

HB 1943, HD2

Measure Title: RELATING TO THE MODERNIZATION OF THE HAWAII ELECTRIC SYSTEM.

Report Title: Grid Modernization; Hawaii Electric System; Public Utilities Commission; Appropriation (\$)

Description: Amends the public utilities commission principles regarding the modernization of the electric grid. Requires the commission to initiate a proceeding no later than July 1, 2014, to discuss upgrades to the Hawaii electric system for anticipated growth of customer generation. Appropriates funds to cover costs of the proceeding. Effective July 1, 2050. (HB1943 HD2)

TESTIMONY OF HERMINA MORITA
CHAIR, PUBLIC UTILITIES COMMISSION
DEPARTMENT OF BUDGET AND FINANCE
STATE OF HAWAII
TO THE
SENATE COMMITTEES ON
ENERGY & ENVIRONMENT
AND
COMMERCE & CONSUMER PROTECTION

MARCH 20, 2014
3:35 p.m.

MEASURE: H.B. No. 1943, H.D. 2
TITLE: Relating to the Modernization of the Hawaii Electric System

Chair Gabbard, Chair Baker, and Members of the Committees:

DESCRIPTION:

This measure proposes to amend Section 269-145.5, Hawaii Revised Statutes ("HRS"), by requiring the Public Utilities Commission ("Commission") to "address technical, policy, and economic issues associated with modernization of the electric grid" based on principles that touch on the diversification of renewable energy resources, but with an emphasis on maximizing distributed generation interconnections, and that have a focus on customer preferences which are to be incorporated into utility distribution system and integrated resource planning. The Commission is also required to commence a regulatory proceeding to "address the technical, policy, and economic issues associated with the modernization of the electric grid in the State, based on the principles in [HRS] section 145.5(b)..." ("Proceeding"). The Proceeding's scope is defined and multiple procedural timelines for the Proceeding are allowed.

Public utilities are required to file detailed reports with the Commission during the course of the Proceeding on "each customer request to interconnect distributed generation that the utility has denied or has delayed for at least thirty days beyond any applicable deadline in the utility's interconnection procedures," with the provision of specific customer and technical information being mandated and made open to the public. Further, the Commission must report its findings and recommendations from the Proceeding prior to the 2016 legislative session, in addition to quarterly interim progress reports to the Legislature being required on the implementation of short-term solutions.

Both the Commission and the Division of Consumer Advocacy within the Department of Commerce and Consumer Affairs ("Consumer Advocate") are exempted from HRS § 103D-304 for the purposes of the Proceeding. General fund appropriations of unspecified amounts for fiscal year 2014-2015 for the Commission and the Consumer Advocate to carry out and participate in the Proceeding are made. Finally, this measure has an effective date of July 1, 2050.

POSITION:

The Commission does not support the language in H.B. No. 1943, H.D. 2. The Commission offers a proposed Senate Draft 1 that incorporates language for this measure agreed to, for the most part, by a working group facilitated by the Senate Committee on Energy & Environment ("Working Group"). The Commission would also like to offer the following comments.

COMMENTS:

The attached proposed Senate Draft 1 includes amendments that were discussed and agreed to by the members of the Working Group, including the Commission, the Consumer Advocate, Department of Business, Economic Development, and Tourism, the Hawaiian Electric Companies, Kauai Island Utility Cooperative, and proponents of customer-sited photovoltaic systems. While the Working Group has agreed to continue to meet for non-substantive refinements to this measure, this proposed draft is substantially complete with respect to the bill's major provisions.

With regard to H.B. No. 1943, H.D. 2, the Commission is concerned that this measure does not adequately acknowledge many of the underlying technical, economic, and policy concerns associated with grid modernization. The scope and issues of the proposed Proceeding in H.B. No. 1943, H.D. 2 appear to solely promote distributed generation at the expense of a diverse resource and technology portfolio and other energy options that may potentially provide greater benefits to both the system and to ratepayers that do not have access to alternative energy resources but who must continue to rely on the electric utility to provide all or a majority of their electricity requirements.

Thank you for the opportunity to testify on this measure.

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

A BILL FOR AN ACT

RELATING TO THE MODERNIZATION OF THE HAWAII ELECTRIC SYSTEM.

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

1 SECTION 1. The legislature finds that a modern electrical
2 grid is essential to meeting Hawaii's clean energy goals. In
3 recent years, Hawaii's electric utilities have integrated
4 significant levels of new renewable energy projects on each
5 island grid, and distributed generation in the form of rooftop
6 photovoltaic systems has been the fastest growing share of new
7 renewable energy generation each year. To date, Hawaii's
8 electric utilities are on track to exceed the next renewable
9 portfolio standard goal in 2015. However, moving beyond the
10 current levels of renewable energy on each grid will likely
11 require further investment in advanced grid modernization
12 technology to meet the State's aggressive clean energy goals and
13 maintain a reliable electricity grid.

14 The legislature believes further investments in advanced
15 grid modernization technology may be needed because Hawaii's
16 island grids are reaching significant levels of variable

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

1 renewable energy that can affect both the overall operation of
2 the grid at the system level and the ability of utilities to
3 provide safe and reliable service at the point of delivery to
4 customers. Continued growth in renewable energy, particularly
5 distributed generation, will require investment to modernize the
6 grid to interconnect higher levels of distributed generation and
7 to support other new customer energy options such as electric
8 vehicles and demand response technologies.

9 The legislature also finds that the rapid growth of the
10 State's solar industry has reduced Hawaii's dependence on
11 imported oil, created thousands of jobs during a statewide
12 economic downturn, and provided thousands of households and
13 businesses new options to manage their energy bills. The
14 legislature believes a long-term, sustainable solar industry is
15 in the State's interest.

16 The legislature further finds that the solar industry is
17 significantly impaired by the current interconnection process.
18 As Hawaii transitions from the early stages of its clean energy
19 transformation, the State needs a more transparent and timely
20 process for electricity customers to exercise their options to
21 manage their energy use.

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

1 The legislature additionally finds that, as distributed
2 generation plays an increasingly significant role in the State's
3 clean energy transition, the utility's processes for
4 interconnection and distribution system planning must evolve
5 along with new rules and tariffs for distributed generation.
6 The current rules and tariffs for distributed generation were
7 developed to support a nascent and emerging solar industry. Now
8 that this energy source and industry have achieved a significant
9 portion of the electricity system's energy mix, tariffs for
10 distributed generation need to be developed and adopted that
11 compensate the utility for grid services provided to customers
12 and that compensate customers for the grid services provided to
13 the utility by distributed generation. These modified tariffs
14 will also set the stage for further technological innovation in
15 this sector as advanced information, photovoltaic inverters, and
16 energy storage systems expand the nature of services offered by
17 customer-sited resources to the electric grid operator.

18 The legislature finds that the resolution of the matters
19 noted in this measure require detailed discussion of technical,
20 policy, and economic issues, and a process that will expedite
21 decision-making on near-term, high priority issues. In

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

1 recognition of the importance of these issues, the purpose of
2 this Act is to:

- 3 (1) Establish guiding principles and outline a timely
4 regulatory process to address modernization of the
5 Hawaii electric system; and
- 6 (2) Dedicate sufficient resources to the public utilities
7 commission and division of consumer advocacy of the
8 department of commerce and consumer affairs to support
9 a timely and expert review and resolution of the
10 various identified issues related to grid
11 modernization.

12 SECTION 2. Section 269-145.5, Hawaii Revised Statutes, is
13 amended to read as follows:

14 "[+]§269-145.5[+] **Advanced grid modernization technology;**
15 **principles.** (a) The commission, in carrying out its
16 responsibilities under this chapter, shall consider the value of
17 improving electrical generation, transmission, and distribution
18 systems and infrastructure within the State through the use of
19 advanced grid modernization technology in order to improve the
20 overall reliability and operational efficiency of the Hawaii
21 electric system.

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

1 (b) In advancing the public interest, the commission shall
2 balance technical, economic, environmental, and cultural
3 considerations associated with modernization of the electric
4 grid, based on the following principles:

5 (1) Enable a diverse portfolio of renewable energy
6 resources;

7 (2) Expand options for customers to manage their energy
8 use;

9 (3) Maximize interconnection of distributed generation to
10 the State's electric grids on a cost-effective basis
11 at non-discriminatory terms and at just and reasonable
12 rates, while maintaining the reliability of the
13 State's electric grids, and allow such access and
14 rates through applicable rules, orders, and tariffs as
15 reviewed and approved by the commission;

16 (4) Determine fair compensation for electric grid services
17 provided to customers and for services provided to the
18 electric grid by distributed generation customers and
19 other non-utility service providers; and

20 (5) Maintain or enhance grid reliability and safety
21 through modernization of the State's electric grids."

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

1 SECTION 3. (a) By July 1, 2014, the public utilities
2 commission shall commence regulatory action to address the
3 technical, policy, and economic issues associated with the
4 modernization of the State's electric grids, based on the
5 principles identified in section 269-145.5(b), Hawaii Revised
6 Statutes; provided that the commission may commence additional
7 regulatory actions to resolve issues associated with grid
8 modernization at its discretion.

9 (b) Regulatory actions commenced by the public utilities
10 commission pursuant to this section may include forming and
11 facilitating working groups or opening proceedings in order to
12 promote the efficient and timely resolution of issues. Any
13 regulatory action shall encompass one or more procedural
14 timelines, as determined by the public utilities commission,
15 including an expedited timeline for resolving short-term, high
16 priority issues associated with grid modernization.

17 (c) The public utilities commission shall submit a final
18 report of its findings and recommendations to the legislature no
19 later than twenty days prior to the convening of the regular
20 session of 2016, and shall include an interim report of progress
21 as part of its annual report submitted in January of 2015
22 pursuant to section 269-5, Hawaii Revised Statutes.

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

1 (d) The public utilities commission and the division of
2 consumer advocacy of the department of commerce and consumer
3 affairs shall be exempt from section 103D-304, Hawaii Revised
4 Statutes, in the procurement of any professional services needed
5 to conduct any regulatory actions required pursuant to this
6 section.

7 SECTION 4. There is appropriated out of the public
8 utilities commission special fund under section 269-33, Hawaii
9 Revised Statutes, the sum of \$1,000,000 or so much thereof as
10 may be necessary for fiscal year 2014-2015 for the public
11 utilities commission to conduct any regulatory actions required
12 pursuant to section 3 of this Act; provided that the public
13 utilities commission shall provide intervener parties access to
14 professional services procured by the commission to support this
15 proceeding as deemed necessary and appropriate by the
16 commission.

17 The sum appropriated shall be expended by the public
18 utilities commission for the purposes of this Act.

19 SECTION 5. There is appropriated out of the public
20 utilities commission special fund under section 269-33, Hawaii
21 Revised Statutes, the sum of \$750,000 or so much thereof as may
22 be necessary for fiscal year 2014-2015 for the division of

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

1 consumer advocacy of the department of commerce and consumer
2 affairs to represent the interests of consumers in accordance
3 with section 269-51, Hawaii Revised Statutes, in the course of
4 any regulatory actions required pursuant to section 3 of this
5 Act.

6 The sum appropriated shall be expended by the department of
7 commerce and consumer affairs for the purposes of this Act.

8 SECTION 6. Statutory material to be repealed is bracketed
9 and stricken. New statutory material is underscored.

10 SECTION 7. This Act shall take effect upon its approval;
11 provided that sections 4 and 5 shall take effect on July 1,
12 2014.

H.B. NO. 1943, H.D. 2

[Proposed S.D. 1]

Report Title:

Grid Modernization; Hawaii Electric System; Public Utilities Commission; Appropriation

Description:

Amends the public utilities commission principles regarding the modernization of the electric grid. Requires the commission to commence regulatory action no later than July 1, 2014, to address the technical, policy, and economic issues associated with the modernization of the State's electric grids. Appropriates funds to cover costs of the proceeding. (Proposed SD1)

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

REVISED

NEIL ABERCROMBIE
GOVERNOR

RICHARD C. LIM
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR



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Statement of
RICHARD C. LIM
Director
Department of Business, Economic Development, and Tourism
before the
SENATE COMMITTEES ON ENERGY AND ENVIRONMENT
And
COMMERCE AND CONSUMER PROTECTION

Thursday, March 20, 2014

3:35 p.m.

State Capitol, Conference Room 225

in consideration of

HB 1943, HD 2

RELATING TO THE MODERNIZATION OF THE HAWAII ELECTRIC SYSTEM.

Chairs Gabbard and Baker, Vice Chairs Ruderman and Taniguchi, and Members of the Committees.

The Department of Business, Economic Development, and Tourism (DBEDT) supports the intent of HB 1943, HD 2, which requires the Public Utilities Commission (PUC) to “commence regulatory action to address the technical, policy, and economic issues associated with the modernization of the State’s electric grids” based on amended principles stated in section 269-145.5(b), Hawaii Revised Statutes.

Specifically, DBEDT supports the draft version of the bill (Working Group Draft) that was agreed upon, for the most part, in a “grid modernization” working group consisting of interested parties including the electric utilities, solar trade associations and individual companies, and environmental advocacy groups as well as Legislative staff, the PUC, the Consumer Advocate and DBEDT. The Working Group Draft that DBEDT supports is being offered by the PUC in its written testimony to this committee.

Thank you for the opportunity to provide comments on HB1943, HD 2.



NEIL ABERCROMBIE
GOVERNOR

SHAN S. TSUTSUI
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DEPUTY DIRECTOR

TO THE SENATE COMMITTEES ON
ENERGY AND ENVIRONMENT
AND
COMMERCE AND CONSUMER PROTECTION

THE TWENTY-SEVENTH LEGISLATURE
REGULAR SESSION OF 2014

THURSDAY, MARCH 20, 2014
3:35 P.M.

TESTIMONY OF JEFFREY T. ONO, EXECUTIVE DIRECTOR, DIVISION OF
CONSUMER ADVOCACY, DEPARTMENT OF COMMERCE AND CONSUMER
AFFAIRS, TO THE HONORABLE MIKE GABBARD, CHAIR,
AND THE HONORABLE ROSALYN H. BAKER, CHAIR,
AND MEMBERS OF THE COMMITTEES

HOUSE BILL NO. 1943 H.D.2 - RELATING TO THE MODERNIZATION
OF THE HAWAII ELECTRIC SYSTEM

DESCRIPTION:

This measure proposes to require the Public Utilities Commission to amend its principles regarding modernization of the electric grid. It also requires the Commission to initiate a proceeding no later than July 1, 2014, to discuss upgrades to the Hawaii electric system for anticipated growth of customer generation.

POSITION:

The Division of Consumer Advocacy supports the intent of this measure with comments.

House Bill No. 1943, H.D. 2
Senate Committee on Energy and Environment
Senate Committee on Commerce and Consumer Protection
Thursday, March 20, 2014, 3:35 p.m.
Page 2

COMMENTS:

The Consumer Advocate is aware of the number of technical issues that are arising due to the current state of the electric grids in the Hawaiian Islands. The current electric grids are unable to accommodate all of the individuals and businesses that are interested in interconnecting distributed generation systems, more commonly known as photovoltaic systems or PV systems, without some delay, additional studies, and/or costs. The current electric grids also constrain the ability to add larger renewable energy projects as well.

The Consumer Advocate has concerns; however, with some of the proposed provisions in H.D. 2. In proposed Hawaii Revised Statutes Section 269-145.5, H.D. 2 provides that, "The commission shall address technical, policy, and economic issues associated with modernization of the electric grid, based on the following principles:"

(5) Incorporate customers' current and forecasted preferences into the utility distribution system and integrated resource planning.

This provision is vague and ambiguous as to what is meant by "customer preferences" and how these preferences are to be measured and determined. If this is meant to be a reference to distributed generation, then the previous paragraphs adequately address distributed generation as a principle to be studied as part of modernizing the electric grid.

The issue of how the grid should be upgraded and the evaluation of the costs associated with such upgrades are expected to be analyzed in the recommended actions identified by the final report filed by the independent facilitator in Docket No. 2011-0206, which was the Commission's Reliability Standards Working Group proceeding. Until those actions have been completed, the proposed measure may be premature.

The Consumer Advocate and the Public Utilities Commission are currently working with a number of stakeholders on revising the parallel Senate version of this bill, S.B. No. 2656. The Consumer Advocate recommends deferral of this bill to allow the parties time to come to a mutually agreed upon draft that can be presented to both the House and the Senate.

Thank you for this opportunity to testify.

RESOLUTION REGARDING GRID MODERNIZATION

WHEREAS, Hawaii is highly dependent on imported fossil fuels, and

WHEREAS, State of Hawaii has adopted clean energy goals to increase the use of its abundant renewable energy resources, and

WHEREAS, Hawaii has electricity rates that are among the highest in the nation, and

WHEREAS, photovoltaic solar systems offer individual homeowners the ability to participate in Hawaii's clean energy goals and also to reduce their household electric bills, and

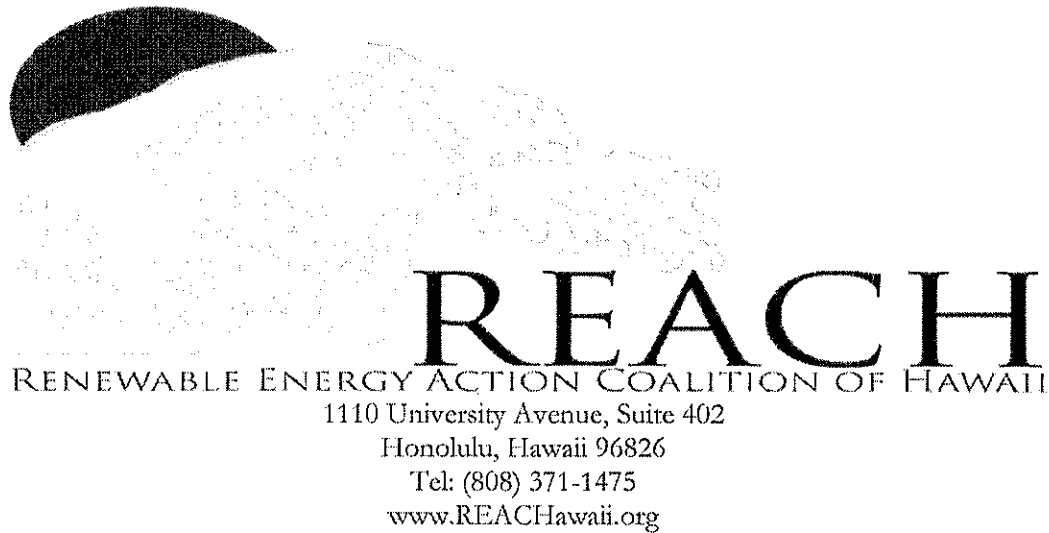
WHEREAS, the Hawaiian Electric Company (HECO) has expressed concerns that its aging utility grid will be unable to accommodate many customers who wish to install a photovoltaic solar system, and

WHEREAS, modernization of HECO's utility grid will allow greater numbers of residential utility customers to install photovoltaic solar systems without jeopardizing the safety or reliability of the utility grid, and

WHEREAS, the Kailua Neighborhood Board wishes the residents it represents to have the opportunity to install photovoltaic solar systems on their houses and to interconnect those systems to HECO's utility grid, and

WHEREAS, HB1943 and SB2656 require the Public Utilities Commission to initiate a proceeding to discuss upgrades to the Hawaii electric system for anticipated growth of customer generation, and the technical, policy and economic issues associated with the modernization of Hawaii's electricity grids, NOW THEREFORE

BE IT RESOLVED that the Kailua Neighborhood Board fully supports HB1943 and SB2656 and urges the State Legislature and the Governor to approve these bills.



Testimony of ERIK KVAM
President of Renewable Energy Action Coalition of Hawaii
e-mail: Kvam@REACHHawaii.org

**In SUPPORT of HB 1943 HD 2 RELATING TO THE MODERNIZATION OF
THE HAWAII ELECTRIC SYSTEM**

**Before the
SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
and the
SENATE COMMITTEE ON COMMERCE AND CONSUMER PROTECTION**

Thursday, March 20, 2014 3:35 a.m.

Aloha Chair Gabbard, Chair baker, Vice-Chair Ruderman, Vice-Chair Taniguchi and members of the Committee.

My name is Erik Kvam. I am the President of Renewable Energy Action Coalition of Hawaii (REACH), a trade association whose vision is a Hawaiian energy economy based 100% on renewable sources indigenous to Hawaii.

REACH is in **SUPPORT** of HB 1943 HD 2.

Hawaii's solar power industry is in crisis. Customers are not ordering and solar power installers are laying off workers because the HECO utilities have braked installation of new solar power systems until the utilities decide whether and how to upgrade the utilities' substations to accommodate lots more systems.

How did this happen? This crisis is happening because the utilities seem to have no planning process for systematically evaluating options for achieving 100% renewable energy. The utilities seem to have no process for figuring out what options -- like options

to upgrade substations to accommodate lots more solar power systems -- in what amounts in what order will get us to 100% renewable energy at the greatest savings to customers and themselves.

REACH SUPPORTS HB1943 HD 2 because the PUC proceeding required by HB1943 HD 2 would provide an appropriate forum for conversations with Hawaii's electric utilities about their planning goals and their evaluations of grid modernization options, including options for grid upgrades to accommodate anticipated growth in customer generation.

Mahalo for providing this opportunity to testify.



Hawaii Solar Energy Association
Serving Hawaii Since 1977

Before the Senate Committee on Energy and Environment &
Committee on Commerce and Consumer Protection
Thursday, March 20, 2014, 3:35 p.m., Room 225
HB 1943 HD 2: Relating to the Modernization of the Hawaii Electrical System

Aloha Chairs Gabbard and Baker, Vice-Chairs Ruderman and Taniguchi, and members of the Committees,

On behalf of the Hawaii Solar Energy Association (HSEA), I would like to testify in general support for the intent of HB 1943 HD 2, which directs the public utilities commission to open a proceeding by July 1, 2014 to address the technical, policy, and economic issues associated with the modernization of Hawaii's electricity grids, with a focus on distributed generation. HSEA is a non-profit trade organization that has been advocating for solar energy since 1977, with an emphasis on solar hot water (SHW) and Photovoltaics (PV) in both residential and small commercial installations. We currently represent 81 companies, which employ thousands of local workers in the solar industry. With 37 years of advocacy behind us, HSEA's goal is to work for a sustainable energy future for all of Hawaii.

Although HSEA supports the general intent of HB 1943 HD 2, HSEA respectfully requests that HB 1943 HD 2 be replaced with HB 1943 HD 2 SD 1 [PROPOSED] currently under revision in the Senate working group of which HSEA has been a part. The working group consists of the various stakeholders including the Utility, the PUC, the Consumer Advocate, the Sierra Club, and other industry representatives, and has been meeting for the last month to find a reasonable compromise that all stake holders could support. We are still in the midst of our negotiations, but are continuing to meet and nearly have a completed draft.

Some key elements of HB 1943 HD 2 SD 1 [PROPOSED] include a preamble which frames the purpose and need for the legislation, a provision for the PUC to form working groups, expedited timelines, and specific appropriations for the PUC and the Consumer Advocate. HSEA supports each of these additions.

This bill does not preclude the importance of a diverse portfolio of cost-effective renewable projects, and in no way puts distributed generation ahead of any other groups. HB 1943 HD 2 SD 1 [PROPOSED] recognizes the value of distributed generation, and the urgent need to get answers to the technical, policy, and economic issues current facing DG.

Everyone agrees that the issues of grid access and cost allocation are complex. But the discussion should have begun in earnest years ago. What technical upgrades are available, and how would they be implemented? What is the cost, and how should it be allocated? How can we best meet our clean energy goals, and beyond, while having a robust utility grid, and a variety of clean energy sources? Time is short, and now is the time to bring our grid up to "grid 2.0."

Thank you for the opportunity to testify
Leslie Cole-Brooks
Executive Director
Hawaii Solar Energy Association



LEAGUE OF
WOMEN VOTERS*

League of Women Voters of Hawaii

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COMMITTEE ON ENERGY AND ENVIRONMENT

Senator Mike Gabbard, Chair
Senator Russell E. Ruderman, Vice Chair

COMMITTEE ON COMMERCE AND CONSUMER PROTECTION

Senator Rosalyn H. Baker, Chair
Senator Brian T. Taniguchi, Vice Chair

HB1943 RELATING TO THE MODERNIZATION OF THE HAWAII ELECTRIC SYSTEM

Thursday, March 20, 2014, 3:35 p.m.

TESTIMONY

Nancy Davlantes, Legislative Committee Member, League of Women Voters of Hawaii

Chairs Gabbard and Baker, Vice Chairs Ruderman and Taniguchi, committee members:

The League of Women Voters of Hawaii supports HB1943 HD2, which would require the public utilities commission to adopt rules for improved accessibility to connect to the Hawaii electric system for any person, business, or entity on the Hawaii electric system. It would also require the commission to initiate a proceeding no later than July 1, 2014, to discuss upgrades to the Hawaii electric system for anticipated growth of customer generation. HD2 calls for transparency on the part of HECO to justify its decision-making on individual requests for interconnection to the grid and requires the utility to file quarterly and annual reports with the PUC that are open to the public.

The League has long supported actions to promote energy conservation and research into alternate energy resources available in Hawaii, taking into consideration environmental effect, economic feasibility, and differing conditions on each island.

Given the overwhelming testimony in support of this bill and the increasing impatience of the public with the pace of progress, we feel the Legislature needs to give the PUC much firmer guidance and make clear that the commission must move as fast as possible to resolve the technical issues holding up installations for those who are eager to enjoy lower electrical rates through the implementation of solar. Creating a smart grid is a big project, but progress needs to begin now.

While Hawaiian Electric Co. has taken steps to allow more PV systems to be installed in areas on Oahu already saturated with solar panels if the systems meet certain technical specifications, those steps are only the beginning in the effort to allow any individual or business wanting to pursue cleaner and cheaper energy the options to do so safely and reliably.

We urge you to pass this bill and thank you for the opportunity to submit testimony



3/20/2014

Senate Committee on Energy and Environment
Senate Committee on Commerce and
Consumer Protection

ENE/CPN

3:35 p.m.

TESTIMONY IN SUPPORT

HB 1943

Chair Gabbard, Chair Baker, Vice Chair Ruderman, Vice Chair Taniguchi, and Members of the Committees:

Hawaii PV Coalition is pleased to submit testimony in **strong support** of HB 1943 HD2.

It is indisputable that Hawaii's residents want solar. This makes sense, given that Hawaii continues to have electricity rates that are more than 3 times the national average. Along with energy conservation, "going solar" is the only way for Hawaii residents to get some relief from their sky-high electric bills. Installing solar also allows Hawaii residents to participate in Hawaii's clean energy goals and help reduce the state's dependence on imported fossil fuels.

Unfortunately, many homeowners are now being prevented from installing photovoltaic solar systems as a result of Hawaiian Electric's interconnection policies. These interconnection policies are in turn the result of aging utility infrastructure designed to support fossil-fuel generation rather than renewable energy.

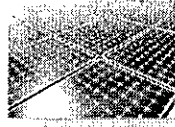
HB 1943 will help solve this problem by initiating a grid modernization planning process. With a more modern grid, Hawaiian Electric will be able to deliver more stable power, with a higher renewable content to its customers, while at the same time allowing more Hawaii residents to install photovoltaic solar systems. Grid modernization will also allow solar installations to proceed more quickly and without requiring homeowners to pay for elaborate studies or costly grid upgrades.

For these reasons, the Hawaii PV Coalition strongly supports HB 1943 HD2. Thank you for the opportunity to provide this testimony.

Sincerely,

Mark Duda
President, Hawaii PV Coalition

The Hawaii PV Coalition was formed in 2005 to support the greater use and more rapid diffusion of solar electric applications across the state. Working with business owners, homeowners and local and national stakeholders in the PV industry, the Coalition has been active during the state legislative sessions supporting pro-PV and renewable energy bills and helping inform elected representatives about the benefits of Hawaii-based solar electric applications.



**SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
SENATE COMMITTEE ON COMMERCE AND CONSUMER PROTECTION**

March 20, 2014, 3:35 P.M.

Room 225

(Testimony is 3 pages long)

TESTIMONY IN SUPPORT OF HB 1943 HD2

Aloha Chair Gabbard, Chair Baker, Vice Chair Ruderman, and Vice Chair Taniguchi,

Blue Planet Foundation strongly supports a robust electrical grid that can connect clean and affordable energy to Hawai'i's citizens and ratepayers. House Bill 1943 will help to ensure that everyone can have access to such a grid, in a timely and reasonable manner. The bill directs the Public Utilities Commission to open a proceeding by July 1, 2014 to address whether there are technical and economic barriers to allowing more residential and commercial customers to interconnect to the grid with clean energy.

For the reasons described below, Blue Planet supports HB 1943 HD2. However, we suggest one amendment. HD2 presently adds the following paragraph to H.R.S. § 269-145.5(b)(3), instructing the Commission to address grid modernization based on principles including "Maximize distributed generation interconnections in non-discriminatory terms and at just and reasonable rates, while maintaining reliability of the grid, through applicable rules, orders, and tariffs." Blue Planet believes that the following language will better achieve the principles in HB 1943: "Allowing distributed generation fair and open access to interconnect to the grid at non-discriminatory terms and at just and reasonable rates, and the commission should ensure such access and rates through applicable rules, orders, and tariffs." This language will be easier to apply because "fair and open access" is a defined term and it fits within national recommended standards for interconnection.

1. Modern Grid Interconnection is Urgently Needed.

This solution cannot wait. At the end of 2013, Hawaii saw a sharp drop in the growth of solar interconnection:

- In October 2013, 1187 fewer ratepayers were issued solar building permits compared to October 2012, a drop of 49%.
- In November 2013, 956 fewer ratepayers interconnected, a drop of 48%.
- In December 2013, 785 fewer ratepayers interconnected, a drop of 41%.

info@blueplanetfoundation.org

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This worrisome stagnation illustrates a sharp change in direction for Hawai'i. Previously, solar installations were essentially doubling each year – an exponential trend that could drive Hawai'i's clean energy transformation. That growth boosted the economy, it created jobs, and it promoted the use of clean energy that does not rely on imported fossil fuels. The current stagnation, if left unaddressed, will do the opposite. Solar stagnation is already resulting in local layoffs. It will robbing Hawai'i of potential energy savings. It will prolong our dependence on dirty fossil fuels.

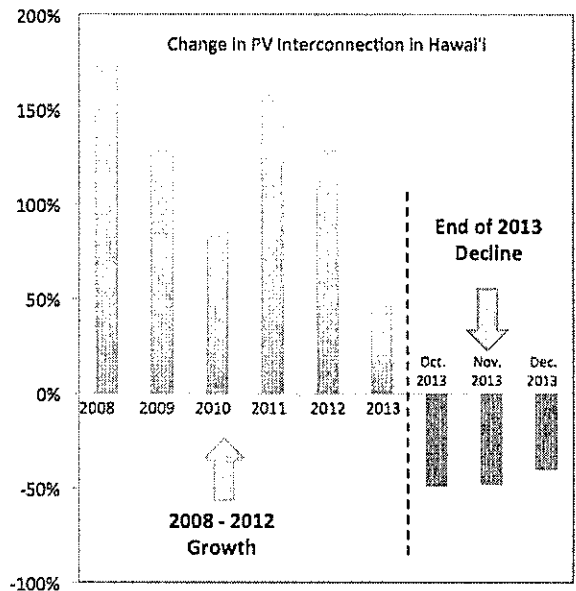
House Bill 1943 can help to make sure that this grid modernization issue is resolved sooner, rather than later.

2. HB 1943 Can Help Ensure Equality for All Ratepayers.

House Bill 1943 can also help ensure that all ratepayers are treated with equal access to clean energy. It is no longer true that solar energy is limited to wealthy neighborhoods. By 2012, the introduction of innovative financing made solar increasingly accessible to all Hawaii ratepayers. For example, in 2012 the fastest growing PV neighborhoods were Wai'anae, Hau'ula, Waimanalo, La'ie, and Waialua.

If the growth of rooftop solar is allowed to stagnate, it means that these growing PV neighborhoods will be unequally and unfairly blocked from clean affordable energy. Moreover, some parties are arguing that new solar customers – presumably in these fast growing lower- and middle-income PV neighborhoods – should be singled out to pay the cost of upgrading the grid to make it work with distributed clean energy. Many ratepayers are already in a holding pattern, under the fear that interconnection will cost thousands of dollars and will take many months. This situation, if allowed to remain, is grossly unfair. As the utility evolves into its 21st century business model, all ratepayers need a grid that is upgraded so that it can flexibly accommodate more clean affordable energy. The cost of a 21st century grid should *not* be unfairly apportioned to those customers who are least able to afford it, and who are most in need of the rate relief that can be provided by clean energy sources such as solar.

With the language suggested above, House Bill 1943 directs the PUC to revise interconnection procedures to ensure fair and open access to the electrical grid, at a reasonable cost.



% growth in number of PV installations for HECO, MECO, and HELCO grids, compared to previous year, and % decline compared to same month in the previous year for HECO grid. Data from HECO NEM reports and recent news reports.

3. HB 1943 Can Help Avoid a Costly and Inefficient Fight for Ratepayers.

Recently in Arizona, a highly public fight between the local utility and solar advocates resulted in millions of dollars wasted on publicity campaigns. After review of the facts, the Arizona PUC found that the cost of solar interconnection could be fairly apportioned by charging a small fee to solar customers based on the size of each solar system. Ultimately, this fee will cost solar households in Arizona roughly \$5 per month, to cover the fixed costs of the utility. In comparison, the Arizona utility argued that solar households should pay a grossly higher fee – \$50 per month. Hawai'i's ratepayers don't deserve this type of wasteful fight, and HB 1943 can help to ensure that the issue of fair and open grid access is addressed in a more efficient manner.

Thank you for the opportunity to testify in support of this timely and important solution.

The Pacific Resource
PARTNERSHIP



Testimony of Cindy McMillan
The Pacific Resource Partnership

COMMITTEE ON ENERGY AND ENVIRONMENT

Senator Mike Gabbard, Chair
Senator Russell E. Ruderman, Vice Chair

COMMITTEE ON COMMERCE AND CONSUMER PROTECTION

Senator Rosalyn H. Baker, Chair
Senator Brian T. Taniguchi, Vice Chair

HB 1943, HD2 – Relating to the Modernization of the Hawaii Electric System
Thursday, March 20, 2013
3:35 p.m.
Conference Room 225

Aloha Chairs Gabbard and Baker, Vice Chairs Ruderman and Taniguchi, and members of the Committees:

The Pacific Resource Partnership (PRP) is a labor-management consortium representing over 240 signatory contractors and the Hawaii Regional Council of Carpenters.

PRP **strongly supports** HB 1943, HD2 – Relating to the Modernization of the Hawaii Electric System, which amends the Public Utilities Commission principles regarding the modernization of the electric grid.

Thousands of Hawaii residents have taken a step forward toward clean energy and installed renewable power at their homes and/or businesses. This is great news on a number of fronts: it helps make better use of our natural resources so we can meet our state's energy goals, creates thousands of sustainable jobs for the construction industry, and lowers utility costs for individuals who have installed solar rooftop panels or other renewable energy systems.

However, this progress has bumped up against technical limitations that need to be resolved. Because Hawaii is the first state to reach such high levels of renewable energy installation, we are blazing the trail with regard to renewable interconnection with the grid. And it is a grid that

March 20, 2014

Testimony Supporting HB 1943, HD2 – Relating to the Modernization of the Hawaii Electric System
Page 2

was created long ago when renewable energy was not even contemplated. We also know there are financial challenges to incorporating more renewable energy like solar into the electrical grid. Both increased renewable energy interconnection and a strong and healthy utility are in the public's best interest.

In September 2013, PRP conducted a public opinion poll about solar power. The results were emphatic: 96 percent of voters support getting energy from solar power. This poll shows an extremely strong public will to overcome the challenges and forge policies that will reduce our dependence on dirty imported fuels.

We respectfully ask for your support on HB 1943, HD2. Thank you for the opportunity to share our views on this important initiative with you.

Testimony Before the Senate Committees on
Energy and Environment and Commerce and Consumer Protection

WRITTEN TESTIMONY ONLY

By Michael Yamane, P.E.
Chief of Operations
Kauai Island Utility Cooperative
4463 Pahee Street, Suite 1, Lihue, Hawaii, 96766-2000

Thursday, March 20, 2014, 3:35 p.m.
Conference Room #225

House Bill No. 1943, HD2 – Relating to the Modernization of the Hawaii Electric System.

To the Honorable Mike Gabbard and Rosalyn H. Baker, Chairs; Russell E. Ruderman and Brian T. Taniguchi, Vice-Chairs, and Members of the Committees:

Thank you for the opportunity to testify on this measure. I am Michael Yamane, Chief of Operations at Kauai Island Utility Cooperative (“KIUC”). I am testifying on behalf of KIUC. We support the general intent of HB No. 1943, HD2, and offer the following comments.

- This measure attempts to address technical, policy and economic issues associated with the modernization or upgrade of the electric grid or system based on a defined set of principles that are too limiting and overly prescriptive. KIUC contends that this measure may result in unintended consequences adverse to the public interest by unduly limiting and restricting the Commission in how it can address these issues. The Commission must have adequate regulatory flexibility to address these complex and technical issues as it deems necessary for the public interest.
- The Commission, under its general investigatory powers (i.e., Hawaii Revised Statutes (“HRS”) §§ 269-7(a) and 269-15), already has the statutory authority and discretion to initiate a proceeding to address technical, policy and economic issues associated with the modernization or upgrade of the electric grid or system in the State. Therefore, any statutory mandate to commence proceedings on these matters (as intended by this measure) is unnecessary.
- If the Legislature is inclined to proceed in mandating a proceeding to address the technical, policy and economic issues associated with the modernization of the electric grid or system in the State, then KIUC recommends that (1) the

Commission should be given the flexibility to address these issues either via formal proceedings (i.e., opening a docket) or informal proceedings (i.e., establishing a non-docketed working group with the Commission's oversight and guidance); and (2) in light of Act 57, Session Laws of Hawai'i 2013 (now codified as HRS § 269-31(b)) recognizing the differences between an electric cooperative and an investor-owned utility, the Commission may initiate a separate proceeding or establish a separate working group to address these issues solely as they pertain to KIUC and its separate electric grid or system on the island of Kauai.

- As you may know, KIUC has been participating in the informal working group facilitated by the Senate Committee on Energy and Environment intended to discuss, collaborate and/or address any outstanding issues or concerns relating to this measure. KIUC plans to continue to participate in this working group to the extent KIUC deems such participation is helpful and necessary.

Thank you again for the opportunity to inform you of KIUC's position on this matter.

**TESTIMONY BEFORE THE SENATE COMMITTEES ON
ENERGY AND ENVIRONMENT AND
COMMERCE AND CONSUMER PROTECTION**

H.B. NO. 1943, H.D. 2

RELATING TO THE MODERNIZATION OF THE HAWAII ELECTRIC SYSTEM

March 20, 2014

3:35 pm

Conference Room 225

Scott Seu

Vice President, Energy Resources and Operations
Hawaiian Electric Company, Inc.

Chair Gabbard and Baker, Vice Chairs Ruderman and Taniguchi, and Members of the Committees:

My name is Scott Seu and I represent Hawaiian Electric and its subsidiary utilities Maui Electric and Hawaii Electric Light.

We support the intent of HB 1943 HD 2 to open a Public Utilities Commission review of technical, policy, and economic issues associated with modernization of the electric grid. However, we cannot support this bill in its current form as it contains proposed statutory language that would be problematic in its implementation.

First, the proposed language states that modernizing the grid should be based on a principle that would "enable a diverse portfolio of renewable energy resources that adheres to customers' preferences." We agree that building a diverse portfolio of renewable energy resources is an appropriate approach to meeting consumers' energy needs. However, adhering to "customers' preferences" is not a practical basis for designing an electrical system, given the diverse interests of our customers and the technical requirements of operating an electrical system. For example, different customers will have different renewable energy preferences depending on such considerations as technology, costs, location, environmental impacts, opportunities to interconnect, and how costs are allocated.

Second, the proposed language also states that a principle should be to "maximize distributed generation interconnections in non-discriminatory terms and at just and reasonable rates, while maintaining reliability of the grid, through applicable

rules, orders and tariffs.” We agree that interconnections should be governed by non-discriminatory terms and just and reasonable rates, while ensuring reliability of the grid. However, statutorily requiring that distributed generation interconnections be maximized would run counter to achieving a diverse renewable energy portfolio, as other energy resources would be taken off the table to allow for customer distributed generation.

Third, the proposed language states that a principle should be to “incorporate customers’ current and forecasted preferences into the utility distribution system.” As explained earlier, building a diverse portfolio of renewable energy resources solely on customer preferences is not practical. Customer preference is an important consideration for energy planning, but it cannot be the only one.

Again, we support the intent of HD 1943 HD 2, to open a PUC review of technical, policy, and economic issues associated with modernization of the electric grid. However, this proceeding should not be constrained by statutory language that would bind the Commission and set unrealistic expectations for our customers.

We note that SB 2656 SD1 has adopted language that would achieve this purpose. If the Committees choose to move this bill forward, we respectfully ask that HB 1943 HD 2, be amended to adopt the language of SB 2656 SD1.

Thank you for this opportunity to testify.

SUNRUN



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**SENATE COMMITTEES ON ENERGY & ENVIRONMENT
AND COMMERCE & CONSUMER PROTECTION**

Thursday, March 20, 2014

**TESTIMONY IN SUPPORT OF HB 1943_HD2 RELATING TO
THE MODERNIZATION OF THE HAWAII ELECTRIC SYSTEM**

Sarah Bertram, Director, Public Policy, Sunrun

Chairs Gabbard and Baker, and Members of the Committee:

Thank you for the opportunity to provide testimony in support of HB 1943_HD2.

Sunrun is a leading residential solar company with a national reach. Sunrun has been serving customers in Hawaii since 2010 by partnering with local solar installers. To date, Sunrun has invested more than \$140M to support approximately 4,000 homeowners across the islands in adopting rooftop solar.

Sunrun explains its support for HB 1943_HD2 and suggests one suggested amendment in this testimony.

In the four years since Sunrun entered the market, Sunrun has observed two clear trends:

1. **The total amount of rooftop solar in Hawaii has roughly doubled each year.** As a result of growing consumer demand for home solar, approximately one in ten homes have solar today and many more homeowners want to install solar in the future.

The increasing consumer desire to serve on-site electricity load with rooftop solar is in the public interest. Beyond allowing homeowners to take action to control their utility bills, rooftop solar advances Hawaii's environmental goals and supports thousands of local jobs.

A September 2013 poll conducted by Tulchin research (N=600) shows how consumer demand for rooftop solar shapes the public's policy views: ninety percent of respondents agreed with the statement (including 67% who *strongly* agree) that "we should allow and encourage as many people as we can to install solar power in their homes and businesses to advance the state's clean energy goals." The legislature in Hawaii has a clear history of supporting policies like HB 1943_HD2 that seek to achieve this objective.

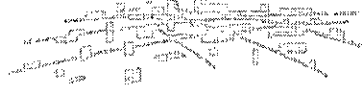
2. **The number of customers experiencing considerable uncertainty and/or delays in adopting solar due to utility interconnection challenges has significantly increased.**

The electric grid needs to adapt to serve the needs of modern-day consumers and support the State's renewable energy goals. Although Hawaii has the highest overall level of rooftop solar per capita, nine out of ten homes do not have rooftop solar today. Further, the State is only a quarter of the way to achieving its renewable energy standard of 40% renewable energy by 2030.

Sunrun supports how HB 1943_HD2 responds to these clear trends. Specifically, this bill:

- **Identifies five policy principles for the Commission to address in a grid modernization planning process.** This legislation does not pre-determine any outcomes, and it maintains the Commission's ability to use existing regulatory processes to address technical and economic issues associated with allowing additional rooftop solar in Hawaii.
- **Requires that Commission establish procedural timelines to "expedite the implementation of short-term solutions and minimize delays on customer access to distributed generation."** Thousands of customers have been negatively impacted by HECO's recent rooftop solar policy changes, which have not been substantiated with robust technical rationale or data. Enabling multiple timelines for this proceeding will minimize the likelihood of future disruptions.

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- **Specifies a utility reporting process for any distributed generation interconnection applications that are significantly delayed while the grid modernization plan is in development.** This reporting will provide transparency into any technical issues that develop in the interim that impede open rooftops in Hawaii from adopting solar.
- **Makes a general fund appropriation to provide the Commission with sufficient resources to carry out this planning process.** Importantly, HB 1943_HD2 allows the resources commissioned using these funds to be accessed by intervenor parties as necessary and appropriate to support "full and fair stakeholder participation." Sunrun suggests that the Commission propose a specific amount of funding necessary to support required resources for this proceeding.

Suggested amendment:

In an effort to collaborate with key stakeholders, several parties have been in discussions with the Commission, the Consumer Advocate, and HECO about how to improve this bill. Many of the concepts from those discussions have been adopted in HB 1943_HD2. However, the following language is not consistent with party discussions and could be improved:

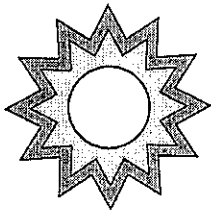
Maximize distributed generation interconnections in non-discriminatory terms and at just and reasonable rates, while maintaining reliability of the grid, through applicable rules, orders, and tariffs; (Section 1 (b)(3))

The Commission has proposed the following language in previous bill drafts. Sunrun suggests adopting this language in lieu of the existing clause.

Allowing distributed generation fair and open access to interconnect to the grid at non-discriminatory terms and at just and reasonable rates, and the commission should ensure such access and rates through applicable rules, orders, and tariffs;

Sunrun supports this bill. Thank you for the opportunity to provide this testimony.

Sincerely,
Sarah Bertram



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Tel: (808)871-1030 Fax: (808)873-7825

Testimony of Inter-Island Solar Supply
In Regard To
H.B. 1943, H.D. 2, Relating to Electrical Grid Modernization
Before The
Joint Senate Committees on ENE and CPN
Thursday, March 20, 3:35 P.M.

Chairs Gabbard and Baker, Vice-Chairs Ruderman and Taniguchi, my name is Richard Reed and I am the president of Inter-Island Solar Supply. **We support the intent of this bill, but believe that the more appropriate vehicle to be the proposed H.B. 1943, H.D. 2, S.D. 1 draft.**

It is our position that the PUC must tackle the technical, policy and economic issues associated with distributed generation and interconnection simultaneously, with the highest immediate priority going to the technical and engineering upgrades that will allow increased grid access for homeowners and businesses while maintaining system safety and reliability.

There continues to be a perception that NEM DG is only for rich folks and that non-participating ratepayers will be left holding a very heavy bag containing significantly higher rates. This is a misconception for four primary reasons:

First, high electric rates in Hawaii are not caused by renewables; they are primarily a function of our continuing dependence on expensive low-sulfur crude oil.

Second, the new world of creative solar financing including long-term low interest loans, leases and power purchase agreements, provides all credit worthy ratepayers with a means to lower or at least stabilize their electric bills. Our banks and credit unions, moreover, have developed competitively priced PV financing options for those that wish to own their systems.

Third, the State's innovative GEMS green finance program is designed to help precisely those ratepayers that want PV, but do not qualify for conventional finance.

Forth, community-based solar as proposed in HB 2141/SB 2934 would allow ratepayers living in condos or homes that cannot easily or effectively deploy solar to buy shares in large-scale PV or wind projects and thus lower their utility costs.

The catch here is that all of these democratizing finance options are of no help without grid access. Therefore, the Commission should first focus on the best and most cost-effective technical solutions that will provide increased and continuing DG grid access.

Grid modernization is not, however, a cost free proposition. This docket has the potential to impact customer electric bills as well as utility financial returns. One essential purpose

of this analysis should be to accurately parse the costs and benefits associated with high saturation DG as well as renewable utility scale projects.

There are other important questions to consider. For example, what DG benefits inure to all ratepayers and how should we value them? This is not simply a matter of costs, as one might assume from reading the Edison Electric Institute's work on DG, with no offsetting ratepayer benefits.

For example, we find that appropriate, targeted and timely utility capital expenditures – especially for Oahu's aged grid – that allow more DG while minimizing the impact on all ratepayers, is a significant public benefit. Importing and burning less oil makes us more secure, mitigates environmental damage, promotes our state's green image, keeps billions of ratepayer dollars in the state for reinvestment, creates good jobs and expands the tax base. All of these, we would argue, are valuable public benefits that are diminished by less, rather than more, DG and energy efficiency.

There are also some that argue that they receive no direct personal benefit from renewables because they live in a high-rise while DG only benefits those that live in single family or low-rise multi-family housing. With the adoption of community based solar (HB 2141/SB 2934) this argument, while already specious, becomes irrelevant.

The PUC has previously ruled in the Energy Efficiency Docket (05-0069) and other proceedings that **all ratepayers** benefit from our statutory (EEPS) energy efficiency programs. Homeowners do not directly benefit from chiller or large motor and commercial lighting upgrades. Condo dwellers do not directly benefit from residential solar water heating installations. Neither group directly benefits from equipment upgrades in hotels or airports. In reality, all of us **collectively** benefit from investments in energy efficiency made by individuals, condo boards, businesses, hotels or the state government.

All ratepayers now pay a small monthly Public Benefit Fund surcharge that supports our EEPS goal of achieving 30% of all our energy needs from efficiency gains by 2030. The Commission long ago judged that this small incremental charge is cost-effective across the full suite of approved residential, commercial and industrial efficiency measures and is also clearly in the public interest.

Are the public benefits from NEM and DG really that much different from those received from EEPS and energy efficiency? We think not and are supported by regulatory precedent in Hawaii.

On the negative side of the ledger, H.B. 1943, H.D. 2, S.D. 1 Proposed allows the PUC too much time for deliberation. The docket issues outlined in this legislation require urgent attention. We are in this pickle precisely because of inadequate planning and foresight. We need immediate solutions to the technical and engineering aspects of grid modernization that will allow both NEM/DG and utility scale renewable energy projects to coexist in a manner beneficial to all ratepayers.

Without a prompt, targeted D & O focused first on the system-wide technical upgrades that will allow safer interconnection, additional damage will be done to Hawaii's ratepayers and the solar industry. We believe that eight to nine months should provide adequate time to complete this essential first piece of the docket. **Industry groups and HECO already have spent nearly seven months working through these technical and engineering upgrades and challenges.**

Thank you for the opportunity to provide these comments.

SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
SENATE COMMITTEE ON COMMERCE AND CONSUMER PROTECTION
March 20, 2014 — 3:35 p.m. — Room 225

Testimony in Support of HB 1943

Chair Gabbard, Chair Baker, Vice Chair Ruderman, Vice Chair Taniguchi, and Members of the Committees:

Thank you for the opportunity to provide testimony in support of HB 1943, HD2. RevoluSun is a locally-owned solar company that has sold and installed more than 3,500 residential photovoltaic solar systems in Hawaii. Every day, RevoluSun meets with dozens of Hawaii residents who are interested in helping Hawaii lower its dependence on fossil fuels by purchasing or leasing a solar energy system.

The public's demand for solar in Hawaii is extraordinarily strong. This is largely because Hawaii continues to have electricity rates that are more than 3 times the national average. Along with energy conservation, "going solar" is the only way for Hawaii residents to get some relief from their sky-high electric bills. It also allows Hawaii residents to participate in Hawaii's clean energy goals and help reduce the state's dependence on imported fossil fuels.

Unfortunately, many homeowners are now being prevented from installing photovoltaic solar systems as a result of Hawaiian Electric's interconnection policies. These interconnection policies are in turn the result of aging utility infrastructure designed to support fossil-fuel generation rather than renewable energy.

HB 1943 will help solve this problem by initiating a grid modernization planning process. With a more modern grid, Hawaiian Electric will be able to deliver more stable power, with a higher renewable content to its customers, while at the same time allowing more Hawaii residents to install photovoltaic solar systems. Grid modernization will also allow solar installations to proceed more quickly and without requiring homeowners to pay for elaborate studies or costly grid upgrades.

For these reasons, we **strongly support** HB 1943. Thank you for the opportunity to provide this testimony.

Sincerely,

Colin Yost
Principal & General Counsel

HB 1943

The benefits of being apart of a local clean energy industry have been to help local people afford to live in Hawaii. Like myself the people of Hawaii have been paying car payments, mortgages, rent, monthly groceries, monthly gas bills that matches HECO's bills every month. Never taking a break on raising rates or lowering them. If HECO wants to slow the industry down then fine but don't slow the local contractors who bleed, sweat and bust their butts everyday trying to follow the rules. The very people who hire local people and stimulate money in the economy. Why not slow down the mainland investors who keep on taking our tax credits from the state and putting it in their own pockets. The same people who keep raising the bar to install PV and never following the rules. Allow local people to benefit and put solar on their roof tops not investors taking land to put Mega Watts of projects in which local people will probably never benefit. The state always talks about supporting the local businesses and the local people. Why not live up to those words. My father has been in solar all my life I've watched him bust his butt everyday to provide for my family in the solar industry. Myself being a second generation Solar Consultant I grow unsure of what our business will be. Fortunately for us my father saw this happen almost 27 years ago in the year I was born. He always said he knew this day was coming. I didn't want to believe him. Heck most of our family left our full time jobs to help grow this into a successful family business. Right now we have also been fortunate to keep all our workers. We continue to get by but for how long? I know that some other companies had to fire 20% of their staff because our lively hood had came to an almost dead stop. Our friends and families are back on the streets with no jobs. HECO has put a stopper to all of our local solar companies and now the leasing companies aka mainland money is thriving because they have unlimited access to money. Money that's not working for the state and money that we will probably never see again. So what am I worried about you may ask? Well I'm worried about my family and the families of my employees and the families of my fellow Solar men and women. I want to be able to provide for our generation and the future generations to come. To be able to teach my kids about my craft and to be the best at what we do which is providing clean and reliable energy for our keiki's future. All we are asking HECO is to help us to have steady growth in rooftop solar. Create a fair market, stick to their word and allow a level playing field for all the local people and the local solar companies. So that we all can work together and thrive in this industry.

Hi-Power Solar

HB1943

Submitted on: 3/17/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
pat gegen	Individual	Support	No

HB1943

Submitted on: 3/17/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Carl	Individual	Support	No

Comments: Mahalo for the opportunity to submit testimony. I strongly urge the passing of this bill as it is vital to the energy security of our islands and consistent with the goals and intent of the Hawaii Clean Energy Initiative.

HB1943

Submitted on: 3/17/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Ronnie Perry	Individual	Support	No

HB1943

Submitted on: 3/18/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Caitlin Pomerantz	Individual	Support	No

Aloha,

People need to have the option to go solar - for their budget and for the environment. Please support HB 1943!

Thanks,

Geoffrey Moore

Silver Moon Art & Design
Geoffrey T. Moore, Owner
808.579.6402
Cell: 808.572.1963
Mail: P.O. Box 792018
Pa'ia, HI 96779
Office: 71 Baldwin Ave., Ste. C7
www.silvermoonmaui.com

HB1943

Submitted on: 3/18/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Doug Phillips	Individual	Support	No

I write in support of HB 1943. My wife and I are HECO residential customers who were able to install pv and water heating systems prior to the slow down. HECO's constriction of solar installations strikes me as protectionist, obstructionist, and anti-environmental. That HECO did not see the solar wave coming is no excuse for its out of date engineering and outmoded infrastructure. Its inabilities to plan adequately and to rise to current conditions reveal the problems with "favored" utilities that have no competition. The game has changed, and HECO needs to keep pace and work with alternate energy providers, not try to kill the competition, as recent reports would seem to imply that it is doing.

Solar development in Hawaii needs better oversight--PUC should have that oversight, not private single for-profit monopolistic utility companies on each island.

Thank you for considering my testimony.

Stephen Canham, PhD
46-156 Nahiku Place
Kaneohe, HI 96744

Aloha

I am encouraging you to vote yes on HB 1943. Being held hostage by HECO is not the answer to clean and affordable energy in Hawaii. We have enough solar power for all our electrical needs; let's act now and keep power affordable for all.

A hui hou, Ana
BeachHouseHawaii.com
808-224-6213
866-625-6946 (toll free)

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HB 1943 is necessary and should be passed immediately.

Carolyn Knoll
Kailua, HI

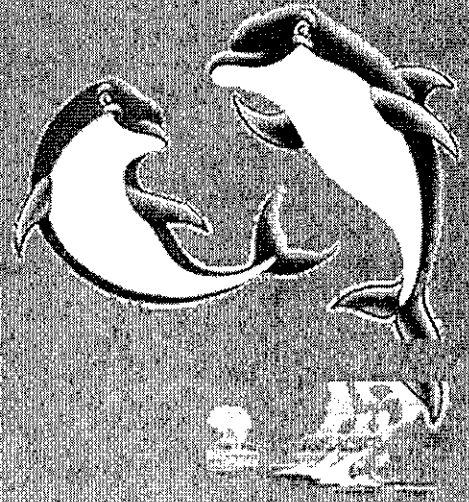
I have rooftop solar now, but HECO says I may have to pay more than the \$17 dollars per month to hook up to their grid. Where is the PUC when we need them?

Bill Russell, Mililani, 96789
808-625-5358

HB 1943

Hawaii residents need relief from highest taxes, highest energy, and unaffordable housing. HECO and others are bankrolling their own wealth.

With Aloha, Becky



Please allow people to install roof-top solar on their homes and businesses. It's good for them, Hawaii, and the entire planet. Go Solar! I have and it has made a huge difference in lowering the cost of my monthly electrical bills; in fact, it has eliminated them.

William J. Smith
Kalaheo, Kauai 96741

It seems to me that HECO is deliberately "putting a wrench" in customers' attempts to accommodate their homes to solar panels. This is unfair and unjust! Surely, this monopoly in Hawaii can find a means to derive some profit from these arrangements without bankrupting those who wish to stop using polluting fuels!

Dr. Virginia H. Bennett (UH / Manoa)

Hawaii cannot afford to wait any longer for rooftop solar. It's the right thing to do.

Hannah I

Aloha,

My husband Ted and I are in the process of purchasing our first home after renting here in Hawaii for the past 20 years. One of the reasons that we had to move was that we could no longer rationalize spending \$500 a month for our electric bill. We are hoping to install photovoltaic cells to our roof and hope to be able to conserve our natural resources as well as our financial ones.

We have been told that we may not be able to use solar because of HECO's opposition.

From our vantage point, we have supported the good folks of HECO for the past 20 years and all we've gotten is increasing costs and a great P.R. campaign about how much HECO is doing to promote renewable clean Hawaiian energy.

If that's truly the case, HECO can start by supporting home owners and renters to contribute to the clean energy process by making use of the plentiful solar energy that we are naturally blessed with here in the islands. To continue to try to slow this inevitable process will only leave our islands poorer in every way.

We want to improve the living conditions for all who live here and do business here. How can we hope to raise our standard of living, which will only benefit HECO as well, when we continue to live under the burden of dirty, increasingly costly electric power.

This change will happen whether HECO is part of the solution or part of the problem. We only ask that they stand by their stated commitment to the people of these islands to help promote a better life for all of us.

To drive people out of their homes, to prevent us from having a safe, renewable, cost effective energy simply out of greed is beyond selfish....it's immoral and as far away from aloha as one can get.

My husband, Ted Greenwald, and I strongly support HB 1943 and urge you to enact this important bill.

Mahalo.

Jo Greenwald

Hello,

I am submitting testimony in support of HB 1943 as an individual, and resident of Hawaii. I will not be present to testify in person at a hearing. Here is my testimony: Hawai'i can't afford to put off the transition to clean energy any longer. In the absence of strong leadership from HECO, individuals and households need to be free to install solar power if they so choose. It is egregious that HECO can impede this and create all kinds of red tape and obstacles. It is time to remove their obstruction and clear the way for unrestricted access and freedom to switch to solar power.

Thank you,

Julia Horn

82-6000 Napoopoo Road
Captain Cook, HI 96704

HB 1943

Please support rooftop solar!!!

Brooks Obr

M4 Medical Student

EMIG Co-President

University of Iowa CCOM

Pager #8932

Sun Run and Island Wide Solar just got me hooked into the HELCO grid. Half of my roof is now covered with photo voltaic panels and HELCO has provided a Net Energy Meter (NEM). That is a good thing.

BUT, Hilo Coffee Mill contracted with a company to build a large solar array on their property, and that array was completed in Nov. of 2013. To this date (March 18, 2014) HELCO has not installed a NEM meter so they can produce power for the grid. Now HELCO may have their reasons for resisting the increase in solar power, but that does not excuse them for spending more money on commercials touting their conversion to renewable energy, while gutting what small efforts they had made to accommodate the new power source. It is not like they are suffering for lack of high kilowatt hour rates, or economic damage to their stock holders. Poor management and lack of foresight should not be their excuse for not coming to the table of alternative energy sources.

L. Michael Klungness
Microenvironmental
POB 364
Mountain View HI 96771
808-968-6789
cell 808-895-3075

We are planning to put rooftop solar panels on the house we are building in Puna.
We want to be connected to the grid, but we need to know that Helco won't try to stop us.
Bo Breda

HB 1943

What's the use of solar panels being so strongly promoted if our electric grid cannot support the additional generation the panels will produce?

Why has HECO dragged their collective feet in such an irresponsible manner, and the PUC has not lighted a fire under this monopoly to proceed in an orderly manner-knowing that upgrades to the grid were essential for successful and consistent utilization of Hawaii's most plentiful and consistently sustainable power source?

It is far past time for action to make Hawaii as energy generation free as possible. Energy is essential for all activity on Hawaii, more so than any other commodity.

Mahalo for your attention to this matter, and listening to the tax and ratepayers of Hawaii.

Cynthia Frith
Resident of Kailua-96734

This is ridiculous.

Start representing the people, instead of HECO!

Support grid modernization and clear the path for more of us to go solar!!!!!!!!!!!!!!

Patricia and Bud Boland

HB 1943 is necessary and should be passed immediately.

Carolyn Knoll
Kailua, HI

My name is Keolalani Koaloha, and I am testifying as an individual to support and am testifying in support of HB 1943 in an effort to END to HECO's stranglehold on rooftop solar.

That HECO would prevent a family of ten from installing solar when their electric bill topped \$1000 is unconscionable, as it's extraordinary absence of a forward-thinking approach to energy conservation. There are NO excuses for HECO. It is "ancient, stuck-in-the-past/tradition thinking" and "avaricious" to continue using fossil fuels when this environment promises enough solar that it could likely preclude the use of them were anyone who able to install solar and deliver it back to the grid. SCREW HECO -- they have no right to prevent anyone from installing solar.

Wake up to the 21st century, HECO. You are an embarrassment to Hawaii!

HB 1943

Please allow all homeowners to install Solar Panels for electricity if they wish to.

Thank you,
Martin Diamond
Kula, HI (6790

Aloha Senators,

Please pass HB1943 to support grid modernization and rooftop solar.

Mahalo for your unselfish service to the people of Hawaii.

Sincerely,
Neil Frazer
112 Haokea Drive
Kailua, HI 96734

People desperately need solar to lower their costs for electricity. The right thing needs to be done.

Sophie Bicoy

HB 1943

Hello,

I am an individual testifying in support of HB 1943. I will not be present at the hearing.

Hawai'i can't afford to put off the transition to clean energy any longer. Thank you for your time and consideration.

Sincerely,

Kristine Andarmani
California resident

Make solar a priority in Hawaii. We need to use the sun more and fossil fuels less in HI. The sun shines daily for all, but fossil fuels must be imported.

Modernize the grid so EVERYONE will have the chance to have solar panels.

Mahalo,

**Bruce K Van Brocklin
PO Box 217
Volcano HI 96785**

support rooftop solar ... NOW !
Linda LeGrande

The state (people) should own the grid. Let Heco/Helco compete for customers like any other business. Let suppliers of solar, wind, geothermal, etc. solicit for customers freely and have access to the common grid. It is the right and fair thing to do.
Moses Thrasher

HB1943

Submitted on: 3/18/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Nancy Davlantes	Individual	Support	No

HB 1943

Aloha,

I support HB 1943, the bill which gives the PUC funding to create a grid modernization proceeding and establishes support for rooftop solar. Hawai'i can't afford to put off the transition to clean energy any longer. In the absence of strong leadership from the utility, individuals and households are taking the lead. HECO has out lived it usefulness and longer deserves the monopoly it was given.

Thank you,
Harvey Arkin
3349 Anoa'i Pl.
Hnl, HI 96822

support rooftop solar...given the amount of sunshine annually in Hawaii, this is a no-brainer and should be required for any new construction, as well as solar water heating, nor should retrofitting be obstructed and the insufficient/outmoded infrastructure should be updated, without the need for smart metering, which is another can of worms...mahalo Dan Dowdall, Lahaina

I, Aaron Levine, am testifying as an individual in support of HB 1943. I will not be present at the hearing.

Our state is in desperate need of grid modernization. We have the potential to become an energy independent state through the use of sustainable resources. A move toward grid modernization would help to realize such a goal and save Hawaii's citizens enormous resources. Such a policy would go far to provide residents with the opportunity to purchase alternative energy systems (e.g., solar) thereby reducing utilities costs and mitigating our incredibly high cost of living. In addition, a grid modernization could help to launch Hawaii as a leader in alternative/renewable resources and attract additional industry and innovation. A more diverse Hawaii economy better serves all our collective interests.

Sincerely,
Aaron J. Levine

3840 Kaimuki Ave., Honolulu, 96816

I wholeheartedly support legislation that allows all families in hawaii access to renewable energy. This is the best thing for family economics, the environment and Hawaii. Please support renewable energy for the future of Hawaii and the world! Kapua Kawelo

My name is Sherri Mora
I am testifying in support of HB 1943
I will not be present at the hearing and I am testifying as an individual
Mahalo

My name is Tia Pearson, I am **testifying in support of HB 1943** and I am testifying as an individual. I will not be present at the hearing.

Hawai'i can't afford to put off the transition to clean energy any longer. In the absence of strong leadership from the utility, individuals and households are taking the lead. We owe it to families like the Bautistas to make good on the promise of solar power.

We completely support rooftop solar. Please do your part to help HECO - or someone - to clear the path for grid modernization. Our island - and the planet - need this. Thank you.

Maryann Gianantoni

HB1943

Submitted on: 3/19/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Robin Kaye	Individual	Support	No

Gay marriage has been legal for a long time ,we are all married to HECO. stop the madness and fix the grid.We deseve clean power ,from our own roof.!

Mike Mcneace

Please add my name to those in favor of allowing any bill that would encourage renewable energy.

Mahalo,
Steve Nishimura

Aloha,

The Bautista family of Waianae would like to install solar panels on their house. However, HECO says they can't install and won't say when the grid will open up. Every month that HECO delays fixing the grid puts added pressure on their family. The same is true for many families in Hawaii. We can't afford to put off the transition to clean energy any longer.

I'm testifying as an individual in support of HB 1943, I won't be present at the hearing. HB 1943 gives the PUC funding to create a grid modernization proceeding and establishes support for rooftop solar. Please clear the path for rooftop solar.

Mahalo.
W.K.A.
Waipahu HI

HB1943

It is time to make a change. I live near a geothermal plant that is producing 20% of the electricity used on the big island of Hawaii.

The cost of that fuel source is 0.00\$ and we are paying the highest cost per KWH in the entire country, someone signed a deal that allowed the plant operator to charge the utility based on the cost of OIL. Talk about a sweetheart deal.

There is no incentive for HECO a Public Utilities Monitored Monopoly to decrease the cost to the consumer. They are in business to make money for their shareholders and to maximize profit. There is nothing wrong with that, and I applaud their success. They have provided many highly paid positions in the state and I think we should thank them for their service and show them the door. We the ratepayers can no longer afford the multi-million dollar bonuses HECO is paying their executives. Those bonuses are being funded by those least able to pay. Please Break Up this Monopoly and incentivize the use on renewable energy specifically Wind, Solar and Geothermal.

TonyKassel@aol.com

BSEE, MS, MBA

HB1943

Submitted on: 3/19/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Barbara L. George	Individual	Support	No

Comments: Enough HECO! Get on board. Hawaii should be a world-wide example on energy conservation and alternative energy. This includes solar!

We need to modernize our grid now. Hawaii has one of the highest rates of electricity yet we use the least because of our fine weather. Why? Because coal has to be shipped here?! It doesn't need to be, its time to embrace alternatives. HECO is a big company and a lot of money here in Hawaii. Don't let them use their power and money to keep Hawaii from moving forward.

g.
--

Gabriel D. Peckham, PhD
Principal Investigator
Black Ivory Biotech
99-193 Aiea Heights Dr. Rm 408
Aiea, HI 96701
808-499-5823 / biogabe@gmail.com

Aloha Members of the Senate Committees on Energy and the Environment and Consumer Protection-

As a new home owner in Honolulu I would like to have the right to install a Photo Voltaic (PV) system in order to save money on the increasingly expensive monthly bill. Not only do I value cost savings, but I also value sustainable, renewable energy sources for our state moving into the future. Residents of Hawaii should have the option to pursue cleaner cheaper options than plugging into a grid dominated by fossil fuels. Hawaiian Electric Co (HECO) has repeatedly failed to demonstrate a plan for growth of the roof-top solar technologies. Solar has been a technology used in Hawaii for decades, HECO's solutions for managing the increase in roof-top PV is past due. I urge the Public Utilities Commission to demand updates to the infrastructure to allow for a more sustainable future for our islands energy needs.

Mahalo for your time and consideration of my testimony,
Stacey Fineran

I apologize I forgot to include some key points: I am in support of HB 1943. I will be present at tomorrows session. I am representing myself only.

Stacey Fineran

helco also gave me the run around on the big island. i live in a perfect location in the dry prairie below waimea. stop the stalling with extra \$ charges for research. keith wallach 62 2157 ouli st kamuela hi 96743

I, Ronald W. Hayashi am testifying as an individual in support of House Bill 1943. The time is NOW, Hawai'i can no longer afford to put off the transitioning to clean energy. In the absence of strong leadership or vision from the utility company, I as an individual and my wife Janet G. Hayashi; we as a household are requesting the PUC take the lead in establishing a clear and concise path to grid modernization. This path will lead the way to incorporation of roof top distributed photo-voltiac power generation . HECO needs to clear the path for rooftop solar and make good on their promise of clean energy for all of Hawai'i! Unfortunately, I will not be able to be present to demonstrate my support during the hearing.

Sincerely Ronald W. Hayashi & Janet G. Hayashi

My name is Hardeep Kharbanda, and I am testifying as an **individual in support of HB1943.**

Hawai'i has an urgent need to transition to clean energy. Continuing to generate power from non-renewable sources is not only short-sighted, but it will hurt the planet, the state, the economy and the people. This bill sets in motion the transition to clean energy in the right way. Consumers deserve the freedom to connect to the grid, and pay or be paid a fair amount for the power they use and generate through solar and other means.

Please support HB1943.

Thank you,

Hardeep "Sunny" Kharbanda

Rasa Integrative Therapy - Transform your body, transform your life.

rasa.massagetherapy.com

I voiced some concern earlier about HECO on PV systems. Its been over six months since i applied and made a loan for the system. I read in the daily paper about so many projects that HECO is doing, such as installing their own PV farms, grid monitoring systems in east oahu, converting to another of fuel to conserve energy. They have ignored the problems we are facing. They are stalling our situation, and made no attempt to inform us on their so called safety study. How long do you have to study ????, why doesn't the state hire electrical engineers to see if they are truthful in their assessment of the overloaded grid. Im sure there are a lot of people in Ewa who do not believe HECO is truthful in the safety issue. Its a BIG smoke screen for their own customers.,and even have the gall to encourage us to save energy and install PV systems. As what you call two face .

Lowell Miura

Re: Support for HB 1943

Hawai'i can't afford to put off the transition to clean energy any longer. In the absence of strong leadership from the utility, individuals and households are taking the lead. HECO needs to clear the path for rooftop solar and make good on the promise of clean energy for all of Hawai'i!

I'm am testifying in favor of HB 1943 as an individual, a homeowner in Kaimuki. I support HB1943, I will not be present at the hearing.

Sincerely,
Carol Alevizos

HB1943

Submitted on: 3/19/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Mitchell Evans	Individual	Support	No

Comments: Support HB1943, please!

The State must do everything possible to remove the roadblocks that HECO has thrown in the way of private (rooftop) solar energy. One problem, in my opinion, is that the structure of HECO obliges the company to make a profit for its shareholders, to the detriment of the citizens of Hawai'i and the necessity that we wean ourselves from a dependence on oil.

Albert J. Schütz
Emeritus Professor of Linguistics
University of Hawai'i at Mānoa

March 18, 2014

My name is Frances Chaine and I'm a resident homeowner. In 1968 my husband and I moved to Honolulu to continue our education. We stayed because we loved Hawaii. My graduate degrees at UH were mostly focused on environmental sciences, their politics and public education. In the classroom, I have tried to advocate environmental protection from the destructive effects of increasing human populations.

In 2009 when we returned to our Palolo home after 13 years working in Micronesia, we got quotes for installing solar hot water which was already REQUIRED for all NEW constructions! AND, four years later, despite soaring energy costs, we were still delaying because our roof was now about 50 years old, and we had other pressing repair and maintenance projects.

I felt very remiss because despite limiting our usage where we could and living in a cool valley where we don't have A/C, the cost of electricity seemed to have tripled since 1997 when we left.

When I mentioned to a respected acquaintance who installs Solar Panels for a living, that I wished we could be more environmentally responsible and reduce our carbon footprint, he said we might install Solar Photo-Voltaic panels on our carport roof. I was hopeful. I knew that there were federal and state tax credits which would help reduce the cost of those installations over time.

We contacted the solar company our friend worked for, and arranged to get a quote. We discussed changes and asked for a second quote for 12 panels. The contract which we finally signed in Sep 2013 said that they would arrange the permits for installation, and that for our Palolo neighborhood, it was a given. However, we had a week plus of rain and had to delay the installation date until October. We had also been told that we had to wait until the new net electric meter was installed before we could turn the system on.

About ten days after it was installed, we received a letter from HECO saying we shouldn't install the PV system yet because the NEM Agreement/permit? was pending approval. Oops! I tried to look online and saw that Palolo area grid was 75-100% saturated.

BUT a day or so later, HECO installed the new meter and left a note to that effect on our door. My husband thought it was a go, and turned on the system, as he had been told where to flip the switch. It took a bit to figure out the monitoring system, but it finally seemed to be working. The company that did the installation helped with the monitoring setup. We received our November HECO bill and it reflected that the system and meter were working and our bill had been reduced after being on for about 9-10 days.

On Dec 4, 2013 we received another letter from HECO saying that the "NEM Agreement" permit had been approved pending inspections. The letter promised that it would **take less than a year for the City inspection to be completed**. I called HECO and the person I spoke to said that technically we shouldn't have turned the system on yet.

It has been almost 4 months so far. My sister-in-law's mother, Mrs. Yoshimura, had solar panels installed on her Kaimuki home, and when she died last year before she was allowed to turn it on, her daughters were not allowed to claim the tax credits. A friend in Kaneohe also had months of problems with the inspection. Another acquaintance was told that he could not install his planned PV panels as his neighborhood grid was saturated.

We paid \$16,000 dollars for the PV panel installation and chose to install the minimum number estimated to cover our minimum electric usage. We didn't want to produce more than necessary yet as we had heard that HECO's infrastructure has not kept pace with the need to accomodate the overproduction. It was only now that I realize that we will not be able to claim any tax credits for 2013 as our city permit has yet to appear in the online city permit system. There seems no way that we can monitor progress about a permit that does not appear as being processed.

We have a NEM Agreement ID number but that does not appear in the City's online system . I talked to my friend a few weeks ago and he said that his company had not been allowed to install any PV systems since the beginning of January which means that he is underemployed and may not be able to pay his rent.

I want to encourage our legislature and City Council to give more support than lip service to alternate energy use in Hawaii. We fight wars over oil, pollute our land and drinking water with oil exploration while global warming aggravated by burning fossil fuels, threatens our shorelines and climate. Maybe the CEO of HECO is not earning her \$6 Million salary?

--

Fran Chaine

HB 1943

I am both a homeowner and a renter. I want this bill to pass. Hawaiian Electric has resisted the change to solar, despite what their PR people have been telling us. If they continue to bog down the transition to solar, people will begin doing it without them, by going off-grid, and then Hawaiian Electric will really struggle to survive. We need to transition as quickly as possible and HECO needs to sprint along, not drag their feet. Please pass this bill.

The home I own is in a neighborhood that has been capped.

As a renter, I am pleased that additional measures are being worked on by the pro-solar folks to make it feasible for renters to participate in solar.

Mary Spadaro
Honolulu

Please accept this testimony as strong support for HB1943.

Hawaiian Electric should not be allowed to delay the state's advancement to renewable energy, and specifically the advancement of roof top solar based on undocumented claims of potential risk to grid stability.

Hawaii ratepayers currently pay the highest rates in the nation per Kilowatt Hour and in 2013 Hawaiian Electric Industries (HEI) earned a 9.7% Return on Equity. In 2013 HEI reported a fourth-quarter profit of \$39 million, or 39 cents per diluted share, compared to a profit of \$13.8 million, or 14 cents per diluted share, for the same quarter in 2012. For all of 2013, HEI reported a profit of \$161.5 million, or \$1.62 per diluted share, compared to a profit of \$138.7 million, or \$1.42 per diluted share.

During this same period, HEI claimed it could not afford to maintain the stability of its grid if individual households continued to add roof-top solar. HEI argues that ratepayers who want to move to renewable, roof-top solar should be required to pay for the upgrades HEI believes are necessary, in lieu of HEI investing its own net income in its grid. What is particularly difficult to understand, is why virtually every other cost, expense, tax or fee HEI proposes to pass along to consumers should be spread among all its ratepayers, but not the alleged incremental costs of roof-top solar.

The strategy at HEI is clear, to delay the advancement of roof-top solar in Hawaii. HB1943 will help significantly to advance the Hawaii renewable energy goals and lower the excessive energy costs for households in Hawaii.

Respectfully,
Mike Hasselle
MoveOn Honolulu Council

March 19, 2014

My name is Bruce Huddleston. I have been a resident of Hawaii since 1959.

I graduated from Iolani, the University of Hawaii with a bachelor's degree in architecture, The University of Sydney with a master's degree in Building Science, and UCLA with a certificate in hazardous materials management.

In my 40 year career I have had the opportunity to work as an architect, engineer, project manager, and project director for organizations such as the Department of Energy, Rockwell International, Unocal, Mobil, NAVFAC, AFCEE, NFESC, and many other organizations. I have been fortunate enough to work on the Space Shuttle and I take no small amount of pride that I have cleaned up more than 80 sites contaminated with gasoline, diesel, motor oil, heavy metals, and chlorinated solvents.

I can speak openly today because my Net Energy Metering agreement is in place. From what I understand no small number of people feel inhibited about speaking out about the problems with the HECO conflict of interest as far as PV is concerned for fear that their application may be delayed.

I am also retired. This means that I will not have to work with HECO in the future. I know for a fact that HECO has a long corporate memory based upon my experiences working at Oceanic Companies, Inc. Oceanic – which is an excellent company with highly experienced and highly capable management, engineers, and technicians – had the audacity to sue HECO in order to be paid for change order work, and Oceanic did not receive another HECO contract for fifteen years.

In my 40 year career I have never seen a company or organization that comes anywhere near the hubris, technical incompetence, lack of planning, and financial irresponsibility demonstrated by the Hawaiian Electric Company (HECO).

I had the opportunity to work directly for HECO on the Waiiau Wastewater Treatment Facility, and I came to the clear understanding that:

1. HECO is a highly dysfunctional organization.
2. HECO is significantly lacking in technical expertise.
3. HECO is significantly lacking in managerial expertise.
4. HECO has no planning capability.
5. HECO places political correctness above technical correctness.
6. HECO operates as if they are a government organization.
7. HECO is so awash in cash that they are not spending money efficiently.
8. No one does any work at HECO facilities during the months of November and December.
9. HECO has no intention of allowing for the large-scale development of rooftop solar.

During private discussions with HECO employees it became obvious that a significant roof mounted PV generating capacity is never going to happen as long as HECO is in charge of producing electricity. HECO has elaborate plans in place to build centralized wind powered facilities, in spite of vehement public opposition.

HECO's ability to shut down the PV industry on the basis of "safety" is a classic example of what happens when foxes guard the henhouse. To the best of my knowledge there is no actual data that indicates that there is any kind of safety problem.

The only way that there can be a "safety problem" at the present time is if you follow the HECO approach and be stupid on purpose according to the following procedure:

1. Make no effort whatsoever to anticipate the grid saturation problem.
2. Do not collect any real world data to evaluate the extent or effects of grid saturation.
3. Make the assumption that there is no correlation between peak solar power generation and peak electrical power consumption. In order to make this assumption it is necessary to make the additional assumption that air conditioning is not used during periods of solar power generation. This is the stupid on purpose part.

Now that the imaginary "safety issue" exists and the PV industry has been virtually shut down, it is necessary to study the problem. This is an excellent example Classic Hawaiian politics at work. Maintain the status quo. Study the problem. Don't anticipate the problem or deal with the problem head on and generate a solution. Study the problem. That way the problem can go on for years. And never be solved. And the status quo is maintained indefinitely.

As a Public Utility HECO needs to divest its power production capability and become a power distribution organization. HECO has a massive conflict of interest with the PV industry. Each and every PV panel installed on Oahu means a direct loss of income for HECO.

HECO did the citizens of Hawaii a huge favor by stopping the PV industry dead in its tracks in September of 2012. It demonstrated to even the most skeptical observer that HECO is a predatory organization and that the number one goal of HECO is to prevent the widespread implementation of rooftop PV, even though 96% of the population of Oahu favors PV energy. HECO won the battle, but they will lose the war.

Why I Hold HECO in Such Low Esteem

In August of 2011 the company I worked for – Oceanic Companies, Inc. – was awarded a 1.1 million dollar contract to rebuild the wastewater treatment system at the HECO Waiau Facility. The condition of the fully operational system that was being rebuilt was beyond description. The sulfuric acid used to neutralize the industrial wastewater had eaten away at the pumps, piping, valves, gauges, concrete walls, and concrete floor. It was hard to believe that the system actually functioned.

HECO was in an extreme rush to complete the rebuilding project. The rebuilding project was complicated by the fact that it was necessary to build new temporary systems to keep the treatment plant fully operational while the permanent new systems were installed.

The first issue that came up as soon as I was involved in the project as the project manager was the decision to use 316 stainless steel (316) for the sulfuric acid system. Any engineering school freshman

can look in a compatibility chart and see that 316 is not recommended for handling sulfuric acid. Alloy 20 is a metal that was developed specifically for sulfuric acid and it is the industry standard.

The organizational structure for the Waiiau Wastewater Treatment Facility (WWTF) defies description. The HECO project manager – Alvin Kurisu – hired a consultant to do the engineering for the project. The HECO project manager also hired a project manager to do the project management – Tom Harrington.

This raises the question: what did the HECO project manager do during the entire project? The answer is: less than nothing.

Because of the deplorable state of the existing wastewater treatment system the WWTF was on a “fast track”. This meant that the project was scheduled to be completed December. This could be achieved as long as the HECO project manager reviewed and approved submittals in a timely manner. The problem was that the HECO project manager failed to take the time and effort to review the submittals. The sulfuric acid system submittals were transmitted to HECO in October, but the submittals were still not approved when I left the project in February 2012.

In spite of our reservations, Oceanic proceeded to install a temporary sulfuric acid system using 316. To provide an example of HECO hubris combined with technical incompetence, during the checkout run of the sulfuric acid system the HECO engineers and technicians insisted that the new sulfuric acid pump was not functioning. I was observing the oscillations of the pressure gauge and was 100% confident that the sulfuric acid pump was functioning perfectly. The HECO engineers and technicians responded that their pH meter reading on the tank had not changed and that no sulfuric acid was going into the neutralization tank. After about 20 minutes a young HECO engineer suggested that it might be a good idea to do a manual test of the tank pH level. The manual pH test demonstrated that the pH of the neutralizing tank had dropped to two, which is extremely acidic. The fact that HECO was operating a neutralization tank with a broken pH meter is beyond comprehension.

To provide another example of hubris and incompetence, the WWTF included a sodium hydroxide (NaOH) system. The commissioning of the NaOH pump demonstrated that HECO places politics above safety. As soon as the pump was energized for the first time it was evident to me that there was a problem with the system. The pressure gauge oscillations were far too abrupt. This occurred at 9:45 on Wednesday morning. I indicated that to the HECO engineers and technicians that the NaOH system was not operating correctly and that I wanted to shut it down and investigate the problem. I had to go to a weekly progress meeting at 10:00. HECO was in a big hurry to get the NaOH system operational, so I was overridden. When I got back from the meeting the pump was still hammering away. The HECO engineers and technicians agreed that something was wrong with the NaOH system and agreed to shut it down to investigate. It turned out that a back pressure regulator had stuck in the closed position so the NaOH pump had been “dead heading” for two hours.

The temporary 316 system was pressure tested and put into operation in September 2011.

On Saturday November 11, 2011 I received a call from Tom Harrington at 7:00 AM indicating that there was a serious problem with the sulfuric acid system. When I arrived at the site there was a significant leak in the acid system at the mixing tee. I was able to get a welder on site and we spent the entire day trying to stop the leak. The skill of the welder was beyond belief. He was lying on his back doing overhead welding on a surface that was 6 inches off of the ground. Tom Harrington spent the entire day

cursing at me and telling me that Oceanic welders didn't know how to weld. I had to temper my response, but I indicated that welds do not fail once they pass a pressure test on the basis of craftsmanship and that the leak was a corrosion problem, not a welding problem.

In any event, Oceanic was able to stop the leak at the mixing tee by completely re-building the bottom of the tee. We were not able to stop the slow leak on the water isolation valve, and investigation of the valve demonstrated severe corrosion.

On Monday the HECO PM first came to the realization that the possibility existed that I was correct about the compatibility of 316 with sulfuric acid and that their consultant was wrong. The HECO PM was surprised to learn that no small amount of heat was generated when the acid mixed with the water. This is something that even a high school chemistry student knows. Kurisu decided that it would be a good idea to do some thermal imaging of the mixing tee to see what he was dealing with. Kurisu was shocked when he saw the temperature levels generated when the mixing tee was operational. Kurisu made the decision to replace a part of the temporary sulfuric acid system with Alloy 20. The 316 mixing tee was removed and cut in half to determine the level of corrosion. The 316 mixing tee had failed completely in less than six weeks of exposure to sulfuric acid.

In any technically competent organization the specifications for the sulfuric acid system would have been revised to Alloy 20 as soon as the failure of the temporary system was discovered.

HECO is not a technically competent organization.

HECO is a *political* organization. I had this explained to me in no uncertain terms at the next progress meeting. The choice of materials was a political decision, not a technical decision. From a political perspective it was *not possible* that the consultant and HECO had made a mistake about the selection of materials for the sulfuric acid system. Since politics automatically take precedence over technical issues, changing the specifications from 316 to Alloy 20 was a serious issue that required further study. To say that I was stunned is an understatement. I felt as if I was in a Dilbert cartoon. A HECO manager had just made a statement that I never thought that I would hear in the context of an actual business meeting. Politics takes precedence over technical issues *automatically*.

When I left the WWTF project in February 2012 HECO had not made a final decision about which material to use for the sulfuric acid system. Fortunately for HECO the sulfuric acid pump manufacturer had refused to provide a 316 pump and accessories, since it would void the warranty. The pump, back pressure regulator, and pulsation dampener were fabricated from Alloy 20. The HECO PM had indicated verbally that the sulfuric acid system would be fabricated out of Alloy 20, but a change order to change the sulfuric acid system from 316 to Alloy 20 was never issued.

Another specific example of HECO hubris and incompetence is the WWTF diaphragm pumps. Diaphragm pumps are used to pump difficult to handle materials. They are very simple and very durable. One characteristic of diaphragm pumps is that they "kick". The entire pump moves during every pump cycle as the diaphragm slams shut. It is possible to set a diaphragm pump on the ground, hook up the hoses, and run the pump for years without any problems. The pump moves a lot, but the movement is harmless.

HECO seemed to place an inordinate amount of attention to the anchor bolts for the WWTF diaphragm pumps. Modern anchor bolts are an engineering masterpiece. For example, each pump has four ½"

anchor bolts. A 1/2" anchor bolt has a pull out strength of 5,000 pounds. Each pump has four bolts, so it would take 20,000 pounds of force to pull the pump out of the foundation. Since the pump weighs approximately 200 pounds, it is difficult to see a problem. In any event, Oceanic did not get approval of the anchor bolt submittal until Oceanic submitted a seismic report from a professional engineer for the anchor bolts.

The amount of discussion that went on about the anchor bolts defies comprehension. There was meeting after meeting, email after email, and telephone call after telephone call. It seemed to go on forever. Tom Harrison pointed out to me what an idiot I was to even consider tying in to the existing pump pedestal and that the "only way to build a proper pump pedestal was to demolish the existing pedestal, cut a portion of the slab for a new pump pedestal footing, install a rebar cage tied in to the footing and extending into the pedestal, and pouring a new foundation and pedestal". All of this for a pump that weighs 200 pounds. None of it added up. HECO seemed to have some kind of bizarre obsession with diaphragm pump pedestals.

It was not until Oceanic did the actual diaphragm pump installation that I realized how fantastically stupid HECO really was. In all of the *decades* of installing diaphragm pumps at the **entire** Waiau facility not one HECO engineer had placed a vibration isolation pad on a diaphragm pump. This simply defies comprehension. HECO operates in some kind of engineering never-never land where not everything is done "according to the book". Apparently some things are done purely on the basis of traditions, and once a tradition is established it is difficult if not impossible to change.

You can go to the Waiau facility right now and see that every diaphragm pump (other than the ones installed by Oceanic) does not have a vibration isolation pad and that every diaphragm pump pedestal (other than the ones installed by Oceanic) has cracks in it.

Of course every pedestal has cracks in it. Diaphragm pumps are supposed to be able to move. It is in the installation instructions. Right there in black and white: set the pump on a rubber pad. Don't set the pump directly on the pedestal and torque down the bolts *the way HECO does*. If you do, all of the dynamic energy transmitted into the pump body by the diaphragm slamming shut is transferred into the pump pedestal with nowhere to go other than to break the concrete.

A properly installed diaphragm rests on a rubber pad. The nuts that hold down the pump have only enough torque on them to slightly compress the rubber pad. A lock nut is required to hold the nut in place. It is a simple installation procedure. Yet it is beyond the technical capability of HECO.

All you have to do is look at the Waiau facility to see that HECO is a dysfunctional organization. The facility looks like a scene from Mad Max 2. Temporary fixes and improvisation are to be seen everywhere you look. If a valve leaks, the HECO procedure is to install another valve downstream of the leaking valve, with another valve downstream of it "just in case". Apparently the idea of fixing the valve is not in the equation.

The way that HECO spends money is something to behold. Any time anything happens, such as testing out a new pump or tying in to an existing system, three or more HECO personnel show up to "monitor the situation". It is difficult to concentrate because in addition to the task at hand it is necessary to determine which question to answer from which HECO employee. Then without notice everyone disappears and it is back to "normal". The number of man hours spent by HECO at meetings was

comparable to the man hours spent by Oceanic actually building the system. As many as 20 people would show up at the weekly meeting, and the meeting usually dragged on for two hours.

Even the simplest engineering decision would require endless hours of discussion. For example, the consultant had generated a design drawing that showed six ½" air lines coming off of a single ½" air line connected to a 2" line. Even a junior engineer knows that the proper engineering approach is to tap off of the 2" line. It was an enormous struggle to get the HECO project manager to agree to the revision to the design, even though the revision was in accordance with standard engineering practice.

In conclusion, HECO does not do engineering "by the book". HECO has its own school of engineering that disregards compatibility charts and manufacturer's recommendations. HECO does not plan ahead. HECO manages by reaction. Instead of anticipating a problem and avoiding a problem HECO allows a problem to develop and then HECO reacts to the problem. HECO should have anticipated the need to build their sulfuric acid system out of Alloy 20, especially that the system that they were replacing was made out of Alloy 20. HECO should have anticipated the grid saturation problem. For HECO to be able to virtually shut down the PV industry because of an unproven safety issue only demonstrates how out of control HECO is at the present time.

Sincerely,

A handwritten signature in black ink that reads "Bruce C. Huddleston". The signature is written in a cursive, flowing style.

Bruce C. Huddleston
865 N Kalaheo Avenue
Kailua HI 96734

HB 1943

I have lived comfortably off the grid in Hawaii for 23 years, and so has one of my sons, who installed both systems, together with a second son who installs solar PV in California. The local electric company is desperately trying to postpone the eventual day when people choose off-grid living over the grid's costly out-of-date systems, sometimes by simply choosing to disconnect from the grid.

No power failures in 23 years in sunny Kapoho. Even my hot water is heated electrically by the sun, costing a lot less to install than thermal, and a far more long-lasting solution, since there are no wild fluctuations of temperature, no scalding mishaps and I can shut the electric water heater off in case of bad weather.

Marie Fontana
Kapoho Road
Pahoa, HI 96778

To the Senate Energy and Environment and Consumer Protection Committees:

When will HECO develop solar energy products and services for renters and for low income people living in private homes? I cannot buy solar power for my home because I am a renter. Instead, I am forced to pay over \$100 per month to Heco for carbon based power in a state where the sun shines almost every day.

Why is solar power only available for a certain class of people? The laws that govern electric power in Hawaii need to be overhauled. The cost of electric power should be lowered. The Heco executives make way too much money. Heco should be a public utility that is run for the benefit of its customers.

There are ways to allow renters and apartment dwellers to have solar energy. I am aware that that HB1943 HD2 is in response to home owners who bought solar panels and are not able to use them because of Heco's refusal to connect. However, I think Hawaii has to take a more comprehensive look at how Heco is run and why electric power in Hawaii is so expensive.

Each time I pay my Heco bill I am paying for someone else's solar panels.

Solar power should not be reserved for a certain class of people in a state that gets sunshine almost everyday.

Thank you,
Pearl Deans

Anthony Aalto
3946 Lurline Drive • Honolulu, Hawai'i 96816
808.234.9779

Committee on Energy & Environment and Committee on Commerce & Consumer Protection
March 20, 2014 3:35pm

Testimony in support of HB 1943

RELATING TO THE MODERNIZATION OF THE HAWAII ELECTRIC SYSTEM

Aloha Chairs Baker and Gabbard and Members of the Committees,

I believe there is an inclination amongst some members of the Legislature to "protect" HECO and I believe this inclination is misguided and will backfire.

The protective urge comes from a good place: a serious sense of responsibility to the wider public and a belief that we need a strong, well-managed utility to service all the community, especially people who live in high-rises who cannot easily install PV systems.

However the idea that HECO can be protected by allowing it to slap an arbitrary cap on the amount of rooftop solar power connected to the grid is totally false. All this will do is encourage people to switch to battery back up systems. In a recent and comprehensive look at rooftop solar, The Rocky Mountain Institute concluded that, as soon as next year, it will make more economic sense for commercial customers in Hawaii to install PV systems with battery storage that to remain connected to the grid. Residential customers are not far behind.

Last week Elon Musk, CEO of Tesla, announced that he is investing in a \$4 billion to \$5 billion "gigafactory" which will double the entire global production of lithium-ion batteries. Musk says the price of batteries will drop 30% in 3 years and 50% by 2020.

At that point it will not make sense for most customers in Hawaii to remain connected to the grid unless HECO invests rapidly in a modern "smart" grid that will permit everyone to interconnect their PV systems. By providing a modern grid HECO will give households a reason to want to remain connected. It will be a way to retain the utility's customer base.

It may seem counterintuitive, but the only way to save HECO is to oblige it to accept more rooftop solar by requiring it to modernize the grid. I urge you to support this bill as written and not to amend or further dilute it.

Thank you for this opportunity to testify.

HB 1943

I am individual. I may be present at the hearing Thursday. Hawai'i can't afford to put off the transition to clean energy any longer.

Brodie Lockard
183 Pinana St.
Kailua, HI 96734

Dear Hawaii State Senate EECF Committee:

I am writing to express my 100% support of Bill HB 1943.

The Third Industrial Revolution --- centered on breaking away from dependence on fossil fuel and adopting clean, renewable energy for mankind continued civilization --- is already taking place, world wide, right in front of our eyes. Passing of HB 1943 is the right thing to do --- it will only demonstrate that Hawaii is a leader in this new mega trend. The people of Hawaii, the future generations of Hawaii, will all benefit from HB 1943 and thank you for passing it .

Alex Li

Renewable energy is the way to go and shouldn't be hindered by the utility company's lack of infrastructure.it is. Lear that citizens want rooftop solar which requires grid modernization.

I am testifying in support of HB 1943. I will not be present at the hearing and am testifying as an individual who is interested in installing rooftop solar in the future.

Sincerely,
Sarah Falzarano
46-473 Kuneki Way
Kaneohe, HI 96744

HB1943

Submitted on: 3/19/2014

Testimony for ENE/CPN on Mar 20, 2014 15:35PM in Conference Room 225

Submitted By	Organization	Testifier Position	Present at Hearing
Brian Emmons	Individual	Support	No

Comments: Hawai'i can't afford to put off the transition to clean energy any longer. We need strong leadership from the PUC and HECO! Modernize the energy grid and support roof top solar!

Greetings,

I'm very excited that you're considering a bill that would further support rooftop solar (HB 1943). I'm a firm believer and support in clean, renewable energy, and that becomes even more important for an island chain like Hawai'i.

I hereby testify to my full support--as an individual--of House Bill 1943. Thank you for your time.

Urie Kline
700 16th Ave
Honolulu, HI 96816

My name is William Walker and I am a resident of Ewa Beach that installed a \$35,000.00 PV system at my residence in October 2013. Shortly after the installation of my system I became aware of HECO's new NEM / grid interconnectivity policy. HECO now requires that a NEM agreement be submitted and approved prior to the installation of the system which is exactly the opposite of the former process where the NEM agreement was the final step. HECO has determined the circuit in my neighborhood is above maximum saturation which may require further studies and improvement before I can connect.

In late November 2013, I received a letter from HECO stating that my system met their new guidelines which they had established for those of us who were "in limbo" and we would be "grandfathered" into the system without any additional costs for studies or grid upgrade costs. In mid January 2014 I received another letter from HECO which stated that despite the promise to be grandfathered into the system HECO could not approve me because of the saturation of level of my circuit.

HECO and HECO alone has created this "problem" and every time they propose a short term solution, which always gets press, they eventually go back on their word citing safety and reliability concerns. My PV system has been up for six months and HECO has not given me a timeline for when their "studies" or "upgrades" are going to be started, conducted, completed, etc.

I've had many sleepless nights and experienced a great amount of unnecessary stress due to HECO's actions.

I do not trust HECO and have no faith in their ability to make improvements to the grid on their own which is why I support HB 1943.

To Whom it May Concern:

My name is Roy Skaggs and I fully support HB 1943, HD2 and modernizing the grid. I am a Project Developer at Alternate Energy. I have been involved in Renewable Energy for over 2 years now and have thoroughly enjoyed helping people become energy efficient and at the same time saving the environment.

Last September, the island's only utility (better known as a monopoly) tried to completely shut down the PV industry. Under the premise of "safety", they have taken away hard working people's jobs and customer's rights to save money and become independent. There is no rhyme or reason to how they have been approving folks to go ahead and get PV. The only thing for sure is, they don't want ANYONE to move forward until they get permission from HECO first. How is this allowed? I have multiple customers who were supposed to be "grandfathered" that HECO is telling "NO" to again! Do they understand the meaning of grandfathering? We consider the people we work with customers and provide service with a smile. HECO could learn about that treatment instead of looking at everyone only as a ratepayer with no other choice.

The rates in Hawaii are the highest in the country. They have gone up over 50% in less than 5 years! When good, honest, hard-working families are struggling to pay these rates, we should be doing everything to help them. Photo-voltaic has done that for thousands of families. There are thousands more who have been wanting to do it and have either been told "NO" by HECO or to "Wait" with no true timetables.

What about all the lost jobs? 28% of the construction industry is attributed to solar. Hundreds of families have now been affected by the layoffs. This weighs not only on those families futures, but also on the taxpayers as many people will go on unemployment. One thing is for sure, there are thousands of voters watching what happens next.

I keep racking my brain trying to figure out how a for-profit monopoly is able to stop people from capturing the sun on their own rooftops to supply themselves electricity? HECO will tell you because of "safety", but have they actually shown anyone proof of this imminent threat? Scott Seu admitted there are grids that are over 200% DML, so where are all the explosions, accidents, injuries, etc? How is it that HECO is not being held responsible for maintaining and upgrading these grids over the years? They admitted that they knew about this for a long time.

I hope to continue working in this industry helping families, the environment, and providing for my own family. We are all looking for answers and HECO has been left seemingly unchecked so far. We all hope to get answers and move towards an energy efficient Hawaii.

Thank you for accepting my testimony.

Sincerely,

Roy Skaggs