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Statement of
THEODORE E. LIU
Director
Department of Business, Economic Development, and Tourism
before the
**HOUSE COMMITTEE ON
ENERGY AND ENVIRONMENTAL PROTECTION**
Thursday, March 13, 2008
9:00 AM
State Capitol, Conference Room 312

in consideration of
SB 2623
RELATING TO RENEWABLE ENERGY TECHNOLOGIES.

Chair Morita, Vice Chair Carroll, and Members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) supports SB 2623, 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 are 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 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.

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.

TAXBILLSERVICE

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SUBJECT: INCOME, Renewable energy technology systems

BILL NUMBER: SB 2623; HB 2005 (Identical)

INTRODUCED BY: SB by Menor, Inouye, Sakamoto, Trimble, 7 Democrats & 1 Republican; HB by Morita and Carroll

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.

EFFECTIVE DATE: 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.

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

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

House Committee on Energy & Environmental Protection
Thursday, March 13, 2008
9:00 a.m.
Conference Room 312

IN SUPPORT OF SB 2623 - 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 45 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 SB 2623 as it helps achieve the goal of Point One - expand renewable energy opportunities.

The purpose of SB 2623 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