

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

February 7, 2017  
9:30 am

**MEASURE:** H.B. No. 848

**TITLE:** RELATING TO ENERGY MODERNIZATION AT THE UNIVERSITY OF  
HAWAII SYSTEM

Chair Lee and Members of the Committee:

**DESCRIPTION:**

This measure would exempt microgrids that promote and serve public higher education institutions from regulation as a public utility by the Public Utilities Commission (“Commission”).

**POSITION:**

The Commission offers the following comments for the Committee’s consideration.

**COMMENTS:**

The Commission supports the development of microgrids as an option to meet the energy needs of customers as articulated in the *Commission’s Inclinations on the Future of Hawaii’s Electric Utilities* (See Docket No. 2012-0036, Order No. 32052).

However, this measure allows for a microgrid exempt from Commission regulation to serve entities “on or within properties adjacent to or nearby the institution’s property[.]” Oversight and consumer protection issues may arise for entities served or affected by microgrids exempt from Commission regulation. For example, it is unclear how important minimum standards for interconnection or reliability would be established for microgrids exempt from Commission regulation.

Thank you for the opportunity to testify on this measure.



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented Before the  
House Committee on Energy & Environmental Protection  
February 7, 2017 at 9:30 a.m.

by  
Kalbert K. Young  
Vice President for Budget and Finance/Chief Financial Officer  
University of Hawai'i System

### HB 848 – RELATING TO ENERGY MODERNIZATION AT THE UNIVERSITY OF HAWAII SYSTEM

Chair Lee, Vice Chair Lowen, and members of the committee:

The University of Hawai'i (UH) supports HB 848, Relating to Energy Modernization at the University of Hawaii. This bill exempts microgrids that promote and serve public higher education institutions from regulation as a public utility by the Public Utilities Commission and adds a definition for "microgrid".

Act 99, Session Laws of Hawaii 2015, established a goal for the University of Hawai'i to become net-zero, with respect to energy use, by producing as much renewable energy as may be needed to support UH campuses by January 1, 2035. This goal is consistent with the State's overall policy goal of achieving a 100 per cent renewable energy portfolio standard by 2045. Microgrids can play a key role in expanding the availability of clean energy to serve persons and buildings in the State that have so far been unable to enjoy its benefits.

Two key barriers to the development of microgrids in Hawai'i include: (1) existing statutes, ordinances, and rules that could prevent or have the effect of preventing the development of microgrids and (2) potential regulation of microgrids as public utilities by the Public Utilities Commission. Microgrids are expected to make the use of renewable energy more readily available to the University and other users.

HB 848 will encourage the facilitation, development and use of microgrids and renewable energy across the University System. This bill, as currently written, establishes initial parameters on the microgrid size and distance from the power source, striking a balance between the University's need to use renewable energy to help achieve a net-zero result and an allowable use of the electric utility's facilities.

Thank you for your time and consideration.



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

COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Rep. Chris Lee, Chair

Rep. Nicole E. Lowen, Vice Chair

DATE: Tuesday, February 7, 2017

TIME: 9:30 am

PLACE: Conference Room 325

RE: HB 848 RELATING TO ENERGY MODERNIZATION AT THE UNIVERSITY OF HAWAII SYSTEM

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

Life of the Land is Hawai`i's own energy, environmental and community action group advocating for the people and `aina for 47 years. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

**Life of the Land is a very strong proponent of microgrids, and supports the intent of the bill, but cannot support the bill as drafted.**

HB 848 has a lot of moving parts, some of which have the power to create some serious unintended consequences. Others would generate cross-subsidies between different rate classes. Still others would disrupt long-standing regulatory practices by the Commission.

A better approach would be to require the PUC to open a docket on microgrids, or to include microgrid analysis in the existing Distributed Energy Resources docket 2014-0192.

“The legislature further finds that the development of microgrids in Hawaii faces two key barriers. First, local ordinances could prevent or have the effect of preventing the development of microgrids.”

Life of the Land is unaware of any local restrictions. Utility regulation is controlled by the State. Counties are preempted from regulations, as Kauai found when they tried to regulate electric towers.

“Second, any entity developing a microgrid that serves residents in Hawaii could be subject to regulation by the public utilities commission.”

Independent and Grid-Connected Microgrids are regulated by the Public Utilities Commission.

“It is not the intent of this Act for the public utilities commission to regulate microgrids, especially when such systems could be of great value to isolated and rural areas of our State or provide overriding public benefits in areas such as education, health, housing, transportation, and other community service areas.”

Rural communities often have private water and waste water utilities. These are regulated by the Public Utilities Commission which is charged with making sure the rates are reasonable.

“No electric utility shall be allowed to assess a charge, fee, or penalty of any kind to the university for planning, designing, constructing, or operating a microgrid.”

It is unclear whether this means that the utility should not interfere with University planning efforts, or that utility ratepayers should finance University planning efforts.

“Include lands and buildings owned or controlled by the university and several adjacent or nearby properties”

It is unclear whether all of the land is owned by the university, but some of it is off campus, or whether the University can extend its reach as far off campus as it wishes.

“The microgrid in which the institution is participating makes only limited use of an electric public utility's transmission or distribution lines to provide, sell, or transmit electricity, meaning that the institution only requires the electric utility to install and operate electric lines and facilities to transport electricity from the power source to the microgrid and the microgrid users' electrical systems.”

Any interconnection with the utility requires approval by the PUC.

“Transmittal of electricity within the area covered by the microgrid, particularly from the power source to the microgrid and its users' electrical systems, will be permitted by the applicable

electrical utility if the entire microgrid area is within lands owned or controlled by the State of Hawaii.”

At various times, military grids have been owned by the military, and at other times, owned by HECO. The bill seems to cover the possibility that the power source is not located adjacent to the campus, and that it crosses other areas served by the Utility. If the power from the source is transmitted over a line that also serves other customers, then the transfer of energy is wheeling. If it is a new line, then it requires Utility construction. In either case the Utility’s actions are regulated by the PUC.

“An electric utility may not charge microgrids standby service rates or similar fees and charges for interconnection into the electric utility system; provided that the educational institution shall pay to the electric utility at established rates filed with and approved by the public utilities commission.”

If the Utility must maintain sufficient spinning reserve to handle loss of a very large University load, without charging a standby fee, then all other ratepayers must subsidize that cost.

Mahalo,

Henry Curtis  
Executive Director



HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Tuesday, February 7, 2017 9:30AM Room 325

**In SUPPORT HB 848** Relating to Energy Modernization at the University of Hawaii System

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

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai‘i strongly supports HB 848, which defines “microgrid” and seeks to exempt microgrids that promote and serve public higher education institutions from regulation as a public utility by the Public Utilities Commission.

Since 1968, the Sierra Club of Hawai‘i has been working to protect the unique natural and cultural resources of our islands. We know that 100% clean energy economy is our best chance of combating climate change.

We support HB 848 because it will allow the University of Hawai‘i to better capitalize on its potential renewable energy resources across its many properties. Authorizing microgrids in this way brings the State closer to achieving its goal of a 100% clean energy economy by 2045. The use of renewable energies will have a significant benefit to the environment by reducing the University’s carbon footprint.

This bill also has the added benefit of facilitating a more secure utility system with built in redundancies that encourage self-reliance and are more aligned with the State’s energy goals. Microgrids are able to operate independent of the main grid, and can provide the various UH campuses with power in situations where the main power grid is inoperative.<sup>1</sup>

A microgrid would be able to store energy generated at the planned solar farm at the UH West Oahu campus and use that energy to help power the other UH campuses throughout the island.<sup>2</sup> This would, in turn, save the University a substantial amount of money.

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<sup>1</sup> U.S. Department of Energy Website, *How Microgrids Work* (June 17, 2014) available at: <https://energy.gov/articles/how-microgrids-work>.

<sup>2</sup> Duane Shimogawa, *Large solar energy farm planned for West Oahu*, Pacific Business News (November 9, 2016) available at: <http://www.bizjournals.com/pacific/news/2016/11/09/large-solar-energy-farm-planned-for-west-oahu.html>.

Various universities across the nation have already implemented the use of microgrid technology, which has resulted in dramatic savings in power costs.<sup>3</sup> For example, as recently as 2014, the Illinois Institute of Technology reported that their microgrid saves the IIT main campus about \$1 million annually.<sup>4</sup> The University of California, San Diego also uses a microgrid and reported that they save more than \$8 million annually in power costs.<sup>5</sup>

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

Mahalo,

Marti Townsend  
Director

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<sup>3</sup> National Electrical Manufacturers Association, *Microgrids, Macro Benefits: How to talk to decision makers about building your own electrical power system*, p.6 (2014) available at: <https://www.nema.org/Communications/Documents/Microgrids-Macro-Benefits.pdf>.

<sup>4</sup> Id.

<sup>5</sup> Id.

**TESTIMONY BEFORE THE HOUSE COMMITTEE ON  
ENERGY & ENVIRONMENTAL PROTECTION**

**H.B. No. 848**

**Relating to Energy Modernization at the University of Hawaii System**

Tuesday, February 7, 2017

9:30 am

State Capitol, Conference Room 325

Kevin M. Katsura

Assistant Deputy General Counsel (Regulatory), Legal Department  
Hawaiian Electric Company, Inc.

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

My name is Kevin Katsura and I am testifying on behalf of Hawaiian Electric Company and its subsidiary utilities Maui Electric Company and Hawai'i Electric Light Company in **opposition** to H.B. 848.

In Hawai'i, there's no extension cord to the mainland. Unlike California and many other places we're compared to, we can't plug into the mainland grid, either to buy or sell electricity to neighboring utilities and for reliability. As loads continue to decrease, as we have seen over the last 10 years, the loss of large customers will impair the sustainability of fair cost allocations to all customers which will impair economic development and the attainment of our state renewable policies and goals. We must address the State's energy future as a whole and not with techniques that sound reasonable as stand-alone concepts, especially those used in larger grids in the mainland with large manufacturing and commercial loads. Hawaii has the best chance of success when all stakeholders can participate in reasoned discussions.

Hawaiian Electric is actively working with the UH System Administration on options to help them achieve their energy and sustainability goals, which includes how they might effectively develop renewable energy systems on their lands. We are seeking win-win solutions that simultaneously help the University *and* our broader



community of energy customers. This bill does not contemplate a collaborative, mutual gains approach between the UH, Hawaiian Electric and other customers, and in fact pursues an opposite pathway, putting the UH at odds with our other customers. We did not need any legislation to begin our collaboration with the UH, and it is unfortunate that the proposed legislation may effectively shut our collaboration down.

This bill, among other things:

- Exempts microgrids from being regulated as public utilities in addition it prohibits the university from paying its fair share of costs by prohibiting the utility from assessing charges, fees, or penalties of any kind to the university.
- Allows the university to establish microgrids before determining if it is feasible, how it would impact all customers in Hawaii, and whether it would fit into the state's energy policy of 100% RPS cost effectively by 2045.
- Benefits the university at the expense of all other customers who will have to pay for all the cost of the current infrastructure while impeding the utilities' ability to pursue 100% renewable energy by 2045.
- May result in the degradation of service reliability as the utility would not be able to negotiate to change operating requirements and project design to protect the system. The utilities need to be involved in setting operational reliability standards to assure system reliability.

To ensure ALL customers benefit from, and are not adversely impacted by microgrids, we recommend that four key principles be addressed:

1. *Fairness with increased customer options:* Some of our customers have expressed an interest in exploring microgrids as the economics of

different solutions, such as renewables and storage, improve. We recommend that the bill encourage collaboration and partnering between utilities and customers to design and operate microgrids and determine and coordinate the specific services needed. These additional services should enhance the value for customers connected to the integrated energy district and ensure that ALL customers benefit from establishing microgrids, not just those within the microgrids. Also, customers within the microgrids should continue to remain customers of the utility and be able to participate in the utilities' energy programs as part of the broader integrated grid. One example of this concept is the collaboration between Hawaiian Electric and the Army to install a 50MW generating facility at Schofield. This system will normally be connected to the larger grid to provide benefits to all customers, but has the ability to be isolated to the Army system to provide them increased energy security and resiliency during abnormal circumstances, a high priority requirement for the Department of Defense.

2. Safety when operating the integrated energy district: Operating an electric grid is complex and the safety of all customers served is paramount. Having an integrated energy district within the macro grid adds more complexity to the coordination and operation of these systems particularly when personnel are working in the energy district and in the macro grid. It is recommended that the operation of the integrated energy district be the responsibility of the Companies to ensure the safety of all customers served.
3. Reliability of the macro electric system: As stated in the preamble, there may be operational benefits that could be derived from an integrated energy district if executed in close coordination and partnership with the macro electric system. To ensure that ALL customers benefit, there should be no negative impacts on the reliability of the macro electric system grid. The Companies agree and reaffirm the wording in the proposed bill that there should not be any compromise to the stability and reliability of the public utility's electric grid.
4. Fairness regarding cost shift issues: In addition, microgrids should not result in increased costs for customers outside of the microgrids. The operational and economic benefits of an integrated energy district should benefit ALL customers. To ensure there is no cost shift issues, regulatory policies need to be addressed as well.

In addition, we would like to include the following definition of a microgrid as defined by the USDOE microgrid group:

*A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. A microgrid can connect and*

*disconnect from the grid to enable it to operate in both grid-connected or island-mode.*

Thank you for this opportunity to testify.



68-3765 MANA HUA PL. WAIKOLOA, HI. 96738  
MAIN: (808)883-9411 CELL:989-1637 EMAIL:  
[WWW.ENERGYRESEARCHSYSTEMS.COM](http://WWW.ENERGYRESEARCHSYSTEMS.COM)

TESTIMONY OF JOHN CROUCH ON BEHALF OF ERS, A RENEWABLE ENERGY COMPANY  
BASED IN HAWAII, BEFORE THE  
HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

**In SUPPORT of HB 848 RELATING TO ENERGY MODERNIZATION AT THE  
DEPARTMENT OF EDUCATION**

**Thursday, February 9, 2017 11:00 am. Conference Room 325**

Aloha, Rep. Chris Lee, Chair: Rep. Nicole E Lowen, Vice Chair and members of the Committee, my name is John Crouch. I have been involved in the design and installation of renewable energy projects in Hawaii since the first large unit at Mauna Lani Bay Hotel and Bungalows in 1998 and the first large scale PV project in Hawaii, 2008, on Lana'i composed of 1.5MW of PV to supply 30% of the daytime load.

ERS is in **SUPPORT** of **HB 848**.

This Act gives clarity to definition and use of microgrids. This is needed to facilitate the use of microgrids in our schools and other qualified entities.

As noted in the Act: Microgrids can facilitate the achievement of Hawaii's clean energy policies by enabling the integration of higher levels of renewable energy and advanced distributed energy resources, including energy storage and demand response.

It is important to allow microgrids to operate as NON UTILITY entities, because they serve specific, easily identified, users, not the general public.

**HB 848 – Is important as a tool to help us reach our goals of energy security sooner than later.**

Thank you for allowing me to testify.

X

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John Crouch  
President

**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Monday, February 6, 2017 11:02 AM  
**To:** EEPtestimony  
**Cc:** john.from.stl@alumni.stanford.edu  
**Subject:** \*Submitted testimony for HB848 on Feb 7, 2017 09:30AM\*

**HB848**

Submitted on: 2/6/2017

Testimony for EEP on Feb 7, 2017 09:30AM in Conference Room 325

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
John Maurer	Individual	Support	No

Comments:

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**HB848**

Submitted on: 2/7/2017

Testimony for EEP on Feb 7, 2017 09:30AM in Conference Room 325

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Erica Scott	Individual	Support	No

Comments: Aloha, my name is Erica Scott and I am a Makiki resident and I strongly support this bill.

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**HB848**

Submitted on: 2/7/2017

Testimony for EEP on Feb 7, 2017 09:30AM in Conference Room 325

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Javier Mendez-Alvarez	Individual	Support	No

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**Subject:** Submitted testimony for HB848 on Feb 9, 2017 11:00AM

**HB848**

Submitted on: 2/8/2017

Testimony for EEP on Feb 9, 2017 11:00AM in Conference Room 325

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Tasha Hose	Individual	Support	No

Comments: Kako'o wau. Mahalo

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**HB848**

Submitted on: 2/8/2017

Testimony for EEP on Feb 9, 2017 11:00AM in Conference Room 325

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jamee Allen	YPDA Hawaii	Support	No

Comments:

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**HB848**

Submitted on: 2/8/2017

Testimony for EEP on Feb 9, 2017 11:00AM in Conference Room 325

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Cody Silva	Individual	Support	No

Comments:

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