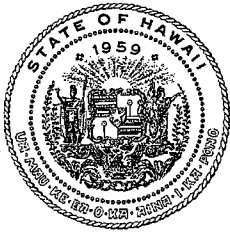


**HB 2005 HD1**



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

LINDA LINGLE  
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Statement of  
**THEODORE E. LIU**  
Director

Department of Business, Economic Development, and Tourism  
before the

**SENATE COMMITTEE ON  
ENERGY AND ENVIRONMENT**

Tuesday, March 11, 2008

2:45 p.m.

State Capitol, Conference Room 414

in consideration of

**HB2005,HD1**

**RELATING TO RENEWABLE ENERGY TECHNOLOGIES.**

Chair Menor, Vice Chair Hooser, and Members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) supports of HB2005HD1, which revises the current definitions of solar systems to include new technologies being developed. We defer to the Department of Taxation on tax implications, and concur with their recommended revisions.

We are also proposing that new sections be added to the bill. Our recommended additions are attached.

There are several technologies that use the sun to produce electricity. Photovoltaic systems are currently the most common, but there area also concentrating solar power systems of various types and several new technologies under development. Energy from the sun can also be used to offset the use of heat or electricity for heating, drying, or air conditioning. Simplifying the tax incentive to be as inclusive as possible could increase innovation and use of our solar energy resource.

We also recommend adding two sections to the bill, to require the electric utilities to use renewable resources only to meet the renewable portfolio standard.

The increased use and development of renewable energy resources will greatly benefit Hawaii's economy, environment, energy security and sustainability, in many ways including:

1. Reduced reliance on imported oil supplies and fewer dollars leaving Hawaii's economy;
2. Reduced cost of fuel for electricity generation, and reduced exposure to the volatile oil prices in the world market;
3. Increased diversification of the electricity generation portfolio, reducing Hawaii's risk to the impact of oil supply shortage and uncertainty;
4. Economic benefits including increased economic activity, economic development and diversification, and job creation; and
5. Reduced greenhouse emissions and the attendant negative impact on climate change and global warming, and on Hawaii's environment.

The Governor has set the vision for a 20% renewable energy by 2020 to achieve energy security, independence, and sustainability. Additionally, the Hawaii Clean Energy Initiative, a joint endeavor with the U.S. Department of Energy and the State of Hawaii, has a vision of 70% of Hawaii's energy coming from renewable resources within a generation (2030). The importance of energy security and self-sustainability for our State cannot be overemphasized, and the long-term path and effort to achieve these objectives can no longer be delayed.

The significance of the proposed revisions in achieving Hawaii's energy goals cannot be overstated. In 2006, the Hawaii utilities used fossil fuel to generate over ninety per cent of the total electricity they sold, which represented almost twenty-five per cent of Hawaii's total oil imports. Only about eight per cent of the electricity sold was generated from renewable resources.

Any new fossil fuel-based generation installed in the future will have a useful lifetime of 30 to 50 years or more, which will perpetuate Hawaii's dependence on imported oil, compromising Hawaii's future energy security and sustainability as well as the attendant negative impact on Hawaii's economy and environment. Furthermore, the price risks of Hawaii's heavy dependence on imported fossil fuel for electricity generation are currently borne entirely by Hawaii's consumers. To the extent possible, future requirements for additional electricity generation must be met by electricity generation from renewable resources. While these will not necessarily be less expensive than petroleum-based power, they will certainly be more stable in price.

There will be challenges in weaning the utilities from its heavy dependence on imported fossil fuels for electricity generation. However, the utilities are already moving in that direction. The new 110 MW peaking unit planned in Campbell Industrial Park by 2009, will use biofuels. The utilities' Renewable Portfolio Standard (RPS) Reports for 2006 indicated other renewable energy projects that the utilities are engaged in or working on in their efforts to achieve a more sustainable future.

Hawaii can achieve the proposed objective. Hawaii is blessed by an abundance of renewable energy resources from the sun, wind, ocean, and earth. The sun provides abundant and free energy resource for solar water heating and for generation of electricity. Assessment of opportunities to harvest our ample wind resources have been identified and continued to be updated. The use of wave energy for electricity generation is being tested and explored. We have large untapped geothermal resources on the Big Island. The potential for expanding the waste-to-energy capacity on Oahu is being considered and explored by the City and County of Honolulu.

Hawaii's current renewable portfolio standard (RPS) includes electricity energy savings from energy efficiency programs. DBEDT unequivocally supports all cost-effective, technically

feasible energy efficiency programs and conservation technologies, and does not in any way prevent, preclude, or inhibit the use of such programs and technologies for decreasing Hawaii's dependence on imported fossil fuels. The establishment of separate energy efficiency standards is an important policy option that deserves serious consideration on its own merits.

The purpose of the proposed additions is to ensure that more renewable sources will be deployed to meet the renewable portfolio standard and increase the use of renewable energy sources. Of the twenty-nine states with RPS, there are only six other states besides Hawaii, that include energy efficiency savings in their RPS. Energy savings from energy efficiency programs decrease electricity demand, but do not increase deployment of renewable sources for electricity generation. Further, energy savings from energy efficiency programs result in double counting the energy savings in calculating the renewable portfolio standard achieved by the utilities. In 2006, the Hawaii utilities reported achieving a renewable portfolio standard of almost 14%, which includes renewable generation and energy efficiency and conservation savings. However, the utilities' actual electricity generation from renewable energy sources was only 8.2%.

This adjustment of the renewable portfolio standard to include only energy from renewable sources will help Hawaii to increase the use and development of renewable energy resources.

Thank you for the opportunity to offer these comments.

b

SUGGESTED ADDITIONS:

SECTION 2. Section 269-91, Hawaii Revised Statutes, is amended to read as follows:

"§269-91 [{}Definitions[{}]. For the purposes of this [{}part[{}]:

"Biofuels" means liquid or gaseous fuels produced from organic sources such as biomass crops, agricultural residues and oil crops, such as palm oil, canola oil, soybean oil, waste cooking oil, grease, and food wastes, animal residues and wastes, and sewage and landfill wastes.

"Cost-effective" means the ability to produce or purchase electric energy or firm capacity, or both, from renewable energy resources at or below avoided costs consistent with the methodology set by the public utilities commission in accordance with section 269-27.2.

"Electric utility company" means a public utility as defined under section 269-1, for the production, conveyance, transmission, delivery, or furnishing of power.

"Renewable electrical energy" means[+]

- ~~(1) Electrical]~~ Electrical energy generated using renewable energy as the source; and
- (2) Electrical energy savings brought about by the use of renewable displacement or off-set technologies, including solar water heating, seawater air-conditioning district cooling systems, solar air-conditioning, and customer-sited, grid-connected renewable energy systems[+; or].

~~[(3)] Electrical energy savings brought about by the use of energy efficiency technologies, including heat pump water heating, ice storage, ratepayer-funded energy efficiency programs, and use of rejected heat from co-generation and combined heat and power systems, excluding fossil-fueled qualifying facilities that sell electricity to electric utility companies and central station power projects].~~

"Renewable energy" means energy generated or produced utilizing the following sources:

- (1) Wind;
- (2) The sun;
- (3) Falling water;
- (4) Biogas, including landfill and sewage-based digester gas;
- (5) Geothermal;
- (6) Ocean water, currents, and waves;
- (7) Biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste;
- (8) Biofuels; and
- (9) Hydrogen produced from renewable energy sources.

"Renewable portfolio standard" means the percentage of electrical energy sales that is ~~[represented]~~ generated by renewable ~~[electrical]~~ energy."

SECTION 3. Section 269-92, Hawaii Revised Statutes, is amended to read as follows:

"§269-92 Renewable portfolio standards. (a) Each electric utility company that sells electricity for consumption in the State shall establish a renewable portfolio standard of:

- (1) Ten per cent of its net electricity sales by December 31, 2010;
- (2) Fifteen per cent of its net electricity sales by December 31, 2015; and
- (3) Twenty per cent of its net electricity sales by December 31, 2020.

(b) The public utilities commission may establish standards for each utility that prescribe what portion of the renewable portfolio standards shall be met by specific types of renewable [electrical] energy resources; provided that:

- (1) ~~{At least fifty per cent of the}~~ The renewable portfolio standards shall be met by electrical energy generated using renewable energy as the source;
- (2) Where electrical energy is generated or displaced by a combination of renewable and nonrenewable means, the proportion attributable to the renewable means shall be credited as renewable energy; and
- (3) Where fossil and renewable fuels are co-fired in the same generating unit, the unit shall be considered to generate renewable electrical energy (electricity) in direct proportion to the percentage of the total heat value represented by the heat value of the renewable fuels.

(c) If the public utilities commission determines that an electric utility company failed to meet the renewable portfolio



standard, after a hearing in accordance with chapter 91, the utility shall be subject to penalties to be established by the public utilities commission; provided that if the commission determines that the electric utility company is unable to meet the renewable portfolio standards due to reasons beyond the reasonable control of an electric utility, as set forth in subsection (d), the commission, in its discretion, may waive in whole or in part any otherwise applicable penalties.

(d) Events or circumstances that are outside of an electric utility company's reasonable control may include, to the extent the event or circumstance could not be reasonably foreseen and ameliorated:

- (1) Weather-related damage;
- (2) Natural disasters;
- (3) Mechanical or resource failure;
- (4) Failure of renewable [~~electrical~~] energy producers to meet contractual obligations to the electric utility company;
- (5) Labor strikes or lockouts;
- (6) Actions of governmental authorities that adversely affect the generation, transmission, or distribution of renewable electrical energy under contract to an electric utility company;
- (7) Inability to acquire sufficient renewable electrical energy due to lapsing of tax credits related to renewable energy development;
- (8) Inability to obtain permits or land use approvals for renewable [~~electrical~~] energy projects;

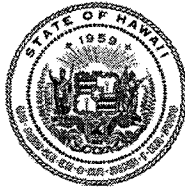
- (9) Inability to acquire sufficient cost-effective renewable [~~electrical~~] energy;
- (10) Substantial limitations, restrictions, or prohibitions on utility renewable [~~electrical~~] energy projects; and
- (11) Other events and circumstances of a similar nature."

SECTION 4. Statutory material to be repealed is bracketed and stricken. New statutory material is underscored.

SECTION 5. This Act shall take effect upon its approval, and shall apply to taxable years beginning after December 31, 2007.

LINDA LINGLE  
GOVERNOR

JAMES R. AIONA, JR.  
LT. GOVERNOR



KURT KAWAFUCHI  
DIRECTOR OF TAXATION

SANDRA L. YAHIRO  
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DEPARTMENT OF TAXATION  
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## SENATE COMMITTEE ON ENERGY & ENVIRONMENT

### TESTIMONY REGARDING HB 2005 HD 1 RELATING TO RENEWABLE ENERGY TECHNOLOGIES

TESTIFIER: KURT KAWAFUCHI, DIRECTOR OF TAXATION (OR DESIGNEE)

DATE: MARCH 11, 2008

TIME: 2:45PM

ROOM: 414

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This bill would replace the photovoltaic energy system category of § 235-12.5, HRS with a newly defined category of solar electric energy systems.

The House Committee on Finance amended this measure to allow for the transfer or sale of the tax credit.

The House of Representatives passed this measure on third reading.

The Department of Taxation **opposes the current draft** of this legislation; however **supports redefining the renewable energy systems** provided by this section of Chapter 235, HRS.

#### **I. NEW PROPOSED DEFINITION OF SOLAR ELECTRIC SYSTEMS.**

The Department **does not like this additional definition** and prefers that a definition in this credit focus on what is put into a machine rather than an approach based upon what the machine creates. **In short, the Department prefers defining the technology based upon inputs; not outputs.** As the law is currently drafted, renewable energy technologies are defined based upon the type of renewable resource that enters a system (*e.g.*, wind, sun, light). This legislation would amend the law to add an additional credit component for what is created (*e.g.*, solar water heating, solar air conditioning, solar space heating, solar drying, and solar process heat system).

#### **II. AMENDMENT TO ALLOW TRANSFER OF CREDIT.**

The Department is strongly opposed to any provision that allows Hawaii tax credits to be sold, assigned, or transferred. Allowing taxpayers to market or sell their tax credits is fundamentally poor tax policy. Selling tax credits can be subject to abuse and suspect motivation by parties involved.

### III. SUGGESTED AMENDMENTS TO CLARIFY THE CREDIT BASED UPON TECHNOLOGY DEVELOPMENTS.

The Department understands that this legislation is based primarily upon technological developments in renewable energy systems that produce electricity from sunlight and an attempt to reconcile the different credit caps and amounts for the varying technologies. **The Department supports redefining the technologies for purposes of this credit.** The Department suggests the Committee consider making the following amendments to the measure as an SD 1 to clarify the application of the renewable energy technologies tax credit to conform to current and future uses of sunlight and other renewable sources.

### IV. REVENUE IMPACT

H.B. 2005 H.D. 1 as drafted results in the following revenue loss:

- FY2009 (loss): \$315,000
- FY2010 (loss): \$2.3 million
- FY2011 (loss): \$1.3 million
- FY2012 and annually thereafter (loss): \$2.3 million

The Department's proposed SD 1 results in the following revenue loss:

- Annual loss of \$500,000 beginning in FY2010.

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### **PROPOSED SD 1 AMENDMENTS**

SECTION 1. Section 235-12.5, Hawaii Revised Statutes, is amended as follows:

**"§235-12.5 Renewable energy technologies; income tax credit.** (a) When the requirements of subsection (c) are met, each individual or corporate taxpayer that files an individual or corporate net income tax return for a taxable year may claim a tax credit under this section against the Hawaii state individual or corporate net income tax. The tax credit may be claimed for every eligible renewable energy technology system that is installed and placed in service in the [State] state by a taxpayer during the taxable year. This credit shall be available for systems installed and placed in service in the [State] state after June 30, 2003. The tax credit may be claimed as follows:

(1) [~~Solar thermal~~] For each solar energy system[s], thirty-five percent of the actual cost or the cap amount determined in subsection (b), whichever is less; and for:

- (A) ~~Single-family residential property: thirty-five per cent of the actual cost or \$2,250, whichever is less;~~
- (B) ~~Multi-family residential property: thirty-five per cent of the actual cost or \$350 per unit, whichever is less; and~~
- (C) ~~Commercial property: thirty-five per cent of the actual cost or \$250,000, whichever is less;~~

(2) [~~Wind-powered~~] For each wind-powered energy system[s], twenty percent of the actual cost or the cap amount determine in subsection (b), whichever is less. for:

- (A) ~~Single-family residential property: twenty per cent of the actual cost or [\$1,500] the cap amount determined in subsection (g), whichever is less;~~
- (B) ~~Multi-family residential property: twenty per cent of the actual cost or \$200 per unit, whichever is less; and~~

- ~~(C) Commercial property: twenty per cent of the actual cost or \$500,000, whichever is less; and~~
- ~~(3) [Photovoltaic] **Solar electric** energy systems for:~~
  - ~~(A) Single family residential property: thirty five per cent of the actual cost or \$5,000, whichever is less;~~
  - ~~(B) Multi family residential property: thirty five per cent of the actual cost or \$350 per unit, whichever is less; and~~
  - ~~(C) Commercial property: thirty five per cent of the actual cost or \$500,000, whichever is less;]~~

~~provided that multiple owners of a single system shall be entitled to a single tax credit; and provided further that the tax credit shall be apportioned between the owners in proportion to their contribution to the cost of the system.~~

~~In the case of a partnership, S corporation, estate, or trust, the tax credit allowable is for every eligible renewable energy technology system that is installed and placed in service in the [State] state by the entity. The cost upon which the tax credit is computed shall be determined at the entity level. Distribution and share of credit shall be determined pursuant to section 235-110.7(a).~~

~~(b) The amount of credit allowed for each eligible renewable energy technology system shall not exceed the applicable cap amount, which is determined as follows:~~

- ~~(1) If the primary purpose of the solar energy system is to use energy from the sun to heat water for household use, then the cap amounts shall be:~~
  - ~~(A) \$2,250 per system for single-family residential property;~~
  - ~~(B) \$350 per unit per system for multi-family residential property; and~~
  - ~~(C) \$250,000 per system for commercial property.~~
- ~~(2) For all other solar energy systems, the cap amounts shall be:~~
  - ~~(A) \$5,000 per system for single-family residential property;~~
  - ~~(B) \$350 per unit per system for multi-family residential property; and~~
  - ~~(C) \$500,000 per system for commercial property.~~
- ~~(3) For all wind-power energy systems, the cap amounts that apply shall be:~~
  - ~~(A) \$1,500 per system for single-family residential property;~~
  - ~~(B) \$200 per unit per system for multi-family residential property; and~~
  - ~~(C) \$500,000 per system for commercial property.~~

~~For purposes of this section, "household use" means any use that heated water is commonly put to in a residential setting, and includes any commercial application of those uses.~~

~~(c) Multiple owners of a single system shall be entitled to a single tax credit and the tax credit shall be apportioned between the owners in proportion to their contribution to the cost of the system.~~

~~In the case of a partnership, S corporation, estate, or trust, the tax credit allowable is for every eligible renewable energy technology system that is installed and placed in service in the state by the entity. The cost upon which the tax credit is computed shall be determined at the entity level. Distribution and share of credit shall be determined pursuant to section 235-110.7(a).~~

~~[(b)] (d) For the purposes of this section:~~

~~"Actual cost" means costs related to the renewable energy technology systems under subsection (a), including accessories and installation, but not including the cost of consumer incentive premiums unrelated to the operation of the system or offered with the sale of the system and costs for which another credit is claimed under this chapter.~~

~~"Renewable energy technology system" means a new system that captures and converts a renewable source of energy, such as wind [, heat (solar thermal), or light (photovoltaic) from the sun] or energy from the sun, into:~~

- ~~(1) A usable source of thermal or mechanical energy;~~
- ~~(2) Electricity; or~~

(3) Fuel.

**"Solar electric energy systems" include solar thermal electric and photovoltaic systems.**

"Solar or wind energy system" means any identifiable facility, equipment, apparatus, or the like that converts ~~[insolation]~~ energy from the sun 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.

~~"Solar thermal energy systems" include solar water heating, solar air conditioning, solar space heating, solar drying, and solar process heat systems.~~

~~[(e)]~~ (e) For taxable years beginning after December 31, 2005, the dollar amount of any utility rebate shall be deducted from the cost of the qualifying system and its installation before applying the state tax credit.

~~[(d)]~~ (f) The director of taxation shall prepare any forms that may be necessary to claim a tax credit under this section, including forms identifying the technology type of each tax credit claimed under this section, whether for solar thermal, photovoltaic from the sun, or wind. The director may also require the taxpayer to furnish reasonable information to ascertain the validity of the claim for credit made under this section and may adopt rules necessary to effectuate the purposes of this section pursuant to chapter 91.

~~[(e)]~~ (g) If the tax credit under this section exceeds the taxpayer's income tax liability, the excess of the credit over liability may be used as a credit against the taxpayer's income tax liability in subsequent years until exhausted. All claims for the tax credit under this section, including amended claims, shall be filed on or before the end of the twelfth month following the close of the taxable year for which the credit may be claimed. Failure to comply with this subsection shall constitute a waiver of the right to claim the credit.

~~[(f)]~~ (h) By or before December, 2005, to the extent feasible, using existing resources to assist the energy-efficiency policy review and evaluation, the department shall assist with data collection on the following:

- (1) The number of renewable energy technology systems that have qualified for a tax credit during the past year by:
  - (A) Technology type (~~solar thermal, solar thermal electric, photovoltaic from the sun, sun~~ and wind); and
  - (B) Taxpayer type (corporate and individual); and
- (2) The total cost of the tax credit to the ~~[State]~~ state during the past year by:
  - (A) Technology type; and
  - (B) Taxpayer type.

~~(g) A taxpayer who installs and places in service an eligible renewable energy technology system in the state for which a tax credit under this section may be claimed may transfer the tax credit in exchange for a cash payment equal to the present value of the tax credit."~~

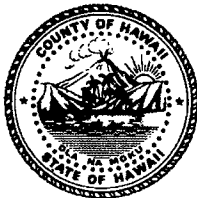
**BOB JACOBSON**

**Councilmember**

*Chair, Environmental Management Committee*

*Vice-Chair, Finance Committee*

*Vice-President Hawai'i State Association of Counties*



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## HAWAI'I COUNTY COUNCIL

*County of Hawai'i*

March 8, 2008

Committee on Energy and Environment

Senator Ron Menor, Chair

Senator Gary L. Hooser, Vice-Chair

And, Members

Hearing Scheduled for Tuesday, March 11, 2008 at 2:45 p.m.

Conference Room 414

State Capitol

415 South Beretania Street

Honolulu, HI

Re: HB 2005 RELATING TO RENEWABLE ENERGY TECHNOLOGIES

I wholeheartedly support HB 2005. I believe that the expansion of the renewable energy technologies tax credit to include solar electric energy systems is necessary.

I urge you to pass HB 2005.

Aloha,

A handwritten signature in cursive script that reads 'Bob Jacobson'.

Bob Jacobson



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

**Hawai'i Energy Policy Forum**

Mr. Robbie Alm, HECO  
Ms. Amy Asselbaye, Ofc of US Rep.  
Neil Abercrombie  
Ms. Madeleine Austin, World Business  
Academy  
Ms. Catherine Awakuni, Div. of  
Consumer Advocacy  
Mr. Warren Bollmeier  
Hi Renewable Energy Alliance  
Mr. Carlito Caliboso, PUC (Observer)  
Mr. Albert Chee, Chevron  
Mr. Kyle Datta, U.S. Biofuels  
Sen. Kalani English, HI State Senate  
Mr. Mitch Ewan, UH HNEI  
Mr. Carl Freedman  
Haiku Design and Analysis  
Mr. Mark Glick, OHA  
Mr. Steve Golden, The Gas Company  
Dr. Michael Hamnett, RCUH  
Ms. Paula Helfrich, EDAH  
Mr. William Kaneko, HI Institute for  
Public Affairs  
Mr. Darren Kimura, Energy Industries  
Holdings  
Mr. Mike Kitamura, Ofc of US Sen.  
Daniel K. Akaka  
Mr. Kal Kobayashi, Maui County  
Mr. Laurence Lau, DOH  
Ms. Yvonne Lau, Ofc of US Rep.  
Mazie Hirono  
Mr. Allyn Lee, C&C of HNL  
Mr. Aaron Leong, Ofc of US Senator  
Daniel K. Inouye  
Dr. Stephen Meder, AIA-Honolulu  
Sen. Ron Menor, HI State Senate  
Mr. Jeff Mikulina, Sierra Club  
Dr. Bruce Miller, UH Ofc of  
Sustainability  
Dr. Sharon Miyashiro, Social  
Sciences Public Policy Ctr.  
Rep. Hermina Morita, HI State  
House of Representatives  
Mr. Tim O'Connell, USDA/Rural  
Development  
Mr. Richard Paglinawan  
Pa Ku'i A Lua  
Ms. Melissa Pavlicek, Western States  
Petroleum Assn  
Mr. Randy Perreira, HI State AFL-CIO  
Mr. Rick Reed, Inter-Island  
Solar Supply  
Dr. Rick Rocheleau, UH HNEI  
Mr. Peter Rosegg, HECO  
Mr. Steven Rymsha, KIUC  
Mr. Riley Saito, PowerLight Corp.  
Mr. Glenn Sato, Kauai County OED  
Ms. Carilyn Shon, DBEDT  
Mr. Bill Short, BIA of Hawaii  
Mr. Ray Starling, HI Energy Grp  
Mr. Lance Tanaka, Tesoro HI Corp  
Dr. Don Thomas, UH Center for the  
Study of Active Volcanoes  
Mr. Murray Towill, Hawai'i  
Hotel Assn  
Ms. Joan White, Hon Community  
Action Program

Testimony of  
**Warren Bollmeier**  
Co-Chair – Renewable Energy Working Group  
Hawai'i Energy Policy Forum

Senate Committee on Energy and Environment  
Tuesday, March 11, 2008  
2:45 pm  
Conference Room 414

**IN SUPPORT OF H.B. 2005, H.D. 1 - Relating to Renewable Energy  
Technologies**

I am Warren Bollmeier, Co-Chair of the Renewable Energy Working Group of the Hawaii Energy Policy Forum ("Forum"). The Forum is comprised of 46 representatives from the electric utilities, oil and natural gas suppliers, environmental and community groups, renewable energy industry, and federal, state and local government, including representatives from the neighbor islands. We have been meeting since 2002 and have adopted a common vision and mission, and a comprehensive "10 Point Action Plan," which serves as a framework and guide for meeting our preferred energy vision and goals. The Forum supports the passage of HB 2005, HD 1 as it helps achieve the goal of Point One - expand renewable energy opportunities.

The purpose of HB 2005, HD 1 is to expand the renewable energy technologies tax credit to include solar electric energy systems. Specifically, the section on "Photovoltaic energy systems" is amended to read "Solar electric energy systems." Solar electric systems are defined as "solar thermal electric and photovoltaic systems." The term "solar thermal systems" is also defined. The Forum supports this bill as it clearly distinguishes the two types of solar systems (solar thermal and solar electric), which are subject to different Renewable Energy Technology Income Tax Credit ("RETITC") treatments. This is particularly important, as there are more types of solar systems that are being installed in or being considered for Hawaii.

Solar thermal systems include the solar water heating (flat-plate collectors) that we see now on at least 25% of our single-family homes in Hawaii. While the flat-plate collectors are used to heat our water, solar thermal electric systems use technologies, such as parabolic dish troughs, to heat water or a working fluid to higher temperatures in order to generate electricity. A utility scale parabolic dish trough system is currently under development in Hawaii.

Thank you for this opportunity to testify.

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



# TAXBILLSERVICE

126 Queen Street, Suite 304

TAX FOUNDATION OF HAWAII

Honolulu, Hawaii 96813 Tel. 536-4587

**SUBJECT:** INCOME, Renewable energy technology systems

**BILL NUMBER:** HB 2005, HD-1

**INTRODUCED BY:** House Committee on Finance

**BRIEF SUMMARY:** Amends HRS section 235-12.5 to replace the term “photovoltaic” with “solar electric.” Adds a definition of “solar electric energy systems” to include solar thermal electric and photovoltaic systems. Also adds a definition of “solar thermal energy systems” to include solar water heating, solar air conditioning, solar space heating, solar drying, and solar process heat systems.

The taxpayer eligible for the credit may transfer the credit in exchange for a cash payment equal to the present value of the tax credit.

**EFFECTIVE DATE:** January 1, 2020; applicable to tax years beginning after December 31, 2007

**STAFF COMMENTS:** Hawaii’s income tax credit for alternate energy devices was established by the 1976 legislature originally for solar energy systems and was later expanded to include wind energy devices, heat pumps, ice storage systems, and photovoltaic systems. This measure proposes to further expand the state energy tax credits to include solar air conditioning, solar space heating, solar drying, and solar process heat systems.

While some may consider an incentive necessary to encourage the use of energy conservation devices, it should be noted that the high cost of these energy systems limits the benefit to those who have the initial capital to make the purchase. If the combined incentives of federal and state income tax credits during the early 1980’s equal to 50% were not able to encourage more than those who did install alternate energy devices during the period when the federal credits were in effect, it is questionable whether the state tax credits along with the federal energy tax credits (30%), will encourage many more taxpayers to install such devices.

If it is the intent of the legislature to encourage a greater use of renewable energy systems by extending the existing energy tax credits to include solar thermal energy systems, as an alternative, consideration should be given to a program of low-interest loans available to all income levels as is being proposed in HB 2101. However, if the taxpayer avails himself of the loan program, the renewable energy credit should not be granted for projects utilizing the loan program as the projects would be granted a double subsidy by the taxpayers of the state.

Low-interest loans, which 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 for those taxpayers who more than likely can afford to make the conversion. A program of low or no-interest loans would do much more to increase the acquisition of these devices. Persons of all income levels could borrow the funds, make the acquisition, and repay the state program in

an amount equal to the avoided costs that their utility bills would now reflect. While this recommendation has fallen on deaf ears in the past; the above-mentioned proposal would help put such devices within the reach of more people. The credit, on the other hand, merely becomes a windfall for those who are able to come up with the up-front costs for such devices. This leaves the poor and lower-middle income families still dependent on fossil fuel energy.

While this proposal focuses on newer alternate energy technologies which are far more expensive to acquire, it underscores the above point that the credit benefits only those who have the means to install such devices. If lawmakers truly want to provide a financial incentive for taxpayers to make the switch to using these alternative energy devices while taking advantage of the credit, then a program of no-interest, or low-interest loans would be far more effective. The state could provide the capital to acquire these devices, and the taxpayer could receive a discount of 30% provided by the federal tax credit. The amount of the state loan could then be amortized by the energy savings realized by the taxpayer.

Merely providing federal and state tax credits ignores the reality of living in Hawaii, that is, most families don't have the resources to make such a large capital outlay while struggling to put food on the table.

Digested 3/7/08



TESTIMONY OF SUNEDISON, LLC IN REGARD TO HB2005, HD1  
RELATING TO A RENEWABLE ENERGY TECHNOLOGIES TAX CREDIT  
BEFORE THE SENATE COMMITTEE ON ENERGY AND ENVIRONMENT  
TUESDAY, MARCH 11, 2008 AT 2:45PM

Chair Menor, Vice-Chair Hooser and Members of the Committee.

SunEdison is a developer of large solar electric photovoltaic systems. We have seven offices in five states including Hawaii. Our goal is to simplify the installation of solar electric resources so that the benefits of solar energy, particularly the reduction in oil-fired grid-supplied electricity, can be realized in Hawaii.

SunEdison supports HB2005, HD1. We believe that broadening access to the tax credit, and enhancing its transferability will help diversify Hawaii's energy markets and reduce our dependence on imported energy.

Oil imports in 2006 totaled \$3.4 billion. A \$10 change per barrel of oil slaps us with a \$340 million charge. \$2 million is spent daily on Oahu for imported fossil fuels to generate electricity. We have to begin to turn this around – oil prices are not coming down.

Hawaii originally passed its renewable energy technologies tax credit in 2003 (SB855) providing an incentive to install renewables such as solar to reduce dependency on imported oil, which was running about \$30/bbl at the time. Indeed, Brian T. Taniguchi, Chair, Committee on Ways and Means, noted in his committee's report:

*Your Committee finds that supporting alternate energy systems is critical to reducing the State's dependency on imported oil. This dependency not only sends capital resources out-of-state, but also creates a tenuous reliance on an unsustainable and unstable resource.*

Since then however, the tax credit has been little used by solar developers. For 2005, the most current year for which data is available, the average credit amount per taxpayer was about \$1,000. While 185 residential installations are helpful, the impact on reducing dependency on foreign oil could be much greater with more emphasis on larger systems. Yet, despite increasing the commercial tax credit cap from \$250,000 to \$500,000 in 2006, there are precious few commercial systems being installed.

There are a number of reasons for this, including net metering limitations and utility-unique interconnection standards, however structuring effective projects for allocating tax credits within a partnership is a complex and cumbersome process, and results in higher



costs. Transferability will reduce these structuring complications allowing more competition within the industry, reducing installation costs, and allowing local businesses and non-profits to reduce their power load.

Hawaii tax equity investors have many investment options that are not tied to project performance risk. For example, the QHTB (Act 221) tax credit is fully transferable, offers a typical market return of 2 for 1 (i.e. \$2 in tax credits for a \$1 dollar investment), and does not have any project risk.

Many investors within Hawaii and on the mainland are interested in monetizing the Federal Investment Tax Credit and MACRS depreciation and are willing to take project performance risk. This is often a different group of investors with lower investment return hurdles. We will most efficiently match investors with projects if we can transfer the Renewable Energy Credit. This will enable mainland investors to support the growth of solar in Hawaii, while enabling Hawaii investors to take advantage of the state tax credit.

In order to compete with projects that use the much more versatile QHTB (Act 221), we need to have a tax credit that is readily transferable. Transferability will enable the solar industry to achieve efficiencies and truly enable Hawaii to become a market where solar development can occur on a significant scale.

**HB2005, HD1 provides the necessary transferability in paragraph (g) of Section 1, and we urge the committee to retain this sentence in its current form.**

In 2006, Hawaii exported only \$16.3 billion in goods and services, including visitor spending, while importing approximately \$24 billion. Let's keep our \$ in Hawaii. We would like to thank the Committee for the opportunity to submit testimony and for the Committee's consideration.

Keith Cronin,  
President, SunEdison Hawaii

Rick Gilliam  
Managing Director, Western States Policy



PHOTOVOLTAIC SOLAR ENERGY  
SOLAR HOT WATER AND HEATING  
ENERGY EFFICIENCY INTEGRATION

HI License # C-26505

March 11, 2008

## **Testimony in Support of HB 2005 HD1 Relating to Renewable Energy Technologies**

Dear Chair Menor, Vice-Chair Hooser, and Members of the Committee:

I am testifying in my role as Vice-President of Finance at Suntech Hawaii, a locally based, owned, and operated solar integrator. Our firm is committed to reducing the state's reliance on carbon-intensive fossil fuels and to helping Hawaii's energy consumers stabilize their energy expenditures by reducing their exposure to fluctuations in the spot-market price of crude oil. To this end, we support HB 2005 HD1.

Regarding the current draft of the bill, Suntech Hawaii would like to make the following points:

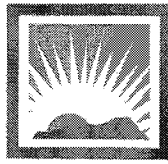
1. We support the so called "portability" provisions of the bill as contained in Section 1, subsection (g). Our firm is frequently in contact with potential customers that do not have sufficient tax liability to justify installing solar systems large enough to eliminate their electric utility bills and/or to reduce their bill to the extent possible given their existing real estate/roof space. By allowing these ratepayers to reduce their use of carbon-intensive electricity beyond the level justified by their current-year state tax liability, portability will increase the State's renewable energy generating capacity relative to where it would be under existing legislation. The change contained in subsection (g) will therefore accelerate the state's progress toward the "20 percent in 2020" Renewable Portfolio Standard. In doing so, it will also reduce our state's emissions of greenhouse and other toxic gases. (According to the US Department of Energy, Hawaii ranks 16<sup>th</sup> in terms of carbon dioxide emitted per MWh of electricity generated and 3<sup>rd</sup> in terms nitrogen oxide emitted per MWh of electricity generated due to our reliance on fossil fuels for the majority of electric generation.)
2. The Solar Alliance (of which Suntech Hawaii is not a member) has previously testified that the proposed changes to Section 1, subsection (g) implicitly extend the state's renewable energies income tax credit to tax exempt entities such as schools and other non-profit groups. The mechanism of such an extension would be the ability of these non-taxed entities to claim the credit, which they cannot use, and then sell it on to other investors. Suntech Hawaii has conducted no outside verification of the Solar Alliance's claim, but would support any change of this sort that directly extends the benefits of the credit to non-taxed entities. We would like to note that such entities already have access to the state credit on a pass-through basis via power purchase agreements (PPAs). Being able to directly access the credit should, however, lower the cost that non-taxed entities pay for renewable energy by eliminating financial inefficiencies inherent in the PPA process.

Suntech Hawaii would like to suggest that if the intent of subsection (g) is indeed to extend the credit to non-taxpaying entities that it be made explicit on the grounds that 1) potential investors in these credits would likely be put off by any uncertainty regarding the ability of non-taxed entities to claim the credits in the first place or 2) such investors would reduce the amount they would pay for the credits in order to compensate for this uncertainty, thereby reducing the benefit of the credit to the non-taxed entity installing the system.

3. Section 1, subsection (g) refers to the transfer of the credits “in exchange for a cash payment equal to the present value of the tax credit.” Suntech Hawaii strongly supports this provision as it will help address the current situation in which most taxpayers intending to claim the credit rationally prefer to place systems in service at the very end of the tax year, in order to reduce the time between expenditure on the system and the time at which they are able to monetize the tax credit by claiming it against income taxes. This causes a bottleneck during the months of October, November, and December that results in less renewable energy generating capacity being installed in the state than would otherwise be the case. Similarly, de-coupling the installation schedule from the tax calendar would increase the number of full-time ‘green collar’ jobs by increasing the amount of renewable energy generating capacity installed in a given year and increase the stability of these jobs by smoothing the workload out over the entire year.
4. Suntech Hawaii also supports the bill’s goal of making explicit the applicability of the tax credit to solar concentrating and other solar electricity generating technologies. That is, we feel that it is fair and reasonable that photovoltaics should not be privileged among electricity generating technologies.

Suntech Hawaii would like to express its thanks to the Committee for the opportunity to testify on behalf of the current draft of this important legislation.

Mark Duda  
Suntech Hawaii, VP Finance



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

TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION  
IN REGARD TO H.B. 2005, HD1  
RELATING TO RENEWABLE ENERGY TECHNOLOGIES  
BEFORE THE  
SENATE COMMITTEE ON ENERGY & ENVIRONMENT  
ON  
TUESDAY, MARCH 11, 2008

Chair Menor, Vice-Chair Hooser and members of the committee, my name is Ron Richmond and I represent the Hawaii Solar Energy Assn (HSEA) The HSEA is a professional trade association established in 1977, and affiliated with the Solar Energy Industries Association (SEIA) in Washington, D.C. HSEA represents manufacturers, distributors, contractors, financiers, and utility companies active in the solar energy industry in Hawaii. We support definitional change stated in H.B. 2005, HD1 but we have reservations about the provision in paragraph (g) beginning at line 9 on page 6 to transfer the tax credit.

The realm of solar energy includes both heat (solar thermal) and light (solar electricity). Solar thermal energy is particularly versatile in that it can be used to provide air conditioning, to heat water and air, or to generate electricity. High temperature solar thermal steam generators, often referred to generically as concentrating solar power (CSP) technologies, are capable of generating enormous amount of electricity.

H.B. 2005, HD1 provides a definitional change that acknowledges that both PV and solar thermal systems are capable of generating electricity. The bill deletes the reference to “photovoltaic energy systems” and replaces it with “solar electric energy systems”, which is more accurate and clarifies the range of solar technologies capable of generating power.

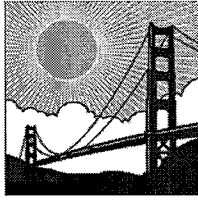
H.B. 2005, HD1 also provides a definition for qualifying “solar thermal energy systems” – that Do Not generate electricity – to include solar water heating, solar air conditioning, solar space heating, solar drying, and solar process heat systems.

These changes provide clarity to the law and make this statute more consistent with the real world technical applications for solar energy.

With respect to provision in paragraph (g) beginning at line 9 on page 6 to transfer the tax credit in exchange for cash, the intent of provision is unclear and requires further understanding. If the intent is to allow non-profit entities benefit from the tax credit, the current language does not provide for that. If the intent is to allow external capital to invest in qualified renewable energy systems placed in service in the State of Hawaii, then the impacts of exporting tax credit dollars needs to be fully understood. HSEA respectfully requests this committee to fully examine and clarify the implications of this provision prior to passing it out.

Thank you for the opportunity to testify.

THE  
Vote Solar  
INITIATIVE



TESTIMONY OF THE VOTE SOLAR INITIATIVE IN REGARD TO HB 2005 H.D. 1  
RELATING TO RENEWABLE ENERGY TECHNOLOGIES  
BEFORE THE SENATE ENERGY AND ENVIRONMENT COMMITTEE  
MARCH 11<sup>TH</sup> AT 2:45PM

Chair Menor, Vice-Chair Hooser and Members of the Committee.

My name is Gwen Rose, and I represent The Vote Solar Initiative, a nonprofit organization with members throughout Hawaii and the U.S. that aims to address global warming and energy independence by bringing solar energy into the mainstream. Our organization has been an active stakeholder in the development of programs and policies that accelerate solar markets.

Renewable energy systems provide quantifiable benefits to Hawaii's ratepayers and utilities. One of its key benefits rests in its ability to avoid consumption of oil for power generation. The cost of purchasing power and fuel can comprise as much as 60 – 80% of the overall retail rate. The cost of fuel is passed through to the ratepayer under the Energy Cost Adjustment Clause (ECAC), which means the ratepayer entirely absorbs the risk. Hawaii has the highest and most fluctuating rates in the nation. Further, there is substantial evidence suggesting that the value derived renewable energy production – in terms of job creation and environmental benefits – is at least equivalent to the retail rate of energy, and potentially much greater. For these reasons, Hawaii should seek to accelerate the amount of installed solar energy.

We support HB2005 H.D. 1, particularly the provision to allow tax credits to be transferable, similar to the pass through provisions provided in the State of Oregon. Oregon simple pass-through/transfer provision that has been helpful in expanding their solar program. In this system a project owner may transfer a tax credit to a partner in return for a lump-sum cash payment (the net present value of the tax credit) upon completion of the project. This system allows non-profit organizations, schools, governmental agencies, tribes, other public entities and businesses with and without tax liability to use the tax credit by transferring their tax credit for an eligible project to a partner with a tax liability. This provision will reduce the cost of financing large solar projects, and considerably speed up the project development process, ultimately resulting in lower overall project costs.

At a time when the price of oil has reached above \$100 per barrel, it is imperative that the state encourage more solar installations. In particular, this bill helps ensure continued, smooth growth and diversity for the renewables market in Hawaii.

Thank you for the opportunity to submit testimony.





**To: Senator Ron Menor, Chair  
Committee on Energy and Environment**

**From: Sopogy Inc.**

**Date: March 10, 2008**

**Subject: Support for HB 2005 – Relating to Renewable Energy Technologies**

Chair Menor, Vice-Chair Hooser and Members of the Committees:

Sopogy, Inc. is a solar power technology company based in Hawaii. Our purpose is to bring renewable solar energy technologies to Hawaii and its people for the betterment of our environment, independence from volatile imported fossil fuels, and energy stability.

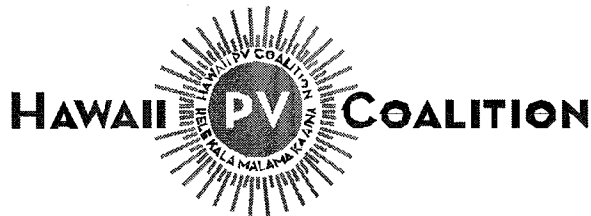
Sopogy has developed a concentrating solar panel that enables the production of electricity, air conditioning, and/or process heat using the sun's power. Our technology is not categorized as Photovoltaic but as Solar Thermal and/or Concentrating Solar Power (CSP). Understanding, therefore, that solar generated electricity can come from a broader range of technologies than just photovoltaic (PV), Sopogy supports this bill's language that would broaden the investment tax credit to all solar electric technologies.

In general, Sopogy, Inc. supports the adoption of renewable energy and energy efficiency measures that lessen the state's dependence on oil, reduce greenhouse gas emissions, and provide energy price stability to Hawaii's consumers.

Thank you for this opportunity to testify.



Power | Process Heat | Air Conditioning



TESTIMONY OF THE SOLAR ALLIANCE AND THE HAWAII PV COALITION  
IN REGARD  
HB 2005 HD 1 RELATING TO RENEWABLE ENERGY TECHNOLOGIES  
BEFORE THE  
BEFORE THE SENATE COMMITTEE ON ENERGY AND ENVIRONMENT  
ON  
TUESDAY, MARCH 11, 2008 AT 2:45PM

Chair Menor, Vice-Chair Hooser and Members of the Committee.

The Hawaii PV Coalition is a non-profit organization that represents installers, suppliers, manufacturers and customers of solar electric systems in the state of Hawaii.<sup>1</sup> The Solar Alliance is a state-focused alliance of solar manufacturers, integrators and financiers dedicated to accelerating the promise of photovoltaic (PV) energy in the United States.<sup>2</sup>

The Hawaii PV Coalition and the Solar Alliance supports HB 2005. We believe broadening the access to the tax credit by both expanding the definition and providing for transferring of the tax credit will help diversify Hawaii's energy markets and reduce Hawaii's dependence on imported energy.

These provisions will also help to increase solar energy in Hawaii thereby diversifying Hawaii energy markets and reduces Hawaii's dependence on imported energy.

Currently, the tax credit is transferable within a partnership. However, this is a much more complex and cumbersome process, and results in difficulties structuring effective projects. The end result is higher costs.

The State of Oregon has a simple pass-through/transfer provision (similar to the one requested above) that has been helpful in expanding their solar program. In this system a project owner may transfer a tax credit to a partner in return for a lump-sum cash payment (the net present value of the tax credit) upon completion of the project. This system allows non-profit organizations, schools, governmental agencies, tribes, other

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<sup>1</sup> The Hawaii PV Coalition, <http://www.hawaiipvcoalition.org/>

<sup>2</sup> The Solar Alliance, <http://solaralliance.org/>

public entities and businesses with and without tax liability to use the tax credit by transferring their tax credit for an eligible project to a partner with a tax liability.<sup>3</sup>

We strongly support Hawaii putting in place a similar provision that will likely increase the rate Hawaii uses renewable energy instead of importing fuels. The committee may wish to add additional language to make sure the schools and non-profits are able to transfer/create a pass through partnership similar to the Oregon provision.

We believe this provision will expand the use of renewable energy in Hawaii, help create fixed cost for energy, reducing the dependence of imported fuels, and help use the local resource of the sunlight to create additional jobs.

We would like to thank the Committee for the opportunity to submit testimony and for the Committee's consideration.

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<sup>3</sup>DSIRE Incentives by State Incentives in Oregon,  
[http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive\\_Code=OR03F&state=OR&CurrentPageID=1](http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=OR03F&state=OR&CurrentPageID=1)