



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

**DAVID Y. IGE**  
GOVERNOR

**LUIS P. SALAVERIA**  
DIRECTOR

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Statement of  
**LUIS P. SALAVERIA**  
**Director**  
Department of Business, Economic Development, and Tourism  
before the  
**SENATE COMMITTEE ON WAYS AND MEANS**

Monday, February 29, 2016  
1:30 p.m.  
State Capitol, Conference Room 211

in consideration of  
**SB 2738, SD 1**  
**RELATING TO RENEWABLE ENERGY.**

Chair Tokuda, Vice Chair Dela Cruz, and Members of the Committee.

The Department of Business, Economic Development & Tourism (DBEDT) offers comments on SB 2738, SD1, which, among other provisions, reduces the Hawaii Renewable Energy Technologies Income Tax Credit (REITC) for solar energy properties used to generate electricity from 35 percent (currently) to 15 percent after December 31, 2022, and creates energy storage property tax credits.

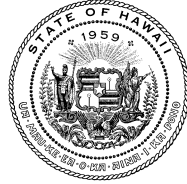
While acknowledging the success of the REITC in decreasing Hawaii's reliance on fossil fuels, stimulating our economy, and driving innovation, DBEDT would support a ramp-down of the tax credit for traditional solar electrical generation systems if it was done in a way to make room in the State budget for other grid-supportive renewable energy resources. This is important given the limited State budgetary resources. Also, without further understanding the relative impact on the expansion of renewable energy resources, we are concerned about the unknown expansion of the aggregate storage tax credit provided by this bill.

Finally, we defer to the Department of Budget and Finance on the impact of the State budget from this bill and the Department of Taxation on its ability to administer its duties under this bill.

Thank you for the opportunity to offer these comments.

DAVID Y. IGE  
GOVERNOR

SHAN TSUTSUI  
LT. GOVERNOR



STATE OF HAWAII  
**DEPARTMENT OF TAXATION**  
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MARIA E. ZIELINSKI  
DIRECTOR OF TAXATION

JOSEPH K. KIM  
DEPUTY DIRECTOR

To: The Honorable Jill N. Tokuda, Chair  
and Members of the Senate Committee on Ways and Means

Date: February 29, 2016  
Time: 1:30 P.M.  
Place: Conference Room 211, State Capitol

From: Maria E. Zielinski, Director  
Department of Taxation

Re: S.B. 2738, S.D. 1, Relating to Taxation.

The Department of Taxation (Department) appreciates the intent of S.B. 2738, S.D. 1, and offers the following comments for your consideration.

S.B. 2738, S.D. 1, makes amendments to sections 196-6.5 and 235-12.5, Hawaii Revised Statutes. Among other changes, it makes the Renewable Energy Technologies Income Tax Credit (RETITC) applicable to solar or wind energy "property" rather than solar or wind energy "systems," and bases the amount of credit on the basis of property rather than on the "actual cost" of the system. The amount of the RETITC is changed by this measure to be twenty-five percent of the basis of solar energy property installed before 2019, twenty percent of the basis for solar energy property installed before 2020, and fifteen percent of the basis for property installed after 2022. The credit is subject to per "property" caps. A similar credit is added for "energy storage property" that is not included as part of solar energy property. The credit for wind energy property is twenty percent of the basis, capped at an unspecified amount. The measure is effective upon approval and applies to taxable years beginning after December 31, 2016.

First, the Department notes that the credit as written applies as a different percentage of the basis of property depending on when the property is installed and placed in service by the taxpayer. However, in both the credit for solar energy property and energy storage property, the dates cannot be reconciled. The installed and placed in service periods in the measure are as follows:

- 25% after December 31, 2016 and before January 1, 2019;
- 20% after December 31, 2017 and before January 1, 2020; and
- 15% after December 31, 2022

The first two time periods overlap, and there is a gap of three years between the second and third periods. It is unclear how the credit would apply in these time periods. The Department suggests that these dates be amended to provide clarity regarding when the different rates are to be applied.

Second, the Department notes that this measure cannot be administered as currently written. As written, this measure poses the exact same problem with ambiguity as section 235-12.5, HRS, is currently enacted. The renewable energy technologies income tax credit (RETITC) has historically been very difficult to administer, primarily due to the fact that the statute contains no definition for the word "system," but capped credit amounts on a per-system basis. One of the outcomes of this statutory ambiguity has been a much larger than anticipated number of RETITC claims made and revenue lost. The ambiguity in the statute was ultimately addressed by the Department's enactment of administrative rules pertaining to the RETITC in November 2012. The changes proposed by S.B. 2738, S.D. 1, have the effect of making these administrative rules obsolete and reintroducing a problem that has already been resolved.

The definition in this measure for "solar or wind energy property" is not significantly different from the prior definition of "solar or wind energy system," and will result in the same ambiguity seen previously with this tax credit. Although the language is changed to "property" rather than "system" there is no meaningful change in the definition; with this definition "property" is synonymous with "system" as the statute was previously worded. The Department strongly suggests that the measure be amended to include definitions and provisions that will provide sufficient guidance to administer the RETITC without the need for administrative rules. Without sufficient clarity, this tax credit could result in a larger than expected revenue losses, similar to the RETITC.

If the intention of the Legislature is to make Hawaii's tax credit more similar to the federal tax credit, the Department suggests simply allowing taxpayers to claim a credit equal to a percentage of the federal tax credit available for renewable energy property without applying a cap. As explained above, the caps have caused confusion for taxpayers and administrative difficulty for the Department, and resulted in unintended revenue losses for the State.

Thank you for the opportunity to provide comments.

# TAX FOUNDATION OF HAWAII

126 Queen Street, Suite 304

Honolulu, Hawaii 96813 Tel. 536-4587

SUBJECT: INCOME, Tax Credit for Renewable Energy

BILL NUMBER: SB 2738, SD-1

INTRODUCED BY: Senate Committee on Transportation and Energy

EXECUTIVE SUMMARY: Amends the renewable energy technologies income tax credit to change limitations for certain technology types, and to make the credit caps apply per energy property rather than per system. Provides increased caps for photovoltaic property that is grid-connected and incorporates energy storage property. Generally the credit is being phased down, perhaps in recognition that the technology involved is no longer new. Tightens up definitions to ensure greater conformity with the Internal Revenue Code.

BRIEF SUMMARY: Amends HRS section 235-12.5, the renewable energy technologies income tax credit, to allow credits for each energy property, as follows:

For each solar energy property used exclusively to heat water and is installed and first placed in service in the State by a taxpayer during the taxable year: 35% of the basis up to the applicable cap amount, which is determined as follows: (A) \$2,250 per solar energy property for single-family residential property; (B) \$350 per unit per solar energy property for multi-family residential property; and (C) \$250,000 per solar energy property for commercial property.

For each solar energy property used primarily to generate electricity and is installed and first placed in service in the State by a taxpayer during the taxable year: a certain percentage of the basis up to the applicable cap amount, which is determined as follows: (A) \$5,000 per solar energy property for single-family residential property, except that if all or a portion of the property is used to fulfill the substitute renewable energy technology requirement in section 196-6.5(a)(3), HRS, the credit will be reduced by 25% of basis or \$2,250, whichever is less; (B) \$350 per unit per solar energy property for multi-family residential property; and (C) \$500,000 per solar energy property for commercial property. The credit rate is 25% for calendar years 2017 and 2018, 20% for calendar years 2018 and 2019, and 15% for calendar year 2023 and thereafter. (Apparently the credit rate could use some clarification, to figure out which rate applies in 2018 and to specify what happens in 2020 and 2021.)

If the solar energy property is grid-connected and incorporates an energy storage property, the applicable cap amount is changed to: (A) \$10,000 per solar energy property for single-family residential property, except that if all or a portion of the property is used to fulfill the substitute renewable energy technology requirement in section 196-6.5(a)(3), HRS, the credit will be reduced by 25% of basis or \$2,250, whichever is less; (B) \$700 per unit per solar energy property for multi-family residential property; and (C) \$500,000 per solar energy property for commercial property. The credit rate is 25% for calendar years 2017 and 2018, 20% for calendar years 2018 and 2019, and 15% for calendar year 2023 and thereafter. (Apparently the credit rate

could use some clarification, to figure out which rate applies in 2018 and to specify what happens in 2020 and 2021.)

For each energy storage property installed and first placed in service in the State by a taxpayer during the taxable year, and is not included in the basis of energy property not described previously: a certain percentage of the basis up to the applicable cap amount, which is determined as follows: (A) \$10,000 per energy storage property for single-family residential property; (B) \$700 per unit per energy storage property for multi-family residential property; and (C) \$500,000 per energy storage property for commercial property. The credit rate is 25% for calendar years 2017 and 2018, 20% for calendar years 2018 and 2019, and 15% for calendar year 2023 and thereafter. (Apparently the credit rate could use some clarification, to figure out which rate applies in 2018 and to specify what happens in 2020 and 2021.)

Wind energy property is also creditable, and the credit rate is 20% basis or \$\_\_\_\_\_, whichever is less.

Provides that the tax credit under this section shall be construed in accordance with Treasury Regulations and judicial interpretations of similar provisions in sections 25D, 45, and 48 of the Internal Revenue Code.

Provides that a planned community association, condominium association of owners, or cooperative housing corporation may claim the tax credit under this section in its own name for property or facilities placed in service and located on common areas.

States that no credit shall be allowed to any federal, state, or local government or any political subdivision, agency, or instrumentality thereof.

EFFECTIVE DATE: Applies to taxable years beginning after 12/31/16.

STAFF COMMENTS: While some may consider an incentive necessary to encourage the use of alternate energy devices, it should be noted that the high cost of these energy systems limits the benefits to those who have the initial capital to make the purchase. If it is the intent of the legislature to encourage a greater use of renewable energy systems through the use of tax credits, as an alternative, consideration should be given to strengthening or fixing the existing program of low-interest loans known as GEMS. Such low-interest loans, that can be repaid with energy savings, would have a much more broad-based application than a credit which amounts to nothing more than a “free monetary handout” or subsidy by state government.

While this and other measures demand serious consideration in order to stem the abuse of the current tax credit provisions, lawmakers and staff need to hone the tax incentive to be a more reasonable incentive that is forged in a good understanding of the developing technology. What is currently on the books reflects a handout for existing technology, and might not be efficient to encourage innovation.

In any event, lawmakers need to keep in mind two things. First, the tax system is the device that raises the money that they, lawmakers, like to spend. Using the tax system to shape social policy merely throws the revenue raising system out of whack, making the system less than reliable as

there is no way to determine how many taxpayers will avail themselves of the credit and in what amount. The second point to remember about tax credits is that they are nothing more than the expenditure of public dollars, but out the back door. If, in fact, these dollars were subject to the appropriation process, would taxpayers be as kind about the expenditure of these funds when there isn't enough money for social service programs, or our state hospitals are on the verge of collapse?

Utilizing tax credits other than to alleviate an excessive tax burden cannot be justified and is of a questionable benefit relative to the cost for all taxpayers. If lawmakers want to subsidize the purchase of this type of technology, then a direct appropriation would be more accountable and transparent.

Furthermore, the additional credit would require changes to tax forms and instructions, reprogramming, staff training, and other costs that could be massive in amount. A direct appropriation, perhaps to fund a rebate program as is now being considered for the cesspool credit, may be a far less costly method to accomplish the same thing.

Digested 2/26/2016



Before the Senate Committee on Ways and Means  
Monday, February 29, 2016, 1:30 p.m., room 211  
SB 2738 SD 1: Relating to Renewable Energy

Aloha Chair Tokuda, Vice Chair Dela Cruz, and members of the Committee,

On behalf of the Distributed Energy Resources Council of Hawaii (“DER Council”), I would like to testify in strong support for SB 2738 SD 1, which replaces the current renewable energy technology tax credit (“REITC”) with an updated tax credit framework for solar, wind, and energy storage property, beginning with systems installed and placed in service in 2017. 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.

Hawaii has recently experienced many significant changes with its distributed energy market and the choices now available to consumers, with the closing of Net Energy Metering and the development of the grid-supply and self-supply tariffs.

The DER Council strongly supports SB 2738 SD 1 because SB 2738 SD 1 updates the current renewable energy technology tax credit to reflect the new choices now available to customers, and SB 2738 SD 1 provides incentives for technologies that will best support our continued progress towards an affordable, reliable, and sustainable energy supply for Hawaii. Specifically, SB 2738 SD 1 provides benefits to the State in several key ways:

I. SB 2738 SD 1 incentivizes the right technology

SB 2738 SD 1 keeps the current REITC structure in place for standard grid-supply systems. That way, customers who still wish to install roof-top solar can still make use of the tax incentive, but the incentive will continue to be limited by the \$5,000 cap per energy system. DERC believes that this provision recognizes that not all customers will wish to install storage or provide load shift or ancillary services to the electrical grid, but that a “vanilla” roof-top system has limits regarding grid benefits.

Next, SB 2738 SD 1 updates the REITC by increasing the cap only for systems that combine photovoltaics and energy storage. By doing so, customers will have an additional incentive to include storage in their renewable energy system, and become a valuable resource to the electrical grid by providing benefits to all electrical customers. For instance, customers who install systems with energy storage can help to shift peak load by storing excess energy during the day and using the stored energy at peak. PV systems plus storage can also serve to off-set or reduce the need for grid improvements and upgrades, as energy produced locally could be stored and consumed locally as need, thus lessening the impact on distribution level infrastructure. Roof top systems with storage can also play a key role in providing distributed ancillary services to the electrical grid.



Finally, SB 2738 SD 1 incentivizes the technology that Hawaii needs by allowing customers to install storage to an existing system. This would allow customers to contribute grid services by combining storage with their existing systems and join in the effort to shift peak load and provide ancillary services to the grid.

II. SB 2738 SD 1 is fiscally prudent and will save the State money by ramping down the credit and providing multiple benefits to the State of Hawaii and all ratepayers

SB 2738 SD 1 is fiscally prudent and a sound investment in our state's future as we strive to reduce our dependence upon imported fossil fuels. SB 2738 SD 1 updates our tax incentives in a fiscally prudent manner by ramping down the incentive from 35% to 15% over a nine year period and by creating an incentive that will best serve to update and improve our electrical grid.

Specifically, the DER Council's analysis of the SB 2738 SD 1 has found that the State will receive a net savings of approximately \$18,000,000 over a five year period, while putting in place the beginnings of an energy storage infrastructure. In addition, the DER Council has found that SB 2738 SD 1 will encourage the development of customer invested distributed energy storage, which would result in a savings of approximately \$45,400,000 over a five year period should the same capacity utility scale storage be developed instead.

Furthermore, the passage of SB 2738 SD 1 would benefit the State's economy in a number of other ways. SB 2738 SD 1 encourages customers to stay grid connected and puts private capital to work by providing incentives for customer-invested and maintained renewable energy systems. In contrast, storage installed by the utility would all be rate-based, and the full cost would be borne by all ratepayers. Also, SB 2738 SD 1 helps keep Hawaii taxpayer's dollars at home as taxpayers will also receive a tax credit on their federal tax bill for their renewable energy investment. Finally, SB 2738 SD 1 benefits the local economy by providing well-paying, local green jobs that cannot be outsourced.

III. SB 2738 SD 1 works in conjunction with the public utilities commission to incent technology for a better electrical grid

As mentioned above, the Commission closed the NEM program in Hawaii last year, and offered two new tariffs in its place for roof top customers. However, the grid-supply tariff will likely reach the 35 MW cap by the end of the year, and the only option for continued investment for residential and commercial customers at that point will be self-supply systems. Although storage is not a requirement of self-supply systems, many systems will include storage, depending upon the customer's use of energy during the day. More importantly, distributed energy systems with storage can provide the network of distributed energy resources which the Commission has envisioned as being a key part of our renewable development and progress.<sup>1</sup> SB 2738 SD 1 bridges the gap between the policy direction provided by the Commission and the current choices available to customers by updating our renewable energy investment tax credit to

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<sup>1</sup> See the Commission's Inclinations in Docket No. 2012-0036 Exhibit A where they state that a critical component of distributed energy will be an DER utilization plan put forth by the utility that identifies how customers "will install, and the utility will utilize as an integrated DER portfolio advanced inverters, distributed energy storage, demand response, and electric vehicles to mitigate adverse grid impacts on utility distribution circuits and the system as a whole" at 15.

reflect the next generation systems which customers need to install to remain relevant and serve as a resource for the entire electrical grid.

IV. SB 2738 SD 1 encourages customers to stay connected to the electrical grid

SB 2738 SD 1 also has the additional benefit of encouraging customers to remain connected to the electrical grid by providing an additional incentive only for systems that are grid connected. Although renewable energy installations which are not grid connected have a purpose in the case where electrical service is not available and especially where a housing shortage could be helped by the ability to affordably invest in storage, it is not to the advantage of the utility or the ratepayers for customers to flee the grid and significantly remove load from the system. This bill would send a strong market signal to incentivize systems that are grid connected. These systems would serve as a stepping stone to a modern, interactive grid that makes the most of all of our energy resources.

Now is the time to act

SB 2738 SD 1 is key to moving forward with our energy future if we wish to rid the state of our dependence upon imported fossil fuels and reach our RPS goal of 100% by 2045. Now is the time to act to make the best use of all of our resources.

Thank you for the opportunity to testify

Leslie Cole-Brooks  
Executive Director  
Distributed Energy Resources Council of Hawaii



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

**TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION  
IN REGARD TO SB 2738 SB 1, RELATING TO RENEWABLE ENERGY  
BEFORE THE  
SENATE COMMITTEE ON WAYS AND MEANS  
ON  
MONDAY, FEBRUARY 29, 2016**

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

HSEA supports SB 2738 SB 1 with comments. This measure seeks to amend §196-6.5 and §235-12.5 in light of changes in both the overall state of clean energy technology as well as recent alterations in state policy. This bill is similar in language and intent to the Federal ITC and follows a similar step-down structure for tax credits.

Broadly, tax incentives for solar energy need to be adopted by the state to advance the growth of renewable energy and, at a state level, accelerate progress towards a 100% renewable energy goal by 2045. A Bloomberg New Energy Finance study published in September of 2015 found that extending the Federal Solar Investment Tax credit to 2022 is likely to add 22GW of solar energy to the United States' energy infrastructure. Removal of the credit would have only led to 8GW of added PV.

Amending §235-12.5 to allow tax credits to incentivize both traditional grid connected solar systems and energy storage systems will bolster renewable energy in Hawaii. With recent changes in solar policy there will be a greater emphasis within the market for energy storage systems, which have inherent grid support functionality. These tax incentives will accelerate the innovation and adoption of energy storage and benefit customers, the utility, and the state.

Special consideration should be given to the proposed amendment to §235-12.5 found in SB 2738 SB 1 labeled (4), (A)-(C) first found on page 10, line 10. This section deals with energy storage installed on an existing solar system. There is concern that modifying a previously installed solar system that is party to a NEM agreement prior to October 12, 2015 would void that NEM agreement. It appears to be the case that the HEI companies are interpreting page 164-165 of Docket 2014-0192, Decision and Order No. 33258<sup>1</sup>, to include energy storage property as a means of additional generating capacity which would subsequently violate a previous NEM agreement if a customer were to retrofit an existing solar energy system with energy storage.<sup>2</sup> A customer would most likely not want to void their current NEM agreement in favor of battery storage. Language should be inserted addressing this and protecting customer who chooses to install a battery

<sup>1</sup> See PUC Docket No. 2014-0192, Decision and Order No. 33258 at pp. 164-165.

<sup>2</sup> See HEI Press Release dated October 13, 2015 here: <https://www.hawaiianelectric.com/public-utilities-commission-approves-new-rooftop-solar-programs>



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

system from voiding their NEM agreement. HSEA suggests that the following provision be added between subsections (k) and (l):

No existing NEM or any other standard interconnection agreement shall be abrogated with the addition of an energy storage system pursuant to section 235-12.5(a)(3).

Additionally, according to the U.S. Census data, Hawaii issued 2356 new housing single-family building permits, of which 781 solar water heater variances were applied for and approved. This represents 33% of all new single-family homes built. It was not the original intention of the variance outlined in §196-6.5 of the Hawaii Revised Statutes to be used so frequently. We request additional amendments to §196-6.5 to further clarify when a variance should be allowed and close the loop hole allowing such a high percentage of approved variance applications.

Thank you for the opportunity to testify.



**SENATE COMMITTEE ON WAYS AND MEANS**

February 29, 2016, 1:30 P.M.

Room 211

(Testimony is 4 pages long)

**TESTIMONY IN SUPPORT OF SB 2738**

And Suggested Clarifying Amendment

Aloha Chair Tokuda, Vice Chair Dela Cruz, and Committee members,

Blue Planet Foundation supports SB 2738 SD1, which revises the state's renewable energy tax credit to account for the growing need for energy storage paired with renewable energy sources. At the same time, SB 2738 SD1 provides a pathway for ramping down tax incentives for renewable energy and energy storage systems in the future.

Energy storage will play an increasingly critical role in transforming the state's electricity system, and for ensuring that electricity customers have options for installing their own grid-connected clean energy infrastructure. It is sensible and appropriate to accelerate the pace of adoption of energy storage and laying groundwork for the transformed energy system. At the same time, it is sensible and appropriate to forecast a future ramp-down of these incentives, once the clean energy transition has commenced in earnest.

Prior testimony on this bill erroneously suggested that the benefit of the renewable energy credit is limited to those that have the initial capital to make a purchase. This is incorrect. Modern financing mechanisms (such as solar leases) have made it possible for many households and businesses in the state to install renewable energy even if they don't have capital for a purchase. Continuing innovation and refinement of such mechanisms, such as green energy financing, are likely to broaden this trend. Furthermore, while installations in early years were more prevalent in neighborhoods with a higher median income, data for later years showed this trend shifting, with the renewable energy accelerating fastest in neighborhoods with lower median incomes. Terminating a renewable energy tax credit would halt this shift at the expense of residents in those neighborhoods. In addition, commercial renewable energy systems are also eligible for the credits set forth in the bill, and thus all electricity ratepayers can benefit in the form of lower prices paid if renewable electricity is sold to a utility and then re-sold to customers. Similarly, all residents are benefitting from a shift away from highly volatile fossil fuels and toward renewable energy. A February, 2016 analysis by the National Renewable Energy Laboratory concluded that the recent extension of federal renewable energy tax credits

will result in more rapid renewable energy development, with the accompanying clean energy benefits.<sup>1</sup>

### Suggested Clarifying Amendment

We note a needed amendment to clarify conflicting dates in the current SD1:

As currently proposed in SB 2738 SD1, the date of this ramp-down is unclear because of conflicting dates in the draft's text. In addition, the ramp-down would commence sooner (either 2018 or 2019) than the ramp-down schedule approved by the U.S. Congress for federal renewable energy tax credits (which will remain at its current level until 2020). We believe it is necessary to clarify the dates of the ramp-down in the current SD1. The suggested amendments below would implement the following: 25% credit for 2017, 2018, 2019; 20% credit for 2020, 2021, 2022; 15% credit for 2023 onward. Revisions to achieve this are marked below in underlining and strikethrough.

(2) For each solar energy property that is used primarily to generate electricity and is installed and first placed in service in the State by a taxpayer during the taxable year:

- (A) Twenty-five per cent of the basis for solar energy property first placed in service after December 31, 2016, and before January 1, ~~2019~~2020, up to the applicable cap amount, which is determined as follows:
  - (i) \$5,000 per solar energy property for single-family residential property; provided that if all or a portion of the solar energy property is used to fulfill the substitute renewable energy technology requirement pursuant to section 196-6.5(a)(3), the credit shall be reduced by twenty-five per cent of the basis or \$2,250, whichever is less;
  - (ii) \$350 per unit per solar energy property for multi-family residential property; and
  - (iii) \$500,000 per solar energy property for commercial property;
- (B) Twenty per cent of the basis for solar energy property first placed in service after December 31, ~~2017~~2019, and before January 1, ~~2020~~2023, up to the applicable cap amount, which is determined as follows:
  - (i) \$5,000 per solar energy property for single-family residential property; provided that if all or a portion of the solar energy property is used to fulfill the substitute renewable energy technology requirement pursuant to section 196-6.5(a)(3), the credit shall be reduced by twenty

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<sup>1</sup> Mai et al., *Impacts of Federal Tax Credit Extensions on Renewable Deployment and Power Sector Emissions* (Nat'l Renewable Energy Lab., Feb. 2016), available at <http://www.nrel.gov/docs/fy16osti/65571.pdf>

- per cent of the basis or \$2,250, whichever is less;
- (ii) \$350 per unit per solar energy property for multi-family residential property; and
- (iii) \$500,000 per solar energy property for commercial property; and
- (C) Fifteen per cent of the basis for solar energy property first placed in service after December 31, 2022, up to the applicable cap amount, which is determined as follows:
  - (i) \$5,000 per solar energy property for single-family residential property; provided that if all or a portion of the solar energy property is used to fulfill the substitute renewable energy technology requirement pursuant to section 196-6.5(a)(3), the credit shall be reduced by fifteen per cent of the basis or \$2,250, whichever is less;
  - (ii) \$350 per unit per solar energy property for multi-family residential property; and
  - (iii) \$500,000 per solar energy property for commercial property;

(3) For each solar energy property that is used primarily to generate electricity and is installed and first placed in service in the State by a taxpayer during the taxable year; provided that the solar energy property is grid-connected and incorporates an energy storage property:

- (A) Twenty-five per cent of the basis for solar energy property first placed in service after December 31, 2016, and before January 1, ~~2019~~2020, up to the applicable cap amount, which is determined as follows:
  - (i) \$10,000 per solar energy property for single-family residential property; provided that if all or a portion of the solar energy property is used to fulfill the substitute renewable energy technology requirement pursuant to section 196-6.5(a)(3), the credit shall be reduced by twenty-five per cent of the basis or \$2,250, whichever is less;
  - (ii) \$700 per unit per solar energy property for multi-family residential property; and
  - (iii) \$500,000 per solar energy property for commercial property;
- (B) Twenty per cent of the basis for solar energy property first placed in service after December 31, ~~2017~~2019, and before January 1, ~~2020~~2023, up to the applicable cap amount, which is determined as follows:
  - (i) \$10,000 per solar energy property for single-family residential property; provided that if all or a portion of the solar energy property is used to fulfill the substitute renewable energy technology requirement pursuant to section 196-

6.5(a)(3), the credit shall be reduced by twenty per cent of the basis or \$2,250, whichever is less;

- (ii) \$700 per unit per solar energy property for multi-family residential property; and
  - (iii) \$500,000 per solar energy property for commercial property; and
- (C) Fifteen per cent of the basis for solar energy property first placed in service after December 31, 2022, up to the applicable cap amount, which is determined as follows:
- (i) \$10,000 per solar energy property for single-family residential property; provided that if all or a portion of the solar energy property is used to fulfill the substitute renewable energy technology requirement pursuant to section 196-6.5(a)(3), the credit shall be reduced by fifteen per cent of the basis or \$2,250, whichever is less;
  - (ii) \$700 per unit per solar energy property for multi-family residential property; and
  - (iii) \$500,000 per solar energy property for commercial property;

(4) For each energy storage property that is installed and first placed in service in the State by a taxpayer during the taxable year, if the cost of the energy storage property is not also included in the basis of a solar or wind energy property under subsection (a):

- (A) Twenty-five per cent of the basis for energy storage property first placed in service after December 31, 2016, and before January 1, ~~2019~~2020, up to the applicable cap amount, which is determined as follows:
  - (i) \$10,000 per energy storage property for single-family residential property;
  - (ii) \$700 per unit per energy storage property for multi-family residential property; and
  - (iii) \$500,000 per energy storage property for commercial property;
- (B) Twenty per cent of the basis for energy storage property first placed in service after December 31, ~~2017~~2019, and before January 1, ~~2020~~2023, up to the applicable cap amount, which is determined as follows:
  - (i) \$10,000 per energy storage property for single-family residential property;
  - (ii) \$700 per unit per energy storage property for multi-family residential property; and
  - (iii) \$500,000 per energy storage property for commercial property; and
- (C) Fifteen per cent of the basis for energy storage property first placed in service after December 31, 2022, up to the applicable cap amount, which is determined as follows:



- (i) \$10,000 per energy storage property for single-family residential property;
- (ii) \$700 per unit per energy storage property for multi-family residential property; and
- (iii) \$500,000 per energy storage property for commercial property; and

Thank you for the opportunity to testify.



Before the Senate Committee on Ways and Means  
February 29, 2016  
SB 2738 SD 1: Relating to Renewable Energy

Aloha Chair Tokuda, Vice Chair Dela Cruz, and members of the Committee,

On behalf of Stem, Inc. (Stem), I would like to testify in strong support for SB 2738 SD 1. The bill will modify the current renewable energy technology tax credit (“REITC”) with an updated tax credit framework. The premise of the bill is to save the State of Hawaii money by gradually ramping the solar tax credit down, while allowing grid-connected energy storage systems to qualify as it does so. This solution will create a bridge for both the electricity grid and the installer business community via the new, high-growth sector of energy storage. Eligibility would begin with systems installed and placed in service in 2017, and will be revenue positive for the State that year, and every year thereafter versus the status quo.

Stem is a leading provider of innovative energy solutions that combine powerful learning software with advanced energy storage. Stem is currently partnered with Hawaiian Electric Company (“HECO”) on a 1MW renewables integration pilot to help the utility reach the State’s renewable energy goals. Stem is also working with the Hawaiian Electric Companies on a data transparency / data availability project for commercial customers, including providing a “super smart meter” service to all public schools in the Tri-Companies’ service territories.

#### I. SB 2738 SD 1 will encourage private investment in the grid

This bill maintains vital aspects of the REITC, while also updating the structure to allow energy storage to be eligible for the incentive. Stem firmly anticipates that many consumers and businesses will be looking to adopt energy storage over the next few years. These systems can reduce electricity bills and provide other local benefits, such as better power quality and back-up power.

Importantly, SB 2738 SD 1 will motivate those considering energy storage systems to invest in grid-connected systems rather than fully off-grid systems. Technology companies like Stem are already developing systems that can serve multiple purposes, including interfacing with the utility to support the grid. This means that private capital invested in storage is also being leveraged to upgrade the grid for everyone’s benefit – rather than rate payers carrying the entire burden of all upgrades.

SB 2738 SD 1 provides the right approach by maintaining the cap for roof-top solar, which now has limited benefits to the electrical grid. At the same time the bill raises the cap for systems that combine roof-top solar with energy storage, or for stand-alone energy storage systems that provide local services to their owners as well as services to the grid.





## II. SB 2738 SD 1 supports Hawaii's resiliency and climate goals

With an RPS goal of 100% by 2045, it is clear that Hawaii's electrical grid is going to need energy storage. As battery prices continue to come down there will be a robust market for distributed energy storage systems in Hawaii in the near-to-mid-term. This bill encourages that market to take shape in synchrony with the intentions of the State and the utility to drive toward 100% renewable energy.

SB 2738 bill will encourage consumers and businesses not just to invest in storage that serves their own needs, but to adopt grid-connected energy storage systems that, when aggregated, can act as a "virtual power plants" for grid operators. These systems can play a vital role in addressing the "duck curve" issue, improving voltage conditions on the distribution system, and managing other issues resulting from high penetrations of renewables.

SB 2738 SD 1 will also help consumers bring down the upfront costs of adopting these systems, and enable financed offerings ("pay-as-you-save" business models), ensuring all taxpayers have access to energy storage.

## III. SB 2738 SD 1 is fiscally prudent

The revised REITC structure in SB 2738 SD 1 provides a fiscally sound and prudent alternative to continuing the current renewables tax incentive program as it stands. By ramping the incentive down over a nine-year period, the bill will save taxpayer dollars while providing the solar industry the opportunity to expand into a new line of work: installing storage systems and solar + storage combination systems. This will be a smooth transition for the local economy, preserve existing jobs and businesses in the solar industry, and create new jobs in the storage industry. And, the resulting installations of distributed energy storage systems across the islands will be installed with the end goals in mind of resilience and security, and serving the needs of a changing electricity grid.

Thank you for the opportunity to provide this testimony.

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**Testimony before the Senate Committee on Ways and Means  
29FEB16  
Conference Room 211  
S.B. 2738 SD1 – Relating to Renewable Energy**

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*Chair Tokuda, Vice Chair Dela Cruz, and Members of the Committee:*

As the Director of Business Strategy Development at Hawaiian Electric Company, I am testifying on behalf of Hawaiian Electric and its subsidiary utilities, Maui Electric and Hawaii Electric Light (collectively “Companies”). The Companies would like to **offer comments** on this bill for consideration.

Our vision is to deliver cost-effective, clean, reliable, and innovative energy services to ALL of our customers, creating meaningful benefits for Hawaii's economy and environment, and making Hawaii a leader in the nation's energy transformation. To drive our vision for Hawaii, we anchor our strategies in a set of common objectives; lowering customer bills 20 percent by 2030, increasing renewables in our generation portfolio, modernizing our grid, and expanding customer options.

Hawaiian Electric is committed to reach 100% RPS by 2045. This will require us to transform our business to include modernization of the generating fleet/grid, increased renewables, and expanded customer options. As we increase the amount of renewable energy production, energy storage, as well as other technologies, will play a significant role in distributing that energy throughout the day to coincide with demand and providing ancillary services. Hawaiian Electric is supportive of energy storage as a customer option and has prepared the following guiding principles to assist in enacting policy for the benefit of ALL customers:

- Energy storage policies should promote or enable renewable energy production to help Hawaii achieve the state's mandate of 100% RPS by 2045.
- Energy storage policies should provide overall cost effective grid benefits to ALL customers, not just those who choose to install batteries on their property.
- Should the state choose to enact policy to promote energy storage through investment tax credits (ITC) to customers who install energy storage, these customers should remain connected to the electric system to support the societal benefit for which these ITC are intended -- integrating more cost-effective renewable energy as we progress toward our state's 100% RPS.

S.B. 2738 SD1 replaces the current renewable energy technology systems tax credit with tax credits for solar energy property, wind energy property, and energy storage property. Energy storage is a set of rapidly advancing technologies and the Companies believe that there will continue to be transformative shifts that will further enable the integration of renewables onto the system. The use, understanding, economics, and performance of energy storage technologies as well as other technologies and grid operations will continue to evolve rapidly during the time horizon of these tax credits. Such changes will impact the optimal resource portfolio on an integrated grid of renewable energy, energy storage and other solutions toward our 100% RPS. Thus, the Companies suggest that these tax credits be allocated in a phased approach with periodic evaluations (e.g., every two to three years, etc...) to determine the optimal technologies needed to get to 100% RPS, and to avoid unintended consequences affecting our customers.

**The Companies also suggest that these energy storage properties be grid connected and controllable to provide the much needed services to enable more renewables.**

Thank you for the opportunity to provide these comments.