DAVID Y. IGE
GOVERNOR

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TO THE HOUSE COMMITTEE ON
CONSUMER PROTECTION AND COMMERCE

TWENTY-NINTH LEGISLATURE
Regular Session of 2018

Tuesday, February 13, 2018
2:00 P.M.

TESTIMONY OF DEAN NISHINA, EXECUTIVE DIRECTOR, DIVISION OF CONSUMER ADVOCACY, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, TO THE HONORABLE ROY M. TAKUMI, CHAIR, AND MEMBERS OF THE COMMITTEE

HOUSE BILL NO. 2249, HD1 – RELATING TO ELECTRIC GRID RESILIENCY.

DESCRIPTION:

This measure proposes to establish a $30,000,000 revolving line of credit sub-fund within the green energy market securitization loan fund for any state agency or department to finance energy efficiency measures. This measure also proposes to establish a grid resiliency rebate program as well as a grid resiliency task force to prepare the State's electrical grid for natural disasters and other emergencies.

POSITION:

The Division of Consumer Advocacy ("Consumer Advocate") appreciates the intent of this measure and offers comments.

COMMENTS:

The Consumer Advocate observes that, in section 4 of the bill, the proposed Hawaii Revised Statutes ("HRS") section 196-65(b)(2), creating a $30 million sub-fund to specifically fund energy efficiency measures for any state agency or department, will not

directly benefit hard-to-reach customers or decrease the cost of electric utility service for all. However, the Consumer Advocate acknowledges savings to the state general fund, via lower electricity costs, could reach many of the same utility customers in the form of lower taxes.

The Consumer Advocate also observes that this bill does not include any language that ensures that funded energy efficiency measures are cost-effective. The Consumer Advocate believes that including clear guidance that any proposed use of the green infrastructure loan program must be cost-effective will require adequate evaluation to ensure that sufficient savings in electricity costs will allow using general revenue savings resulting from those cost-effective energy efficiency measures to repay the loan plus the stated cost of interest. Including a provision requiring cost-effective energy efficiency measures would facilitate: 1) the "health" of the proposed sub-fund as well as whole green infrastructure fund; 2) mitigating potential adverse impacts to electricity consumers that may be asked to replenish the green infrastructure funds if adequate repayment from past loans are not received; and 3) mitigating the possibility that general funds might need to be encumbered to repay the loans. Language requiring cost-effective energy efficiency measures could be inserted in HRS section 196-65(b)(2) and read as: "Creating a $50,000,000 sub-fund, as a revolving line of credit under the umbrella of the green energy market securitization loan fund, for any state agency or department to obtain low-cost financing to install cost-effective energy efficiency measures."

Regarding the grid resiliency task force, rebate program, and rebate special fund, the Consumer Advocate supports grid resiliency in order to enable faster recovery after catastrophic events. To make the grid resiliency task force more effective, the Consumer Advocate respectfully suggests adding at least one representative from the State's electric utility companies as well as a government agency familiar with the electric grid and regulation of the electric utility companies to the task force. The Consumer Advocate also suggests that, in order to facilitate the state's ability to recover from a catastrophic event, this committee should consider whether the resiliency task force should also consider the necessary steps to make ready the State's telecommunications and transportation resiliency plans.

The Consumer Advocate, from an electric utility ratepayer perspective, supports efforts that will ensure that the grid resiliency rebate special fund proposed in HRS section 269-B will derive some funding from other funding sources, not just from the public benefits fund and customer bills; the Consumer Advocate hopes that the majority of funding for the grid resiliency rebate special fund will not be through increased electricity bills, especially if the resiliency task force is expanded to evaluate the state's telecommunications and transportation resiliency. It would be inappropriate to use electric customer bills to fund telecommunications and transportation planning and/or projects.

The Consumer Advocate respectfully suggests that the legislature consider allowing the task force to complete a holistic evaluation and report on additional legislative actions (as already included in the measure) that might be necessary, rather than presupposing what definitions or parameters should be part of the resiliency plan. For instance, it may be premature to define an "eligible resiliency facility" or "battery storage device" – eligible for some rebate under the program – until after the task force has completed its deliberations.

Thank you for this opportunity to testify.

DAVID Y. IGE
GOVERNOR

LUIS P. SALAVERIA
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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Statement of
LUIS P. SALAVERIA
Director
Department of Business, Economic Development and Tourism
before the
HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE
Tuesday, February 13, 2018
2:00 P.M.
State Capitol, Conference Room 329

in consideration of
HB2249, HD1
RELATING TO ELECTRIC GRID RESILIENCY

Chair Takumi, Vice Chair Ichiyama, and Members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) **offers comments on HB2249, HD1**, which creates a $30,000,000 revolving line of credit sub-fund under the umbrella of the green energy market securitization loan fund for any state agency or department to finance energy efficiency measures, establishes the grid resiliency rebate program, and a grid resiliency task force to prepare the State's electrical grid for natural disasters and other emergencies.

DBEDT appreciates the holistic efforts and leadership found in part II to further maintain and enhance grid resiliency to prepare for and recover more quickly from high consequence events such as hurricanes, which are increasing in frequency. While DBEDT recognizes the value of the creation of a Grid Resiliency Task Force, we do not have the resources to establish such a task force. DBEDT could assist by consulting with stakeholders regarding grid resiliency and building grid resiliency into buildings and planning, but our limited resources for staffing and funding support for technical assistance is of concern.

Thank you for the opportunity to provide DBEDT's comments on HB2249, HD1.

TESTIMONY OF RANDY IWASE
CHAIR, PUBLIC UTILITIES COMMISSION
STATE OF HAWAII
TO THE
HOUSE COMMITTEE ON
CONSUMER PROTECTION & COMMERCE

February 13, 2018
2:00 p.m.

MEASURE: H.B. No. 2249 HD1
TITLE: RELATING TO ELECTRIC GRID RESILIENCY.

Chair Takumi and Members of the Committee:

DESCRIPTION:

Creates a $30,000,000 revolving line of credit sub-fund under the umbrella of the green energy market securitization loan fund for any state agency or department to finance energy efficiency measures. Establishes the grid resiliency rebate program and a grid resiliency task force to prepare the State's electrical grid for natural disasters and other emergencies. (HB2249 HD1).

POSITION:

The Public Utilities Commission ("Commission") offers the following comments for consideration.

COMMENTS:

The Commission takes no position on the $30,000,000 revolving line of credit sub-fund under the umbrella of the green energy market securitization loan fund.

Regarding the grid resiliency rebate program, the Commission welcomes legislative guidance to specifically analyze vulnerability and improve grid resilience through planning and investment. The Commission notes that this legislation will require increasing the Public Benefits Fee on utility customer bills to support the grid resiliency rebate program. As such, the Commission requests the Legislature consider appropriating additional funds into the grid resilience special fund instead of requiring an increase in the Public Benefits

Fee. In addition, the Commission is unclear as to whether Section 16 contemplates electric utilities receiving rebates from the grid resiliency rebate program.

Thank you for the opportunity to testify on this measure.

THE ALLIANCE FOR SOLAR CHOICE

HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE

February 13, 2018, 2:00 p.m.
(Testimony is 1 page long)

TESTIMONY IN SUPPORT OF HB 2249, HD1

Aloha Chair Takumi and Members of the Committee:

The Alliance for Solar Choice (TASC) respectfully supports HB 2249, HD1, relating to electric grid resiliency. This measure prepares Hawaii for natural disasters and other emergencies, by creating (1) a grid resiliency task force, (2) an investment program, and (3) a rebate program.

Four months after the devastating impacts of Hurricane Irma, nearly a half a million people in Puerto Rico lack access to reliable sources of electricity.[1] Puerto Rico's grim struggle must serve as a wake-up call for Hawaii. Imagine the devastation if a similar storm were to hit Hawaii, and how our vulnerable keiki and kapuna would struggle without reliable access to electricity, food, and water?

Modernizing our grid can lessen the severity of blackouts, as well as reduce the amount of dirty fossil fuels we burn, thus cutting back the emission of greenhouse gases that increase the severity and impact of monster storms.

We can look to other another island for inspiration: Cuba. Over a decade ago, Cuba made a commitment to moving away from its Soviet-style electrical grid and centralized power plants. Cuba committed to both energy efficiency and decentralized power plants. These local power plants, or microgrids, can disconnect from the electrical grid during severe storms or blackouts and continue to provide power to their customers. This way during major storms, critical areas like hospitals and emergency centers can continue to have access to electricity. Cuba's success directly contrasts with Puerto Rico. After Hurricane Irma struck, power was mostly restored within a week.

Further, we know we can move towards a more distributed and resilient grid. Over 90% of the solar panels survived superstorm Sandy in 2012. Solar power systems similarly survived the impact of Hurricane Irma, even powering street lights in Coral Springs, Florida. Distributed electrical grids -- ones with lots of small, decentralized power systems -- are inherently more reliable and resilient, ensuring power at the place where it is needed the most regardless of what happens to a wooden pole supporting an electrical power line somewhere else.

Mahalo for the opportunity to submit these comments.

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[1] http://abcnews.go.com/US/months-maria-450k-residents-puerto-rico-power/story?id=52585227

Before the House Committee on Consumer Protection & Commerce
Tuesday, February 13, 2018 2:00 p.m. Room 329
HB 2249 HD 1: Relating to Electric Grid Resiliency

Aloha Chair Takumi, Vice Chair Ichiyama, and members of the Committee,

On behalf of the Distributed Energy Resources Council of Hawaii ("DER Council"), I would like to testify in partial support of HB 2249 HD 1 which creates a $30,000 revolving line of credit under the GEMS fund, and establishes the grid resiliency rebate program as well as a grid resiliency task force to prepare the State's electric grid for natural disasters and other emergencies. HB 2249 also appropriates $20,000 out of the GEMS fund to be deposited in the grid resiliency rebate program. Our principal area of interest is in the grid resiliency rebate fund.

The DER Council is a nonprofit trade organization formed to assist with the development of distributed energy resources and smart grid technologies which will support an affordable, reliable, and sustainable energy supply for Hawaii.

The investment in grid resiliency is seen as a crucial next step towards the development of an electrical grid which can respond to and withstand any emergency that may come our way. Even though Hawaii has made significant progress in the development of renewable energy, that renewable energy will not necessarily help Hawaii should we face a natural disaster or some other kind of emergency. A standard roof-top solar deployment, for instance, is designed to shut down if the grid is down. This is a safety feature that is part of an inverter's programming to protect line workers should they shut down a part of the grid for repair. Hawaii needs installations which are designed as a microgrid, such that the installation can operate independently from the grid should the grid fail. Microgrids are very flexible in that they can be designed for a wide range of uses, from single residential homes, commercial buildings, schools, and entire communities.

However, we are concerned that the GEMS fund might not be a viable option for this appropriation due to other commitments under the GEMS loan fund. This bill would begin the process of wisely allocating funds for investment in a resilient electrical infrastructure. We respectfully request that the legislature consider making an appropriation from the general fund in order to ensure investment in our grid resiliency. Hawaii is the most isolated island in the world, and we need to ensure that we can stand strong should we face a natural disaster or other emergency.

Thank you for the opportunity to testify.

Best regards,
Leslie Cole-Brooks
Executive Director
Distributed Energy Council of Hawaii

Hawaii Solar Energy Association
Serving Hawaii Since 1977

TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION
IN REGARD TO HB 2249 HD1, RELATING TO ELECTRIC GRID RESILIENCY
BEFORE THE
HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE
ON
TUESDAY, FEBRUARY 13TH, 2018

Chair Takumi, Vice-Chair Ichiyama, and members of the committee, my name is Will Giese, and I represent the Hawaii Solar Energy Association, Inc. (HSEA)

HSEA **strongly supports** HB 2249 HD1. The measure amends establishes the grid resiliency capital investment program and the grid resiliency rebate program as well as a grid resiliency task force to prepare Hawaii's electrical grid for natural disasters and other emergencies.

The HSEA was founded in 1977 to further solar energy and related arts, sciences and technologies with concern for the ecologic, social and economic fabric of the Hawaiian Islands. Our membership includes the vast majority of locally owned and operated solar installers, contractors, distributors, manufacturers, and inspectors across all islands.

Grid resiliency and stability before, during, and after disasters is essential to providing residents of Hawaii a sense of security and the ability to quickly recover. Now more than ever electrical systems that build resiliency and stability into island electrical grids should be seriously considered as a path to energy independence by 2045.

As of last month, more than 30% of Puerto Ricans are without electricity.[1] **Puerto Rico is a wakeup call for Hawaii.** In the wake of Hurricane Maria, Puerto Rico released proposed rules on microgrid development and other grid resiliency efforts to strengthen its grid against extreme weather.[2] As a state we must decide if we are going to stand by and wait until a major disaster hits our islands or be proactive with intelligent and timely energy policy.

The 2015 Hawaii Catastrophic Hurricane Plan published by the Hawaii Emergency Management Agency paints a stark picture of the current state of Hawaii's electrical grid.[3] The report states:

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[1] Savransky, Rebecca. "Nearly Half a Million Customers Are Still without Power in Puerto Rico." *TheHill*, 25 Jan. 2018, thehill.com/blogs/blog-briefing-room/news/370744-nearly-half-a-million-customers-still-dont-have-power-in-puerto.

[2] Staff, PREC. *REGULATION ON MICROGRID DEVELOPMENT*. MI ed., CEPR, ser. 0001, 2018, *REGULATION ON MICROGRID DEVELOPMENT*.

[3] HI-EMA, Staff. *2015 Hawaii Catastrophic Hurricane Plan*. SOH-HI-EMA, 2015, *2015 Hawaii Catastrophic Hurricane Plan*.

[1]Order No.32052, Docket No. 2012-0036, 16–29

> "A catastrophic hurricane will produce statewide power outages and disrupt all energy systems, resources, and markets. Much of Hawaii's electrical systems are located in inundation zones. Failure of this infrastructure will lead to major disruptions of production, transmission, and distribution of electricity. The power generation and distribution systems in Hawaii are subject to island-wide outages before, during, and after a catastrophic hurricane."[4]

Per this report, a ***best case*** scenario estimates 50% power outage for ***at least*** 30 days post-disaster (category 4 hurricane or stronger):[5]

Table 2-6: Critical Services Impacts

	Description	Summary of Impact
Critical Services	**Days without power** *Source: Hawaiian Electric Company*	50% of power generation lost for up to 30 days
	Days without water/sewer services *Source: 2013 State of Hawaii Mass Care Council*	7 days without service post-hurricane
	Days without seaport services *Source: 2013 State of Hawaii Mass Care Council*	7 days without basic/emergency service post-hurricane
	Days without airport services[12] *Source: 2013 State of Hawaii Mass Care Council*	3-5 days with no airport availability. Initially, only emergency operations via military transport. Estimate for restoration of commercial traffic was not available.
	Days required for debris clearance *Mass Care Working Group*	7 days for major roadways

It is essential that Hawaii be prepared for a major emergency or natural disaster. Through this bill, critical services like EMS, fire, and police as well as utility line workers and healthcare professionals would be given an extra layer of security in the event of a disaster. Hospitals and emergency shelters (primarily public schools) will be hardened against the impacts of a major emergency. Utility infrastructure will be made more resilient.

HB2249 does a variety of things to assist in the construction of resiliency measures across all parts of Hawaii's energy sector, from residential up to utility scale. In fact, this bill specifically directs the PUC to incorporate grid resiliency planning into the utility's grid modernization efforts, which include a number of aspects related to energy generation, distribution, and transmission. This bill seeks to raise all boats and help all people.

The state must act to treat grid resiliency efforts like those outlined in HB 2249 proactively, rather than symptomatically. Renewable energy, energy storage, microgrids, and grid resiliency efforts inherent in this bill build the critical infrastructure needed to

[4] See "Report" at pp. 109.
[5] See "Report" at Impacts, 2-6.

[1]Order No.32052, Docket No. 2012-0036, 16–29

safeguard the state against major disaster. This bill makes our state more secure, more resilient, and cleaner.

Put simply, this bill will save lives.

We **strongly support** HB 2249 and we urge this committee to pass this measure.

Thank you for the opportunity to testify.

[1]Order No.32052, Docket No. 2012-0036, 16–29

TESTIMONY BEFORE THE HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE

H.B. No. 2249, H.D. 1

Relating to Electric Grid Resiliency

Tuesday, February 13, 2018
2:00 pm
State Capitol, Conference Room 325

Rodney Chong
Manager, Grid Modernization
Hawaiian Electric Company, Inc.

Chair Takumi, Vice Chair Ichiyama, and Members of the Committee:

My name is Rodney Chong 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. 2249, H.D. 1.

The preamble of this bill correctly frames the importance of and need to invest in grid resiliency. However the bill does not address improving overall electric system resilience – which benefits all customers - but instead focuses on using public funding for PV-battery systems to serve as emergency generators at critical infrastructure facilities. As such, this bill is too narrowly focused and fails to consider and prioritize resilience upgrades that provide the best benefits to the State.

H.B. 2249, H.D. 1 jumps to a one-size-fits-all solution without properly considering the specific needs of critical facilities. Although PV-battery systems may be suitable to provide emergency power for certain buildings if properly designed and hardened to withstand severe hurricanes and operate independently from the grid, they may still be inadequate for other critical facilities that will need emergency power during periods beyond the capability of a PV-battery system. For example, the Queen's Medical Center and the Daniel K. Inouye International Airport have emergency power systems that are able to separate from the utility grid during a

power outage and keep operating through prolonged periods of adverse weather, which a PV-battery system would not be able to do.

Furthermore, this bill does not take into consideration existing codes and standards related to emergency power systems, such as the National Fire Protection Association (NFPA) 101 Life Safety Code, NFPA 110 Emergency and Standby Power Systems, and NFPA 111 Standard on Stored Electrical Energy Emergency and Standby Power Systems, that have been developed over time and includes design, installation, and testing requirements for these systems. Also, note that this bill's definition of what is a critical facility is entirely too broad, including even the primary residences of first responders, and does not correspond to the definition in existing codes and standards.

We support the need for resilience of critical infrastructure and critical facilities. But there first needs to be a process of determining and prioritizing those needs, and then meeting those needs with the right solutions. We should not force fit one technology as the solution for resilience, because there are a variety of needs and a variety of solutions.

Accordingly, the Hawaiian Electric Companies oppose H.B. 2249, H.D. 1. Thank you for this opportunity to testify.

DAVID Y. IGE
GOVERNOR

GWEN S. YAMAMOTO LAU
EXECUTIVE DIRECTOR

HAWAII GREEN INFRASTRUCTURE AUTHORITY

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Testimony of Gwen Yamamoto Lau, Executive Director
Hawaii Green Infrastructure Authority (HGIA)
before the
HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE
Tuesday, February 13, 2018 at 2:00 P.M.
State Capitol, Conference Room 329

in consideration of
HOUSE BILL NO. 2249, HD1
RELATING TO ELECTRIC GRID RESILIENCY

Chair Takumi, Vice Chair Ichiyama and Members of the Consumer Protection and Commerce Committee:

Thank you for the opportunity to testify and provide comments on House Bill 2249, HD1, relating to electric grid resiliency. This bill proposes to (1) create a sub-fund under the umbrella of the Green Energy Market Securitization ("GEMS") loan fund and convert $30.0 million into a revolving line of credit available for any state agency or department to obtain low-cost financing to install energy efficiency measures, (2) establish a grid resiliency rebate program utilizing $20.0 million of GEMS funds and (3) establish a grid resiliency task force. As the Legislature's intent of the GEMS fund was to have it available for the underserved (i.e. low and moderate-income homeowners, renters and nonprofits) and as the Hawaii Public Utilities Commission's Order no. 32318 requires that at least 51% of the GEMS funds benefit said underserved, the original intent of HB2029 (which was merged into HB2249, HD1) was to include the Department of Education's existing $46.4 million loan under the $50.0 million revolving line. As such, the minimum amount of the revolving line of credit for state agencies cannot be less than $46.4 million. Additionally, a $20.0 million raid on the GEMS funds would force HGIA to start turning away applications for small businesses, which are not considered "underserved" for the purposes of the GEMS fund, but are still the backbone of Hawaii's economy.

While the intent of this bill addresses an important matter, the cost to upgrade state and city/county facilities with battery storage devices should not be borne by ratepayers via an unsustainable rebate program which, once expended, would require the State to find additional funding sources.

In doing a quick review of the California small generator incentive program referenced in the bill, it appears that although the California program generously provides rebates equivalent to

approximately 37% of the cost of storage, it would still require an eligible grid resiliency facility to have or to have access to cash amounting to 63% of the cost of the battery storage device in order to utilize the rebate.

Over the past year, by attracting and leveraging 52% in private capital, HGIA has approved loans facilitating almost $34.0 million in total project costs for nonprofits, small businesses and multi-family rental projects to install solar PV. Cash rebates are an attractive incentive ONLY if one has access to excess cash or favorable financing terms. Instead of utilizing $20.0 million in GEMS funds for rebates, a longer-term, sustainable solution may be to leverage these funds to attract private investments enabling a wider reach with each public dollar to provide low-cost financing of battery storage devices for eligible non-government grid resiliency facilities. Creating a $20.0 million battery storage revolving fund would provide an exponential potential for greater impacts than a rebate could by **recycling, re-investing and re-lending that same public dollar**.

Lastly, as HGIA only has some $47.0 million in GEMS funds available, raiding $20.0 million for a one-time use rebate, would only leave approximately $27.0 million available for its current lending programs, as well as it on-bill repayment mechanism and future programs, including community based solar.

Thank you for this opportunity to testify and offer comments for House Bill 2249, HD1.

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

COMMITTEE ON CONSUMER PROTECTION & COMMERCE
Rep. Roy M. Takumi, Chair
Rep. Linda Ichiyama, Vice Chair

Tuesday, February 13, 2018
2:00 P.M.
Conference Room 329

HB 2249, HD1 RELATING TO ELECTRIC GRID RESILIENCY.

Aloha Chair Takumi, Vice Chair Ichiyama, 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 supports the bill but has a problem with the preamble (part 1 of the bill).

"The legislature additionally finds that although government agencies were not named as underserved by the Hawaii public utilities commission in the green energy market securitization program, the commission has acknowledged that

the green energy market securitization program was not intended to be exclusively dedicated to underserved customers."

The PUC didn`t say this out of the blue, they simply quoted the Legislature.

"Government agencies can be classified with those ratepayers who are considered hard to reach with traditional market-competitive financing agreements, due to procurement limitations and the obligation to include contractual provisions that make the continuation of contracts contingent upon the allocation of funds."

To say that governmental agencies and economically challenged ratepayers share the difficulty of acquiring funding is demeaning to struggling people.

Mahalo,

Henry Curtis
Executive Director

HB-2249-HD-1
Submitted on: 2/12/2018 1:49:22 PM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Melodie Aduja	OCC Legislative Priorities Committee	Support	No

Comments:

SIERRA CLUB OF HAWAIʻI
MĀLAMA I KA HONUA. Cherish the Earth.

HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE

Tuesday, February 13, 2018 2:00PM Conference Room 329

In SUPPORT of HB 2249 HD1 Relating to electric grid resiliency

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Aloha Chair Takumi, Vice Chair Ichiyama and members of the Committee,

On behalf of our 20,000 members and supporters, the Sierra Club of Hawaiʻi, a member of the Common Good Coalition, **strongly supports HB 2249 HD1**, a measure that establishes the grid resiliency capital investment program and the grid resiliency rebate program as well as a grid resiliency task force to prepare Hawaiʻi's electrical grid for natural disasters and other emergencies.

The electrical infrastructure of Hawaiʻi is severely vulnerable to major disaster. Currently, all of Hawaiʻi's major utility scale power generators sit within inundation zones across all islands. In the event of a major natural disaster, such as a category 4 hurricane or a tsunami, the majority of these generators would be rendered inoperable. This and other major vulnerabilities also extend to transformers, transmission systems, and distribution networks. The people of Hawaiʻi would be without power for days or weeks post disaster, and recovery would be slow and expensive.

HB 2249 HD1 creates a structure by which this system can be updated. By allowing the use of the Public Benefits Fee to create resiliency in the electric grid, our emergency shelters and hospitals, and residential homes, this measure seeks to safeguard the people of Hawaiʻi against major disaster. Additionally, many of these updates will utilize renewable energy which is in line with Hawaii's 2045 RPS goals, the power supply improvement plan, and grid modernization efforts. HB 2249 HD1 simultaneously creates reliability, grid stability, and clean power infrastructure.

Last year, Hurricane Irma and Maria devastated the country of Puerto Rico and its people, leaving thousands without power and creating massive environmental devastation. A similar fate awaits Hawaiʻi, unless this bill is passed. Major flooding in even one of our fuel oil burning power

plants could irreversibly destroy the vulnerable ecosystems surrounding them. A renewable power generator on a similar geographic footprint, such as wind turbines or ground-mounted solar, would have not even 1/100 of the environmental impact of an inundated traditional fossil fuel plant. Solar panels do not generate oil slicks or leak dangerous hydrocarbons into the water supply.

Hawai‘i, its people, and the environment need smart energy policies like HB 2249 HD1. The alternative to not passing this measure is terrifying and unacceptable.

We strongly support HB 2249 HD1 and urge the committee to pass this measure.

HB2249 HD1

Grid Resiliency; Energy; Disaster Preparedness; Capital Investment; Rebate Program; Task Force ($)

February 13, 2018, 2:00p.m.

Relating to Electric Grid Resiliency

Aloha Chair Takumi, Vice Chair Ichiyama, and members of the committee. The Sierra Club Student Union stands in support of HB2249 HD1 on relating to electric grid resiliency.

Hb2249 HD1 will greatly modernize our grid, as well as allow for the use of more sources of renewable energy. This modernization will help Hawai'i's infrastructure by greatly reducing blackouts, and the protect this state against the loss of power from natural disasters such as what happened in Puerto Rico after being devastated by hurricane Irma. Having a more resilient electric grid with renewable energy will safeguard this State's power when it becomes imperative for survival and relief. With such natural disasters becoming ever more apparent bills such as this are imperative for safeguarding Hawai'i for the future.

Thank you for allowing the Sierra Club Student Coalition to testify.

Email: communications@ulupono.com

HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE
Tuesday, February 13, 2018 — 2:00 p.m. — Room 329

Ulupono Initiative Supports HB 1801 HD 1, Relating to Electric Grid Resiliency

Dear Chair Takumi, Vice Chair Ichiyama, and Members of the Committee:

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

Ulupono supports HB 1801 HD 1, which creates a revolving line of credit sub-fund for state government agencies under the green energy market securitization (GEMS) loan fund, because it aligns with our goal of increasing the production of clean, renewable energy in Hawai'i.

Ulupono believes this bill will help deploy GEMS funds faster as now state departments will be able to qualify for financing its internal energy efficiency projects. This could further provide additional flexibility for GEMS, one of the key issues that the GEMS program has encountered in its brief existence.

Ulupono is also supportive of this bill and will remain so as long as the GEMS funds are deployed as originally intended – with a payback structure – to help continuously replenish the fund and adhere to standard business practices.

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

Thank you for this opportunity to testify.

Respectfully,

Murray Clay

Managing Partner

HB-2249-HD-1
Submitted on: 2/11/2018 3:33:17 PM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Carlton York	Individual	Support	No

Comments:

Add safe Green alternatives to Upgrade and support existing Grid .

HB-2249-HD-1
Submitted on: 2/12/2018 9:16:37 AM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Mary Whispering Wind	Individual	Support	No

Comments:

I SUPPORT HB2249,

Please protect our environment. Organic natural agriculture, without toxic contamination of our food and environment is necessary to protect the health, safety, and economic future of Hawaii's citizens.

Mahalo for your concerned consideration,

Mary Whispering Wind
PWT Maui, volunteer

COMMITTEE ON CONSUMER PROTECTION & COMMERCE
Rep. Roy M. Takumi, Chair
Rep. Linda Ichiyama, Vice Chair

Re: HB2249 H.D. 1, RELATING TO ENERGY EFFICIENCY

Tuesday, February 13, 2018 – 2:00 P.M., Conference Room 329

I am writing in **STRONG OPPOSITION** to HB2249 H.D. 1, which would create a "sub-fund" revolving line of credit to allow taxpayer-supported state agencies or departments to raid the utility-customer-backed GEMS loan program of $30,000,000 to install energy efficiency measures that should be funded out of the state's general fund.

- The Green Energy Market Securitization (GEMS) lending program has been mismanaged and proven to be an unmitigated disaster since its inception.

- Because GEMS has been so wildly unsuccessful, the Legislature through Act 57, has already raided utility-customer-backed funds to "loan" the DOE $46,400,000 **interest-free**; this expressly places a public expense (DOE) obligation on utility customers who are already on the hook to repay the borrowed $150,000,000 in bonds in the GEMS lending pool **with interest** through a non-by-passable monthly fee on everyone's electric bill.

- The PUC recently noted the following deficiencies in Hawaii Green Infrastructure Authority (the "Authority") GEMS' operations:[1]

    - The Authority can't seem to keep staff: the first lasted three months; the second less than eight months; and the third left after less than a year.

    - No local bank initially expressed interest in participating in HGIA's residential PV loan product; the one that eventually did was replaced in less than four months by a second that, among other things, couldn't navigate the time differences between Hawaii and Wisconsin and didn't understand how trust properties worked, with the result that "83% of applications received during the first six months were declined or withdrawn."[2]

    - Out of 43 applications for non-profit PV loans, exactly zero were issued "due to the design of the financing structure."[3]

[1] PUC Order No. 34864, filed 10/12/2017 at 8-12.
[2] HGIA Motion to Suspend Program Notification and Modification Processes, filed 7/21/2017, at 15.
[3] Order No. 34864 at 11.

- The Commercial Energy Efficiency Product suffered from a "disconnect"[4] between a minimum project size requirement ($1 million) and a GEMS requirement that it was limited to non-profits and small businesses.

- HGIA declined the single small business PV loan product it received.

- This bill does not meet the requirements of Section 37-52.3, HRS: there is no explanation why the $30,000,000 line of credit or the $20,000,000 "grid resiliency rebate special fund" could not be more constitutionally implemented under the general fund appropriation process.

- That this bill attempts to portray state agencies as "underserved" and "hard to reach" because they have chosen not to "invest in energy efficient improvements" defies all reason and logic.[5]

- Finally, while the GEMS program was designed exclusively by DBEDT, and HGIA is housed in DBEDT, DBEDT has already testified that it doesn't have the resources to implement so much of the original bill as would have created a "grid resiliency capital investment" program and task force. The solution? HB2249, HD1 creates the $20,000,000 "rebate" special fund, gives it to the PUC to run, and allows for an unspecified financial raid on the public benefits fund by amending §269-121.

Really?

The Tax Foundation of Hawai`i has the correct solution: don't make a bad situation worse, kill this bill and then pull the plug on this ruinous GEMS program.[6]

Sally Kaye
511 Ilima Ave.
Lana`i City, HI 96763

[4] *Id.* at 12.

[5] HB2249, H.D.1: "Though government agencies were not named as underserved by the Hawaii public utilities commission in the [GEMS] program [,] state agencies constitute a significant component of energy consumption in Hawaii, [and] investment in energy efficiency improvements by government agencies has been limited. [G]overnment agencies can be classified with those ratepayers who are considered hard to reach with traditional market-competitive financing agreements, due to procurement limitations and the obligation to include contractual provisions that make the continuation of contracts contingent upon the allocation of funds."

[6] https://www.tfhawaii.org/wordpress/blog/2016/08/gems-as-a-target-for-raiding/ : "The GEMS program should be evaluated to determine whether there is a realistic need for this program, and if not figure out how to shut it down, return the remaining money in the fund back to the bondholders, stop the bleeding, and take away the potential for raiding."

HB-2249-HD-1
Submitted on: 2/12/2018 9:52:10 AM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Angela Huntemer	Individual	Support	No

Comments:

Please support this bill. The State of Hawaii is positioned now to be a world leader in renewable and sustainable energy generation. Let's do this. Help make it possible by supporting this bill. Mahalo.

HB-2249-HD-1
Submitted on: 2/12/2018 10:15:18 AM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Tulsi Greenlee	Individual	Support	No

Comments:

HB-2249-HD-1
Submitted on: 2/12/2018 2:23:28 PM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Aria Juliet Castillo	Individual	Support	No

Comments:

HB-2249-HD-1
Submitted on: 2/12/2018 7:44:13 PM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kathy Shimata	Individual	Support	No

Comments:

To me, grid resiliency means that more of us can make our own power & share it. Let's improve the grid to handle multiple energy inputs.

HB-2249-HD-1
Submitted on: 2/12/2018 9:29:48 PM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Merle Hayward	Individual	Support	No

Comments:

HB-2249-HD-1
Submitted on: 2/12/2018 11:27:46 PM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Don Aweau	Individual	Support	Yes

Comments:

In support of measure. Request committee to consider overall benefits to create a microgrid system that will help communities recover more quickly from disasters. Mahalo nui loa for the opportunity to submit testimony.

LATE

TESTIMONY REGARDING HB 2249, HD1

being heard by the House Committee on Consumer Protection & Commerce
on Tuesday, February 13, 2018 at 2 p.m. in Room 329

Aloha Chair Takumi and Members of the Committee:

Thank you for the opportunity to provide testimony regarding HB 2249, HD1. Part II of this important bill would advance efforts to improve the resiliency of Hawaii's critical infrastructure facilities by integrating resiliency considerations into planning activities and by providing support for the deployment of energy solutions that reduce the risk of electrical service interruptions during crisis events.

In the wake of the large scale natural disasters that impacted numerous parts of the United States and its territories last year, the after effects of which are still being felt by many, it is reasonable and appropriate that localities like Hawaii, which are uniquely vulnerable to such disasters, to take steps to ensure that critical infrastructure facilities continue to be operational in times of crisis.

Access to electricity is a fundamental need, the absence of which can effectively render many critical infrastructure facilities inoperative exacerbating the adverse immediate impacts of any given crisis event, deepening the challenges such episodes invariably pose and slowing the pace of recovery in their aftermath.

The distributed solar and battery storage technologies that Tesla both manufacturers and deploys, specifically solar PV and lithium-ion battery systems, provide system planners and facilities managers a new set of tools that can play an important part in improving facility and system resiliency. For example, battery systems paired with solar represents a robust form of energy back-up, allowing customers to identify priority electricity needs at a given premises that will continue to be powered even in the event of a broader grid outage. Further, because such systems are not dependent on an onsite conventional fuel supply they represent a more robust and environmentally sound approach as compared to conventional gas or diesel generators.

While the resiliency "use case" is intuitively appealing, the ability of those entities that manage critical infrastructure facilities to deploy these solutions may be limited, owing to constraints these entities face. At the same time, given the public nature of the benefits of ensuring these facilities remain operational, there is strong policy rationale for programmatic support to facilitate the deployment of such systems.

While Tesla supports HB 2249, HD1, especially Part II, we request the following friendly amendment: To ensure that the Task Force's recommendations are well-vetted and practical, it should be explicitly directed to convene stakeholder meetings to solicit input from the broader stakeholder community.

Thank you for the opportunity to provide testimony.

HB-2249-HD-1
Submitted on: 2/13/2018 11:06:39 AM
Testimony for CPC on 2/13/2018 2:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Dave Kisor	Individual	Support	No

Comments:

The present grid on Hawai'i Island is junk. When we have a category anything storm, there is a possibility that we'll have a remake of Tropical Stormicane Iselle, which was a debacle, especially for those of us who were adversely affected. If you aren't in Puna Makai, you probably have the idea that geothermal is great, grand and wonderful, but when both of their lines out are broken, grid resiliency is in the toilet. By the way, the way geothermal is run here, it is neither clean nor green, as clean does not produce hydrogen sulfide in quantities that can knock a person down and green does not require pentane as part of the process. Has anybody analyzed the situation, or is throwing money at the problem someone's idea of the best solution?

LEGISLATIVE TAX BILL SERVICE

TAX FOUNDATION OF HAWAII

126 Queen Street, Suite 304 Honolulu, Hawaii 96813 Tel. 536-4587

LATE

SUBJECT: MISCELLANEOUS, Establish GEMS Sub-Fund to Loan to State Agencies

BILL NUMBER: HB 2249, HD 1

INTRODUCED BY: House Committee on Environmental Protection

EXECUTIVE SUMMARY: Part I of the bill creates a $30,000,000 revolving line of credit sub-fund under the umbrella of the Green Energy Market Securitization (GEMS) loan fund for any state agency or department to finance energy efficiency measures. If the GEMS program is to be allowed to live, it must be able to make loans at commercially reasonable rates at commercially reasonable terms. If loans are to be repaid out of reduced utility costs, what happens if the utility rates go up and the reduction in utility costs fails to materialize?

SYNOPSIS: Adds definitions of "energy efficiency measures," "revolving line of credit," and "sub-fund" to section 196-61, HRS.

Amends section 196-62, HRS, to allow the Hawaii Green Infrastructure Authority to make loans to government entities.

Amends section 196-65, HRS, to set aside a $30 million revolving fund to be used exclusively for this purpose.

Specifies that loans to government agencies shall be issued at an interest rate of 3.5% per annum, and that loans are to be repaid "using general revenue savings resulting from reduced utility costs as a result of the implementation of energy efficient lighting and other energy efficiency measures."

EFFECTIVE DATE: July 1, 2018.

STAFF COMMENTS: The Green Energy Market Securitization or GEMS program is a financing program that was supposed to provide loans at a low interest rate to finance alternative energy systems and other clean energy improvements for those, such as nonprofits and individuals with lower credit scores, who might not be able to get other kinds of financing. Governor Abercrombie signed the program into law, after which a 2014 bond issue raised $150 million for the program.

Recently, in Order No. 34930, the Hawaii Public Utilities Commission (PUC) focused on how the GEMS program was coexisting with another ratepayer-funded program, which you may know as Hawaii Energy. That's the same Hawaii Energy that sends you a little chart every month showing how your energy use compares against that of (1) your neighbors, and (2) your *energy efficient* neighbors.

Back in 2014, the PUC was asked to, and did, approve a Green Infrastructure Fee that went on everyone's utility bill. For residents, it started at about $1.50 per month and is now down to

$1.18 after periodic readjustments. The $150 million, after all, needs to be paid back with interest. The PUC noted that ratepayers were also paying a Public Benefits Fee of about $5 a month to fund Hawaii Energy and it didn't want to whammy ratepayers again, so it directed that the PBF be reduced by the GIF…temporarily. The PUC made it clear that it wanted the shortfall in the PBF to be paid back. Quickly. So as not to disrupt the energy efficiency programs that Hawaii Energy was carrying out.

GEMS, however, wasn't accomplishing the lofty goals that were set for it. Of the $150 million borrowed on the bond market, a measly 3%, or $5 million, had been loaned out as of July 31, 2017. The 2017 legislature, by Act 57, SLH 2017, required GEMS to loan $46.4 million to the Department of Education to cool the schools, but that wasn't helpful to GEMS because it also provided that the loan was to be at zero interest. Since its inception, GEMS administrative and program costs were nearly $2.8 million, against revenues just shy of $1 million. "If HGIA [the Hawaii Green Infrastructure Authority, which administers GEMS] does not collect loan repayments, with interest," the PUC said, it "in the long term, will be unable to support itself."

The PUC noted that Hawaii Energy claimed to have saved consumers over $1 billion in energy bill savings to date, with every dollar of investment generating $9 in benefits.

The PUC concluded that "HGIA has not demonstrated the ability to replenish the PBF," and that the prospects for GEMS repaying the revenue that it borrowed from the PBF are dim unless the PUC acts now. Therefore, it said, the dollars that GEMS gets from its loan repayments and such will be used to repay the PBF, starting *now*. And, these payments will be made *before* funding GEMS program administrative costs. Apparently, the GEMS staff had better get those green infrastructure loans deployed and get that interest coming in if they want to get paid.

What does this mean?

If you are a legislator, this is not just a wake-up call. The GEMS program has been a disaster from its inception, and the PUC has basically said that it expects the program to crash and burn. The program does not simply need polishing; it needs radical surgery if it is to survive. And, given the other pressing needs that our government faces, it may be that the correct decision is to cut our losses and scrap the program before the fallout from its death throes takes out other programs and agencies.

This bill, by walling off 20% of GEMS' funding for the exclusive use of state agencies, could be an opportunity – or another train wreck. Particularly troublesome is the language in section 9 of the bill: "Beginning with fiscal year 2018-2019, and annually thereafter, the department or agency shall begin to repay the loan pursuant to section 6 using general revenue savings resulting from reduced utility costs as a result of the implementation of energy efficient lighting and other energy efficiency measures." Because general law can and does specify what in a contract can be enforced, there is some question whether section 9 would allow an agency to avoid repaying a loan from GEMS if either (1) it does not achieve reduced utility costs, or (2) it doesn't know whether it has achieved reduced utility costs due to the energy efficiency measures it implements. What happens, for example, if the price of bunker fuel jumps precipitously,

resulting in a sharp rise in electricity rates? The energy efficiency measures could be working splendidly, but there will be no reduced utility costs.

If GEMS is to be allowed to survive, it needs the ability to make its loans at commercially reasonable rates and terms.

Our first recommendation, therefore, is that section 9 of the bill be deleted. It's nice to know that energy efficiency measures are in fact paying for themselves, but the risk of that not being the case needs to be on the borrower, not on the lender.

Our second recommendation is that the interest rate not be fixed at 3.5%. A commercially reasonable rate needs to be negotiated, and it needs to be above the program's actual cost of capital. If it is not, the PUC, in pursuit of its fiduciary duties, may well enter even more restrictive orders that further hamstrings the GEMS program.

Our third recommendation is to revisit the "loan" appropriated to the Department of Education under Act 57, SLH 2017. GEMS must be able to charge a commercially reasonable interest rate, and must be able to make loans on commercially reasonable terms, to the Department of Education the same as any other state agency.

Digested 2/13/2018