 100% while still producing power from imported, dirty coal.

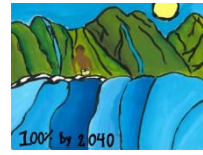
Another loophole is that the businesses selling gas are exempt from the RPS requirements. This is unfair to electric utilities and distorts economic decisions by clients. It also prevents the State from reaching its goals to have 100% renewable energy that will make our economy stronger, make us safer in the event of natural disasters, improve our air quality and slow the progress of climate change.

Please close these loopholes – 100% should be 100% and all fossil fuels should be treated equally.

Finally, accelerating the adoption of renewable energy will save us money, create local jobs, improve our air quality and health. With the costs of renewable energy falling more rapidly than foreseen, the targets should be adjusted accordingly.

Mahalo,

Dr. Lisa Marten  
Executive Director  
Healthy Climate Communities  
healthyclimate@hawaii.rr.com



## HOUSE COMMITTEE ON FINANCE

February 22, 2019, 11:00 A.M.

Room 308

(Testimony is 6 pages long)

### TESTIMONY IN SUPPORT OF HB 550 HD1

Aloha Chair Luke, Vice Chair Cullen, and Committee members:

Blue Planet Foundation **supports** HB 550 HD1, which directs the Public Utilities Commission to incentivize gas utilities to achieve 100% renewable sources by 2045 and increases the interim renewable portfolio standard (RPS) targets for electric utilities (for 2030 and 2040). ***We prefer, however, the original version of HB 550, which ensures that Hawaii's 100% goal actually means "100%" and extends the benefits of the RPS to include gas utilities.***

Passing the original version of HB 550 is essential for **accelerating progress** and ensuring **transparency, consistency, fairness, and consumer confidence** in Hawaii's 100% renewable energy target.

### THE SUCCESS AND IMPORTANCE OF THE RPS LAW

Hawaii's RPS law has been a resounding success. In 2015, the legislature set a vision for Hawaii's energy security, economic viability, and environmental protection by setting a target of 100% renewable energy by 2045. The 100% RPS law has since impacted the energy system exactly as intended, and is driving energy progress in the state. It has strengthened collaborations and fostered alignment on a variety of regulatory issues. With strong Public Utilities Commission guidance and oversight, Hawaii's 100% RPS is resulting in utility long-range plans that will achieve the mandate ahead of schedule, while simultaneously saving consumers billions of dollars compared to the fossil fuel status quo.

The 100% RPS has set market expectations. Hawaii is now securing 100% renewable energy projects, able to provide energy at any time of day or night, for a stable cost that is substantially less than the cost of fossil fuel.

In fact, earlier this month, Hawaiian Electric announced contracts for seven large solar and battery projects at record low prices, proving it is possible to generate clean electricity far cheaper than from fossil fuels.<sup>1</sup> The power from these projects will be as low as 8 cents per

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<sup>1</sup> See <https://www.hawaiianelectric.com/new-solar-plus-storage-projects-set-low-price-benchmark-for-renewable-energy-in-hawaii>

kilowatt-hour (kWh), with most coming in below 10 cents per kWh. Even the highest-priced project is substantially lower than the 15 cents per kWh average cost to produce electricity from fossil fuels.

By comparison, just a few years ago, Hawaii was considering importing liquefied natural gas (LNG)—another fossil fuel—to generate electricity for 15 to 20 cents per kWh.

## 100% RPS FOR GAS UTILITIES IS CRITICAL

The original draft of HB 550 wisely establishes a renewable portfolio standard requiring that 100% of gas sold by gas utility companies in the state be renewable by 2045. Expanding Hawaii's 100% RPS to apply to gas utility companies is a necessary next step if we hope to achieve our ambitious clean energy and climate targets—particularly meeting the commitment to the Paris Climate Agreement (Act 32 of 2017) and target of net carbon neutral by 2045 (Act 15 of 2018). **Simultaneously, the measure will fix the current unfairness in the energy market**, which requires electric utilities, but not gas utilities, to comply with a renewable portfolio standard. Without an RPS policy for gas, Hawaii could remain dependent on fossil fuels for decades and fail to achieve its critical climate goals.

Consumers sometimes confuse “natural gas” with renewable energy. As most commonly used, natural gas is “natural” in the same way that oil and coal are “natural.” **Natural gas is a fossil fuel.** It is not renewable, and it is inconsistent with a shift to 100% renewable energy.

Blue Planet applauds Hawaii Gas for its recent efforts to integrate small amounts of renewable natural gas (RNG) into its supply. In December 2018, Hawaii Gas launched its operations at the first renewable natural gas facility in the islands, capturing and processing biogas created during the process of treating wastewater at the Honouliuli Wastewater Treatment Plant on Oahu.<sup>2</sup> The plant is expected to produce 800,000 therms energy per year, which is equivalent to about 15,000 barrels of oil. Previously, this gas was flared (i.e. burned) at the plant. With this project, the City and County of Honolulu will now derive revenue by selling the gas, rather than wasting it, and bring RNG on Oahu to roughly 5% of the total gas supply. This is a remarkable win-win solution. Blue Planet Foundation strongly supports these efforts to transition to renewable gas.

Scaling this will require the development of additional renewable natural gas sources—particularly identifying new win-win solutions for local private and public entities, such as that developed with Honouliuli. These might include: wastewater treatment facilities, landfills, other waste sources, local crops, or renewable hydrogen. Suppliers in other locations may also become an option. In the continental U.S., Clean Energy Fuels Corp. is currently marketing a renewable natural gas product called “Redeem.” This is collected from various waste sources,

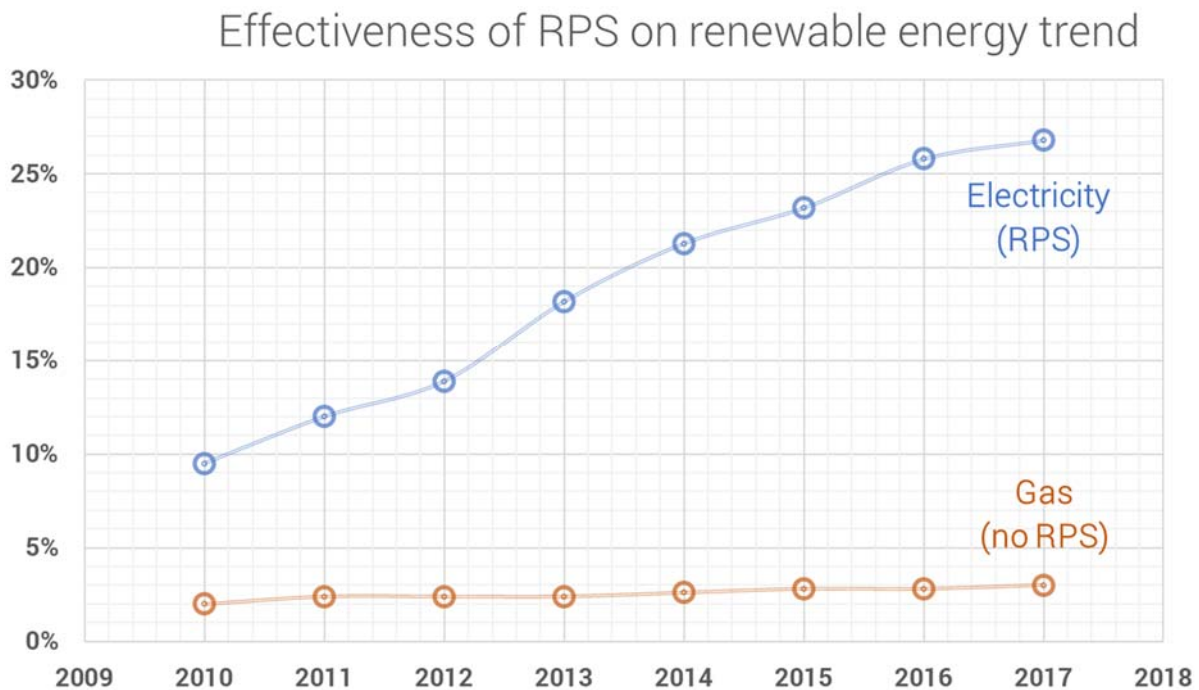
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<sup>2</sup> See <https://www.bizjournals.com/pacific/news/2018/12/20/hawaii-gas-completes-first-renewable-gas-facility.html>.



such as landfills and farms, and then distributed across the country via a natural gas pipeline system. It is presently used to fuel thousands of vehicles each day.

**It is clear, however, that renewable standards are required to ensure that Hawaii Gas continue to increase the amount of renewable gas in their system.** Despite promises over the past decade about increasing the use of renewable gas, the actual use of RNG has remained nearly flat. The chart below, using data from the statutorily required renewable energy annual reports,<sup>3</sup> compares the renewable progress made by the electric utility versus the gas utility. The electric utility has steadily increasing renewable goals set for by the RPS.



Hawaii Gas previously stated that they plan to “diversify our feed stock to include gas from renewable resources such as landfill gas and bio-methane, and other renewable sources, including animal fat and plant oils that are locally produced.”<sup>4</sup> A *Honolulu Advertiser* article from November 22, 2009 discussed the plans of the Gas Company (now dba Hawaii Gas) and its belief that integrating high amounts of local feedstock is a good business decision for the company and for customers. In 2009 testimony to the legislature on HB 1464, The Gas Company stated: “We are actively taking the necessary steps to increase the renewable content

<sup>3</sup> Renewable Energy Annual Reports filed with the Hawaii Public Utilities Commission, available at <http://puc.hawaii.gov/reports/energy-reports/>

<sup>4</sup> The Gas Company Testimony in Support of HB 1464 HD2, Relating to Energy Resources (Feb. 26, 2009), available at [http://www.capitol.hawaii.gov/session2009/testimony/HB1464\\_HD2\\_TESTIMONY\\_FIN\\_02-27-09\\_4\\_.pdf](http://www.capitol.hawaii.gov/session2009/testimony/HB1464_HD2_TESTIMONY_FIN_02-27-09_4_.pdf)

of our gas to 50 percent for the entire state within five years.”<sup>5</sup> These statements likely gave some comfort to lawmakers at the time that binding renewable energy targets for natural gas weren’t necessary. Unfortunately, we are seeing the effect of those decisions ten years later.

***A renewable portfolio standard for gas is necessary to ensure that Hawaii actually stays on track to achieve its critical clean energy and climate goals.***

Beyond using waste gas from sewage treatment and landfills, the gas utility has raised concerns about the viability, cost, and available volume of locally produced feedstock for renewable gas. While this may present real challenges, renewable natural gas is not the only option for the incumbent gas utility. Renewably produced hydrogen presents a perfect opportunity as a sustainable fuel—one with tremendous growth potential. Hydrogen—the most common element in the universe—will likely play a key role in our clean energy future, particularly in the transportation sector. Hydrogen can be used as a storage fuel, where hydrogen is created from geothermal, wind, or solar energy and stored (in pure gas, compressed, some chemical state, or through another medium) and used later in combustion or fuel cell applications.

Progressive gas companies around the globe are exploring the use of renewable hydrogen as a replacement for their natural gas sales. In Australia, Evoenergy and Canberra Institute of Technology are testing the direct conversion of natural gas infrastructure and pipelines to hydrogen.<sup>6</sup> In the United Kingdom, three natural gas distributors have detailed plans to convert the UK’s residential gas system to a hydrogen delivery system. UK firms Northern Gas Networks and Cadent, as well as Norwegian gas firm Equinor, suggested an initial roll-out of the program to 3.7 million homes and 400,000 businesses in Northern England could commence as soon as 2028.<sup>7</sup>

Establishing an RPS for gas in Hawaii will help foster the transition to low-carbon replacements for natural gas, and could help unlock a transformation to a hydrogen-based clean energy system for the state.

***In the interest of achieving our state’s critical clean energy and climate goals, robust state energy policy, fairness, and unlocking innovation, Blue Planet Foundation strongly supports establishing a gas RPS via HB 550.***

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<sup>5</sup> *Id.*

<sup>6</sup> Canberra Institute of Technology, “Nation’s first hydrogen test station at CIT Fyshwick,” December 4, 2018 ([https://cit.edu.au/news/hydrogen\\_test\\_station](https://cit.edu.au/news/hydrogen_test_station)).

<sup>7</sup> <https://arstechnica.com/science/2018/11/natural-gas-distributors-outline-proposal-to-convert-home-heating-to-hydrogen/>

## 100% MEANS 100%

The original version of HB 550 ensures “100%” means “100%” by making a needed correction to the RPS calculation. Currently, the state’s RPS calculation can provide utilities with “double credit” for some distributed energy sources, such as rooftop solar. This leads to the outcome that the calculated RPS can be greater than the actual percentage of renewable energy on Hawaii’s electric grids. The original version of HB 550 would revise the RPS accounting calculation to address this potential outcome.

To the credit of the Hawaiian Electric Companies, the most recent electric utility power supply plans appear to target a fully renewable system, even though a loophole in the RPS calculation improperly accounts for distributed energy generation. To illustrate, the forecasted Hawaiian Electric RPS for 2045 is as high as 183% (the maximum for a properly calculated renewable standard should be 100%). In short, this is because distributed energy resources, such as rooftop solar, impact the RPS calculation in a way that essentially provides a double credit.

While power supply planning to date has not been hampered by this faulty calculation, it nonetheless **creates uncertainty and lack of clarity for consumers**. This is a long-standing problematic feature of Hawaii’s energy targets. As an example, the circa-2008 clean energy initiative goal of 70% renewable energy was actually a 40% renewable energy goal, with a supporting energy efficiency goal of 30%. Consumers were endlessly confused by the reference to “70%.”

Fixing the RPS calculation is intended to avoid repeating that mistake. **100% renewable energy should mean 100% renewable energy.**

## ACCELERATING THE TRANSITION

The state is already on track to achieve the vision set by the legislature for renewable electricity, including both the near-term and long-term RPS requirements. But at least one recent study shows that accelerating the interim targets could be more cost-effective for Hawaii ratepayers than maintaining the trajectory for renewables under the current RPS law.<sup>8</sup>

Accelerating the transition to 100% renewable energy—as proposed in House Bill 550—is not only beneficial to Hawaii’s economy, it could be crucial for our planet. As the most recent special report from the United Nations Intergovernmental Panel on Climate Change (IPCC) concluded, avoiding climatic catastrophe will require transformative action at a pace and scale never seen before. The special report found that “there is no documented historic precedent” for government action of the kind needed to achieve climate stability.<sup>9</sup> As an island community, we

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<sup>8</sup> See Rhodium Group (commissioned by Elemental Excelsior), *Transcending Oil: Hawai‘i’s Pathway to a Clean Energy Economy* (2018), available at: <https://www.transcendingoil.com/>.

<sup>9</sup> See IPCC, *Special Report on Global Warming on 1.5°C*, available at: <https://www.ipcc.ch/sr15/>

feel this threat firsthand. We must continue to do our part to avoid the most devastating impacts of climate change.

As a state, we've committed to doing just that. Beyond the 100% RPS, the Hawaii Legislature committed to achieving the objectives set out in the Paris Climate Agreement (Act 32 of 2017) and adopted the goal to be net carbon neutral by 2045 (Act 15 of 2018). Meeting these ambitious targets will require courageous leadership and smart policies—like House Bill 550—that quickly move us past the status quo.

## CONCLUSION

Blue Planet Foundation strongly supports the original draft of HB 550 to help **accelerate Hawaii's clean energy progress, increase fairness across the energy sectors, and spur innovation and development in new, locally produced, renewable fuels**. This is an important measure for ensuring transparency, consistency, fairness, and consumer confidence in Hawaii's 100% renewable energy target.

We look forward to working with the legislature on this key policy.

Thank you for the opportunity to testify.



# Environmental Caucus

## The Democratic Party of Hawai'i

### HOUSE COMMITTEE ON FINANCE

February 22, 2019 11:00 a.m. Room 308

**SUPPORTS the intent of HB550 HD1:** Relating to Renewable Energy

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Aloha Chair Luke, Vice Chair Cullen, and Committee Members,

On behalf of the Environmental Caucus of the Democratic Party of Hawai'i (ECDPH), we **support the intent of HB550 HD1**, relating to renewable energy and kindly request the original language be restored to this important bill.

The original language of this bill sought to rectify the overestimation of the amount of renewable energy serving Hawai'i's electric utility customers and to hold the gas utility to a higher standard that mirrors the electric utility's commitment to transition to clean energy. The gas utility should not have a lower standard than the electric utility. The extraction of natural gas releases greenhouse gases such as methane, which is roughly 30 times more potent as a heat-trapping gas than carbon dioxide. If left untouched by the same renewable portfolio standard that applies to the electric utility, the original purpose of the 100% RPS remains misaligned. We know that the legislature intends to support a clean energy future, so the RPS should apply equitably to all sectors of power generation. *All utilities should be held to the same standards and commitments to effectively transition to 100% renewable energy by 2045.*

Climate change and efforts to mitigate its effects is the single most pressing issue of our time. There is no question that we must address climate change posthaste. With the recent Intergovernmental Panel on Climate Change (IPCC) special report (2018) there is clear consensus among scientists globally that we must limit global warming to 1.5 degrees Celsius to avoid catastrophic and irreversible effects that would impact all of humankind. To reach this goal, we must cut global anthropogenic carbon emissions in half by 2030 and reach net zero emissions by mid-century. It is evident that "rapid and

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# Environmental Caucus

## The Democratic Party of Hawai'i

far-reaching transitions in energy, land, urban and infrastructure, and industrial systems (IPCC SR 2018)” are necessary.

Mahalo for the opportunity to testify **supporting the intent of HB550 HD1.**

Kimiko LaHaela Walter

Interim Chair, Energy and Climate Change Subject Committee, Environmental Caucus of the Democratic Party of Hawai'i

State Central Committee Representative, Environmental Caucus of the Democratic Party of Hawai'i



Email: [communications@ulupono.com](mailto:communications@ulupono.com)

HOUSE COMMITTEE ON FINANCE  
Friday, February 22, 2019 — 11:00 a.m. — Room 308

**Ulupono Initiative Supports HB 550 HD 1, Relating to Renewable Energy**

Dear Chair Luke, Vice Chair Cullen, and Members of the Committee:

My name is Murray Clay and I am Managing Partner of the Ulupono Initiative, a Hawai'i-based impact investment firm that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally produced food; increase affordable, clean, renewable energy; and better manage waste and fresh water resources. Ulupono believes that self-sufficiency is essential to our future prosperity and will help shape a future where economic progress and mission-focused impact can work hand in hand.

**Ulupono supports HB 550 HD 1**, which amends the definition of “renewable portfolio standard” to more accurately reflect the percentage of renewable energy use in the State, because it aligns with our goal of increasing the production of clean, renewable energy in Hawai'i.

Under the current definition, the double counting of renewable distributed energy resources by using “sales” instead of “generation” in the denominator results in the RPS that overstates our actual progress. For the 2020 goal of 30 percent, the actual renewable generation as a percentage of total generation is approximately 25 percent. Similarly, for the 2030 RPS goal of 40 percent, the actual renewable generation is 28 percent.

In addition, by requiring all grid connected electric utility generation to be 100% renewable by 2045, the Legislature is addressing grid connected cogeneration, which closes that loophole. Furthermore, the electric utilities can use this language in the justification for approving or denying interconnections to new generation units that use fossil fuel energy.

As Hawai'i's energy issues become increasingly complex and challenging, we appreciate this committee's efforts to look at policies that support renewable energy production.

Thank you for this opportunity to testify.

Respectfully,

Murray Clay  
Managing Partner

*Investing in a Sustainable Hawai'i*



# ELEMENTAL EXCELERATOR

**Written Statement of Elemental Excelerator  
before the House Committee on Finance  
Friday, February 22, 2019**

**In consideration of [HB 550 HD1](#)  
RELATING TO RENEWABLE ENERGY**

**Aloha Chair Luke, Vice-Chair Cullen, and Members of House Committee on Finance:**

Elemental Excelerator respectfully **submits our support with comments** on HB 550 HD1, which:

1. Amends the renewable portfolio standard interim goals for 2030 and 2040 to accelerate the adoption of renewable energy.
2. Appropriates funds.

Elemental Excelerator is a Honolulu-based growth accelerator program founded and operating in Hawai'i. We have awarded over \$30 million to 82 companies resulting in 56 demonstration projects in Hawai'i & Asia Pacific. Each year, we evaluate over 500 companies and look for innovative entrepreneurs from around the world to come to Hawai'i and find transformative solutions to help us achieve our 100% clean energy goals and solve our most pressing environmental problems. We select 15-20 companies annually that best fit our mission and fund each company up to \$1 million.

In April 2018, Elemental Excelerator commissioned a study entitled *Transcending Oil: Hawai'i's Path to a Clean Energy Economy*. The study found that in Hawai'i, transitioning to renewable energy is cheaper than sticking with oil. The faster we go, the cheaper it will be. Our clean energy goals and accelerated targets necessitate leadership across state and local government, private institutions, and community organizations, and requires early and frequent community engagement.

**We support HB 550 HD1 because of the following reasons:**

1. **It is more cost-effective:** Transcending Oil found that renewables are more cost effective and the most cost-effective path will lead us to up to 84% renewable energy by 2030 and up to 95% by 2040.<sup>1</sup> Updating interim targets for the RPS from 40% to 65% by 2030 and from 70% to 85% by 2040 tails the projected cost effective path and lies conservatively within Hawaiian Electric Companies' Power Supply Improvement Plan, which states that "*under multiple longer-term scenarios, our RPS can be at least 72 percent by 2030 and reach at least 100 percent by 2040, ahead of the 2045 deadline.*"<sup>2</sup>

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<sup>1</sup> Larsen, J., Mohan, S., Herndon, W., Marsters, P., & Pitt, H. (2018, May 01). Transcending Oil: Hawai'i's Path to a Clean Energy Economy, p.22, Retrieved from <https://rhg.com/research/transcending-oil-hawaiis-path-to-a-clean-energy-economy/>

<sup>2</sup> Hawaiian Electric Companies' 2016 Power Supply Improvement Plan (PSIP). (2016, December). Retrieved from [https://www.hawaiianelectric.com/documents/clean\\_energy\\_hawaii/grid\\_modernization/psip\\_executive\\_summary\\_20161223.pdf](https://www.hawaiianelectric.com/documents/clean_energy_hawaii/grid_modernization/psip_executive_summary_20161223.pdf)



- 2. It will enhance our economy:** Compared to meeting the current RPS of 40% renewable energy by 2030, Transcending Oil found that advancing targets to 84% by 2030 create up to 3,500 additional jobs per year that pay \$3-7 more per hour than Hawai'i's \$20 median wage and drive nearly \$2.8 billion in additional investment by accelerating its clean energy transformation.<sup>3</sup>

Mahalo for the opportunity to provide testimony on this legislation.

Sincerely,



Aki Marceau  
Managing Director, Policy & Community - Hawai'i

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<sup>3</sup> Transcending Oil, p.3.



To: The House Committee on Finance  
From: Brodie Lockard, Hawaii State Climate Lead, Organizing for Action  
Date: Friday, February 22, 2019, 11:00 am

### **In strong support of HB 550 HD1**

Dear FIN Chair Luke, Vice Chair Cullen, and Committee Members—

Organizing for Action strongly supports HB 550 HD1, ***with its original language restored.***

OFA implores you to restore the original intent of HB 550 and establish an RPS for the gas utility. We must move away from dirty fossil fuels, especially climate destroying LNG, ***without delay.*** Hawaii Gas knows well that their current business model cannot meet the RPS Hawaii needs to reach zero-emission energy, and a study is a complete waste of time. Their model needs to change, and that is not the PUC's problem nor the legislature's problem. It's Hawaii Gas's problem, and they need to be pushed with an RPS, not a senseless study.

November's UN IPCC report says that governments ***at all levels*** around the world must take “rapid, far-reaching and unprecedented changes in all aspects of society” to avoid catastrophic levels of global warming. It says the planet will reach the crucial threshold of 1.5 degrees Celsius above pre-industrial levels as early as 2030, precipitating the risk of extreme drought, wildfires, floods and food shortages for hundreds of millions of people. We cannot wait 27 years to achieve our 100% renewable energy goal. We must act now with the urgency of war to fight climate change and accelerate our actions, setting a target of no later than 2030 for fully zero-emission energy.

So in addition to reinstating the language to establish an RPS for the gas utility, HB 550 should be amended to accelerate the target for utilities to achieve zero-emissions energy by 2030, as is already being proposed nationally in the Green New Deal. 2045 is far too late. We can and must do better.

Natural gas has no place in Hawaii's clean energy future and makes our dependence on imported, dirty fossil fuels worse. Using less (or none) of it would also send a message to suppliers that it's high time they get out of their destructive business and focus on clean energy instead.

We're depending on you to lead us quickly to a zero-emission future, where natural gas has no role. Who will do it if not you?

Thank you for the opportunity to testify.

Brodie Lockard  
Hawaii State Climate Lead, Organizing for Action



To: The House Committee on Finance  
From: Sherry Pollack, 350Hawaii.org  
Date: Friday, 2/22/19

### **In opposition of HB550 HD1**

Aloha Chair Luke, Vice Chair Cullen, and Committee members,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. On behalf of our 6,000 members and supporters, 350Hawaii.org regretfully must **oppose HB550 HD1 in its current amended form.**

The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

But the amended version of this bill has seriously harmed the original intent of this legislation. Instead of doing what is needed to meaningfully address lifecycle greenhouse gas emissions that are destroying our climate by ensuring the gas utility is included in the RPS, the amended version of this bill only calls for a feasibility study to be conducted.

If Hawaii Gas was a good neighbor company, they would have done their own feasibility study long ago. We are passed that now. We already know what we need to do. The UN IPCC report says we have 10 years to drastically reduce greenhouse gas emissions to avoid Climate Hell. We must transition away from dirty fossil fuels, especially the climate-destroying LNG that Hawaii Gas uses, without delay.

Unless this bill is restored to its original language and intent, this bill should be opposed. A study only serves to waste our time and money, while it tragically squanders a livable future for our children as the sea level rises and the climate system, our life-support system, is further destroyed.

Greta Thunberg, a 15-year-old climate activist, who called on world leaders at the UN Climate Change Conference to do more, stated “You say you love your children above all else and yet you are stealing their future in front of their very eyes. Until you start focusing on what needs to be done rather than what is politically possible, there is no hope.”

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 in its current form.

Thank you for the opportunity to testify in opposition to what was originally a very important bill for the climate.

Sherry Pollack  
Co-Founder, 350Hawaii.org

**HB-550-HD-1**

Submitted on: 2/21/2019 2:15:13 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
tia pearson	350 Hawaii	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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Unless this bill is restored to its original language and intent, this bill should be opposed. A study only serves to waste our time and money, while it tragically squanders a livable future for our children as the sea level rises and the climate system, our life-support system, is further destroyed.

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 in its current form.

**HB-550-HD-1**

Submitted on: 2/21/2019 4:10:14 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
pamela burrell	apollo kauai	Oppose	No

Comments:

Aloha Honorable House Members,

I ask that the committee OPPOSE HB550 HD unless this bill is restored to its original language. The amended version of this bill has seriously revervsed the oringinal intent of this legislation.

Please. climate disruption is accelerating before our eyes.

Regards,

Pamela Burrell, Co-chair Apollo Kaua'i

Kalihiwai, Kaua'i

**HB-550-HD-1**

Submitted on: 2/21/2019 2:43:40 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Janet Graham	350.org	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

But the amended version of this bill has seriously harmed the original intent of this legislation. Instead of doing what is needed to meaningfully address lifecycle greenhouse gas emissions that are destroying our climate by ensuring the gas utility is included in the RPS, the amended version of this bill only calls for a feasibility study to be conducted.

If Hawaii Gas was a good neighbor company, they would have done their own feasibility study long ago. We are passed that now. We already know what we need to do. The UN IPCC report says we have 10 years to drastically reduce greenhouse gas emissions to avoid Climate Hell. We must transition away from dirty fossil fuels, especially the climate-destroying LNG that Hawaii Gas uses, without delay.

Unless this bill is restored to its original language and intent, this bill should be opposed. A study only serves to waste our time and money, while it tragically squanders a livable future for our children as the sea level rises and the climate system, our life-support system, is further destroyed.

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 it in its current form.

**HB-550-HD-1**

Submitted on: 2/20/2019 10:01:44 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Nanea Lo	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 it in its current form.



**HB-550-HD-1**

Submitted on: 2/20/2019 10:05:14 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
sherri carden	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/20/2019 3:07:45 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Brijit Reis	Individual	Support	No

Comments:

Aloha Chair Luke, Vice Chair Cullen and Committee Members,

We have a law mandating 100% renewable energy by 2045 to stop the flow of money out of our State to pay for fossil fuels, create jobs, clean the air and slow climate change. Right now solar rooftops are double-counted and the calculations are wrong. Also, gas has no requirements on it at all which is unfair and distorts economic decisions. Finally, given how much cheaper large solar farms have become than imported oil, our State will save money and reap more benefits if the benchmarks are updated to speed the transition.

Mahalo, Dr. Brit Reis

**HB-550-HD-1**

Submitted on: 2/20/2019 3:04:10 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Debbie Schatz	Individual	Support	No

Comments:

I request that you pass HB550.

We have a law mandating 100% renewable energy by 2045 to stop the flow of money out of our State to pay for fossil fuels, create jobs, clean the air and slow climate change. Right now solar rooftops are double-counted and the calculations are wrong. Also, gas has no requirements on it at all which is unfair and distorts economic decisions. Finally, given how much cheaper large solar farms have become than imported oil, our State will save money and reap more benefits if the benchmarks are updated to speed the transition.

Acting now will still take time for systems to be in a place that secures success. ACT NOW!

**HB-550-HD-1**

Submitted on: 2/20/2019 3:15:27 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
stephanie frazier	Individual	Support	No

Comments:

I strongly support and ask you to pass HB550. The transition to 100% renewable energy will save us money, create local jobs and make our energy supply more secure. To maximize these benefits we need this bill to fix the map so that 100% actually means 100%. We also need to close the loop hole for the gas industry. Finally, given how much cheaper renewable energy has become then imported oil, we will save money if we move the timeline up.

Mahalo, Stephanie Frazier

Kailua

**HB-550-HD-1**

Submitted on: 2/20/2019 3:11:31 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Karen Simmons	Individual	Support	No

Comments:

Dear Chair Luke, Vice-Chair Cullen and Committee Members,

I support and ask you to pass HB550. We have a law mandating 100% renewable energy by 2045 to stop the flow of money out of our State to pay for fossil fuels, create jobs, clean the air and slow climate change. Right now solar rooftops are double-counted and the calculations are wrong. Also, gas has no requirements on it at all which is unfair and distorts economic decisions. Finally, given how much cheaper large solar farms have become than imported oil, our State will save money and reap more benefits if the benchmarks are updated to speed the transition.

Thank you for your consideration,

Karen Simmons

**HB-550-HD-1**

Submitted on: 2/20/2019 10:16:36 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Avi Okin	Individual	Oppose	No

Comments:

I support the original version of HB550, not the corrupted one that is HB550HD1 as slanted to give fossil fuel companies a break. They do not need one and we, as people, need to move rapidly towards renewal energy only.

Mahalo.

**HB-550-HD-1**

Submitted on: 2/20/2019 10:55:36 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
william digiorgio	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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If Hawaii Gas was a good neighbor company, they would have done their own feasibility study long ago. We are passed that now. We already know what we need to do. The UN IPCC report says we have 10 years to drastically reduce greenhouse gas emissions to avoid Climate Hell. We must transition away from dirty fossil fuels, especially the climate-destroying LNG that Hawaii Gas uses, without delay.

Unless this bill is restored to its original language and intent, this bill should be opposed. A study only serves to waste our time and money, while it tragically squanders a livable future for our children as the sea level rises and the climate system, our life-support system, is further destroyed.

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 in its current form.





**HB-550-HD-1**

Submitted on: 2/20/2019 11:14:37 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Margaret Russo	Individual	Oppose	No

Comments:

I oppose HB550. I support renewable energy. I'm beginning the transition away from fossil fuels in my personal life. It isn't easy and it isn't cheap. But it is necessary so my kids and future grandkids have a livable planet, our only home.

Our house has a photovoltaic system and battery storage with grid tie-in. My family is transitioning away from reliance on the grid and propane. When our gas water heater and stove wear out, we'll say "aloha 'oe iÄ• Hawai'i Gas!" The State of Hawai'i needs to do the same—we must transition quickly to renewable energy production and storage.

Look, I'm sacrificing to transition to renewables that won't break even for 11.5 years. But it is worth it to leave a livable planet for our mo'opuna, our grandkids! There's also the satisfaction of getting only a ~\$26.00 bill from HELCO each month. The State of Hawai'i and Hawai'i Gas need to get on board with rapid transition to renewables, too!

**HB-550-HD-1**

Submitted on: 2/20/2019 11:20:58 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Tadia Rice	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/20/2019 11:37:55 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Jonathan Boyne	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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**HB-550-HD-1**

Submitted on: 2/21/2019 2:08:14 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Kanani Kai	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 6:28:20 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Randy Ching	Individual	Oppose	No

Comments:

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

Please hold HB550 HD1. Natural gas is a fossil fuel. We need to keep ALL fossil fuels in the ground. Most especially since most natural gas produced in the U.S. is now fracked -- one of the most destructive and greenhouse gas producing methods ever developed. Methane leaks from these natural gas wells and methane is extraordinarily effective at trapping heat in the atmosphere.

Over the time frame of a decade, methane is over 80 times more powerful a greenhouse gas than CO2. We cannot afford to use natural gas. The IPCC and the NCA4 both agree that we have about a decade to reduce fossil fuel use by 75 - 80%. Please help Hawaii go 100% renewable -- solar, wind, ocean + battery storage.

Again, please do not pass HB550 HD1. Mahalo for your consideration.

Randy Ching (Honolulu)

**HB-550-HD-1**

Submitted on: 2/21/2019 7:57:12 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Lois Crozer	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 8:05:29 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
John NAYLOR	Individual	Oppose	No

Comments:

Aloha,

We must get off fracked gas! Please educate yourselves re communities on the mainland where the actual fracking occurs.. Drinking water is contaminated and earthquakes have increased exponentially to name some of the most dramatic effects

. Obviously, here in Hawaii the burning of these fossil fuel also pumps carbon into the atmosphere.... An atmosphere we all share everywhere!

Please do not support this bill as written even though it does move in the right direction. Do not support fracking anywhere!

Mahalo,

John Naylor      Makawao

**HB-550-HD-1**

Submitted on: 2/21/2019 8:14:16 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Andrea Nandoskar	Individual	Oppose	No

Comments:

Please restore the original language of HB550 or oppose HB550 HD1 it in its current form. Mahalo for your consideration.



**HB-550-HD-1**

Submitted on: 2/21/2019 8:29:48 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Joy Silver	Individual	Oppose	No

Comments:

I strongly oppose this bill.

**HB-550-HD-1**

Submitted on: 2/21/2019 8:31:12 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Robert Culbertson	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

But the amended version of this bill has seriously harmed the original intent of this legislation. Instead of doing what is needed to meaningfully address lifecycle greenhouse gas emissions that are destroying our climate by ensuring the gas utility is included in the RPS, the amended version of this bill only calls for a feasibility study to be conducted.

If Hawaii Gas was a good neighbor company, they would have done their own feasibility study long ago. We are passed that now. We already know what we need to do. The UN IPCC report says we have 10 years to drastically reduce greenhouse gas emissions to avoid Climate Hell. We must transition away from dirty fossil fuels, especially the climate-destroying LNG that Hawaii Gas uses, without delay.

Unless this bill is restored to its original language and intent, this bill should be opposed. A study only serves to waste our time and money, while it tragically squanders a livable future for our children as the sea level rises and the climate system, our life-support system, is further destroyed.

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 it in its current form.

**HB-550-HD-1**

Submitted on: 2/21/2019 8:36:08 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jordan Moniuszko	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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**HB-550-HD-1**

Submitted on: 2/21/2019 8:58:35 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
sharon Levine	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 in its current form.

Thank you,

Sharon Levine

Waianae, Hawaii

**HB-550-HD-1**

Submitted on: 2/21/2019 9:26:52 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
ChristopherMcCullough	Individual	Oppose	No

Comments:

**Subject: Public Testimony; HB 550**

Submitted: Thursday, February 21, 2019

To whom it may concern,

It is easy to understand and support the opening premise of this bill (HB550), until the reader reaches SECTION 2, Chapter 269, and the details of how HB550 will amend the current law governing the state's Renewable Portfolio Standards.

**First**, the entire premise of the bill is flawed, for it is impossible for Hawaii Gas in its mission to sell fossil fuels to be an effective partner in Hawaii's RPS goals and transition to a clean energy economy, designed to eliminate fossil fuels from the state's energy mix.

**Second**, Section 2 Chapter 269 (3) seeks to use taxpayer and ratepayer funding through so-called "public utilities special fund" and to apply monies toward an ill-conceived objective that somehow Hawaii's Gas utility will be somehow shoehorned into the current RPS compliance goals, while continuing to sell and distribute natural gas and other fossil fuels products in Hawaii.

**Third**, Section 2 Chapter 269 (3)(C)(i) calls for the identification of renewable alternatives, such as the procurement and importation of biogas. This mandate fails on several fronts, specifically, the importation of biogas, which runs contrary to the state's RPS transition to locally produced clean energy independence, or that biogas qualifies as a clean energy (zero emissions) energy substitute.

**Fourth**, Section 2 Chapter 269 (3)(D) Unregulated gas sales and what requirements are needed for the transition of gas that is unregulated to a renewable energy source Once again, and throughout the false of premise of this HB 550, is the idea that a fossil fuel with the greenhouse gas emissions half that of burning the dirtiest fuel available today, coal, can somehow be considered a clean or renewable energy fuel source, regardless of its application within Hawaii's energy mix.

**Fifth**, HB 550 goes onto state... "The legislature is concerned that requiring electric utilities but not gas utilities to increase their reliance on renewable energy creates an unfair playing field that may unintentionally harm consumers by promoting suboptimal long-lived investments in fossil fuels through gas-fired distributed electrical generation."

HB550 is designed to address one thing; above all, that is the preservation of Hawaii Gas and its fossil fuel based business model.

A much more effective means of addressing the state's current 2045 RPS goals, and needed reform that addresses all energy stakeholders: **First, vote NO on HB 550**, and then propose and put forward for full legislative consideration a statewide carbon tax which rewards "zero emissions" energy production and its public consumption.

Sincerely,

Bill Bugbee  
<https://www.beyondkona.com/>



**HB-550-HD-1**

Submitted on: 2/21/2019 11:26:12 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Sara DiGrazia	Individual	Oppose	No

Comments:

Dear Committee,

My daughter and I (age 11) are writing in opposition to the revised HB550: HB550 HD1. We support all measures which immediately work toward 100% renewable energy for Hawai'i. This amended bill no longer does so. Please restore the original language of HB550 or oppose HB550 HD1.

Thank you,

Sara DiGrazia

and Mesina DiGrazia-Roberts

**HB-550-HD-1**

Submitted on: 2/21/2019 11:35:25 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
James Tolley	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 in its current form.



**HB-550-HD-1**

Submitted on: 2/21/2019 11:41:06 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Dale Jensen	Individual	Oppose	No

Comments:

Dear Committee Members:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

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Sincerely,

Dale Jensen, Prof. Engineer, Kailua

**HB-550-HD-1**

Submitted on: 2/21/2019 12:43:25 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
donald erway	Individual	Oppose	No

Comments:

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**HB-550-HD-1**

Submitted on: 2/21/2019 1:11:02 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
christine trecker	Individual	Oppose	No

Comments:

HB550 HD1 is a far cry from the original bill to include the gas utility in our renewable portfolio standards. If we are to achieve our critically important 100% renewable energy goals, we must take bold steps to rein in the use of LNG today. A renewable gas portfolio standards feasibility study, as proposed in HB550 HD1, is not good enough!

Thank you.

**HB-550-HD-1**

Submitted on: 2/21/2019 1:15:38 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Christopher Hall	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 1:28:48 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jeremy Garrett	Individual	Oppose	No

Comments:

I previously submitted support for this measure, however the amended version seems to undermine the original purpose of the measure. Allowing Hawaii gas to continue to import a fossil fuel (i.e. LNG), is counterproductive to the states stated goal of 100% renewable energy. Please reject this legislation.



**HB-550-HD-1**

Submitted on: 2/21/2019 1:32:01 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Zoe Williams	Individual	Oppose	No

Comments:

Emergency responders, DHS, and our Departments of Emergency Management all agree; we need firm energy sources for resiliency (when the lights go out, the gas stays on) and as a bridge to our renewable future.

Gas energy is significantly cleaner than the 80% petroleum made electricity in our state and needs to be an important part of that bridge.

If we eliminate gas, no mo tiki torches :-(

**HB-550-HD-1**

Submitted on: 2/21/2019 1:22:15 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Mustafa Demirbag	Individual	Oppose	No

Comments:

We have to make sure we have diverse energy sources available in Hawaii. Gas is a very good option. It is very clean and resilient.

**HB-550-HD-1**

Submitted on: 2/21/2019 1:32:50 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Severine Busquet	Individual	Oppose	No

Comments:

Hi:

HB550 HD1 does make some fixes to the RPS including some modest attempts to move up the targets for achieving 100% renewable energy for the electric utility. But by allowing Hawaii Gas, a company on record as being a climate denier, to continue to expand their use of climate-destroying fracked LNG, we are stealing our childrens future.

For these simple reasons I strongly oppose HB550 HD1.

Thanks for your attention

Severine

**HB-550-HD-1**

Submitted on: 2/21/2019 1:33:50 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jason Lau	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 1:51:42 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Lei Kamaka	Individual	Oppose	No

Comments:

Gas is a cheaper alternative & a CLEAN engery source. We should be able to choose what evergy source to use instead of being FORCED to use only electric/solar.

**HB-550-HD-1**

Submitted on: 2/21/2019 1:48:58 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jared Pasalo	Individual	Oppose	No

Comments:

Hawaii needs diversified energy sources to ensure economic sustainability and give consumers the ability to choose different energy sources and not monopoly electric only. Gas is more reliable in emergency situations like hurricanes and blackouts.

**HB-550-HD-1**

Submitted on: 2/21/2019 1:43:33 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Nadine Ferraro	Individual	Oppose	No

Comments:

RE: HB550 HD1

Relating to renewable energy, I strongly feel, I believe, I know that we need to move away from fossil fuels like LNG. No study is needed. I respectfully ask that the original language of HB550 be restored; or, current language be opposed.

Thank you.

Nadine Ferraro

**HB-550-HD-1**

Submitted on: 2/21/2019 1:34:36 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Derwin Chu	Individual	Oppose	No

Comments:



**HB-550-HD-1**

Submitted on: 2/21/2019 1:34:38 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Fancy Lau	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 2:01:44 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
John M. Matsunaga	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 2:13:52 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
John Penner	Individual	Oppose	No

Comments:

The current bill imposes un-fair competitive and financial burdens on the gas utilities. Gas is a clean and viable alternative fuel, solar systems and other renewable systems and there longevity and overall cost to the consumer are not proven to be reliable where gas has Been around for over 100 years and has been reliable and clean energy that consumers like myself trust and rely on. There are many uses that gas allows the consumer to use that will not impact there finances like solar systems do and during natural disasters or power outages gas has proven the leader in maintaining a source for cooking and hot water and power generation when the electricity goes out. Unless you have battery back up for solar your solar will not work in a power outage situation and for the vast majority of people who have these expensive systems they will not be able to utilize them and the government should not be able to force an industry or idea on the consumer because they want to achieve a status or get votes, renewables are a good idea to help cut back on things but we are nowhere near ready for everything to be completely renewable and we should Have the freedom of Choice with no special process when choosing how or what kind of appliances we choose to buy and use or which energy we would be forced to use. The islands already have a high cost of living and we need to help keep things affordable and this bill does not help that cause. Gas is a very clean and reliable energy it needs to be given the same respect as solar and wind it is in abundance and doesn't require high cost to deliver to the customer and the use is endless we already have infrastructure and the ability to obtain the product and use it in any situation for example normal day to day use or the ability to have some sort of normal ability during or after a natural disaster. Please take this in to consideration when discussing this and be honest with yourself could you survive after an earthquake or hurricane on solar alone and would you be able to live a normal life after such an event in just renewables how would Oahu look in that situation with no power grid and the panels on your roof you couldn't use until the grid was repaired. With gas you can cook and take a bath nd run a generator and get your basic needs taken care of without relying on the grid. Thank you for allowing me to testify

John P

**HB-550-HD-1**

Submitted on: 2/21/2019 2:16:32 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Stanford Klask	Individual	Oppose	No

Comments:

I oppose bill HB 550HD1

We can't put all our eggs in one basket. We need more diversity for clean energy sources in hAWAII.

**HB-550-HD-1**

Submitted on: 2/21/2019 2:22:08 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Robyn Ford	Individual	Oppose	No

Comments:

Aloha,

As a resident in the state of Hawaii all my life, I truly believe that the gas utilities should have the same renewable portfolio standards as the electric utilities because gas is a clean, resilient and a more cost effective energy source. And I also strongly believe that putting Hawaii Gas's unregulated propane business under terms of the renewable portfolio standards will put them in a unfair disadvantage to compete in the business market with other distributors because of the regulatory control. We need a diversity of energy sources to ensure economic sustainability for Hawaii's future.

Mahalo,

Robyn Ford

**HB-550-HD-1**

Submitted on: 2/21/2019 2:28:47 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Antonio Prietto	Individual	Oppose	No

Comments:

First, as a former Landfill Gas Engineer, I have sense as to how much landfill and sewage plant gas would be required for our gas utility to go 100% renewable. And did you know landfill gas has a limited life. Before we force this type of legislation onto the State of Hawaii, I encourage our lawmakers to at least assemble a portfolio all the possible sites for renewable gas and the probability of those projects becoming feasible, including the cost effectiveness. Let's first determine if there is enough renewable gas to meet our state's need. Do our legislators even know how much renewable fuel is required?

Second, at my home I use propane (LPG) not synthetic natural gas as served in Honolulu proper. To my knowledge, there is no renewable gas technology, that would replace propane. Do our legislators know what percentage of all gas sold in Hawaii is propane? Or how much propane is sold statewide.

Third, I encourage our lawmaker to at least know the difference between propane and synthetic natural gas. If you did not know, the two fuels are very different from one another and can not be interchanged. For instance if you use propane and buy a gas stove, it MUST be converted from natural gas to propane for it to work.

Lastly, I support the efforts to use all the cost effective renewable sources available. However, I detest and am ashamed of our lawmakers making rules without understanding the basics of an industry's rules effect. Please do your homework.

**HB-550-HD-1**

Submitted on: 2/21/2019 2:34:11 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Kevin Nishimura	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 2:37:37 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Ryan Yoshida	Individual	Oppose	No

Comments:

I believe that Hawaii must explore all renewable options, but unless the state is prepared to fund or subsidize the renewable gas effort to the degree that renewable electricity is encouraged, I believe an accelerated timeline is impractical and unjust. That said, if the State is prepared to committ significant resources to renewable gas infrastructure and adoption, I would support a Bill to hasten the adoption of renewable standards.



**HB-550-HD-1**

Submitted on: 2/21/2019 2:40:13 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Russell Winkelman	Individual	Oppose	No

Comments:

I oppose this bill for several reasons. First, we need diverse energy sources for the state. We should have the option to have a propane generator and propane hotwater in our homes and businesses. This was quite evident during the recent electrical blackouts we had accross the state.

Second, there are very limited renewable resources for Gas. The electric utilities, on the other hand, have a multitude of options for renewable energy production. The Gas Company does not, and they can not be held to the exact same RPS standards as the electric utilities.

Third, "The Gas Company" has a PUC regulated side of the business and an unregulated side. This bill puts unnessary requirements on the entire company that their competitors would not have to follow.

**HB-550-HD-1**

Submitted on: 2/21/2019 2:44:20 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jennifer Manchester	Individual	Oppose	No

Comments:

Gas is clean and cost efficient. This bill would pose a disadvantage for the gas company to compete in the market with other propane distributors. The people need to have and should have a choice in energy sources to ensure sustainability for our future generations in Hawaii. When there is a monopoly in the State as we've already seen it causes financial strain for the people of Hawaii. With diversity people have choices to determine what is economical and financially sound for their family.

**HB-550-HD-1**

Submitted on: 2/21/2019 2:50:23 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Lawrence	Individual	Oppose	No

Comments:

Gas utilities should follow the same RPS as the electric utility company. Gas is clean, resilient, and cost effective. Hawaii needs diverse energy sources for economic sustainability for Hawaii's future.

**HB-550-HD-1**

Submitted on: 2/21/2019 2:51:40 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Remigio Dela Cruz	Individual	Oppose	No

Comments:

I respectively oppose this bill for the following reasons. Fundamentally, the Gas Company should not be held to the same standards as the Electric Utilities. There are very limited renewable resources for Gas. The electric utilities, on the other hand, have a multitude of options for renewable energy production. The Gas Company does not.

Second we need diverse energy sources for the state. We should have the option to have a propane generator and propane hotwater in our homes and businesses. This was quite evident during the recent electrical blackouts that we had accross the state.

Third, "The Gas Company" has a PUC regulated side of the business and an unregulated side. This bill puts unnecessary requirements on the entire company that their competitors would not have to follow.

This is an unnecessary bill that restricts private industry and customer choice.

**HB-550-HD-1**

Submitted on: 2/21/2019 3:12:14 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Cheryl Lien-Fua	Individual	Oppose	No

Comments:

I respectfully oppose this measure. Hawaii needs AFFORDABLE DIVERSIFIED energy sources. Adding on renewable standards and deadlines hurts Hawaii kama'aina residents by driving the cost of energy higher. Hawaii has a limited customer base to spread the cost of these mandates. Hawaii is not able to buy/sell energy or have millions and millions of customers like Mainland energy companies. Energy is something all Hawaii residents rely on for survival - not all residents are high income and can afford the additional costs for these ideals. We also need diversified supplies - as many of us know with long term memory - the problems with relying on one or two companies for supplies. Please protect our kama'aina and our kamali'i (our babies) so that we can continue to live in Hawaii.

**HB-550-HD-1**

Submitted on: 2/21/2019 3:29:18 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
C A Lien-Fua	Individual	Oppose	No

Comments:

Our family home uses electric and propane for our household needs. We live in an area where the electric poles snap like dominos in high wind weather. We use propane for half of our energy needs. It is too costly per HECO to put electric wires underground so we are at the mercy of weather conditions. We are so grateful to have propane in our time of need for our energy needs. We don't mind paying two monthly charges to HECO and Hawaii Gas so that we have the diversification of energy supply. However now with these renewable mandates the legislature will drive up the cost of energy. We tried to get PV but got rejected by HECO and the cost is quite high, we are not sure it is worth the investment. Please, please do not drive up local residents' energy costs. We are struggling with the cost of housing, food, transportation and energy. Our children may not be able to afford to live here - how do we pass on ALOHA when local residents leave and only rich Mainland and foreigners can invest in housing in Hawaii? No aloha!

**HB-550-HD-1**

Submitted on: 2/21/2019 3:29:23 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jeremy Santiago	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 3:31:48 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Penni C Lee	Individual	Oppose	No

Comments:

By adding language regarding the gas utility, you also include their non-regulated propane business. Are you now going to regulate the gas company's unregulated propane business? Are you also going to regulate other businesses like Lowe's or Home Depot that sell bottled gas? And what about Amerigas, another company that does business in Hawaii. If you're going to regulate one company, then you need to treat all companies the same so they are competing on an equal playing field.

I have solar at my house. And if I had to use their "recommended" electric water heater backup every time it was raining or the sun wasn't out, then my electric bill would be ridiculously high. Luckily, I've got my solar feeding a tankless gas water heater. My gas is more economical and reliable than the sun. On another note, I've only seen HECO purchase renewable electricity from other sources. What are they doing to clean up their own power plants?

While I agree that we all need to reduce our carbon footprint. I don't think you can eliminate it. Before you decide that you've got to remove all fossil fuel, just think about how this state would need gas in a disaster situation. Is solar or wind going to provide electricity for emergency generators if the electric grid goes out. I don't think so. Are we all supposed to have battery backups (made with plastic that comes from - oh yeah fossil fuel)?



**HB-550-HD-1**

Submitted on: 2/21/2019 4:01:36 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Martha E. Martin	Individual	Oppose	No

Comments:

I strongly oppose HB550 HD1 because the amendments of this bill have abandoned the original purpose of the bill.

Please either restore the original language of HB550, or oppose HB550 HD1.

**HB-550-HD-1**

Submitted on: 2/21/2019 4:10:11 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Colin Hashiro	Individual	Oppose	No

Comments:

**LATE**

**HB-550-HD-1**

Submitted on: 2/21/2019 5:05:47 PM  
Testimony for FIN on 2/22/2019 11:00:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Michele Nihipali	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550. HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

But the amended version of this bill has seriously harmed the original intent of this legislation. Instead of doing what is needed to meaningfully address lifecycle greenhouse gas emissions that are destroying our climate by ensuring the gas utility is included in the RPS, the amended version of this bill only calls for a feasibility study to be conducted.

If Hawaii Gas was a good neighbor company, they would have done their own feasibility study long ago. We are passed that now. We already know what we need to do. The UN IPCC report says we have 10 years to drastically reduce greenhouse gas emissions to avoid Climate Hell. We must transition away from dirty fossil fuels, especially the climate-destroying LNG that Hawaii Gas uses, without delay.

Unless this bill is restored to its original language and intent, this bill should be opposed. A study only serves to waste our time and money, while it tragically squanders a livable future for our children as the sea level rises and the climate system, our life-support system, is further destroyed.

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 it in its current form.

Thank you,

Michele Nihipali

54-074 A Kam Hwy.

Hauula, HI 96717



**HB-550-HD-1**

Submitted on: 2/21/2019 5:07:51 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

**LATE**

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
John K. Kamei	Individual	Oppose	No

Comments:

Gas utilities, by right, should have the same RPS that have been established for electrical utilities.

Gas is a clean and cost effective energy source that helps diversify Hawaii's economic future.

**HB-550-HD-1**

Submitted on: 2/21/2019 5:23:17 PM

Testimony for FIN on 2/22/2019 11:00:00 AM



Submitted By	Organization	Testifier Position	Present at Hearing
Elizabeth Song Lockard	Individual	Oppose	No

Comments:

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been significantly weakened in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

But the amended version of this bill has seriously undermined the original intent of this legislation. Instead of doing what is needed to meaningfully address lifecycle greenhouse gas emissions that are destabilizing our climate by ensuring the gas utility is included in the RPS, the amended version of this bill only calls for a feasibility study to be conducted.

We are past the need for feasibility studies. The IPCC's latest report says we have at most 10 years to drastically reduce greenhouse gas emissions in order to avoid a full-scale planetary crisis. We must transition away from all fossil fuels, especially the climate-destroying LNG that Hawaii Gas uses, without delay.

We need the strongest legislature possible if we are to have any hope for our future, and not pander to profit-driven companies who deny the severity of the climate crisis to serve their own interests. Please restore the original language of HB550 or oppose HB550 HD1 in its current form.

**HB-550-HD-1**

Submitted on: 2/21/2019 5:31:49 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

**LATE**

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Lynne Youmans	Individual	Oppose	No

Comments:

Natural Gas is a low carbon fuel. For that reason alone, it should be encouraged as an alternative fuel to high carbon electric power generated from fossil fuel. Focusing on renewable natural gas rather than the carbon reducing potential of all natural gas isn't the best use of state resources. We should have a comprehensive clean energy plan, including an understanding of how low carbon natural gas can be a useful cle

**HB-550-HD-1**

Submitted on: 2/21/2019 5:54:12 PM

Testimony for FIN on 2/22/2019 11:00:00 AM



<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
L.M. Holmes	Individual	Oppose	No

Comments:

As recently amended by the gas utility, this bill cannot be supported by anyone interested in meeting Hawai'i's goal of ending dependency on fossil fuels. Please do not pass HB 550 in its present form.

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. I strongly oppose HB550 HD1 in its current form; please restore the original language and make it worthwhile again.

Mahalo for the opportunity to testify.

Dr. Lorna Holmes, Honolulu 96817



**LATE**

**HB-550-HD-1**

Submitted on: 2/21/2019 6:52:06 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
DARREN CHANG	Individual	Oppose	No

Comments:

**HB-550-HD-1**

Submitted on: 2/21/2019 6:54:43 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

**LATE**

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
carlo fabriga	Individual	Oppose	No

Comments:



# Chamber of Commerce HAWAII

*The Voice of Business*

**Testimony to the House Committee on Finance  
Friday, February 22, 2019 at 11:00 A.M.  
Conference Room 308, State Capitol**

**LATE**

**RE: HB 550 HD1 RELATING TO HOUSING**

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

The Chamber of Commerce Hawaii ("The Chamber") respectfully **opposes** HB 550 HD1, which stipulates the state PUC study the feasibility of having a 100 percent renewable energy portfolio by 2045 for all gas sold by a gas utility in the state, including non-regulated propane gas.

The Chamber is Hawaii's leading statewide business advocacy organization, representing about 2,000+ 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.

We strongly support the benefits of clean energy and having a sustainable future; however, we see potential unintended consequences with the language contained in this legislation which has been amended from applying to gas sold for grid-connected electrical energy generation to all sales, regulated and unregulated, by a gas utility. This legislation would impose an overly burdensome mandate to comply with an existing renewable portfolio standard that is currently reserved for electrical utilities. Additionally, this bill will negatively impact consumer choice and increase costs to customers.

Thank you for the opportunity to testify.

**LATE**

**HB-550-HD-1**

Submitted on: 2/21/2019 8:36:02 PM

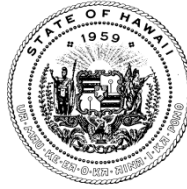
Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Ron Brown	Individual	Oppose	No

Comments:

I testify in opposition to HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix some flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

But the amended version of this bill in calling for an unnecessary feasibility study will put off action that is urgently needed now. We face the greatest crisis of our time. Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 it in its current form.



**TESTIMONY BY:**

JADE T. BUTAY  
DIRECTOR

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

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

February 22, 2019  
11:00 a.m.  
State Capitol, Room 308

**H.B. 550, H.D. 1**  
**RELATING TO RENEWABLE ENERGY.**

House Committee on Transportation

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The Department of Transportation (DOT) offers **comments** to the portion which seeks to amend the renewable portfolio standard interim goals for 2030 and 2040 to accelerate the adoption of renewable energy.

The Administration does not support the importation of natural gas for electrical generation but supports consideration of natural gas for fueling Hawaii's transportation needs.

The DOT supports cleaner alternative fuels and is concerned that imposing renewable portfolio standards on the gas utility may inadvertently harm clean energy efforts that seek the use of large scale biomass production to produce additional biogas, and public / private partnership in developing new pathways for clean, reliable and cost-effective hydrogen fuel supplies.

The DOT's airport bus pilot program weigh factors such as cost to buy or lease buses, operation cost, maintenance cost, environmental impacts, and long-term feasibility to make a selection between electric buses and buses powered by compressed natural gas.

This project demonstrates DOT's examinations of clean and ultra-low carbon fuels to replace our current fleet of diesel and gasoline powered vehicles as a means towards meeting Hawaii's energy goals.

Thank you for the opportunity to provide testimony.



**LATE**

**Testimony to the House [Committee on Finance](#)**

Friday, February 22, 2019 11:00 a.m.

State Capitol Room 308

RE: House Bill 550 HD1 – Relating to Renewable Energy

Aloha Chair Luke, Vice Chair Cullen and Members of the Finance Committee

The Kaua`i Chamber of Commerce respectfully opposes HB 550 HD1, which stipulates the state PUC study the feasibility of having a 100 percent renewable energy portfolio by 2045 for all gas sold by a gas utility in the state, including non-regulated propane gas.

The Kaua`i Chamber of Commerce supports the benefits of clean energy and having a sustainable future; however, we see potential unintended consequences with the language contained in this legislation which has been amended from applying to gas sold for grid-connected electrical energy generation to all sales, regulated and unregulated, by a gas utility. This legislation would impose an overly burdensome mandate to comply with an existing renewable portfolio standard that is currently reserved for electrical utilities. Additionally, this bill will negatively impact consumer choice and increase costs to customers.

Thank you for your consideration as you deliberate this legislation.



**LATE**

49 South Hotel Street, Room 314 | Honolulu, HI 96813  
www.lwv-hawaii.com | 808.531.7448 | voters@lwv-hawaii.com

COMMITTEE ON FINANCE

THURSDAY, 2/22/19, 11 AM, Room 308  
HB550 HD1, RELATING TO RENEWABLE ENERGY  
**TESTIMONY**

Beppie Shapiro, Legislative Committee, League of Women Voters of Hawaii

Chair LUKE, Vice-Chair CULLEN, and Committee Members:

The League of Women Voters of Hawaii **OPPOSES HB550 HD1 which 1) makes valuable changes to the renewable portfolio (RPS) calculation but 2) to our disappointment subverts the original intent of HB550 by calling for a feasibility study by the PUC of applying the RPS to gas utility companies rather than including “Natural “ gas in the RPS.**

The United Nations Intergovernmental Panel on Climate Change, a group of climate scientists in fall of 2018 describes a world of worsening food shortages, wildfires, inundated coastlines, intensifying droughts and poverty, and a mass die-off of coral reefs as soon as 2040 — a period well within the lifetime of many Hawaii residents. The panel warned there is only a dozen years for global warming to be kept to a maximum of 1.5C = 2.7F degrees to avoid truly catastrophic impacts.

HB550 proposed an important contribution to improving Hawaii’s goal of getting to “100%” renewable energy by 2045. This goal, which has garnered a lot of national attention, did not as written commit the state to actually generating 100% of its energy from renewable sources.

As noted by Life of the Land, and confirmed by the Deputy Attorney General and by Hawaiian Electric Company, the present definition allows the RPS metric of renewable energy penetration to exceed 100% while coal-based electricity is still used on the electric grid. HB550 would amend this definition to more accurately measure progress toward the renewable energy goal.

HB550 as originally written would also and importantly include synthetic natural gas (SNG) in the renewable portfolio standard. SNG is composed mainly of methane, an extremely potent greenhouse gas; and butane, another fossil fuel. (The process of creating SNG also consumes a lot of energy currently generated from non-renewable sources).

HB550 HD1 has removed this very important action on SNG and instead only requests a feasibility study of such action. As made clear by the UN Panel on Climate Change, as well as many other studies and publications, it is far too late to start a feasibility study, which in any case is unnecessary.



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HB550 in its original form was a vital step forward in preventing the most severe and immediate consequences of climate change. As amended in HD1 it fails to make its most important contribution and prolongs the current, unacceptable exception of SNG from the RPS. Please move the original HB550 forward or oppose the amended bill HD1.

Thank you for the opportunity to submit testimony.



February 21, 2019

**OFFERING COMMENTS ON  
HOUSE BILL 550, HOUSE DRAFT 1, RELATING TO RENEWABLE ENERGY**

House Committee on Finance  
The Honorable Sylvia Luke, Chair  
The Honorable Ty Cullen, Vice Chair

Friday, February 22, 2019 – 11:00 a.m.  
State Capitol, Room 308

Chair Luke, Vice Chair Cullen and members of the Committee,

Thank you for this opportunity to submit written testimony on House Bill 550, House Draft 1, Relating to Renewable Energy. My name is Lance Tanaka, director of government and public affairs for Par Hawaii. As Hawaii's leading provider of petroleum products and transportation fuels, Par Hawaii owns the state's only operating refinery with a refining capacity of 148,000 barrels per day of product; distributes fuels via pipelines on Oahu and barges to all major harbors in the state; markets fuels through a network of 76 and Hele retail stations throughout Hawaii; and operates the nonmnom convenience stores.

HB 550, HD 1 requires the Public Utilities Commission to study the feasibility of implementing renewable energy portfolio standards to encourage the use of renewable energy by gas utility companies, and amends the renewable portfolio standard interim goals for 2030 and 2040 to accelerate the adoption of renewable energy.

**Par Hawaii offers the following comments:**

- Under **§269 – \_\_ Renewable gas portfolio standards study** beginning on page 4, we believe the study would be better-served by:
  - (1) Involving the Public Utilities Commission in developing and implementing a utility ratemaking structure by December 31, 2021;
  - (2) Involving the Department of Business, Economic Development & Tourism in engaging the Hawaii Natural Energy Institute of the University of Hawaii to conduct independent studies as prescribed in HD 1;
  - (3) Involving gas utilities to provide input in determining impacts of renewable portfolio standards on supply chain economics and costs to be borne by customers.

Testimony by Par Hawaii  
Offering comments on HB 550, HD 1,  
Relating to Renewable Energy  
House Committee on Finance  
Friday, February 22, 2019 at 11:00 a.m.  
Hawaii State Capitol, Room 308  
Page 2

- Under **§269-92 Renewable portfolio standards, (b)** on page 9, we would note that for cost-efficiency and continuity of operation, Par Hawaii's refinery operates its co-generation unit using byproducts from the petroleum refining process, and routes excess electricity to the power grid. Requiring that electricity placed into the grid by independent power generators must also be 100% renewable mandates that we source a renewable fuel to power our co-gen unit. This will detract from the efficiencies and favorable economics we currently derive using petroleum feedstock and is likely to increase the cost of refining.

Thank you for allowing Par Hawaii to submit written testimony offering comments on this measure.

**HB-550-HD-1**

Submitted on: 2/21/2019 11:43:44 PM

Testimony for FIN on 2/22/2019 11:00:00 AM

**LATE**

Submitted By	Organization	Testifier Position	Present at Hearing
Joseph Kohn MD	We Are One, Inc. - www.WeAreOne.cc - WAO	Oppose	No

Comments:

**HB550 HD1 RELATING TO RENEWABLE ENERGY**

I ask that the committee OPPOSE HB550 HD1. The intent of this bill has been undermined in its current amended form. The original language of this bill attempted to fix three flaws in our renewable portfolio standard (RPS): 1. ensured 100% means 100% by correcting the RPS calculation, 2. increased some interim targets to adopt renewable energy, and 3. included the gas utility in the RPS.

But the amended version of this bill has seriously harmed the original intent of this legislation. Instead of doing what is needed to meaningfully address lifecycle greenhouse gas emissions that are destroying our climate by ensuring the gas utility is included in the RPS, the amended version of this bill only calls for a feasibility study to be conducted.

If Hawaii Gas was a good neighbor company, they would have done their own feasibility study long ago. We are passed that now. We already know what we need to do. The UN IPCC report says we have 10 years to drastically reduce greenhouse gas emissions to avoid Climate Hell. We must transition away from dirty fossil fuels, especially the climate-destroying LNG that Hawaii Gas uses, without delay.

Unless this bill is restored to its original language and intent, this bill should be opposed. A study only serves to waste our time and money, while it tragically squanders a livable future for our children as the sea level rises and the climate system, our life-support system, is further destroyed.

Our children need the legislature to protect them and stand up for their future, and not the profits of companies who deny the climate crisis we face. Please restore the original language of HB550 or oppose HB550 HD1 in its current form.

There is no rational reason to pollute our own environment or destroy ecosystems.

[www.WeAreOne.cc](http://www.WeAreOne.cc)

**HB-550-HD-1**

Submitted on: 2/21/2019 9:39:36 PM

Testimony for FIN on 2/22/2019 11:00:00 AM



Submitted By	Organization	Testifier Position	Present at Hearing
Hermina Morita	Individual	Oppose	No

Comments:

Aloha Madame Chair and Members of the Finance Committee:

I comment based on my experience as a former Legislator who worked to pass the Renewable Portfolio Standard (RPS), put the Hawaii Natural Energy Institute (HNEI) permanently into statute rather than session law and to pass the “barrel” tax and in my former role as the Chair of the Hawaii Public Utilities Commission (HPUC). I oppose Section 2 of House Bill 550, House Draft 1 as it is currently written. While I understand the proponents of the bill’s desire to move toward a renewable future, the purpose of the RPS was to establish a floor for renewable resources in the regulated electricity sector. To assume the same type of policies are transferable and can be applied to the gas sector, which has both regulated and unregulated entities and where it plays a minuscule role in electricity generation in Hawaii, may have unintended consequences. Unlike the electricity sector, where there are a number of cost-competitive renewable resources that can be used for the production of electricity, “renewable” gas is still in nascent development and the infrastructure cost to develop a reliable and adequate supply to meet the stated target of the bill is uncertain.

The gas sector study should be conducted by the HNEI from the funds it receives from the “barrel” tax and without the need for the such a study to be contracted through the HPUC. Created by the Legislature, HNEI has five core functions:

- Research & Development
- Technical Validation & Implementation
- Analysis & Modeling
- Education & Training
- State Energy & Policy Support

HNEI is more than capable of conducting or contracting an independent gas sector study as such a study is well within its mandate and expertise. There is no need or reason to use any other type of funds or contracting through the HPUC.

Section 2 also appears to conflate two policy objectives, performance based ratemaking (PBR) and a gas RPS. While moving a regulated entity towards PBR is a laudable endeavor, it in itself is a time consuming regulatory process where an RPS would be only one of many desired performance outcomes, and could possibly negatively affect

other desired outcomes such as affordability and reliability. But more importantly, one should not conclude that a RPS is appropriate for the gas sector. To mandate the HPUC to establish a gas RPS and PBR by December 31, 2021 when the future supply and availability of renewable gas and the cost of renewable gas infrastructure is not clearly understood by policymakers is premature to establish into law at this time. Please allow the gas sector study to be completed first before committing a monumental task upon the HPUC without solid information and to avoid unintended consequences.

Thank you for the opportunity to comment on this measure.

Mina Morita, P.O. Box 791, Hanalei, HI 96714

**LATE**

**HB-550-HD-1**

Submitted on: 2/22/2019 5:50:31 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Dean Uyehara	Individual	Oppose	No

Comments:

Propane is a clean and economical energy source. Electricity presently burns black oil which is a greater pollutant than Propane and or Natural Gas. We need for the public to have the ability to choose their energy source at a competitive rate.

**HB-550-HD-1**

Submitted on: 2/22/2019 6:27:42 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

**LATE**

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Keith Tanaka	Individual	Oppose	No

Comments:



**LATE**

**HB-550-HD-1**

Submitted on: 2/22/2019 6:53:36 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Andrea Quinn	Individual	Support	No

Comments:

Dear Honorable Committee Members:

Please support HB550. Coral reefs are dying in large part to warming oceans, and valuable coastline is eroding due to sea level rise. Climate change is already occurring. We need to be a leader in renewable energy.

Thank you for the opportunity to present my testimony.

Sincerely,

Andrea Quinn

Kihei

**HB-550-HD-1**

Submitted on: 2/22/2019 7:06:47 AM

Testimony for FIN on 2/22/2019 11:00:00 AM



<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Craig Furuta	Individual	Oppose	No

Comments:

I oppose this bill for the following reasons:

1. Creates an inequitable environment for the nonregulated propane sector. The gas utility's non regulated would fall under the RPS while other propane businesses would not be required to follow the mandaate.
2. The bill language puts the gas utility under the same standards as the electric utility while providing a smaller window.
3. Hawaii needs to have diversified energy sources for the public to select from and to ensure energy stability for the future.
4. Gas is a clean and cost effective energy source.

Regards,

Craig Furuta

Concerned Citizen

**HB-550-HD-1**

Submitted on: 2/22/2019 7:54:44 AM

Testimony for FIN on 2/22/2019 11:00:00 AM



Submitted By	Organization	Testifier Position	Present at Hearing
Carl Campagna	Individual	Comments	No

Comments:

I support the idea of a study, but not laying an arbitrary RPS standard similar to the electric utility RPS.

The fuel industry is not as ramped up to produce and procure renewable gas in operational volumes at this time. Though the potential exists.

We need a step by step approach that accommodates both increased food production and the waste stream generated from it and other hreen waste, as well as various incentives to grow and sell feed stock, set up manufacturing plants, produce and purchase fuels.

Please refer to SCR121/HCR118 for guidance on the study.

Mahalo for consideration

**LATE**

**HB-550-HD-1**

Submitted on: 2/22/2019 6:31:07 AM

Testimony for FIN on 2/22/2019 11:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Paul Balazs	Individual	Oppose	No

Comments:

Made in good faith but the amendments to this bill have massive implications. Change must be made now. Please restore original language.

**HB-550-HD-1**

Submitted on: 2/22/2019 9:42:47 AM

Testimony for FIN on 2/22/2019 11:00:00 AM



Submitted By	Organization	Testifier Position	Present at Hearing
Marc Dexter	Individual	Oppose	No

Comments:

As an informed and concerned citizen, I oppose this bill. The continued concerted effort by certain special agenda groups to force the State into a vulnerable energy position needs to be slowed to pace that allows for proper objective SCIENTIFIC consideration of the facts. prior to decisions being made. There is currently no combination of technology that can support the 2045 goal, and thus accelerating the goal is unrealistic at best. Furthermore, it will put the state into a bind with the requirement that "renewable" energy, i.e. wind and solar power, be dramatically expanded without proper consideration of impacts and the potential vulnerabilities it will create in our power grid. I do not want my child to experience the future effects of a weakened and vulnerable power system that does not have the technical capability to satisfy the firm power demands of our state.

The reality is that it would take thousands of acres of solar panels and thousands of containers of batteries to achieve a fraction of the power the island of Oahu needs. And, it has already been scientifically demonstrated that there are no additional viable onshore locations for wind power other than Kahe Point. We not only do not have the land that would need to be dedicated to solar panels and battery storage, but the local environmental impacts of such infrastructure have not been realistically considered. Both wind power and solar power have environmental impacts, resulting in the death of endangered bird species, and loss of important land resources amongst other things. Not to mention the environmental cost in other parts of the world of battery and solar panel construction, including mining for lithium and other materials. This bill fails to take into consideration the actual scientific facts and risks associated with wind and solar power, and the realities of creating a robust, resilient, and sustainable power portfolio for the State of Hawaii.

Natural or renewable gas is a significantly cleaner, and less environmentally dangerous fuel than liquid petroleum hydrocarbon fuels. It is absolutely a clear method to reduce greenhouse gas emissions over the use of other petroleum fuels, and is being used successfully in many parts of the world to do just that. Therefore it meets the requirement to reduce the effects of greenhouse gas emissions. In addition, it represents a key component of a secure, resilient, and reliable energy infrastructure that can provide the firm power required for a modern state such as Hawaii. Our state is simply too vulnerable to hurricanes and other natural forces to rely on the fragile and unreliable power infrastructure associated with wind and solar power systems.

This bill fails to present adequate consideration of the ultimate cost to consumers that will result. fAs a result of the measures in this bill, the average consumer will pay FAR more for development of a more unreliable power source than what we currently have In reality, the cost it will be simply unsustainable from a financial perspective for both individual residents and the State government. No decision such as this should even be considered without a clear understanding of the actual, real costs to consumers.

This bill is premature, and will continue to reduce the energy security of the state by forcing unnecessary burden onto our natural gas utility. Previous legislation has already clearly the defined the State's intent to go towards renewable energy. But let's not proceed with blinders on as the special interest groups would like. Natural and renewable gas should be part of a diverse and resilient energy portfolio which is clearly required going forward for the State of Hawaii.