

TESTIMONY OF RANDY IWASE
CHAIR, PUBLIC UTILITIES COMMISSION
STATE OF HAWAII
TO THE
HOUSE COMMITTEE ON
ENERGY AND ENVIRONMENTAL PROTECTION

February 9, 2017
8:30 a.m.

MEASURE: H.B. No. 903

TITLE: RELATING TO RENEWABLE ENERGY

Chair Lee and Members of the Committee:

DESCRIPTION:

This measure amends the current definition of “renewable portfolio standard” to mean the percentage of electrical energy *generation* that is represented by renewable energy rather than the percentage of electrical energy *sales* that is represented by renewable energy.

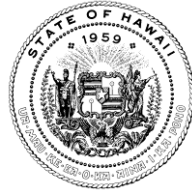
POSITION:

The Public Utilities Commission (“Commission”) offers the following comments for the Committee’s consideration.

COMMENTS:

The Commission notes that that the term “electrical energy sales” is currently represented by a definite figure that is regularly reported by the utility. It is unclear to the Commission how the term “electrical energy generation” would be calculated and reported. The Commission is currently collaborating with the Department of Business, Economic Development, and Tourism and other stakeholders on language to address these issues.

Thank you for the opportunity to provide comments on this measure.



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TO THE HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

THE TWENTY-NINTH LEGISLATURE
REGULAR SESSION OF 2017

THURSDAY, FEBRUARY 9, 2017
8:30 A.M.

TESTIMONY OF DEAN NISHINA, EXECUTIVE DIRECTOR, DIVISION OF
CONSUMER ADVOCACY, DEPARTMENT OF COMMERCE AND CONSUMER
AFFAIRS, TO THE HONORABLE CHRIS LEE, CHAIR,
AND MEMBERS OF THE COMMITTEE

HOUSE BILL NO. 903 - RELATING TO RENEWALBE ENERGY

DESCRIPTION:

This measure proposes to amend the “Renewable Portfolio Standard” definition to more accurately reflect the amount of renewable energy generation in Hawaii by amending the renewable portfolio standard calculation to be based on electrical energy generation as opposed to electrical energy sales.

POSITION:

The Division of Consumer Advocacy (“Consumer Advocate”) supports the intent of this bill and offers the following comments.

COMMENTS:

The Consumer Advocate supports the state’s goal of employing 100% renewable energy on its electric grids by 2045, and so the Consumer Advocate supports the intended effect of the amendment in this bill, changing the Renewable Portfolio Standards (“RPS”) calculation in Hawaii Revised Statutes (“HRS”) § 269-91 from “sales” to “generation”, in that it should more fully realize the state’s goal.

The Consumer Advocate would like to bring a couple of points to the Legislature's attention regarding HRS § 269-92. If the proposed measure moves forward, it would only modify HRS § 269-91. However, to ensure consistency related to the renewable portfolio standards in HRS Chapter 269, the bill should also amend the intermediate RPS benchmarks set forth in HRS § 269-92 reflecting the denominator changing from "sales" to "generation".

More substantively, however, those intermediate benchmarks were set under the current RPS calculation, the state's electric utilities have been planning and progressing according to the current calculation, and they may have difficulty meeting the next immediate benchmark or two under a new calculation, except at significant cost, which will ultimately be borne by ratepayers.

Thank you for this opportunity to testify.



DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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AMENDED 2/7/17

Statement of
LUIS P. SALAVERIA
Director
Department of Business, Economic Development and Tourism
before the
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
Thursday, February 9, 2017
8:30 a.m.
State Capitol, Conference Room 325

in consideration of
HB903
RELATING TO RENEWABLE ENERGY.

Chair Lee, Vice Chair Lowen, and Members of the Committee.

The Department of Business, Economic Development and Tourism (DBEDT) **supports HB903 with amendments**, which modifies the definition of “renewable portfolio standard (RPS)” to be based on ‘generation’ instead of ‘sales’ in order to more accurately reflect the percentage of renewable energy penetration in the State.

To fully meet the objectives of Act 97, Session Laws of Hawaii (SLH) 2015 establishing the 100% renewable portfolio standard (RPS) by 2045 and Act 38, SLH 2015 aspiring for greater energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii’s dependence on imported fuels for electrical generation, the current method for calculating RPS must be modified so it can accurately represent the percentage of renewable penetration in Hawaii. This is because the current method of calculating RPS is flawed as it is incongruent to compare ‘renewable electrical energy generation’ to ‘electrical energy sales’. This flaw causes the RPS to be inflated due to the denominator (‘sales’) excluding: (1) customer-sited grid-connected electrical energy generated; and (2) transmission and distribution (T&D) energy losses that occur between the points of electrical energy generation and the customer meter where sales are measured.

Additionally, as Hawaii’s energy sector transitions to renewable energy, it is important that all relevant entities are aligned and that we avoid creating an unfair playing field that may unintentionally harm consumers by promoting suboptimal long-lived investments in fossil fuels through gas-fired distributed electrical generation.

Through collaboration with various stakeholders, DBEDT proposes the attached amendments which: (1) amend the RPS to a ratio of total renewable electrical energy generated from grid-connected renewable energy systems divided by total electrical energy generated from grid-connected energy systems, expressed as a percentage; (2) promotes fairness and alignment in Hawaii's transition to renewable energy by establishing renewable portfolio standards and targets for gas utility companies that mirror those set for electric utility companies. We would like to emphasize that the chosen gas RPS targets were based on the intention to create achievable near-term success coupled with motivational stretch goals that are balanced by 'off-ramps', and periodic evaluations and adjustments (if needed) by the PUC toward the ultimate achievement of 100% renewable gas sold for electricity generation in 2045.

We strongly encourage the committee to pass this measure and are open to further discussion with other stakeholders on this measure. Thank you for the opportunity to offer comments on HB903.

A BILL FOR AN ACT

AMENDED 2/7/17

RELATING TO RENEWABLE ENERGY.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. The legislature finds that Act 97, Session Laws
2 of Hawaii 2015, amended section 269-92, Hawaii Revised Statutes,
3 to establish a one hundred per cent renewable portfolio standard
4 by 2045, with the intent to transition the State away from
5 imported fuels and toward renewable local resources that provide
6 a secure source of affordable energy. However, the calculation
7 of the renewable portfolio standard, based on the definition of
8 renewable portfolio standard enacted in 2001 and amended in
9 2006, is the percentage of electrical energy sales that is
10 represented by renewable electrical energy. The legislature
11 finds that the calculation of the renewable portfolio standard
12 based on electrical energy sales (renewable electrical energy
13 divided by total electricity sales), rather than on electrical
14 energy generation (renewable electrical energy divided by total
15 electrical energy generation), overestimates the amount of
16 renewable energy serving Hawaii's electric utility customers.

17 There are two fundamental issues that lead to the current

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1 discrepancy: (1) the current renewable portfolio standard
2 calculation inflates the reported percentage of renewable energy
3 by excluding ~~renewables from~~ customer-sited, grid-
4 connected ~~renewable~~ energy generation in the denominator, which
5 becomes material with higher levels of customer-sited, grid-
6 connected energy generation and higher renewable portfolio
7 standard percentages; and (2) the current electrical energy
8 sales number does not include energy losses that occur between
9 the points of electrical energy generation and the customer
10 meter where sales are measured. Failure to address these issues
11 would create the incorrect public perception of the State's
12 progress towards its one hundred per cent renewable energy
13 statutory goal.

14 Furthermore, the legislature finds that Hawaii's energy
15 sector is undergoing a transition to renewable energy that is
16 strengthening the State's economy, environment, and security.
17 To complete this transition successfully it is also important
18 that all relevant entities are aligned. Along these lines, the
19 legislature is concerned that requiring electric utilities, but
20 not gas utilities, to increase their reliance on renewable
21 energy creates an unfair playing field that may unintentionally
22 harm consumers by promoting suboptimal long-lived investments in

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1 fossil fuels through gas-fired distributed electrical
2 generation. These effects may also have near- and long-term
3 impacts on the viability of the State's electric utilities, and
4 near- and long-term impacts on the viability of the State's gas
5 utilities.

6 The legislature finds that the simplest, fairest, and most
7 effective solution to this concern is to implement renewable
8 portfolio standard targets for gas utilities that mirror those
9 being achieved by electric utilities. This Act requires all gas
10 sold for grid-connected electrical energy generation under
11 regulated gas utility operations in the State to become more
12 renewable over time.

13 The purpose of this Act is to: (1) amend the definition of
14 renewable portfolio standard to more accurately reflect the
15 percentage of renewable energy penetration in the State; and (2)
16 establish gas utility company renewable portfolio standards for
17 electricity generation ensuring that the State's market for gas
18 embraces and supports the transition away from fossil fuels and
19 toward renewable energy.

20 SECTION 2. Section 269-91, Hawaii Revised Statutes, is
21 amended to read as follows:

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1 "§269-91 [f]Definitions.[f] For the purposes of this
2 [f]part[f]:

3 "Biofuels" means liquid or gaseous fuels produced from
4 organic sources such as biomass crops, agricultural residues and
5 oil crops, such as palm oil, canola oil, soybean oil, waste
6 cooking oil, grease, and food wastes, animal residues and
7 wastes, and sewage and landfill wastes.

8 "Cost-effective" means the ability to produce or purchase
9 electric energy or firm capacity, or both, from renewable energy
10 resources at or below avoided costs or as the commission
11 otherwise determines to be just and reasonable consistent with
12 the methodology set by the public utilities commission in
13 accordance with section 269-27.2.

14 "Cost-effective" in the context of a gas utility company
15 means the ability to produce or purchase gas from renewable gas
16 resources at or below avoided costs or as the commission
17 otherwise determines to be just and reasonable.

18 "Electric utility company" means a public utility as
19 defined under section 269-1, for the production, conveyance,
20 transmission, delivery, or furnishing of power.

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1 "Gas utility company" means a public utility as defined
2 under section 269-1, for the production, conveyance,
3 transmission, delivery, or furnishing of gas.

4 "Grid-connected" means interconnected to the Hawaii electric
5 system under an existing standard or rule approved by the public
6 utilities commission. As used in this definition,
7 "interconnection" has the same meaning as described in section
8 269-141.

9 "Hawaii electric system" has the same meaning as described
10 in section 269-141.

11 "Renewable electrical energy" means:

12 (1) Electrical energy generated using renewable energy as
13 the source, and beginning January 1, 2015, includes
14 customer-sited, grid-connected renewable energy
15 generation; and

16 (2) Electrical energy savings brought about by:

17 (A) The use of renewable displacement or off-set
18 technologies, including solar water heating, sea-
19 water air-conditioning district cooling systems,
20 solar air-conditioning, and customer-sited, grid-
21 connected renewable energy systems; provided
22 that, beginning January 1, 2015, electrical

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1 energy savings shall not include customer-sited,
2 grid-connected renewable-energy systems; or

3 (B) The use of energy efficiency technologies,
4 including heat pump water heating, ice storage,
5 ratepayer-funded energy efficiency programs, and
6 use of rejected heat from co-generation and
7 combined heat and power systems, excluding
8 fossil-fueled qualifying facilities that sell
9 electricity to electric utility companies and
10 central station power projects.

11 "Renewable energy" means energy generated or produced using
12 the following sources:

- 13 (1) Wind;
- 14 (2) The sun;
- 15 (3) Falling water;
- 16 (4) Biogas, including landfill and sewage-based digester
17 gas;
- 18 (5) Geothermal;
- 19 (6) Ocean water, currents, and waves, including ocean
20 thermal energy conversion;

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1 (7) Biomass, including biomass crops, agricultural and
2 animal residues and wastes, and municipal solid waste
3 and other solid waste;

4 (8) Biofuels; and

5 (9) Hydrogen produced from renewable energy sources.

6 "Renewable gas" means gas generated or produced using the
7 following sources:

8 (1) Biogas, including landfill and sewage-based digester
9 gas;

10 (2) Biomass, including biomass crops, agricultural and
11 animal residues and wastes, and municipal solid waste
12 and other solid waste;

13 (3) Biofuels; and

14 (4) Hydrogen produced from renewable energy sources.

15 "Renewable portfolio standard" [~~means the percentage of~~
16 ~~electrical energy sales that is represented by renewable~~
17 ~~electrical energy.~~] has the same meaning as described in section
18 269-92 and 269-A."

19 SECTION 3. Section 269-92, Hawaii Revised Statutes, is
20 amended to read as follows:

21 "**§269-92 Renewable portfolio standards**[~~✓~~] for electric
22 utility companies. (a) The renewable portfolio standard for an

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1 electric utility company means total renewable electrical energy
2 generated from grid-connected renewable energy systems divided by
3 total electrical energy generated from grid-connected energy
4 systems, expressed as a percentage; provided that this will not
5 apply where the generation is used exclusively for emergency
6 service in case of failure of the normal supply from the Hawaii
7 electric system.

8 [~~a~~] (b) Each electric utility company that sells
9 electricity for consumption in the State shall establish a
10 renewable portfolio standard of:

- 11 (1) Ten per cent [~~of its net electricity sales~~] by
12 December 31, 2010;
- 13 (2) Fifteen per cent [~~of its net electricity sales~~] by
14 December 31, 2015;
- 15 (3) Thirty per cent [~~of its net electricity sales~~] by
16 December 31, 2020;
- 17 (4) Forty per cent [~~of its net electricity sales~~] by
18 December 31, 2030;
- 19 (5) Seventy per cent [~~of its net electricity sales~~] by
20 December 31, 2040; and
- 21 (6) One hundred per cent [~~of its net electricity sales~~] by
22 December 31, 2045.

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1 (c) All electric grid-connected energy systems shall be
2 one hundred per cent renewable energy systems by December 31,
3 2045; provided that this will not apply where the generation is
4 used exclusively for emergency service in case of failure of the
5 normal supply from the Hawaii electric system.

6 ~~(b)~~ (d) The public utilities commission may establish
7 standards for each electric utility company that prescribe what
8 portion of the renewable portfolio standards shall be met by
9 specific types of renewable energy resources; provided that:

10 (1) Prior to January 1, 2015, at least fifty per cent of
11 the renewable portfolio standards shall be met by
12 electrical energy generated using renewable energy as
13 the source, and after December 31, 2014, the entire
14 renewable portfolio standard shall be met by

15 electrical generation from renewable energy sources;

16 (2) Beginning January 1, 2015, electrical energy savings
17 shall not count toward renewable energy portfolio
18 standards;

19 (3) Where electrical energy is generated or displaced by a
20 combination of renewable and nonrenewable means, the
21 proportion attributable to the renewable means shall
22 be credited as renewable energy; and

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1 (4) Where fossil and renewable fuels are co-fired in the
2 same generating unit, the unit shall be considered to
3 generate renewable electrical energy (electricity) in
4 direct proportion to the percentage of the total heat
5 input value represented by the heat input value of the
6 renewable fuels.

7 [~~(e)~~] (e) If the public utilities commission determines
8 that an electric utility company failed to meet the renewable
9 portfolio standard, after a hearing in accordance with chapter
10 91, the utility shall be subject to penalties to be established
11 by the public utilities commission; provided that if the
12 commission determines that the electric utility company is
13 unable to meet the renewable portfolio standards due to reasons
14 beyond the reasonable control of an electric utility, as set
15 forth in subsection [~~(d)~~], (f), the commission, in its
16 discretion, may waive in whole or in part any otherwise
17 applicable penalties.

18 [~~(d)~~] (f) Events or circumstances that are outside of an
19 electric utility company's reasonable control may include, to
20 the extent the event or circumstance could not be reasonably
21 foreseen and ameliorated:

22 (1) Weather-related damage;

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- 1 (2) Natural disasters;
- 2 (3) Mechanical or resource failure;
- 3 (4) Failure of renewable electrical energy producers to
- 4 meet contractual obligations to the electric utility
- 5 company;
- 6 (5) Labor strikes or lockouts;
- 7 (6) Actions of governmental authorities that adversely
- 8 affect the generation, transmission, or distribution
- 9 of renewable electrical energy under contract to an
- 10 electric utility company;
- 11 (7) Inability to acquire sufficient renewable electrical
- 12 energy due to lapsing of tax credits related to
- 13 renewable energy development;
- 14 (8) Inability to obtain permits or land use approvals for
- 15 renewable electrical energy projects;
- 16 (9) Inability to acquire sufficient cost-effective
- 17 renewable electrical energy;
- 18 (10) Inability to acquire sufficient renewable electrical
- 19 energy to meet the renewable portfolio standard goals
- 20 beyond 2030 in a manner that is beneficial to Hawaii's
- 21 economy in relation to comparable fossil fuel
- 22 resources;

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1 (11) Substantial limitations, restrictions, or prohibitions
2 on utility renewable electrical energy projects; and

3 (12) Other events and circumstances of a similar
4 nature that could not be reasonably foreseen and
5 ameliorated.

6 SECTION 4. Chapter 269, part V, Hawaii Revised Statutes,
7 is amended by adding the following new sections to be
8 appropriately designated and to read as follows:

9 "§269-A Renewable portfolio standards for gas utility
10 companies. (a) The renewable portfolio standard for a gas
11 utility company means total heat energy in therms from renewable
12 gas sold divided by total heat energy in therms from gas sold,
13 expressed as a percentage. For the purposes of this definition
14 the terms "renewable gas sold" and "gas sold" are limited to gas
15 sold for grid-connected electrical energy generation under
16 regulated gas utility company operations in the State.

17 (b) Each gas utility company that sells gas for grid-
18 connected electrical energy generation under regulated utility
19 operations in the State shall establish a renewable energy
20 portfolio standard of:

21 (1) Ten per cent by December 31, 2025;

22 (2) Thirty per cent by December 31, 2030;

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1 (3) Seventy per cent by December 31, 2040; and

2 (4) One hundred per cent by December 31, 2045.

3 (c) The public utilities commission may establish

4 standards for each gas utility company that prescribe what

5 portion of the renewable portfolio standards shall be met by

6 specific types of renewable gas resources; provided that where

7 gas is composed of co-mingled fossil and renewable gases, the

8 renewable gas component of such gas shall be considered to be in

9 direct proportion to the percentage of the total heat input

10 value represented by the heat input value of the renewable gas.

11 (d) If the public utilities commission determines that a

12 gas utility company failed to meet the renewable portfolio

13 standard, after a hearing in accordance with chapter 91, the

14 utility shall be subject to penalties to be established by the

15 public utilities commission; provided that if the commission

16 determines that the gas utility company is unable to meet the

17 renewable portfolio standards due to reasons beyond the

18 reasonable control of a gas utility, as set forth in subsection

19 (e), the commission, in its discretion, may waive in whole or in

20 part any otherwise applicable penalties.

21 (e) Events or circumstances that are outside a gas utility

22 company's reasonable control may include, to the extent the

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1 event or circumstance could not be reasonably foreseen and
2 ameliorated:

3 (1) Weather-related damage;

4 (2) Natural disasters;

5 (3) Mechanical or resource failure;

6 (4) Failure of renewable gas producers or suppliers to
7 meet contractual obligations to the gas utility
8 company;

9 (5) Labor strikes or lockouts;

10 (6) Actions of governmental authorities that adversely
11 affect the procurement of renewable gas under contract
12 to a gas utility company;

13 (7) Inability to acquire sufficient renewable gas due to
14 lapsing of tax credits related to renewable gas
15 development;

16 (8) Inability to obtain permits or land use approvals for
17 renewable gas projects;

18 (9) Inability to acquire sufficient cost-effective
19 renewable gas;

20 (10) Inability to acquire sufficient renewable gas to meet
21 the renewable portfolio standard goals beyond 2030 in
22 a manner that is beneficial to Hawaii's economy in

.B.NO.

1 relation to comparable fossil fuel resources;

2 (11) Substantial limitations, restrictions, or prohibitions
3 on utility renewable gas projects; and

4 (12) Other events and circumstances of a similar nature
5 that could not be reasonably foreseen and ameliorated.

6 (f) The public utilities commission shall evaluate the
7 renewable portfolio standards every five years, beginning in
8 2023, and may revise the standards based on the best information
9 available at the time to determine if the standards established
10 remain effective and achievable.

11 (g) By July 1, 2019, each gas utility company shall submit
12 to the public utilities commission for review and approval, a
13 procedure that establishes how the gas utility company will
14 measure and report their renewable portfolio standard status to
15 the public utilities commission.

16 §269-B Achieving gas portfolio standard. (a) A gas
17 utility company and its affiliates may aggregate their renewable
18 portfolios to achieve the renewable portfolio standard.

19 (b) If a gas utility company and its affiliates aggregate
20 their renewable portfolios to achieve the renewable portfolio
21 standard, the public utilities commission may distribute,
22 apportion, or allocate the costs and expenses of all or any

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1 portion of the respective renewable portfolios among the gas
2 utility company, its gas utility affiliates, and their
3 respective ratepayers, as is reasonable under the circumstances.

4 (c) A gas utility company may recover, through an
5 automatic rate adjustment clause, the gas utility company's
6 revenue requirement resulting from the distribution,
7 apportionment, or allocation of the costs and expenses of the
8 renewable portfolios of the gas utility company and its gas
9 utility affiliates.

10 (d) To provide for timely recovery of the revenue
11 requirement under subsection (c), the commission may establish a
12 separate automatic rate adjustment clause, or approve the use of
13 a previously approved automatic rate adjustment clause, without
14 a rate case filing. The use of the automatic rate adjustment
15 clause to recover the revenue requirement shall be allowed to
16 continue until the revenue requirement is incorporated in rates
17 in the respective gas utility company's rate case.

18 §269-C Waivers, extensions, and incentives. Any gas
19 utility company not meeting the renewable portfolio standard
20 shall report to the public utilities commission within ninety
21 days following the goal dates established in section 269-A, and
22 provide an explanation for not meeting the renewable portfolio

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1 standard. The public utilities commission, after allowing an
2 appropriate period of public comment, shall have the option to
3 either grant, or not, a waiver from the renewable portfolio
4 standard or an extension for meeting the prescribed standard.

5 The public utilities commission may provide incentives to
6 encourage gas utility companies to exceed their renewable
7 portfolio standards or to meet their renewable portfolio
8 standards ahead of time, or both."

9 SECTION 6. In codifying the new sections added by section
10 5 of this Act, the revisor of statutes shall substitute
11 appropriate section numbers for the letters used in designating
12 the new sections in this Act.

13 SECTION 7. Statutory material to be repealed is bracketed
14 and stricken. New statutory material is underscored.

15 SECTION 8. This Act shall take effect on January 1, 2018.

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Report Title:

Renewable Portfolio Standard; Definition.

Description:

Amends the definition of renewable portfolio standard to more accurately reflect the percentage of renewable energy penetration in the State; and promotes fairness and alignment in Hawaii's transition to one hundred per cent renewable energy and ensure that the State's market for gas embraces and supports the State's transition toward increasing renewable energy

The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.



Testimony by:
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JADE T. BUTAY
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IN REPLY REFER TO:

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DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
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February 9, 2017
8:30 a.m.
State Capitol, Room 325

H.B. 903
RELATING TO RENEWABLE ENERGY.

House Committee on Energy and Environmental Protection

The Department of Transportation (DOT) **supports** this bill to amend the renewable portfolio standard (RPS) definition to more accurately reflect the amount of renewable energy generation in Hawaii by amending the RPS calculation to be based on electrical energy generation as opposed to electrical energy sales.

By accurately defining the RPS, the Legislature will ensure that the intent of Act 97(15) is met; namely, to establish a one hundred per cent renewable portfolio standard by 2045 in order to transition the State away from imported fuels and toward renewable local resources. This further supports DOT's pursuit of clean energy in the transportation sector. In particular, it supports the cost-effective electrification of transportation using indigenous renewable resources while simultaneously helping to reduce our state's carbon pollution.

Thank you for the opportunity to provide testimony.



HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Feb. 9, 2017, 9:30 A.M.
Room 325
(Testimony is 4 pages long)

TESTIMONY IN SUPPORT OF HB 903

Aloha Chair Lee, Vice Chair Lowen, and Committee members:

Thank you for hearing HB 903. Blue Planet Foundation **supports** this bill. However, **we can also support of a variety of other bills, drafts, or potential drafts that address this issue** in a constructive and fair manner. This hearing will be the first opportunity in this legislative session to take stock of all the perspectives that will be shared in public testimony. We ask that you forward this bill for continued collaboration to address those perspectives, or that you adopt one of the other potential solutions that may be proposed in testimony on this bill by various parties.

Near the end of this testimony, we identify a variety of workable solutions that Blue Planet can support. This is a crucially important bill for ensuring **transparency, consistency, fairness, and consumer confidence** in Hawai'i's 100% renewable energy target (Renewable Portfolio Standard, or RPS). We believe that these interests overwhelmingly call for all parties to rally behind a single solution that will ensure that 100% renewable energy truly means 100% renewable energy.

For reasons described below, this issue also involves **questions about renewable natural gas (a renewable fuel), which differs from typical natural gas (a fossil fuel)**. At the end of this testimony, we provide information on renewable natural gas, which is set to shortly comprise roughly 5% of the gas supply on Oahu.

THE SUCCESS AND IMPORTANCE OF THE RPS LAW

Hawai'i's RPS law has been a resounding success. After various iterations through roughly the past fifteen years, in 2015 the legislature set a vision for Hawai'i's energy security, economic viability, and environmental protection by setting a target of 100% renewable energy by 2045.

The 100% RPS law has subsequently 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. It has set market expectations. Hawai'i 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. With strong PUC guidance and oversight, it

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is resulting in utility power supply plans that will achieve the mandate ahead of schedule, while simultaneously saving consumers billions of dollars compared to the fossil fuel status quo. **The state is on track to achieve the vision set by the legislature for renewable electricity, including both the near-term and long-term RPS requirements.**

100% MEANS 100%

To the credit of the Hawaiian Electric Companies, the 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 Hawai'i'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.**

2016 LEGISLATIVE SESSION AND SUBSEQUENT COLLABORATION

HB 903, as drafted, would implement a simple mechanical solution for addressing the RPS calculation, by changing the word "sales" to "generation." However, during the 2016 legislative session some concerns were raised about this simple solution.

One of the primary concerns with this approach is that distributed energy resources might also include fossil fuel generation (likely to be gas-fired generation). This type of **natural gas-fired generation could render it impossible for electric utilities to meet their renewable energy goals**. No comprehensive solution to this issue was adopted during the 2016 session.

After the conclusion of the session, the Department of Business, Economic Development & Tourism (DBEDT) convened various entities (including representatives of Hawaiian Electric and Hawaii Gas) in an effort to collaborate and investigate solutions. That process has explored a variety of potential solutions, with various approaches and degrees of complexity.

Nonetheless, the focal point for any solution is ensuring that the state does not waiver from its commitment to 100% renewable energy.

With continued collaboration, it appears that parties should be able to agree on an effective, fair, and constructive approach to this issue, including any remaining concerns that are raised in public testimony during this hearing.

WORKABLE SOLUTIONS

Blue Planet Foundation can support variations on any of the following approaches to this issue:

- **We can support HB 903.** With **clarity**, this approach would fix the mechanical issue. As noted above, it will require simultaneously ensuring that electric utilities are not impeded in achieving their 100% renewable energy mandate, e.g. because of gas-fired generation.
- **We can support HB 1040.** HB 1040 is similar to a discussion draft generated during the DBEDT-led collaboration, and was introduced as part of the Administrative package. It would achieve a similar result as HB 903 with respect to the RPS calculation, but would also create a **new mechanism** to ensure that gas-fired generation does not impede the ability to achieve 100% renewable energy.
- **We can support HB 1253.** This solution is consistent with the state's broader shift to renewable energy, and would directly address the RPS-related concern with natural gas. Put simply, it would require gas utilities to transition to a 100% RPS on a similar time horizon as electric utilities, starting with 5% renewable gas by 2020. Paired with a mechanical fix to the RPS calculation (such as in HB 903), it would ensure that 100% renewable means 100% renewable, and would create a measure of **fairness** that is missing in the regulation of energy utilities today.
- **We can support a combination.** We understand that various parties may suggest RPS solutions that are variations or combinations derived from the bills or concepts described above (e.g. language to be suggested by DBEDT, the Ulupono Initiative, and/or others). These combinations are also workable solutions.

WHAT IS RENEWABLE NATURAL GAS?

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. Thus, as noted above, using fossil fuel-based natural gas is inconsistent with a shift to 100% renewable energy.

In Hawai'i, The Gas Company (dba Hawaii Gas) currently uses natural gas in two forms. It creates synthetic natural gas (SNG), primarily from oil products. It also uses liquefied natural gas (LNG), which is gas drilled from a well and then liquefied for shipping. Both of these are fossil fuels.

However, The Gas Company also currently uses some gas that is derived from renewable sources. Approximately 2.4% of its gas supply presently comes from a renewable feedstock.¹

¹ See Hawaii Gas Annual Report to PUC (May, 2016), *available at* <http://puc.hawaii.gov/wp->

In August 2016, the company announced its successful application to recover gas emitted from the Honouliuli wastewater treatment plant. This is a renewable “biogas” created during the process of treating wastewater—i.e. renewable natural gas (RNG). When the project becomes operational in approximately 12-18 months, it will supplant approximately 3% of the existing fossil fuel gas supply.² Previously, this gas was flared (i.e. burned) at the facility. With this project, the City and County of Honolulu will now derive revenue by selling the gas, rather than wasting it. This is a remarkable win-win solution.

As a result, **renewable natural gas is set to soon comprise roughly 5% of the gas supply on Oahu.** Blue Planet Foundation strongly supports these efforts to transition to renewable gas.

Scaling this up 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. For example, these might include: wastewater treatment facilities, landfills, other waste sources, local crops, or renewable hydrogen. Suppliers in other locations may also become an option. On the U.S. mainland, Clean Power Fuels is currently marketing a renewable natural gas product called “Redeem.” This is collected from various waste sources, 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.

Thank you for this opportunity to testify in support.

content/uploads/2013/04/2016-HRS-269-45-Gas-RE-Report.pdf

² *Id.*; see also Press Release, Hawaii Gas Receives Biogas Award From City & County Of Honolulu (Aug. 2, 2016).

**Testimony before the
House Committee on Energy & Environmental Protection**

February 9, 2017, 8:30 am

Conference Room 325

H.B. No. 903 – Relating to Renewable Energy

By Scott Seu

Senior Vice President, Public Affairs

Hawaiian Electric Company, Inc.

Chair Lee, Vice-Chair Lowen and Members of the Committee:

My name is Scott Seu. I am testifying on behalf of Hawaiian Electric and its subsidiary utilities, Maui Electric and Hawaii Electric Light (collectively “Companies”).

We cannot support this bill in its current form. While we can support the intent of this measure to revise the mathematics of the renewable portfolio standard (“RPS”) to more accurately reflect progress towards the state’s goal of moving off of fossil fuels, it must be coupled with further revisions to the RPS statute that close the loophole of customers generating their own electricity with fossil fuels such as gas, diesel or other non-renewable fuels.

Many of our large customers are being presented with proposals to self-generate their electricity using fossil fuels whether it is in the form of self-supply contracts, combined heat and power units, or microgrids. Under the proposed RPS law, this customer fossil fuel electricity is counted against Hawaiian Electric’s RPS, yet we have no control over the customer generation. Not only does this jeopardize achievement of our State’s clean energy goals, but it creates an unlevel playing field between customers and companies that do their part to support clean energy policy, and customers, fossil fuel providers, and vendors that choose to ignore it.

As long as customer generation from fossil fuels is allowed to expand without some sort of oversight or accountability, then the RPS and the state’s clean energy policy have a major gap. So while fixing the math of the current RPS makes sense, more importantly, this gap in public policy needs to be closed. We have been working with DBEDT and others on amendments that will address these concerns.

Thank you for this opportunity to testify.



Email: communications@ulupono.com

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION
Thursday, February 9, 2017 — 8:30 a.m. — Room 325

Ulupono Initiative Strongly Supports HB 903, Relating to Renewable Portfolio Standards

Dear Chair Lee, Vice Chair Lowen and Members of the Committee:

My name is Kyle Datta and I am General Partner of the Ulupono Initiative, a Hawai'i-based impact investment company that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally grown food, increase affordable, renewable energy, and reduce waste. We believe 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 strongly supports HB 903, which fixes the renewable portfolio standard for electrical energy by removing the double count from the formula.

Why is this so important? 100% should mean 100%

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 24 percent. Similarly, for the 2030 RPS goal of 40 percent, the actual renewable generation is 32 percent. Correcting the formula would save 1.4 MM bbls of oil in 2030—nearly 3 percent of total state energy use, or the equivalent of adding more than 400 MW of solar power to the grid.

How do we address distributed energy fueled by fossil fuels?

Some parties are concerned that the current RPS and HB 903 do not address customer sited grid connected fossil fuel power generation, notably Combined Heat and Power (CHP). Both the electric and gas utility have estimated the total CHP market at ~100 MW (compared to O'ahu's total demand of ~1,165 MW). Nonetheless, Ulupono supports amending HB 903 to address this concern.

Ulupono would support any of the following amendments to address this concern:

- a) The language contained in HB 1040
- b) Alternative language attached to this testimony that includes a renewable portfolio standard for customer sited grid connected power generation from gas or other fossil fuels sold by a regulated utility
- c) Alternative language proposed by DBEDT in its testimony that includes a renewable portfolio standard for customer sited grid connected power generation from gas sold by a

Investing in a Sustainable Hawai'i

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gas utility

Ulupono has provided a presentation attached to this testimony that explains the problem, and how either HB 1040 or the attached proposed amendments to HB 903 address the concern of customer sited generation utilizing fossil fuel. This presentation applies to either HB 1040 or the alternative language proposed by Ulupono and DBEDT.

The nuances between the Ulupono bill and the DBEDT bill is that Ulupono is clarifying that the gas RPS applies to any regulated utility, anticipating the HEI companies may have plans to sell gas in the future, given that they planned to do this in the recent past. We did not want unintended drafting oversight that would allow an electric utility selling gas to avoid the RPS. There are minor differences in the preamble as well. We regret that there was not enough time to harmonize these bills and socialize with all stakeholders. That said, Ulupono would fully support the DBEDT version as well.

Ulupono recommends targets for any regulated utility selling fossil fuels for grid connected power generation, whether customer-sited or utility-scale must meet the 2045 target of 100 percent. We all can agree that there will be no grid-connected fossil fuel generation from any regulated source.

From a practical matter, we believe it is possible for a gas utility to achieve a modest 5 percent meaningful target in 2020 based on the renewable gas already in system and near term projects underway. It is clearly possible, though challenging, to achieve 30 percent by 2030 through biogas projects under discussion and certainly desirable to reach 50 percent by 2040. Thus, our proposed targets are based on practical assessment of renewable gas over the next two decades. We note that if the future projects do not materialize, the "beyond reasonable control" clauses contained in section 269 A (e) protect the regulated utility from undue penalties. Therefore, should the committee adopt the DBEDT proposed target of 10 percent by 2020, we do not have an objection.

Further, we believe the ongoing collaborative process offers an opportunity for future modifications to either the language proposed by Ulupono or DBEDT, to address any remaining concerns any party has stated today. Therefore, we recommend the committee pass this bill with any of above amendments to address the concern regarding distributed grid connected fossil fuel generation.

Thank you for this opportunity to testify.

Respectfully,

Kyle Datta
General Partner

A BILL FOR AN ACT

RELATING TO RENEWABLE PORTFOLIO STANDARD.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that Act 97, Session Laws of Hawaii 2015, amended section 269-92, Hawaii Revised Statutes, to establish a one hundred per cent renewable portfolio standard by 2045, with the intent to transition the State away from imported fuels and toward renewable local resources that provide a secure source of affordable energy. However, the calculation of the renewable portfolio standard, based on the definition of renewable portfolio standard enacted in 2001 and amended in 2006, is the percentage of electrical energy sales that is represented by renewable electrical energy. The legislature finds that the calculation of the renewable portfolio standard based on electrical energy sales (renewable electrical energy divided by total electricity sales), rather than on electrical energy generation (renewable electrical energy divided by total electrical energy generation), overestimates the amount of renewable energy serving Hawaii's electric utility customers.

There are two fundamental issues that lead to the current discrepancy: (1) the current renewable portfolio standard calculation inflates the reported percentage of renewable energy by excluding renewables from customer-sited, grid-connected renewable and non-renewable energy generation in the denominator, which becomes material with higher levels of

customer-sited, grid-connected energy generation and higher renewable portfolio standard percentages; and (2) the current electrical energy sales number does not include energy losses that occur between the points of electrical energy generation and the customer meter where sales are measured. Failure to address these issues would create the incorrect public perception of the State's progress towards its one hundred per cent renewable energy statutory goal.

The legislature finds that Hawaii's energy sector is undergoing a transition to renewable energy that is strengthening the State's economy, environment, and security. To complete this transition successfully it is also important that all relevant entities are aligned. Along these lines, 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. These effects may also have near- and long-term impacts on the viability of the State's electric utilities, and near- and long-term impacts on the viability of the State's gas utilities.

The legislature finds that the simplest, fairest, and most effective solution to this concern is to implement renewable portfolio standard targets for gas utilities that mirror those being achieved by electric utilities. This Act requires all gas sales under regulated utility operations to become more renewable over time.

The purpose of this Act is to: (1) amend the definition of renewable portfolio standard to more accurately reflect the percentage of renewable energy penetration in the State; and (2) promote fairness and alignment in Hawaii's transition to one

hundred per cent renewable energy and ensure that the State's market for gas embraces and supports the State's transition toward increasing renewable energy.

SECTION 2. Section 269-91, Hawaii Revised Statutes, is amended to read as follows:

"§269-91 [f]Definitions.[f] For the purposes of this [f]part[f]:

"Biofuels" means liquid or gaseous fuels produced from organic sources such as biomass crops, agricultural residues and oil crops, such as palm oil, canola oil, soybean oil, waste cooking oil, grease, and food wastes, animal residues and wastes, and sewage and landfill wastes.

"Cost-effective" means the ability to produce or purchase electric energy or firm capacity, or both, from renewable energy resources at or below avoided costs or as the commission otherwise determines to be just and reasonable consistent with the methodology set by the public utilities commission in accordance with section 269-27.2.

"Cost-effective" in the context of a regulated utility company selling gas means the ability to produce or purchase gas from renewable gas resources at or below avoided costs or as the commission otherwise determines to be just and reasonable.

"Electric utility company" means a public utility as defined under section 269-1, for the production, conveyance, transmission, delivery, or furnishing of power.

"Gas utility company" means a public utility as defined under section 269-1, for the production, conveyance, transmission, delivery, or furnishing of gas.

"Grid-connected" means interconnected to the Hawaii electric system under an existing standard or rule approved by the public utilities commission. As used in this definition, "interconnection" as in section 269-141.

"Hawaii electric system" has the same meaning as described in section 269-141.

"Renewable electrical energy" means:

- (1) Electrical energy generated using renewable energy as the source, and beginning January 1, 2015, includes customer-sited, grid-connected renewable energy generation; and
- (2) Electrical energy savings brought about by:
 - (A) The use of renewable displacement or off-set technologies, including solar water heating, sea-water air-conditioning district cooling systems, solar air-conditioning, and customer-sited, grid-connected renewable energy systems; provided that, beginning January 1, 2015, electrical energy savings shall not include customer-sited, grid-connected renewable-energy systems; or
 - (B) The use of energy efficiency technologies, including heat pump water heating, ice storage, ratepayer-funded energy efficiency programs, and use of rejected heat from co-generation and combined heat and power systems, excluding fossil-fueled qualifying facilities that sell electricity to electric utility companies and central station power projects.

"Renewable energy" means energy generated or produced using the following sources:

- (1) Wind;
- (2) The sun;
- (3) Falling water;
- (4) Biogas, including landfill and sewage-based digester gas;
- (5) Geothermal;
- (6) Ocean water, currents, and waves, including ocean thermal energy conversion;
- (7) Biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste and other solid waste;
- (8) Biofuels; and
- (9) Hydrogen produced from renewable energy sources.

"Renewable gas" means gas generated or produced using the following sources:

- (1) Biogas, including landfill and sewage-based digester gas;
- (2) Biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste and other solid waste;
- (3) Biofuels; and

(4) Hydrogen produced from renewable energy sources.

"Renewable portfolio standard" [~~means the percentage of electrical energy sales that is represented by renewable electrical energy.~~] has the same meaning as described in section 269-92 and 269-A."

SECTION 3. Section 269-92, Hawaii Revised Statutes, is amended to read as follows:

"§269-92 Renewable portfolio standards~~(-)~~ for electric utility companies. (a) The renewable portfolio standard for an electric utility company means the ratio of total renewable electrical energy generated from grid-connected renewable energy systems divided by total electrical energy generated from grid-connected energy systems, expressed as a percentage; provided that this will not apply where the generation is used exclusively for emergency service in case of failure of the normal supply from the Hawaii electric system.

~~[(a)]~~ (b) Each electric utility company that sells electricity for consumption in the State shall establish a renewable portfolio standard of:

- (1) Ten per cent [~~of its net electricity sales~~] by December 31, 2010;
 - (2) Fifteen per cent [~~of its net electricity sales~~] by December 31, 2015;
 - (3) Thirty per cent [~~of its net electricity sales~~] by December 31, 2020;
 - (4) Forty per cent [~~of its net electricity sales~~] by December 31, 2030;
 - (5) Seventy per cent [~~of its net electricity sales~~] by December 31, 2040; and
 - (6) One hundred per cent [~~of its net electricity sales~~] by December 31, 2045.
- (c) All electric grid-connected energy systems shall be

one hundred per cent renewable energy systems by December 31, 2045; provided that this will not apply where the generation is used exclusively for emergency service in case of failure of the normal supply from the Hawaii electric system.

~~[(b)]~~ (d) The public utilities commission may establish standards for each electric utility company that prescribe what portion of the renewable portfolio standards shall be met by specific types of renewable energy resources; provided that:

- (1) Prior to January 1, 2015, at least fifty per cent of the renewable portfolio standards shall be met by electrical energy generated using renewable energy as the source, and after December 31, 2014, the entire renewable portfolio standard shall be met by electrical generation from renewable energy sources;
- (2) Beginning January 1, 2015, electrical energy savings shall not count toward renewable energy portfolio standards;
- (3) Where electrical energy is generated or displaced by a combination of renewable and nonrenewable means, the proportion attributable to the renewable means shall be credited as renewable energy; and
- (4) Where fossil and renewable fuels are co-fired in the same generating unit, the unit shall be considered to generate renewable electrical energy (electricity) in direct proportion to the percentage of the total heat input value represented by the heat input value of the renewable fuels.

~~[(e)]~~ (e) If the public utilities commission determines that an electric utility company failed to meet the renewable portfolio standard, after a hearing in accordance with chapter 91, the utility shall be subject to penalties to be established by the public utilities commission; provided that if the commission determines that the electric utility company is unable to meet the renewable portfolio standards due to reasons beyond the reasonable control of an electric utility, as set forth in subsection ~~[(d)]~~ (f), the commission, in its discretion, may waive in whole or in part any otherwise applicable penalties.

~~[(d)]~~ (f) Events or circumstances that are outside of an electric utility company's reasonable control may include, to the extent the event or circumstance could not be reasonably foreseen and ameliorated:

- (1) Weather-related damage;
- (2) Natural disasters;
- (3) Mechanical or resource failure;

- (4) Failure of renewable electrical energy producers to meet contractual obligations to the electric utility company;
- (5) Labor strikes or lockouts;
- (6) Actions of governmental authorities that adversely affect the generation, transmission, or distribution of renewable electrical energy under contract to an electric utility company;
- (7) Inability to acquire sufficient renewable electrical energy due to lapsing of tax credits related to renewable energy development;
- (8) Inability to obtain permits or land use approvals for renewable electrical energy projects;
- (9) Inability to acquire sufficient cost-effective renewable electrical energy;
- (10) Inability to acquire sufficient renewable electrical energy to meet the renewable portfolio standard goals beyond 2030 in a manner that is beneficial to Hawaii's economy in relation to comparable fossil fuel resources;
- (11) Substantial limitations, restrictions, or prohibitions on utility renewable electrical energy projects; and
- (12) Other events and circumstances of a similar nature that could not be reasonably foreseen and ameliorated.

SECTION 4. Chapter 269, part V, Hawaii Revised Statutes, is amended by adding the following new sections to be appropriately designated and to read as follows:

"§269-A Renewable portfolio standards for regulated utility companies selling gas. (a) The renewable portfolio standard for a regulated utility company selling gas means the heat energy in therms from renewable gas sold for grid connected electric power generation to a non-electric utility divided by the heat energy in therms from the total gas sold for grid connected power generation to a non electric utility, expressed as a percentage. As used in this definition, "gas sold" means the sale of all gas under regulated utility operations in the State by a any utility company, by its corporate parent, and by its corporate parent's subsidiary entities, partners, joint venturers, and affiliate entities.

(b) Each regulated utility company that sells gas for grid connected electric power in the State shall establish a renewable energy portfolio standard of:

- (1) Five per cent by December 31, 2020;
- (2) Thirty per cent by December 31, 2030
- (3) Fifty per cent by December 31, 2040; and
- (4) One hundred per cent by December 31, 2045.

(c) The public utilities commission may establish standards for each gas utility company that prescribe what portion of the renewable portfolio standards shall be met by specific types of renewable gas resources; provided that where gas is composed of co-mingled fossil and renewable gases, the renewable gas component of such gas shall be considered to be in direct proportion to the percentage of the total heat input value represented by the heat input value of the renewable gas.

(d) If the public utilities commission determines that a gas utility company failed to meet the renewable portfolio standard, after a hearing in accordance with chapter 91, the utility shall be subject to penalties to be established by the public utilities commission; provided that if the commission determines that the gas utility company is unable to meet the renewable portfolio standards due to reasons beyond the reasonable control of a gas utility, as set forth in subsection (e), the commission, in its discretion, may waive in whole or in part any otherwise applicable penalties.

(e) Events or circumstances that are outside a gas utility company's reasonable control may include, to the extent the event or circumstance could not be reasonably foreseen and ameliorated:

- (1) Weather-related damage;
- (2) Natural disasters;
- (3) Mechanical or resource failure;

- (4) Failure of renewable gas producers or suppliers to meet contractual obligations to the gas utility company;
- (5) Labor strikes or lockouts;
- (6) Actions of governmental authorities that adversely affect the procurement of renewable gas under contract to a gas utility company;
- (7) Inability to acquire sufficient renewable gas due to lapsing of tax credits related to renewable gas development;
- (8) Inability to obtain permits or land use approvals for renewable gas projects;
- (9) Inability to acquire sufficient cost-effective renewable gas;
- (10) Inability to acquire sufficient renewable gas to meet the renewable portfolio standard goals beyond 2030 in a manner that is beneficial to Hawaii's economy in relation to comparable fossil fuel resources;
- (11) Substantial limitations, restrictions, or prohibitions on utility renewable gas projects; and
- (12) Other events and circumstances of a similar nature that could not be reasonably foreseen and ameliorated.

(f) The Public Utilities Commission shall evaluate the renewable portfolio standards every five years, beginning in 2018, and may revise the standards based on the best information available at the time to determine if the standards established remain effective and achievable.

§269-B Achieving gas portfolio standard. (a) A regulated utility company that sells gas and its affiliates may aggregate their renewable portfolios to achieve the renewable portfolio standard.

(b) If a regulated utility company that sells gas and its

affiliates aggregate their renewable portfolios to achieve the renewable portfolio standard, the public utilities commission may distribute, apportion, or allocate the costs and expenses of all or any portion of the respective renewable portfolios among the gas utility company, its gas utility affiliates, and their respective ratepayers, as is reasonable under the circumstances.

(c) A regulated utility company that sells may recover, through an automatic rate adjustment clause, the regulated utility company's revenue requirement resulting from the distribution, apportionment, or allocation of the costs and expenses of the renewable portfolios of the regulated utility company and its regulated utility affiliates.

(d) To provide for timely recovery of the revenue requirement under subsection (c), the commission may establish a separate automatic rate adjustment clause, or approve the use of a previously approved automatic rate adjustment clause, without a rate case filing. The use of the automatic rate adjustment clause to recover the revenue requirement shall be allowed to continue until the revenue requirement is incorporated in rates in the respective gas utility company's rate case.

§269-C Waivers, extensions, and incentives. Any gas utility company not meeting the renewable portfolio standard shall report to the public utilities commission within ninety days following the goal dates established in section 269-A, and provide an explanation for not meeting the renewable portfolio standard. The public utilities commission, after allowing an appropriate period of public comment, shall have the option to either grant, or not, a waiver from the renewable portfolio standard or an extension for meeting the prescribed standard.

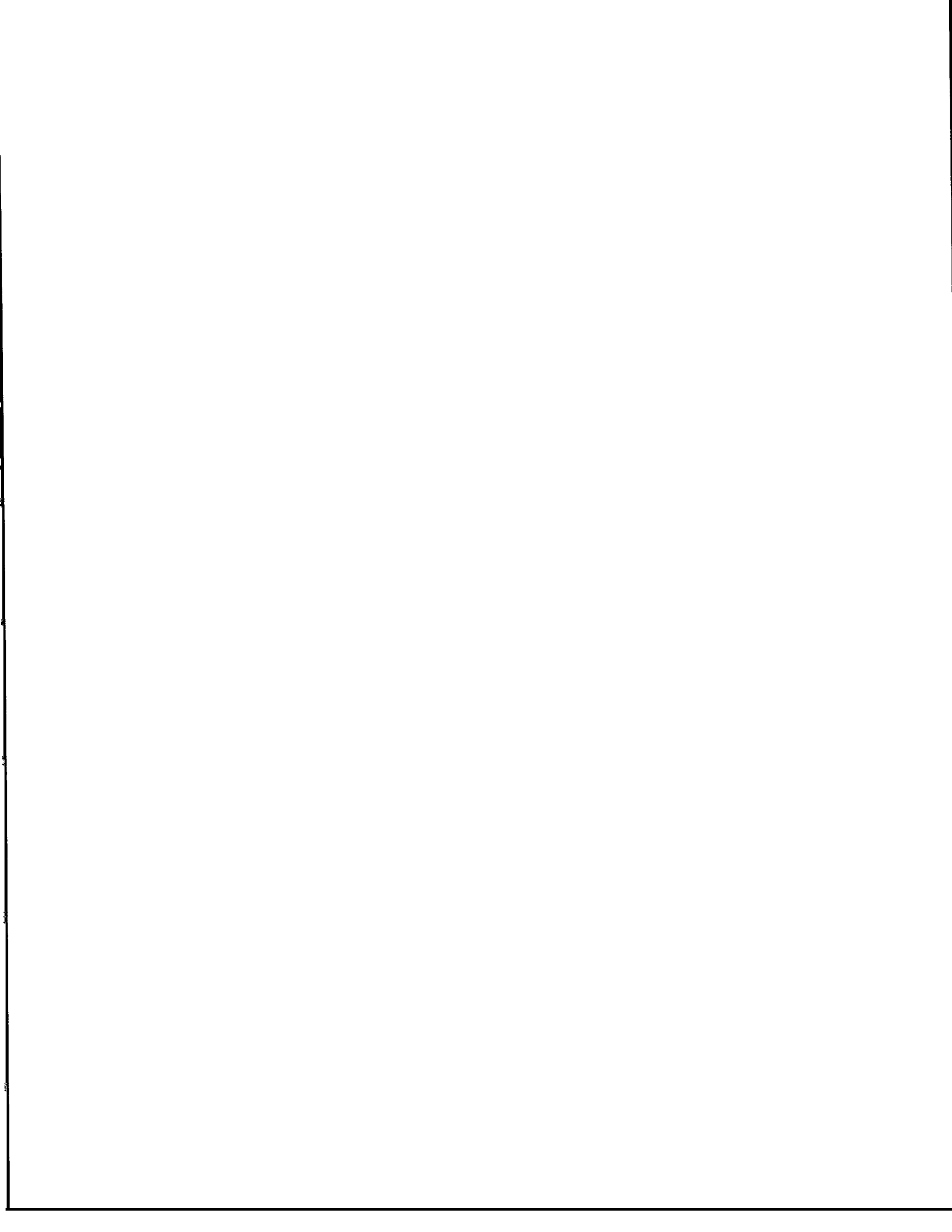
The public utilities commission may provide incentives to encourage gas utility companies to exceed their renewable portfolio standards or to meet their renewable portfolio

standards ahead of time, or both."

SECTION 6. In codifying the new sections added by section 5 of this Act, the revisor of statutes shall substitute appropriate section numbers for the letters used in designating the new sections in this Act.

SECTION 7. Statutory material to be repealed is bracketed and stricken. New statutory material is underscored.

SECTION 8. This Act shall take effect on January 1, 2018.



RPS FIX

**TESTIMONY OF KYLE DATTA, ULUPONO
INITIATIVE**

FEBRUARY 9, 2017



WHY FIX THE RPS

SIZE OF THE DEFINITION GAP

	STATE GOAL	ACTUAL RPS UNDER DEFINITION
2020	30%	24%
2030	40%	32%

Calculated by applying the percent decrease of HECO projections for renewable energy using current and redefined RPS definitions

EQUIVALENT ENERGY REQUIRED TO REPLACE THE GAP

MMBOE DISPLACED	MW SOLAR
0.9 MMBOE	268 MW
1.4 MMBOE	409 MW

FIXING THE RPS

PROBLEM:

Current RPS Formula Double Counts Distributed Energy

- RPS formula is renewable generation/sales
- Double counts customer-sited renewable generation
- Error increases over time
 - By 2045, 100% RE = 125% RPS

SOLUTION:

Fix the Formula

- Fix formula to be renewable generation/total generation

CHALLENGE:

Minimize Unintended Consequences

- Address regulated gas sales for power
- Recognize limits of regulatory scope

ULUPONO AMENDMENTS TO RPS FORMULA ALIGNS INCENTIVES WITH POLICY

ELECTRIC UTILITIES:

Renewable generation
divided by total generation

- Minus generation claimed
by gas utilities (to avoid
double count)

GAS UTILITIES:

New RPS created as defined by:

- Renewable generation from fuel sold
Divided by total generation from fuel sold

- New RPS designed to parallel electric utility incentive to use renewable fuels or renewable power
- Ultimately, all utilities will have to phase out fossil fuels for power by 2045

HB 1040 PROPOSED RPS FORMULA WITH RENEWABLE OFFSETS

ELECTRIC UTILITIES:

Renewable generation
divided by total generation

- Minus generation claimed
by gas utilities (to avoid
double count)

GAS UTILITIES:

New RPS created as defined by:

- Renewable generation from fuel sold plus
- Renewable generation owned, leased or
contracted for
- Divided by total generation from fuel sold
and total generation owned, leased or
contracted for

- New RPS designed to parallel electric utility incentive to either use renewable fuels or invest in renewable generation
- Ultimately, all utilities will have to phase out fossil fuels for power by 2045

HOW NEW FORMULA WOULD WORK: ULUPONO AMENDMENTS

CUSTOMER GENERATION PLUS OFF-SET

- Customer CHP 20MW
 - 10% Renewable Gas
 - 90% Fossil Gas
 - 85% Capacity Factor
 - 100% Used to reduce load



COMPARISON TO 2015 BASELINE

- Existing RPS: 23.2%
- Actual State RPS: 21.7%

◦ Existing HECO RPS	23.8%
◦ Proposed HECO RPS	22.0%
◦ Hawaii Gas RPS	10%
◦ Actual State RPS	21.8%

HOW NEW FORMULA WOULD WORK: HB 1040 OFFSETS

CUSTOMER GENERATION PLUS OFF-SET

- Customer CHP 20MW
 - 10% Renewable Gas
 - 90% Fossil Gas
 - 85% Capacity Factor
 - 100% Used to reduce load
- Hawaii Gas-owned Solar PV 10MW
 - 24% Capacity Factor
 - Sold to HECO as RFP winner



COMPARISON TO 2015 BASELINE

- Existing RPS: 23.2%
 - Actual State RPS: 21.7%
- | | |
|---------------------|-------|
| ◦ Existing HECO RPS | 24% |
| ◦ Proposed HECO RPS | 22.1% |
| ◦ Hawaii Gas RPS | 21.1% |
| ◦ Actual State RPS | 22% |

RPS TARGETS FOR ELECTRIC GENERATION

PROPOSED RPS TARGETS

	ELECTRIC UTILITY	GAS UTILITY
2015	15%	N/A
2020	30%	0
2030	40%	5%
2040	70%	50%
2045	100%	100%

SOLUTIONS TO COMPETITIVE CONCERNS

ARE UTILITY INCENTIVES ALIGNED TO POLICY?

- Yes. All regulated fossil fuels now under RPS with goal of 100% renewable energy for electric generation by 2045 that completely phases out fossil fuel use in power

DOES ANYONE HAVE AN UNFAIR COMPETITIVE ADVANTAGE?

- No. Companies regulated by PUC on equal footing.
- Unregulated importation could become a problem in the future that is under discussion.

ARE HAWAII GAS RENEWABLE OFFSETS INCREASING OR SWAPPING RENEWABLE ENERGY?

- Multiple issues regarding offset are under discussion

SOLUTIONS TO PRACTICAL CONCERNS

WHAT ABOUT DoD NATIONAL SECURITY OR EMERGENCIES?

- These are exempted now and would continue to be.

HOW IS REFINERY COGENERATION ADDRESSED?

- Refineries are unregulated, so their cogeneration to lower their energy costs cannot be included
- Any new cogeneration for sale to utility would count under electric utility RPS or otherwise addressed

RENEWABLE GAS SUPPLIES ARE LIMITED. WHAT DOES THIS MEAN TO THE HAWAII GAS RPS?

- Hawaii Gas fossil power projects will be limited by the renewable gas or, with offsets, the new renewable power projects it can generate.
- Hawaii Gas will ultimately have to transform its fuel to power to 100% renewable by 2045.



LATE

Hawaii Solar Energy Association
Serving Hawaii Since 1977

**TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION
IN REGARD TO HB 903, RELATING TO RENEWABLE ENERGY
BEFORE THE
HOUSE COMMITTEE ON ENERGY AND ENVIRONMENT
THURSDAY, FEBRUARY 9TH, 2017**

Chair Lee, Vice-Chair Lowen, and members of the committee, my name is Hajime Alabanza and I represent the Hawaii Solar Energy Association, Inc. (HSEA).

HSEA **supports** the intent of HB 903 and provides comments. This measure amends the definition of renewable portfolio standard to reflect the true amount of renewable energy penetration in the state.

In order to accurately track the progress of the state of Hawaii towards its 100% renewable portfolio standard goals, accurate definitions are imperative. The original Act 97 contains language that defines “renewable portfolio standard” as the “percentage of electrical energy sales that is represented by renewable electrical energy” (HRS §269-91). Electrical energy sales do not reflect the actual amount of energy being produced or used and leads to misconceptions regarding progress towards a 100% RPS. Renewable energy sales figures would tend to overestimate the amount of renewable energy penetration.

Additionally, HSEA cautions against the ambiguity inherent in using the term generation. Is this to mean generation under Standard Testing Conditions (STC), generation in aggregate after one year of use, generation over the lifetime of the system, or another type of generation? As collaboration with the PUC, DBEDT, and other stakeholders continue on this bill, it may be prudent to address this ambiguity. HSEA looks forward to this collaboration and is more than willing to assist in any way.

Thank you for the opportunity to testify.

LATE



P.O. Box 37158, Honolulu, Hawai`i 96837-0158
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COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Rep. Chris Lee, Chair

Rep. Nicole E. Lowen, Vice Chair

DATE: Thursday, February 9, 2017

TIME: 8:30 am

PLACE: Conference Room 325

RE: HB 903 RELATING TO RENEWABLE ENERGY SUPPORT

Aloha Chair Lee, Vice Chair Lowen, and Members of the Committee

Life of the Land is Hawai`i's own energy, environmental and community action group advocating for the people and `aina for 47 years.

HB 903 fixes one of the major flaws in the Hawai`i definition of Renewable Portfolio Standards (RPS).

If a customer and a utility each have a solar system and a petroleum-based generator, and each of the four systems produces one unit of energy per year, then the totality is four units.

Current Definition. $RPS = \frac{\text{Solar Systems (2 units)}}{\text{Grid Systems (2 units)}} = 100 \text{ percent}$

Under the new definition, the grid-based RPS will be either 1/2 or 2/3, depending on how the law is interpreted. In either case, it prevents an RPS > 100% in cases where the utility continues to use fossil fuel.

Mahalo,
Henry Curtis
Executive Director

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, February 8, 2017 4:38 PM
To: EEPtestimony
Cc: wmanonsen@consultant.com
Subject: *Submitted testimony for HB903 on Feb 9, 2017 08:30AM*

HB903

Submitted on: 2/8/2017

Testimony for EEP on Feb 9, 2017 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
William Anonsen	The Maritime Group, LLC	Support	No

Comments:

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

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February 9, 2017

**TESTIMONY PROVIDING COMMENTS ON HOUSE BILL 903,
RELATING TO RENEWABLE ENERGY**

House Committee on Energy & Environmental Protection
The Honorable Chris Lee, Chair
The Honorable Nicole Lowen, Vice Chair

Thursday, February 9, 2017 – 8:30 a.m.
State Capitol, Room 325

Chair Lee, Vice Chair Lowen and members of the Committee,

Thank you for providing Par Hawaii with this opportunity to submit comments on House Bill 903, Relating to Renewable Energy. My name is Lance Tanaka, director of government and public affairs for Par Hawaii. Par Hawaii, Inc., formerly Mid Pac Petroleum, and Par Hawaii Refining, LLC, formerly Hawaii Independent Energy, are subsidiaries of Texas-based Par Pacific Holdings, Inc., formerly known as Par Petroleum Corporation. Collectively, we are known as Par Hawaii, the leading supplier of transportation fuels in the Islands.

The purpose of this bill is to amend the “renewable portfolio standard” definition to more accurately reflect the amount of renewable energy generation in Hawaii, by amending the renewable portfolio standard calculation to be based on electrical energy generation as opposed to electrical energy sales.

Par Hawaii would like to provide the following comments.

Par Hawaii supports the Legislature’s pursuit of accuracy in the method by which progress is measured relative to Hawaii becoming 100% renewable in electrical generation by the year 2045. Our comments, then, center on the possibility that the State could subsequently require companies that self-generate electricity to comply with the renewable portfolio standard.

In the 2015 legislative session, lawmakers passed House Bill 623, Conference Draft 1, which was enacted into law as Act 097. The final version of the bill increased Hawaii’s renewable portfolio standard to 30% by 2030, 70% by 2040 and 100% by 2045 for electrical generation. However, as introduced, H.B. 623 originally contained a provision, whereby “...electricity from on-site generation not purchased from an electric utility, both on-grid and off-grid, is subject to the same renewable standards as electricity generated by electric utilities.”

Testimony Providing Comments on H.B. 903, Relating to Renewable Energy
Presented by Lance Tanaka, Par Hawaii
House Committee on Energy & Environmental Protection
Hawaii State Capitol, Room 325
Thursday, February 9, 2017 – 8:30 a.m.
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Par Hawaii, known then as Hawaii Independent Energy, LLC, opposed that provision to establish renewable standards for self-generators, which would have adversely impacted our refining economics.

The co-gen unit is an essential tool that supplies power to run the refinery and feeds excess electricity into the grid. The co-gen also enables the refinery to balance its refining operations. The crude oil we import is refined into varying supplies of jet fuel, diesel, naphtha and other byproducts. The byproducts are used interchangeably as fuel to run the co-gen unit. By subjecting our co-gen to the same renewable standards as an electric utility, we would be required to source renewable fuel in order for our co-gen power to comply.

This change in fuel basis – procuring, importing and storing an expensive renewable fuel to burn in our co-gen – would result in the loss of fuel flexibility, making optimization very challenging. Furthermore, Par Hawaii would be forced to export byproducts at a financial loss. In such a scenario, we would require an exemption to continue using the crude oil we import to power our co-gen unit.

Thank you for allowing me to present these comments to the Committee.

A handwritten signature in black ink, appearing to read "Lance N. Tanaka". The signature is fluid and cursive, with a long horizontal stroke at the end.

Lance N. Tanaka
Director, Government & Public Affairs
Par Hawaii



SIERRA CLUB OF HAWAI'I
MĀLAMA I KA HONUA. *Cherish the Earth.*

LATE

HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Thursday, February 9, 2017 8:30AM Room 325

In SUPPORT HB 903 Relating to Renewable Energy

Aloha Chair Lee and members of the Energy & Environmental Protection Committee,

On behalf of our 20,000 members and supporters, Sierra Club of Hawai'i supports HB 903, which seeks to clarify confusion in our renewable portfolio standards to ensure we actually achieve a 100% clean energy future in Hawai'i.

Since 1968, the Sierra Club of Hawai'i has been working to protect the unique natural and cultural resources of our islands. We helped advocate for the establishment our current renewable energy portfolio standards.

We support modifications to Haw. Rev. Stat. §269-91 that make clear all energy used in the Hawaiian Islands is from 100% renewable sources by 2045. Relying on energy sales does not capture all energy consumed here.

In order to ensure a full and fair transition to a truly clean energy economy, it is crucial that the Legislature address this flaw in the definitions for our clean energy mandate.

Thank you very much for this opportunity to provide testimony on this important issue.

Mahalo,
Marti Townsend
Director