



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

DAVID Y. IGE  
GOVERNOR

LUIS P. SALAVERIA  
DIRECTOR

MARY ALICE EVANS  
DEPUTY DIRECTOR

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Statement of  
**LUIS P. SALAVERIA**  
Director  
Department of Business, Economic Development and Tourism  
before the  
**HOUSE COMMITTEE ON FINANCE**  
Wednesday, April 4, 2018  
2:30 PM  
State Capitol, Conference Room 308

in consideration of  
**SB2910, SD2, HD1**  
**RELATING TO ELECTRIC GRID RESILIENCY.**

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

The Department of Business, Economic Development, and Tourism (DBEDT) **offers comments on SB2910, SD2, HD1**, which creates a \$50.0 million 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 loan program, and a grid resiliency task force to prepare the State's electrical grid for natural disasters and other emergencies.

HGIA has submitted testimony, and DBEDT defers to HGIA comments.

DBEDT appreciates the leadership found in Part II to enhance grid resiliency to prepare for and recover more quickly from events such as hurricanes. We are very concerned, however, that the measure notes that DBEDT may hire a consultant, yet no funding is provided. With our limited staffing and funding, we are concerned about our ability to carry out the duties identified in this measure.

Thank you for the opportunity to provide DBEDT's comments on SB2910, SD2, HD1.



**DAVID Y. IGE**  
GOVERNOR

**DOUGLAS S. CHIN**  
LIEUTENANT GOVERNOR

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

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**CATHERINE P. AWAKUNI COLÓN**  
DIRECTOR

**JO ANN M. UCHIDA TAKEUCHI**  
DEPUTY DIRECTOR

**TO THE HOUSE COMMITTEE ON FINANCE**

**TWENTY-NINTH LEGISLATURE  
Regular Session of 2018**

**Wednesday, April 4, 2018  
2:30 p.m.**

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

**SENATE BILL NO. 2910, S.D. 2, H.D. 1 – RELATING TO ELECTRIC GRID  
RESILIENCY.**

**DESCRIPTION:**

This measure creates a \$50,000,000 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. This measure also establishes the Grid Resiliency Loan Program and a Grid Resiliency Task Force to prepare the State's electrical grid for natural disasters and other emergencies. This measure also establishes a Grid Resiliency Loan Special Fund to provide funding for critical infrastructure.

**POSITION:**

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

COMMENTS:

H.D.1 has removed language that sought to establish and fund a homeland security and resiliency council to investigate the resiliency of Hawaii's electric grids. Instead, Part II of this measure seeks to establish the grid resiliency task force and the creation of a grid resiliency loan program. In addition, section 4 amends Hawaii Revised Statutes ("HRS") section 196-65(b)(2) to enable the creation of a \$50 million sub-fund to specifically fund energy efficiency measures for any state agency or department. The proposed measure, while relying on funds collected from customers, 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. Given the title of the bill, the Consumer Advocate respectfully recommends that the measure focus on grid resiliency and not the creation of a sub-fund within the Hawaii green infrastructure special fund.

In addition, the Consumer Advocate notes that this bill does not include language that ensures that funded energy efficiency measures are cost-effective. Including clear guidance that any proposed use of the green infrastructure loan program must be cost-effective will require evaluation to ensure that sufficient savings in electricity costs will allow using general revenue savings from those cost-effective energy efficiency measures to repay the loan, plus the stated cost of interest. 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, loan program, and loan program special fund, the Consumer Advocate supports grid resiliency to enable faster recovery after catastrophic events. To make the grid resiliency task force more effective, the Consumer Advocate respectfully suggests adding to the task force 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 facilitate the State's ability to recover from a catastrophic event, the Consumer Advocate also suggests that the task force consider the steps necessary 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 loan program special fund proposed in HRS section 269-B will derive some funding from sources other than the public benefits fund and customer bills. The Consumer Advocate hopes that the majority of funding for the special fund will not be through increased electricity bills, especially if the task force is expanded to evaluate the resiliency of the State's telecommunications and transportation

infrastructures. 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 task force complete a holistic evaluation and report on additional legislative actions (as already included in the measure) that might be necessary, rather than establishing resiliency plan definitions or parameters in this bill. For instance, it may be premature to define an “eligible resiliency facility” or “battery storage device” – eligible for some loan under the program – until after the task force has completed its deliberations.

In summary, the Consumer Advocate prefers the language of S.B. 2910, S.D. 2, which excluded the sections dealing with the Hawaii green infrastructure loan program and focused only on grid resiliency matters, which is consistent with the measure’s title. S.B. 2910, S.D. 2 also excluded sections related to overly prescriptive definitions associated with grid resiliency, the proposed grid resiliency loan program, and the grid resiliency loan program special fund. The Consumer Advocate believes that S.B. 2910, S.D. 2 correctly recognized that the grid resiliency task force, or council as it is referred to in S.B. 2910, S.D. 2, should be allowed to complete its analysis to inform the report that will summarize the findings, recommendations, and status of actions before the convening of the 2019 regular session.

Thank you for this opportunity to testify.

TESTIMONY OF RANDY IWASE  
CHAIR, PUBLIC UTILITIES COMMISSION  
STATE OF HAWAII  
TO THE  
HOUSE COMMITTEE ON  
FINANCE

April 4, 2018  
2:30 p.m.

**MEASURE:** S.B. No. 2910 HD1  
**TITLE:** RELATING TO ELECTRIC GRID RESILIENCY.

Chair Luke and Members of the Committee:

**DESCRIPTION:**

Creates a \$50,000,000 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 Loan Program and a Grid Resiliency Task Force to prepare the State's electrical grid for natural disasters and other emergencies. Establishes a Grid Resiliency Loan Special Fund to provide funding for critical infrastructure. (SB2910 HD1)

**POSITION:**

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

**COMMENTS:**

The Commission takes no position on the \$50,000,000 revolving line of credit sub-fund under the umbrella of the green energy market securitization loan fund.

Regarding the grid resiliency loan program and the grid resiliency task force, the Commission welcomes Legislative guidance to specifically analyze vulnerability and improve grid resilience through planning and investment. The Commission notes that the Public Benefits Fee (PBF) supports the Hawaii Energy program and achievement of the State's energy efficiency portfolio standards under HRS § 269-96. Redirecting funds

away from the PBF into the grid resiliency loan program could be detrimental to achievement of the State's energy efficiency standards under HRS § 269-96.

The Commission notes that in the alternative, this legislation would require increasing the PBF on customer bills to support the grid resiliency loan program. As such, the Commission requests the Legislature consider appropriating additional funds into the grid resiliency loan special fund instead of requiring an increase in the PBF.

In addition, the Commission is unclear as to whether it is the Legislature's intent that Section 16(c) of this measure would allow electric utilities to receive funds from the grid resiliency loan program.

Thank you for the opportunity to testify on this measure.



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 FINANCE**  
Wednesday, April 4, 2018 at 2:30 P.M.  
State Capitol, Conference Room 308

in consideration of

**SENATE BILL NO. 2910, SD2, HD1  
RELATING TO ELECTRIC GRID RESILIENCY**

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

Thank you for the opportunity to testify and offer comments on Senate Bill 2910, SD2, 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 \$50.0 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 task force, and (3) create a grid resiliency loan program utilizing \$20.0 million of GEMS funds.

HGIA will defer to Department of Business, Economic Development and Tourism on the grid resiliency task force and the Public Utilities Commission (“PUC”) on the loan program.

With approximately \$47.0 million in GEMS funds available, raiding \$20.0 million for the grid resiliency loan special fund would only leave some \$27.0 million in loan capital for HGIA’s existing lending programs, the Green Energy Money Saver On-Bill Program (the request for which was submitted to the PUC on February 28, 2018), and other future loan programs, including community based solar. Additionally, a \$20.0 million raid would force HGIA to immediately 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.

Thank you for this opportunity to testify and offer comments for Senate Bill 2910, SD2, HD1.

# TAX FOUNDATION OF HAWAII

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126 Queen Street, Suite 304

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

BILL NUMBER: SB 2910, HD-1

INTRODUCED BY: House Committee on Energy & Environmental Protection

EXECUTIVE SUMMARY: Creates a \$50,000,000 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 \$50 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, 2050.

STAFF COMMENTS: The Foundation’s testimony is limited to Part I of the bill.

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 1/3 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 of this Act 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 section 6 of the bill be amended to delete the requirement that the interest rate 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 make even more restrictive orders that further hamstring 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 4/2/2018



COLLEGE OF SOCIAL SCIENCES  
**HAWAII ENERGY POLICY FORUM**  
UNIVERSITY OF HAWAI'I AT MĀNOA

**Hawaii Energy Policy Forum**

Jeanne Schultz Afuvai, Hawaii Inst. for Public Affairs  
David Bissell, Kauai Island Utility Cooperative  
Michael Brittain, IBEW, Local Union 1260  
Jade Butay, Hawaii Dept of Transportation  
Caroline Carl, Hawaii Energy  
Albert Chee, Island Energy Services  
Elizabeth Cole, The Kohala Center  
Kyle Datta, Ulupono Initiative  
Richard DeGarmo, Hawaii Gas  
Mitch Ewan, UH Hawaii Natural Energy Institute  
Jay Fidell, ThinkTech Hawaii  
Carl Freedman, Haiku Design & Analysis  
Matthias Fripp, REIS at University of Hawaii  
Ford Fuchigami, Ofc of Hawaii State Governor  
Will Giese, Inter-Island Solar Supply  
Dale Hahn, Ofc of US Senator Brian Schatz  
Michael Hamnett, SSRI at University of Hawaii  
Senator Lorraine Inouye, Hawaii State Legislature  
Randy Iwase, Public Utilities Commission  
Darren Kimura, Energy Industries  
Representative Chris Lee, Hawaii State Legislature  
Gladys Marrone, Building Industry Assn of Hawaii  
Stephen Meder, UH Facilities and Planning  
Sharon Moriawaki, UH Public Policy Center  
Rocky Mould, Ofc of Climate Change  
Aina Naniolo, Ofc of US Congresswoman Colleen Hanabusa  
Ron Nelson, Defense Logistics Energy Agency  
Dean Nishina, Division of Consumer Advocacy  
Denise Oda, US Department of Agriculture  
Stan Osserman, HCATT  
Melissa Pavlicek, Hawaii Public Policy Advocates  
Randy Perreira, Hawaii Government Employees Assn  
Fredrick Redell, Maui County Energy Office  
Rick Rocheleau, UH Hawaii Natural Energy Institute  
Ross Roley, PACOM  
Will Rolston, Hawaii County, Research & Development  
Peter Rosegg, Hawaiian Electric Companies  
Scott Seu, Hawaiian Electric Companies  
Carilyn Shon, Hawaii State Energy Office, DBEDT  
Joelle Simonpietri, Simonpietri LLC  
Ben Sullivan, Kauai County  
Lance Tanaka, Par Hawaii  
Maria Tome, Public Utilities Commission  
Kirsten Turner, Ofc of US Representative Tulsi Gabbard  
Alan Yamamoto, Ofc of US Senator Mazie Hirono

Testimony of John Cole  
Chair, Electricity Working Group  
Hawaii Energy Policy Forum

To the  
House Committee on Finance

April 4, 2018 at 2:30 pm in Conference Room 308

**IN SUPPORT OF SB 2910, Senate Draft 2 House Draft 1: Relating to  
Electric Grid Resiliency**

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

I am John Cole, Chair of the Electricity Working Group of the Hawaii Energy Policy Forum (Forum). The Forum, created in 2002, is comprised of over 40 representatives from Hawaii's electric utilities, oil and natural gas suppliers, environmental and community groups, renewable energy industry, and federal, state and local government, including representatives from the neighbor islands. Our vision and mission, and comprehensive "10 Point Action Plan" serves as a guide to move Hawaii toward its preferred energy goals and our support for this bill.

SB 2910 SD2 HD1 creates a \$50,000 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, established a Grid Resiliency Loan Program and a Grid Resiliency Task Force to prepare the State's electrical grid for natural disasters and other emergencies, and establishes a Grid Resiliency Loan Special Fund for critical infrastructure.

**The Forum supports the creation of a Grid Resiliency Task Force, but takes no position on the other parts of this bill.**

Much of the State's critical infrastructure is vulnerable to major hurricanes or other natural disasters, which could leave residents without power, water, communications, and other necessary services for an extended period of time. Proper planning and implementation to ensure we are as prepared as possible for such events is crucial

The Hawaii Policy Energy Forum Suggests that the Grid Resiliency Task Force should coordinate with the operators and major stakeholders of the various categories of critical infrastructure in the state to significantly increase the utility of the assessments and recommendations that come out of the Task Force's work.

Thank you for the opportunity to testify.

*This testimony reflects the position of the Forum as a whole and not necessarily of the individual Forum members or their companies*



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

HOUSE COMMITTEE ON FINANCE  
Wednesday, April 4, 2018 — 2:30 p.m. — Room 308

**Ulupono Initiative Strongly Supports SB 2910 SD 2 HD 1, Relating to Electric Grid Resiliency**

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

My name is Murray Clay and I am Managing Partner of the Ulupono Initiative, a Hawai'i-based impact investment firm that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally produced food; increase affordable, clean, renewable energy; and better 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 strongly supports SB 2910 SD 2 HD 1**, which creates a revolving line of credit sub-fund for state government agencies under the green energy market securitization (GEMS) loan fund and a grid resiliency task force and loan program, 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.

For the grid resiliency task force and loan program, Ulupono is supportive of discussion and funding for critical grid resiliency infrastructure needs.

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.

*Investing in a Sustainable Hawai'i*



Respectfully,

Murray Clay  
Managing Partner

## Testimony before the House Committee on Finance

**S.B. No. 2910, H.D. 1**

### **Relating to Electric Grid Resiliency**

Wednesday, April 4, 2018  
2:30 pm; Agenda #2  
State Capitol, Conference Room 308

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

Chair Luke, Vice Chair Cullen, 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 S.B. 2910, 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.

S.B. 2910, 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. The cloudy and rainy weather that we experienced last month has shown that having PV-battery systems

as a single solution will not always meet the needs for critical infrastructure to operate under a range of events and circumstances.

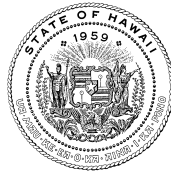
For example, the Queen's Medical Center and the Daniel K. Inouye International Airport have emergency power systems that are able to separate from the utility grid during a power outage and keep operating through prolonged periods of adverse weather, which a PV-battery system would not be able to do.

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..

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. We support the prior version of the bill, S.B. 2910 S.D. 2, since it appropriately focuses on the need to assess and prioritize the security and resiliency needs of our state's electric grid and critical infrastructure, and then to develop recommendations to best serve those needs.

Accordingly, the Hawaiian Electric Companies oppose S.B. 2910, H.D. 1.  
Thank you for this opportunity to testify.

DAVID Y. IGE  
GOVERNOR



LAUREL A. JOHNSTON  
DIRECTOR  
  
KEN N. KITAMURA  
ACTING DEPUTY DIRECTOR

EMPLOYEES' RETIREMENT SYSTEM  
HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND  
OFFICE OF THE PUBLIC DEFENDER

**STATE OF HAWAII**  
**DEPARTMENT OF BUDGET AND FINANCE**  
P.O. BOX 150  
HONOLULU, HAWAII 96810-0150

ADMINISTRATIVE AND RESEARCH OFFICE  
BUDGET, PROGRAM PLANNING AND  
MANAGEMENT DIVISION  
FINANCIAL ADMINISTRATION DIVISION  
OFFICE OF FEDERAL AWARDS MANAGEMENT (OFAM)

**WRITTEN ONLY**  
TESTIMONY BY LAUREL A. JOHNSTON  
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE  
TO THE HOUSE COMMITTEE ON FINANCE  
ON  
SENATE BILL NO. 2910, S.D. 2, H.D. 1

**LATE**

**April 4, 2018**  
**2:30 p.m.**  
**Room 308**

RELATING TO ELECTRIC GRID RESILIENCY

Senate Bill No. 2910, S.D. 2, H.D. 1, creates a \$50,000,000 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 Loan Program (GRLP) and Special Fund (GRLSF) to be administered by the Public Utilities Commission; allocates an unspecified amount from the revenues collected through the Public Benefits Fee as authorized in Section 269-121, HRS, to be deposited into the GRLSF for the purposes of the GRLP; appropriates \$20,000,000 from the Green Infrastructure Special Fund to be deposited into the GRLSF for FY 19; and establishes a Grid Resiliency Task Force to prepare the State's electrical grid for natural disasters and other emergencies.

The Department of Budget and Finance, as a matter of general policy, does not support the creation of any special fund which does not meet the requirements of Section 37-52.3, HRS. Special funds should: 1) serve a need as demonstrated by the purpose, scope of work and an explanation why the program cannot be implemented



successfully under the general fund appropriation process; 2) reflect a clear nexus between the benefits sought and charges made upon the users or beneficiaries or a clear link between the program and the sources of revenue; 3) provide an appropriate means of financing for the program or activity; and 4) demonstrate the capacity to be financially self-sustaining. In regards to Senate Bill No. 2910, S.D. 2, H.D. 1, it is difficult to determine whether the special fund would be self-sustaining.

Thank you for your consideration of our comments.

**LATE**

**SB-2910-HD-1**

Submitted on: 4/3/2018 2:35:46 PM

Testimony for FIN on 4/4/2018 2:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Melodie Aduja	the Oahu County Committee on Legislative Priorities of the Democratic Party of Hawai'i	Support	No

Comments:



**LATE**

**HOUSE COMMITTEE ON FINANCE**

April 4, 2018, 2:30 p.m.  
(*Testimony is 1 page long*)

**TESTIMONY IN SUPPORT OF SB 2910 SD2 HD1 WITH PROPOSED AMENDMENT**

Aloha Chair Luke and Members of the Committee:

The Alliance for Solar Choice (TASC) respectfully supports SB 2910 SD2 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 loan 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.<sup>1</sup> Puerto Rico's grim struggle must serve as a wake-up call for Hawaii. In 2017, more damage occurred as a result of natural disasters than any other time in recorded history. Experts believe the severity and frequency of natural disasters will only increase as a result of climate change. 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.

As with any bill, improvements can be made. We are concerned that running a loan program may be outside of the Commission's expertise. We recommend moving back to the original language of this measure, which established a rebate program. A similar program is currently administered by the public benefit fund administrator (and managed by the Commission). This may be easier to manage and implement.

Mahalo for the opportunity to submit these comments.

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



**LATE**

**Hawaii Solar Energy Association**  
*Serving Hawaii Since 1977*

**TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION  
IN REGARD TO SB 2910 SD2 HD1, RELATING TO ELECTRIC GRID  
RESILIENCY  
BEFORE THE  
HOUSE COMMITTEE ON FINANCE  
ON  
WEDNESDAY, MARCH 21, 2018**

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

HSEA **supports**, SB 2910 SD2 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.<sup>1</sup> **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.<sup>2</sup> 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.

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<sup>1</sup> 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.

<sup>2</sup> Staff, PREC. *REGULATION ON MICROGRID DEVELOPMENT*. MI ed., CEPR, ser. 0001, 2018, *REGULATION ON MICROGRID DEVELOPMENT*.



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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.<sup>3</sup> The report states:

“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.”<sup>4</sup>

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

**Table 2-6: Critical Services Impacts**

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

The state must act to treat grid resiliency efforts like those outlined in SB 2910 proactively, rather than symptomatically. Renewable energy, energy storage, microgrids, and grid resiliency efforts inherent in this bill build the critical infrastructure needed to safeguard the state against major disaster. This bill makes our state more secure, more resilient, and cleaner.

<sup>3</sup> HI-EMA, Staff. *2015 Hawaii Catastrophic Hurricane Plan*. SOH-HI-EMA, 2015, *2015 Hawaii Catastrophic Hurricane Plan*.

<sup>4</sup> See “Report” at pp. 109.

<sup>5</sup> See “Report” at Impacts, 2-6.



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Put simply, this bill will save lives.

We **support** SB 2910 SD2 HD1 and we urge this committee to pass this measure.

Thank you for the opportunity to testify.



**LATE**

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