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To: The Honorable Sylvia Luke, Chair
and Members of the House Committee on Finance

Date: Tuesday, April 4, 2017
Time: 3:00 P.M.
Place: Conference Room 308, State Capitol

From: Maria E. Zielinski, Director
Department of Taxation

Re: S.B. 665, S.D. 2, H.D. 1 Relating to Renewable Energy

The Department of Taxation (Department) appreciates the intent of S.B. 665, S.D. 2, H.D. 1, and provides the following comments for your consideration.

S.B. 665, S.D. 2, H.D. 1, amends the renewable energy technologies income tax credit. The credit is changed so that it applies to "solar energy property," rather than a "solar energy system." A new credit is also created for "energy storage property" if the cost is not included in the basis of solar energy property. The measure has a defective effective date of July 1, 2050. H.D. 1, sunsets the credit for taxable years ending after December 31, 2035. A summary of the changes to the credit follows:

Property exclusively for heating water

- The amount of the credit for solar energy property installed exclusively to heat water is 35% of the basis up to the applicable cap amount as follows:
  - $2,250 for single-family residential property
  - $350 per unit for multi-family residential property
  - $250,000 for commercial property

Property used to generate electricity

- The amount of the credit is determined as a percentage of the basis of the property. The amounts are:
  - 25% of the basis – January1, 2018 to December 31, 2020
  - 20% of the basis – January 1, 2021 to December 31, 2023
  - 15% of the basis – January 1, 2024 and thereafter

- The credit for each solar energy property is capped at the following amounts:
  - $5,000 for single-family residential property

- $350 per unit for multi-family residential property
- $500,000 for commercial property

Property used to generate electricity that is grid-connected and incorporates energy storage property

- The amount of the credit is determined as a percentage of the basis of the property. The amounts are:
  - 25% of the basis – January1, 2018 to December 31, 2020
  - 20% of the basis – January 1, 2021 to December 31, 2023
  - 15% of the basis – January 1, 2024 and thereafter

- The credit for each solar energy property is capped at the following amounts:
  - $10,000 for single-family residential property
  - $700 per unit for multi-family residential property
  - $500,000 for commercial property

Property used to store electricity if the costs were not included as part of solar or wind-energy property

- The amount of the credit is determined as a percentage of the basis of the property. The amounts are:
  - 25% of the basis – January1, 2018 to December 31, 2020
  - 20% of the basis – January 1, 2021 to December 31, 2023
  - 15% of the basis – January 1, 2024 and thereafter

- The credit for each energy storage property is capped at the following amounts:
  - $5,000 for single-family residential property
  - $350 per unit for multi-family residential property
  - $500,000 for commercial property

Combined energy storage and solar energy system

- The applicable credit for an energy storage system plus one half of the available applicable credit for a solar energy system

Wind energy property

- The amount of the credit is 20% of the basis of the property
- The credit for each wind energy property is capped at the following amounts:
  - $1,500 for single-family residential property
  - $200 per unit for multi-family residential property
  - $500,000 for commercial property

Taxpayers without liabilities can claim the credit

A provision is included to allow a planned community association, a condominium association of owners, or a cooperative housing corporation to claim the tax credit in its own name for property placed in service and located on common areas.

First, the amendments proposed in this measure do not address the issue of how many credits that a taxpayer may claim. Each of the caps are per "energy storage property," but there are no provisions providing any further guidance. Simply replacing the word "system" with "energy storage property" does not remedy the difficulty in administration of this credit at all. The caps must be tied to another factor that can be quantified with certainty such as the direct current solar panel rating or the storage capacity measured in kilowatt-hours. The measure cannot be administered as written due to this ambiguity. The Department strongly suggests redefining the caps so that they are effective and can be administered.

Second, proposed section 235-12.5(a)(5), Hawaii Revised Statutes, attempts to limit the credit when solar energy property and energy storage are installed and placed in service together to the full energy storage property credit and one-half of the solar energy property credit that would otherwise be available under proposed sections (a)(2) and (3). The Department notes that this provision is not effective because nothing in this measure prevents a taxpayer from claiming the solar energy property credit and the energy storage property separately. Additionally, the credit available in proposed paragraph (a)(3) is for solar energy property that incorporates an energy storage property; it is unclear how the credit in (a)(5) would be available in those circumstances.

Furthermore, section (a)(5) uses the term "combined energy storage and solar energy system" without defining it. This will cause ambiguity because taxpayers will be able to receive a greater tax credit by claiming the credits separately as discussed above. One issue that can be foreseen is whether "combined" means that the solar energy and energy storage properties need to be installed and placed in service at the same time. If the answer is "yes", then taxpayers can simply place the properties in service at different times.

Third, the credit provided in proposed section (a)(3) is ambiguous and should be clarified. H.D. 1 adds a definition of "grid connected" to include individual or corporate taxpayers who have an approved interconnection agreement from the electric utility "or whose facility does not have an existing tie to the electrical grid." The addition of this definition does not clarify the purpose of the section (a)(3) credit structure. It is the Department's understanding that a taxpayer would have no control over the how the electricity is consumed from the grid. Under current law, utility scale installations would be deemed "commercial." If there is no feasible way to determine how electricity from "grid-connected" solar energy system was used, the Department suggests the deletion of sections (a)(3)(A)(i) and (ii), (a)(3)(B)(i) and (ii), and (a)(3)(C)(i) and (ii).

In addition, the part of the definition of "grid-connected" that states, "or whose facility does not have an existing tie to the electrical grid" needs to be further clarified. Under current

law and under this measure, renewable energy installations may qualify for the credit whether or not it is connected to the electrical grid. Under this measure, the installation could qualify for the credit under (a)(2), (a)(4), or (a)(5) without amending the definition of "grid-connected" as modified in H.D. 1. As such, the Department suggests amending the definition to read:

> "Grid-connected" means that the individual or corporate taxpayer has obtained an approved interconnection agreement from an electric utility for the solar energy property [~~or whose facility does not have an existing tie to the electric grid~~].

Finally, if the Committee wishes to move this measure forward, the Department notes that it is able to implement this measure for taxable years beginning after December 31, 2017.

Thank you for the opportunity to provide comments.

LEGISLATIVE TAX BILL SERVICE

TAX FOUNDATION OF HAWAII

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

SUBJECT: INCOME, Renewable Energy Tax Credits

BILL NUMBER: SB 665, HD-1

INTRODUCED BY: House Committee on Energy & Environmental Protection

EXECUTIVE SUMMARY: Our comments are limited to Part I, which 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. If approved, the credit would be an indeterminate expenditure of public dollars out the back door, and could carry with it large administrative costs.

SYNOPSIS: Part I 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, the credit is 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 the credit rate times 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 2018-2020, 20% for calendar years 2021-2023, and 15% thereafter.

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 the credit rate times 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 2018-2020, 20% for calendar years 2021-2023, and 15% thereafter.

For each energy storage property 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 creditable basis of a solar or wind energy property: a certain percentage of the basis up to the applicable cap amount, which is determined as follows: (A) $5,000 per energy storage property for single-family residential property; (B) $350 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 2018-2020, 20% for calendar years 2021-2023, and 15% thereafter.

Credits for energy storage and a solar energy system may stack.

Wind energy property is also creditable, and the credit rate is 20% basis up to the applicable cap amount, which is determined as follows: (A) $1,500 per wind 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 20% of basis or $1,500, whichever is less; (B) $200 per unit per solar energy property for multi-family residential property; and (C) $500,000 per solar energy property for commercial property.

Provides that multiple owners of a single property shall be entitled to a single tax credit, which is apportioned between the owners in proportion to their contribution to the cost of the property. For a partnership, S corporation, estate, or trust, the credit is allowed for every eligible solar or wind energy property [probably should also include energy storage property] that is installed and placed in service in the State by the entity. The credit is distributed pursuant to IRC section 704(b).

Defines "basis" on which the credit is based as costs related to the solar energy, wind energy, or energy storage property, including accessories, energy storage, and installation, but does not include the cost of consumer incentive premiums unrelated to the operation of the energy property or offered with the sale of the energy property and costs for which another credit is claimed under this chapter. Any cost incurred and paid for the repair, construction, or reconstruction of a structure in conjunction with the installation and placing in service of solar or wind energy property, such as the reroofing of single-family residential property, multi-family residential property, or commercial property, shall not constitute a part of the basis of the eligible property; provided that costs incurred for the physical support of the solar or wind energy property, such as racking and mounting equipment and costs incurred to seal or otherwise return a roof to its pre-installation condition shall constitute part of the basis for the purposes of this section. States that basis shall be consistent with the use of basis in section 25D or section 48 of the Internal Revenue Code.

Defines "energy storage property" as any identifiable facility, equipment, or apparatus, including battery, grid-interactive water heater, ice storage air-conditioner, or the like, that is permanently fixed to a site and electrically connected to a site distribution panel by means of an installed wiring, and that receives electricity generated from various sources, stores that electricity as

electrical, chemical, thermal, or mechanical energy, and delivers the energy back to an electric utility or the user of the electric system at a later time.

Defines "grid-connected" as meaning that the individual or corporate taxpayer has obtained an approved interconnection agreement from an electric utility for the solar energy property or whose facility does not have an existing tie to the electric grid.

Defines “solar or wind energy property” as any identifiable facility, equipment, apparatus, or the like that converts solar or wind energy to useful thermal or electrical energy for heating, cooling, or reducing the use of other types of energy that are dependent upon fossil fuel for their generation, if (1) the construction, reconstruction, or erection of the solar or wind energy property is completed by the taxpayer; or (2) the solar or wind energy property is acquired by the taxpayer if the original use of the solar or wind energy property commences with the taxpayer.

The tax credit for solar or wind energy properties is nonrefundable by default, but a taxpayer may elect to give up 30% of the credit to make it refundable. Alternatively, a taxpayer whose adjusted gross income is $20,000 or less for single filers or $40,000 or less for joint filers may elect to make the tax credit refundable without discount. If a taxpayer receives the nonrefundable credit and is unable to use all of it, the unused credit may be carried forward indefinitely until exhausted. Spouses not filing a joint return may only make the election to the extent that they would have been able to make the election if they had filed a joint return. An election once made is irrevocable.

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.

States that no credit shall be allowed after the taxable year ending December 31, 2035.

Part II establishes within the department of transportation a building energy efficiency demonstration project for building energy efficiency designs that assist the State in reaching net zero emissions.

EFFECTIVE DATE: July 1, 2050, shall apply to taxable years beginning after December 31, 2050.

STAFF COMMENTS: 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 generous about the expenditure of these funds when our kids are roasting in the public school classrooms, there isn't enough money for social service programs, or our state hospitals are on the verge of collapse?

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, or adding on to an existing program such as Hawaii Energy, may be a far less costly method to accomplish the same thing.

As a technical matter, the refundability elections in subsections (f) and (g) are written to apply for "solar or wind energy properties." This language means that the election does not apply to energy storage systems. That result may not be what was intended, and may create unnecessary complexity. If it is intended that the refundability elections apply to the credit in general, the Committee should consider restoring a good part of the language of these subsections as originally written.

Digested 4/1/2017

Kaua`i Island Utility Cooperative
Your Touchstone Energy® Cooperative

Testimony Before the House Committee on
Finance

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

Tuesday, April 4, 2017, 3:00 p.m.
Conference Room # 308

Senate Bill No. 665, SD2, HD1 – Relating to Renewable Energy

To the Honorable Sylvia Luke, Chair; Ty J.K. Cullen, Vice-Chair, and Members of the Committee:

DESCRIPTION:

Replaces the current renewable energy technology systems tax credit with tax credits for solar or wind energy property and energy storage property and is applicable to taxable years beginning after 12/31/2017. Establishes a demonstration project for building energy efficiency designs within the Department of Transportation. (SB665 HD1)

COMMENTS:

Mahalo for the opportunity to provide comments on this measure. Kaua'i Island Utility Cooperative (KIUC) has concerns about the bill as it is currently written, and the impact it may have on the financial feasibility of utility scale solar projects.

As you may know, KIUC and Tesla have partnered on a large solar-plus-storage facility, which is designed to feed 13 megawatts of stored solar power into the Kauai grid for four hours during our peak evening demand period. A second solar-plus-storage project with AES Distributed Energy is currently in the permitting phase and could be on-line as early as 2018. The AES project is even larger than Tesla: designed to deliver 20 megawatts for five hours overnight.

Once both projects are operational, KIUC will be close to achieving 60 percent renewable generation. The facilities make environmental sense, and they also offer reasonably priced power for our members. At 13.9 cents and 11 cents per KWh respectively - achieved under the current tax credit structure - the Tesla and AES projects deliver reliability and value to our 24,745 members. Utility scale projects benefit all of our members, especially those who cannot afford or for other reasons cannot install their own rooftop solar systems.

Should this bill pass in its current form, the agreement we have with AES would likely be renegotiated, with the possibility that the potential benefits to KIUC's members would be diminished to the point of project abandonment.

We strongly encourage you to reconsider this bill, especially with respect to the change in verbiage from commercial "system" eligibility to "property" eligibility. Many of our concerns would be resolved if the reference in this bill remained as "system" eligibility.

Mahalo for your consideration.

Before the House Committee on Finance
Tuesday, April 4, 2017, 3:00 p.m., Room 308
SB 665 SD 2 HD 1: Relating to Renewable Energy

Aloha Chair Luke, Vice Chair Cullen, and members of the Committee,

On behalf of the Distributed Energy Resources Council of Hawaii ("DER Council"), I would like to testify in support for SB 665 SD 2 HD 1 which creates tax incentives for customer-invested PV plus energy storage for both new installs and legacy PV systems in addition to stand alone storage. SB 665 SD 2 HD 1 also ramps down the tax credit over a 6 year period, and SB 665 SD 2 HD 1 is designed to be revenue neutral and therefore have no negative impact on the general 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 energy storage is seen as a crucial next step towards the development of a resilient and reliable electrical grid which can accommodate more renewable energy resources and help Hawaii achieve its clean energy goals. Specifically, energy storage contributes to grid modernization in a variety of ways. Energy storage can be utilized to shift peak load and supply capacity, provide many valuable ancillary services such as fast frequency response, supplemental reserves, and regulating reserves[1], delay or offset the need for grid upgrades, and provide energy back-up during emergencies. Distributed energy storage also provides the greatest number of benefits in comparison to other storage technologies, and should be seen as a key driver in Hawaii's clean energy development.[2]

In addition, distributed energy storage puts private capital to work through customer investments which provide benefits to all rate payers. Energy storage also helps keep local dollars at home by reducing the need for fossil fuels, reducing federal tax liability through the federal investment tax credit, and by supporting an industry that provides good local green jobs that cannot be outsourced.

[1] *See* Docket No. 2015-0412 Demand Response Pilot Project currently underway.
[2] *See* "The Economics of Battery Energy Storage," Rocky Mountain Institute October 2015 at 6 where distributed behind the meter battery storage provides 13 grid services—the greatest number of grid services when compared to energy storage located on the distribution and transmission system.

However, the DER Council does not support a ramp of the credit at this time. In the alternative, we recommend that the ramp should proceed with certainty and over a longer period of time than the 6 year span currently in SB 665 SD 2 to assist the industry and customers in adjusting to any new rates. The renewable energy industry has already been significantly downsized by changes in policy and interconnection issues in this last year, and the new customer self-supply tariff has seen very slow enrollment. At the same time, although the development of this new wave of energy systems has been slow to start, distributed energy stands to take Hawaii to a new era where customer invested systems are aggregated and utilized by the utility as a resource for all ratepayers.

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 665 SD2, RELATING TO RENEWABLE ENERGY
BEFORE THE
HOUSE COMMITTEE ON FINANCE
ON
TUESDAY, APRIL 4TH, 2017

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

HSEA supports the intent of SB 665 SD2 HD1 with some 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.

Broadly, tax incentives for solar energy should 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. These tax incentives will accelerate the innovation and adoption of energy storage and benefit customers, the utility, and the state.

The renewable energy investment tax credit (REITC) has been the single most successful incentive to building out renewable and sustainable technology in Hawaii since it's inception. Not only is it a significant boon to local industry, but it represents a substantial benefit to the public good in the form of greatly reduced energy costs. Very rarely do costs of any kind, such as mortgages, goods, and services, decline in Hawaii. The REITC has allowed thousands of families to benefit from lower energy costs with lower initial capital thresholds.

With this in mind, it is important to note that any significant change to this credit may have significant impacts. As has been the case throughout this session on numerous pieces of legislation, changes to exiting state statute must be hyper aware of potential changes occurring at the federal level. While the structure and potential amendments to this bill may follow the current federal tax structure, it may not be the case in the near future. The state statute should therefore be considered a type of hedge against the uncertainty of the federal situation, or rather a way for the state to safeguard itself against

macro political changes. Using this framework, any potential change to the REITC and associated statutes should be approached with the utmost caution.

We urge the committee to consider these points and support the intent of SB665 SD2 HD1.

Thank you for the opportunity to testify.

Email: communications@ulupono.com

HOUSE COMMITTEE ON FINANCE
Tuesday, April 4, 2017 — 3:00 p.m. — Room 308

Ulupono Initiative Supports SB 665 SD 2 HD 1, Relating to Renewable Energy

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

My name is Kyle Datta and I am General Partner of 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 reduce waste. 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 SB 665 SD 2 HD 1, which replaces the renewable energy systems tax credit with tax credits for energy storage, because it aligns with our goal of increasing the production of clean, renewable energy in Hawai'i, while being revenue neutral to revenue positive for the State.

In considering the alternatives for energy storage tax credits, Ulupono applies the following principles to all of the energy storage bills being addressed today:

Renewable Energy Subsidies:

- Subsidies should be used to accelerate the market penetration of energy technologies that are critically important to electric system operations, where large scale adoption of these technologies would lower the risk adjusted rates to all ratepayers.

- Subsidies should have defined sunset dates set to the expected point at which the renewable technologies are cost effective without the subsidies.

- If no clear sunset date has been set, subsidies should ramp down to allow the smaller, typically local companies time to adapt, and to prevent the precipitous loss of jobs.

- Subsidies should benefit those who have provided the source of funds used to

provide the subsidies, whether these be taxpayer or ratepayer funds.

- To that end, funds approved by the public, capital markets, and the Legislature for other purposes should not be used for subsidies, if these subsidies do not serve the same purpose.

Budget Considerations

- Renewable energy subsidies should have a total annual cap to ensure the State budget exposure is managed or attempt to be fiscally neutral (ramp down other program to pay for new program)

- This cap can be extended for maximum benefit by focusing subsidies on customer sided energy storage for two reasons:

    - First, distributed photovoltaic systems coupled with energy storage enable "smart export" which eliminates over supply in the daytime peak hours and provides dispatch capable energy and reduces or eliminates the need for costly grid upgrades including utility scale storage. Based on the most recent Power Supply Improvement Plan, *this could save ratepayers billions of dollars*.

    - When the utility or an independent power producer installs a battery on the grid, they receive the tax credits and all ratepayers pay for the remaining costs of battery. Given the cap on the state tax credit for commercial property and assume that the net, combined effect of the federal and state tax credit is 40 percent, ratepayers will pay for 60 percent of the battery. The majority of batteries are used for load shifting and some for regulation. The utility scale batteries will often only be partially utilized.

      When a residential customer puts in a battery, he/she will receive a combined 55 percent federal and state tax credit (assuming it falls within the cap) and they personally pay for the difference. If the customers provide load shifting or regulation services to the grid, they are only paid for the value to the grid of the services. Therefore, all ratepayers pay far less for grid services than they would have otherwise paid if the utility had bought the battery, because, in essence, the customer absorbs the cost of the under-utilization.

- Maximization of federal subsidies for the benefit of the state should occur before these subsidies are phased out in five years. Therefore, state energy storage subsidies should start immediately.

- Cognizant of the Department of Taxation reorganization, the definition of energy storage subsidies should fit within the current Department of Taxation schemes to the maximum extent possible.

This bill aligns closely with the criteria enumerated above (see attached table). If the Legislature believes the projected net cost of the bill is too high, it could lower the residential cap to provide more savings for the State budget.

Our financial analysis, based on the projections of new solar in the Hawaiian Electric Companies' most recent Power Supply Improvement Plans provides an indication of the total net cost exposure (incomplete because it does not cover Kaua'i). One of the biggest impacts to the State's budget is the usage of this credit by residential or commercial customers. Greater residential adoption would increase the fiscal deficit to the State because currently many residential customers use the existing tax credit in full. If residential uptake accounts for 50 percent of the new solar/storage, the net impact through 2025 of implementing this bill would be a **savings to the State of $135 million dollars** with 50 percent residential new solar/storage. However, if residential uptake accounts for 75 percent of the new solar/storage, then there would be a net cost of $1 million dollars through 2025. We caution these numbers are only indicative of the important levers that can impact the overall State budget exposure.

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,

Kyle Datta
General Partner

Before the House Committee on Finance
Tuesday, April 4, 2017, 3:00 p.m., Room 308
SB 665 SD 2 HD 1: Relating to Renewable Energy

Aloha Chair Luke, Vice Chair Cullen, and members of the Committee,

On behalf of Green Charge, I would like to testify in strong support for SB 665 SD 2 HD 1 which creates tax incentives for customer sited combined solar and energy storage and standalone storage. Additionally, SB 665 SD 2 HD 1 is designed to be revenue neutral and therefore have no negative impact on the general fund. SB 665 SD 2 HD 1 is designed to ramp down the tax credit over a 6-year period and is applicable to new installs and legacy PV solar systems.

Green Charge, an ENGIE company, is a market leader in behind-the-meter energy storage, often teaming up with local solar installers in multiple states since 2009 to provide consumer savings which are reinvested locally. The majority of Green Charge projects are on schools, providing environmental and economic benefits to the whole community of ratepayers and local taxpayers due to school district savings. Founded in 2009, Green Charge has gained valuable technical and policy insights, having worked closely with numerous utilities and regulators in storage pilot programs, behind the meter storage program design processes, demonstration projects, deployment partnership arrangements. Our company eagerly awaits the opportunity for a full-time presence and local investment in Hawaii along other ENGIE companies and we view SB 665 SD 2 HD as the key opportunity to do so.

As a fast-responding and flexible asset, energy storage solutions will play critical roles in helping Hawaii achieve its 100% clean energy and greenhouse gas emissions goals by capturing and discharging energy from renewables (on site and in front of the meter renewables), empowering customers to make smart decisions with their energy use, supporting grid needs such as ramping and voltage support, and reducing the need to rely on high emissions power sources. Simply put, a storage rebate program will help "bridge the gap" for commercial and school projects that can no longer participate in net metering or could never go solar in the first place due to physical contends. The growth of onsite storage will benefit ratepayers over time via the decrease in transmission and infrastructure investments as Hawaii continues to drive its national and international leadership in setting up a "grid of the future" with a focus on clean, smart and decentralized generation leading to jobs that can't be exported.

However, Green Charge does not support a ramp of the credit at this time. In the alternative, we recommend that the ramp should proceed with certainty and over a longer period of time than the 6-year span currently in SB 665 SD 2 to assist the industry and customers in adjusting to any new rates. This will create stability and encourage greater investment and growth by the clean energy industry.

4151 Burton Drive
Santa Clara, CA 95054

800-426-5010

GreenCharge.Net

Thank you for the opportunity to testify and please feel free to contact me at jmandell@greencharge.net.

Juliana Mandell
Market Development Manager
Green Charge http://www.greencharge.net/

April 3, 2017

To: Representative Sylvia Luke, Chair
Members, House Committee on Finance

From: Tim Shestek, Senior Director
State Affairs

RE: SB 665 SD2 HD1 – Proposed Amendments

The American Chemistry Council (ACC) is writing to offer our comments and proposed amendments to SB 665 SD2 HD1, which would establish a building energy efficiency demonstration project within the Department of Transportation.

ACC member companies manufacture the raw materials for a myriad of industries, including products that help make buildings and homes more energy efficient. The business of chemistry employs over 800,000 workers, making it one of the largest US industries in terms of employment. Chemistry is creating solutions that empower Americans to improve energy efficiency, making our nation's energy supplies go further while lowering energy costs. Plastic foam insulation, solar panels, and house wrap are all energy efficiency products made possible through chemistry.

ACC advocates for the adoption of the latest energy efficiency codes for both residential and commercial construction. We have been an active supporter of the Energy Efficient Codes Coalition (EECC), a collective effort of business interests, architects, affordable housing advocates, utilities and environmental organizations working together to promote energy efficiency building codes.

While we think there is real value in setting forth a pilot program to demonstrate the cost-effectiveness of energy efficiency, we would like to see other key elements of high efficiency buildings added to the prescriptive list and offer the following attached amendments. Incorporating certain energy efficiency elements into a building without consideration for the integrity of the building's thermal envelope could undermine many of the efficiency gains this bill seeks to achieve. Efficiency improvements that take into account the building's envelope are not only more cost-effective in achieving long-term savings, but improve the building's quality, comfort and value.

We also offer an amendment relating to roofing materials to ensure that the materials used demonstrate lasting energy savings and aren't solely determined by color or paint. While color does have some affect, it should not be the only factor used to determine the effectiveness of these products.

The building sector is the single largest user of energy in the US, with commercial and residential buildings accounting for nearly 40% of total US energy consumption. As we look for ways to reduce demand and engage in more conservation efforts, adopting and implementing energy efficiency policies must remain at the forefront of those discussions.

Thank you in advance for considering our views. If you have any questions or comments, please do not hesitate to contact me at 916-448-2581 or via email at Tim_Shestek@americanchemistry.com. You may also contact ACC's Hawaii based representatives Red Morris, Ross Yamasaki or Bruce Coppa at 808-531-4551.

PART II

SECTION 3. (a) There is established within the department of transportation a building energy efficiency demonstration project for building energy efficiency designs that assist the State in reaching net zero emissions.

(b) The department of transportation shall identify one state land site and construct a new state building or remodel an existing state facility to create a facility or building with net zero emissions. The department of transportation shall follow the United States Department of Energy's description of a Zero Energy Ready Home, which is a home with a renewable energy system that can offset all or most of its 'annual energy consumption. The department of transportation shall work with the department of business, economic development, and tourism to identify a site.

(c) In developing, constructing, and maintaining the new state building following the guidelines established under subsection (b), the department of transportation with the department of business, economic development, and tourism shall conduct an analysis of the cost and benefits of adopting the building energy efficiency designs incorporated into the building or facility, including the fiscal consequences to the State and the related cost savings from energy efficiency. The department shall include payback periods of investment, taking into account the cost savings of the program. Building energy efficiency designs shall include, but not be limited to, the following when applicable:

(1) ~~Lighter colored roofing material~~ Durable cool roof materials;

(2) Windows that use dynamic or electro chromatic glazing with the ability to change performance properties;

(3) Sensor-based lighting control systems;

(4) High efficiency ventilation or air conditioning units;

(5) Incorporation of natural light;

(6) Renewable energy systems; ~~and~~

(7) Waste to energy conversion systems~~.~~;

(8) Insulation and thermal envelope components;

(9) Reduced envelope air leakage; and

(10) Roofline insulation.

(d) The department of transportation shall submit a report to the legislature of the analysis conducted pursuant to subsection (c) no later than twenty days prior to the convening of the regular session of 2020.

Before the House Committee on Finance
Tuesday, April 4, 2017, 3:00 p.m., Room 308
SB 665 SD 2 HD 1: Relating to Renewable Energy

Aloha Chair Luke, Vice Chair Cullen, and members of the Committee,

On behalf of Stem, Inc. (Stem), I would like to testify in support for SB 665 SD 2 HD 1 which creates tax incentives for customer-invested PV plus energy storage for both new installs and legacy PV systems in addition to stand alone storage. SB 665 SD 2 HD 1 also ramps down the current solar tax credit over a 6 year period, and SB 665 SD 2 HD 1 is designed to be revenue neutral and therefore have no negative impact on the general fund.

Stem is a leading provider of advanced energy storage to small and medium businesses in Hawaii and across the mainland. Stem is currently partnered with Hawaiian Electric Company ("HECO") on a 1MW renewables integration project to demonstrate how distributed energy storage can help the utility reach the State's lofty renewable energy goals. As part of this pilot, Stem is currently serving 27 customers on Oahu with grid-connected, advanced energy storage systems. These customers are paying to be part of this pilot, and they save more than they pay on their electricity bills. When not in use, their batteries are also used to support the grid.

The investment in energy storage is a vital next step towards the development of a resilient and reliable electrical grid which can accommodate more renewable energy resources and help Hawaii achieve its clean energy goals.

Specifically, energy storage contributes to grid modernization in a variety of ways: Energy storage can be utilized to shift peak load and supply capacity; it can provide much-needed ancillary services, that are currently provided by fossil fuel generators, such as frequency response, supplemental reserves, and regulating reserves[1]; it can delay or offset the need for grid upgrades; and it can provide energy back-up during emergencies. Distributed energy storage also provides the greatest number of benefits in comparison to other storage technologies, and should be seen as a key driver in Hawaii's clean energy development.[2]

In addition, distributed energy storage puts private capital to work through customer investments which provide benefits to all rate payers. Stem's customers, for example, get battery systems that help them lower their bills but they also allow the utility to tap into that fleet of batteries as a single resource when the grid needs it. Energy storage helps keep local dollars at home by

[1] *See* Docket No. 2015-0412 Demand Response Pilot Project currently underway.
[2] *See* "The Economics of Battery Energy Storage," Rocky Mountain Institute October 2015 at 6 where distributed behind the meter battery storage provides 13 grid services—the greatest number of grid services when compared to energy storage located on the distribution and transmission system.

reducing the need for fossil fuels and by creating good local green jobs that cannot be outsourced.

As a final note, Stem does not support a ramp of the existing solar credit at this time. In the alternative, we recommend that the ramp should proceed with certainty and over a longer period of time than the 6 year span currently in SB 665 SD 2 HD 1 to assist the industry and customers in adjusting to any new rates. The renewable energy industry has already been significantly downsized by changes in policy and interconnection issues in this last year, and the new customer self-supply tariff has seen very slow enrollment. At the same time, although the development of this new wave of energy systems has been slow to start, distributed energy stands to take Hawaii to a new era where customer invested systems are aggregated and utilized by the utility as a resource for all ratepayers.

Thank you for the opportunity to provide this testimony.

Tad Glauthier
VP of Hawaii Operations
Stem, Inc.

TESTIMONY REGARDING SB 665, SD2, HD1
being heard by the House Committee on Finance
on Tuesday, April 4, 2017 at 3:00 p.m.
In Conference Room 308

Aloha Chair Luke and members of the Committee:

Thank you for the opportunity to provide testimony regarding SB 665 SD2, HD1; which replaces the current Renewable Energy Technology System Tax Credit (REITC) with tax credits for solar energy property, wind energy property, and energy storage property.

Tesla is supportive of the bill as it pertains to expanding the availability of tax credits to include energy storage, as well as the revised framework which would reduce the value of the tax credit over time. At the same time, as discussed below, we have serious concerns regarding the language that would transition the applicability of the tax credit from "systems" to" property". This language change creates significant ambiguity regarding the value of the tax credit program and could undermine its efficacy in driving adoption of larger scale commercial projects if implemented as proposed.

Energy storage has a significant role to play in the future of Hawaii's energy system. In the context of high penetrations of renewables, both distributed and utility scale, energy storage represents an increasingly important asset class that can help integrate these resources into the system. Energy storage effectively transforms intermittent renewables that generate energy based on the rising and setting of the sun or the vagaries of the wind, into a fully dispatchable resource that is available when it is needed by the grid and customers. As Hawaii transitions toward a future where 100% of the State's energy needs are met from renewables, it is vitally important that the State take steps today to support the deployment of energy storage systems.

In addition to the fundamental role that energy storage can play in facilitating increased renewable adoption, energy storage also creates a more dynamic and efficient grid. When deployed behind the customer meter, it enables customers to more easily respond to time-of-use rates or other dynamic tariff and demand response programs. Similarly, grid operators can utilize energy storage to more effectively and efficiently address system peak needs, by strategically locating storage and using it as an alternative to more conventional and bulky investments in transmission and distribution facilities, or additional generation.

By modifying the tax credit to include energy storage, both stand-alone and paired with solar, the proposed reforms in the bill will improve the economics of storage projects in the near and medium term, helping the industry scale and bring down costs. Tax credit, or other incentive support, also represents a critical bridge to a future where the regulatory environment has caught up with the capabilities of the technology. While energy storage is recognized as being capable of addressing a huge number of use cases, current regulations and market rules limit these use cases to a relative few.

As we look to a future where energy storage costs have declined further and more use cases are unlocked, it is reasonable to step down the level of the tax credit as proposed by SB 665, SD2, HD1. For this reason we are supportive of the approach the bill takes in terms of the structure of the tax credit, whereby the percentage of storage costs that can be claimed and receive tax credit support declines based on when eligible technologies are deployed.

While Tesla supports modifying the existing tax credit program to include energy storage, and also the inclusion of a gradual step down in credit value as the market for storage matures, we do have substantial reservations regarding the language in the bill that changes the applicability of the tax credit from "systems" to "property". While seemingly innocuous, because any language changes will have to be implemented, in this case by the Department of Taxation ("DoTax"), this language change creates significant uncertainty in terms of how the tax credit regime, as proposed in SB665, SD2, HD1 will be administered. We note that DoTax submitted testimony also raising this issue when the bill was heard by the Senate's Committee on Ways and Means on February 27, 2017. In its testimony, DoTax observed that the language created ambiguity that it would need to address. Absent an understanding of how this language change will affect the ultimate administration and value of credits that can be secured through the program, it is difficult for market participants to assess the implications. It also seems likely to delay the availability of any tax credits pending DoTax's implementation of the bill's requirements.

The simplest thing to address this would be to revert the language back to its current form, such that throughout the bill the language would continue to refer to "systems". This will ensure that the other changes proposed by the bill can be more easily implemented and its implications more readily understood by potential applicants for the credit. To the degree the intent of this language change is to effectively limit the number of tax credits that can be claimed for any given project, Tesla believes one of the inevitable results will be to force commercial entities interested in deploying solar and/or energy storage to deploy much smaller, sub-optimally-sized projects.

In short, although we support certain elements of SB665, SD2, HD1 specifically as the bill pertains to expanding tax credit support for energy storage systems, we believe that it still needs work, in particular to ensure the bill does not undercut the ability of commercial entities from deploying renewable and storage projects sized to meet their energy needs. Given these concerns and the general challenges with administering a tax credit program, for purposes of supporting energy storage systems, we prefer the approach taken in HB 1593 HD 1.

Thank you again for the opportunity to submit this Testimony.

THE ALLIANCE FOR SOLAR CHOICE

LATE

HOUSE COMMITTEE ON FINANCE

April 4, 2017, 3:00 P.M.
(Testimony is 1 page long)

TESTIMONY IN SUPPORT OF SB 665 SD2 HD1, WITH A PROPOSED AMENDMENT

Aloha Chair Luke and Members of the Committee:

The Alliance for Solar Choice (TASC) respectfully supports SB 665 SD2 HD1, relating to renewable energy. This measure replaces the existing renewable energy tax credit with a system that favors the deployment of energy storage. However, TASC supports either (1) significant amendments to the bill or (2) pushing alternative approaches, such as what was proposed by HB 1593.

TASC supports smart, prudent incentives for energy storage. However, as drafted, SB 665 may not increase the current incentive for people deploying solar & storage. Currently, Hawaii's tax credit applies per "system," which has been administratively defined as a 5kW photovoltaic system. So if a Hawaii resident installs a 10kW system, they're entitled to a credit cap of up to $10,000.

Under the current language, a Hawaii resident is limited to the monetary cap regardless of the size of the installation. On page 14, lines 2-3, the measure states it shall be interpreted in accordance with the pertinent Internal Revenue Code sections. This bill also eliminates the word "system" and replaces it with term "property." The federal interpretation of "property" results in a one-time credit for an entire installation. Applying that logic to the HD1 — with a cap not found in federal law — it is likely that the monetary cap would always apply regardless of the size of the system.

Put another way, a typical solar installation would see an approximate 30% reduction in the total tax credit. A typical solar installation with energy storage would see a minimal increase in the incentive amount.

Under this measure, the only type of installation that would see a significant incentive would be an energy storage device without any associated solar system. While this may be a desirable policy goal, we suggest pursuing options that encourage the deployment of both energy storage and clean energy, whenever possible.

Respectfully, we suggest this Committee leave the current definitions of "system" in place. Or, in the alternative, substitute the language found in HB 1593.

Mahalo for the opportunity to submit these comments.

DAVID Y. IGE
GOVERNOR

LATE

Testimony by:

FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

April 4, 2017
3:00 p.m.
State Capitol, Room 308

S.B.665, S.D.2, H.D.1
RELATING TO ENERGY EFFICIENCY.

House Committee on Finance

The Department of Transportation (DOT) **supports** Part II of this bill to conduct a building energy efficiency pilot program.

The DOT, in partnership with the Department of Business, Economic Development and Tourism has implemented several successful energy savings projects and is very interested in reaching net zero emissions.

With this partnership, the DOT intends to submit a report to the legislature on recommended best practices towards energy efficiency standards prior to implementing its building energy efficiency pilot program.

Thank you for the opportunity to provide testimony.

finance8 - Joy

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Monday, April 3, 2017 4:46 PM
To: FINTestimony
Cc: david.j.rodriguez@hawaii.gov
Subject: *Submitted testimony for SB665 on Apr 4, 2017 15:00PM*

SB665
Submitted on: 4/3/2017
Testimony for FIN on Apr 4, 2017 15:00PM in Conference Room 308

Submitted By	Organization	Testifier Position	Present at Hearing
Ford Fuchigami	Department of Transportation	Support	Yes

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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LATE

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Statement of
LUIS P. SALAVERIA
Director
Department of Business, Economic Development and Tourism
before the
HOUSE COMMITTEE ON FINANCE
Tuesday, April 4, 2017
3:00 p.m.
State Capitol, Conference Room 308

in consideration of
SB 665, SD 2, HD 1
RELATING TO RENEWABLE ENERGY.

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

The Department of Business, Economic Development and Tourism (DBEDT) **provides comments on Part I and supports Part II** of SB 665, SD 2, HD1.

Part I

Part I replaces the current renewable energy technology systems tax credit (RETITC) with tax credits for solar energy property, wind energy property, and energy storage property; and applies to taxable years beginning after December 31, 2017 and sunsets December 31, 2035.

DBEDT recognizes that energy storage can play an important role in achieving Hawaii's clean energy goals and believes energy storage can provide benefits to the entire electric system if the appropriate energy storage technologies are implemented and used in an optimal manner. However, DBEDT has concerns whether tax credits ought to be the preferred vehicle for incentivizing storage given the various ongoing regulatory proceedings that could serve as incentives and market drivers for storage and be more directly tied to the necessary and most cost-effective resources to meet our State's clean energy goals.

To elaborate, the demand for storage will be influenced by the HECO Companies' Power Supply Improvement Plan (PSIP); once approved it will provide guidance for the type of storage needed (e.g. utility-scale, commercial, residential), how much capacity is needed, and what operations or services are required to support the electric system (e.g. load shifting, contingency, regulation). Also, the Distributed Energy

Resources docket, Demand Response docket, and Community-Based Renewable Energy (CBRE) Program docket may result in modifying or creating new tariffs or rate structures that could provide the financial mechanisms needed to incentivize energy storage.

For example, the Public Utilities Commission's recently released their proposed CBRE program framework for review and comments (reference Order No. 34388, Docket No. 2015-0389). The proposed CBRE Program offers varying bill credit rates for three time periods and peaker facilities. A solar photovoltaic (PV) system without storage may be limited to the mid-day period (9 am to 5 pm), which offers the lowest bill credit rate. However, if a storage device is used this system could take advantage of the off-peak, on-peak, or peaker rates which could be up to 87% higher than the rates for the mid-day period. Thus, if adopted this program could provide a financial incentive to encourage the adoption of storage. If you now combine this measure's tax credit of up to $500,000 PLUS the higher credit rate from the proposed CBRE Program, this measure will be creating a double incentive for a commercial system.

If the Legislature moves forward with this bill, DBEDT recommends removing Section 235-12.5 (a)(3), which provides tax credits for grid-connected solar energy properties that generate electricity and incorporate an energy storage property, and removing Section 235-12.5 (a)(5), which provides tax credits for each combined energy storage and solar energy system. It is unclear why these subsections are included as this bill also offers tax credits for solar energy properties that generate electricity in Section 235-12.5 (a)(2), and energy storage properties in Section 235-12.5 (a)(4).

Finally, given the limited State budget and 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, and 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.

Part II

Part II directs that the Department of Transportation (DOT), with assistance from DBEDT, shall implement an energy efficiency demonstration project for building energy efficiency designs that assist the State in reaching net zero emissions. The DOT and DBEDT shall conduct an analysis of the cost and benefits of adopting the building energy efficiency designs. The DOT shall submit a report to the 2020 legislature; an unspecified amount is appropriated out of the special fund to be expended by the DOT.

DBEDT will be pleased to work with and assist DOT.

Thank you for the opportunity to offer these comments on SB 665, SD 2, HD 1.