

SB 151



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

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377

Statement of
THEODORE E. LIU
Director
Department of Business, Economic Development, and Tourism
before the
SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
Tuesday, February 3, 2009
2:45pm
State Capitol, Conference Room 225

in consideration of

SB151
RELATING TO ENERGY.

Chair Gabbard, Vice Chair English, and Members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) has concerns regarding the cost impact of SB151, which mandates solar water heater systems for town-homes and condominiums, and increases the income tax credits for single-family, multi-family, and commercial properties for photovoltaic and solar water heating systems.

DBEDT concurs that the initial cost of renewable energy systems represents a barrier for homeowners and businesses, and we recognize this bill's mandate offset by increased tax credits.

While we do support increasing solar installations in townhouses and condominiums, we are concerned about the cost implications generated by this proposal and believe that the incentives currently in place are appropriate. We prefer the incentive provisions of the Administration's Hawaii Clean Energy Initiative bill, SB871, which are in line with the Executive Biennium

Budget for Fiscal Years 2009-2010. Currently the incentives are set at 35% of actual cost for photovoltaic and solar water heating systems.

We defer to the Department of Taxation on tax matters.

Thank you for the opportunity to offer these comments.

LINDA LINGLE
GOVERNOR

JAMES R. AIONA, JR.
LT. GOVERNOR



KURT KAWAFUCHI
DIRECTOR OF TAXATION

SANDRA L. YAHIRO
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF TAXATION
P.O. BOX 259
HONOLULU, HAWAII 96809

PHONE NO: (808) 587-1510
FAX NO: (808) 587-1560

**SENATE COMMITTEE ON ENERGY & ENVIRONMENT
TESTIMONY REGARDING SB 151
RELATING TO ENERGY**

TESTIFIER: KURT KAWAFUCHI, DIRECTOR OF TAXATION (OR DESIGNEE)
DATE: FEBRUARY 3, 2009
TIME: 2:45PM
ROOM: 225

This measure increases the tax credit incentives for the installation of solar energy systems.

The Department of Taxation supports the intent of incentivizing alternative energy use in the State; however opposes the revenue loss generated by this measure.

SUPPORT FOR ALTERNATIVE ENERGY—The Department strongly supports the encouragement and implementation of alternative energy systems in Hawaii in order to lessen the State's dependence on alternative energy. As fossil fuel and petroleum prices become more volatile, Hawaii's ability to generate its own energy from home will make the State more secure and less reliant on others.

PREFERENCE FOR ADMINISTRATION'S TAX PACKAGE—The Department prefers the comprehensive energy-related tax package contained in SB 871, which clarifies the renewable energy systems tax credits, as well as tax incentives for net-zero energy efficient buildings. The Administration's measure has been factored into the biennium budget and the financial plan.

CLARIFY "BUILDING PERMIT" LANGUAGE—The Department suggests clarifying the language relating to whether systems become disqualified due to the issuance of a "building permit." The Department understands the intent that only "new construction" homes are to be disqualified. However, the law is not that clear. A building permit is necessary for any addition or amendment to a home, as well as installation of the energy system. The issue then, is that the term "building permit" could be interpreted to be any permit, which could disqualify a taxpayer. The Department suggests clarifying the language as provided in SB 871.

OPPOSITION TO UNBUDGETED REVENUE LOSS—The Department cannot support the tax provision in this measure because it is not factored into the budget. The Department must be

Department of Taxation Testimony
SB 151
February 3, 2009
Page 2 of 2

cognizant of the biennium budget and financial plan. This measure has not been factored into either. Given the forecasted decrease in revenue projections, this measure would add to the budget shortfall.

REVENUE LOSS—This legislation will result in a revenue loss of approximately \$10.6 million per year starting in FY11



February 3, 2009

Senator Mike Gabbard, Chair
Committee on Energy and Environment
Conference Room 225
State Capitol
415 South Beretania Street

Chair Gabbard and Members of the Committee:

Subject: **Senate Bills No. SB 151, SB 155, SB 148, SB 156 and SB 554
relating to Energy; Renewable Energy and Energy Resources**

My name is Jim Tollefson, President of the Chamber of Commerce of Hawaii. The Chamber of Commerce of Hawaii works on behalf of its members and the entire business community to:

- Improve the state's economic climate
- Help businesses thrive

The Chamber of Commerce of Hawaii is opposed to all of the bills listed.

Last session the Senate passed SB No. 644 which effectively:

1. Required all new single family residences constructed after January 1, 2010 to include a solar water heater system;
2. Eliminated the Solar thermal energy systems tax credits on all single-family residential properties after 1/1/2010; and
3. Prohibited a single family residential developer from claiming any renewable energy technologies tax credits for systems installed between now and 2010.

Government "Mandates" that attempts to direct the free market system generally result in penalizing one section of the market. For example, in this case, while the arguments that a \$7,000 thermal solar water heating system can easily be incorporated into the mortgage of the average priced home in Hawaii resulting in the homeowner realizing a net savings as energy cost rise over time, the mandate does not recognize or provide a mechanism to assist buyers seeking units priced for residents making less than 80% and less than 120% of the Housing and Urban Development (HUD) median income levels in Hawaii. For Honolulu, the HUD median income for a family of four is \$77,300. Irrespective of costs, developers are required to provide generally 20% of their total units for families making 120% or less of the HUD median income and 10% of their total units for families making 80% or less of the HUD median income.

Adding the cost of a thermal solar water heating unit to these houses effectively means the buyer gets \$7,000 "less" house.

If the goal was really to significantly reduce our 90% dependency on imported oil, wouldn't it have made more of an impact on our energy dependency to require all existing housing units (approximately 491,000 as of July 2005) to convert to solar water heaters as opposed to requiring only new units to have solar (approximately 5,700 units in 2006). Why do you think the focus was on new units as opposed to existing?

No one disagrees with the intended goal of moving the state toward becoming more energy self sufficient. The concern is in the manner our elected leaders are choosing to accomplish this goal. Building on the mandates from last year, the following is a list that attempts to summarize what is being proposed in each of the five (5) bills being heard.

Bill Number	SB 151	SB 155	SB 148	SB 156	SB 554
Mandatory	Yes	PV--Yes	Yes for 6 or more units	Yes Requires 25% of all new construction by 2015; 50% of all new construction by 2020.	No
Tax Credits					
Solar Thermal	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Removes tax credit for developers; but reinstates tax credits for individual units
SFR	50% or \$5,000	35% or \$2,250	35% or \$2,250	35% or \$2,250	35% or \$2,250
MFR	50% or \$1,000	35% or \$350	35% or \$350	35% or \$350	35% or \$350
Commercial	50% or \$250,000	35% or \$250,000	35% or \$250,000	35% or \$250,000	35% or \$250,000
Wind Power					
SFR	20% or \$1,500	20% or \$1,500	20% or \$1,500	20% or \$1,500	20% or \$1,500
MFR	20% or \$200	20% or \$200	20% or \$200	20% or \$200	20% or \$200
Commercial	20% or \$500,000	20% or \$500,000	20% or \$500,000	20% or \$500,000	20% or \$500,000
Photovoltaic					
SFR	75% or \$12,500	75% or \$12,500	35% or \$5,000	35% or \$5,000	35% or \$5,000
MFR	75% or \$1,000	75% or \$1,000	35% or \$350	35% or \$350	35% or \$350
Commercial	75% or \$1,000,000	75% or \$1,000,000	35% or \$500,000	35% or \$500,000	35% or \$500,000

In general, we are concerned because the proposed legislation focuses again on "Mandates" with little or no incentives. In addition, as was the case last session, none of the legislation clearly identifies the specific problem or problems that need to be addressed through the proposed legislation. If the underlying intent is to encourage

more energy efficient perhaps the proposed legislation should be expanded to include an assessment and analysis of the various proposed legislation with clearly articulated criteria for outcomes that unintended consequences of the proposed legislation.

Perhaps, as in other Cities or municipalities, government in Hawaii should lead by example. In other Cities, policy makers “mandated” government projects to achieve a certain green or sustainable design standard. In so doing, the design professionals and contractors in these Cities were educated and developed the necessary hands on experience to build a green or sustainable project. AFTER the design professionals and contractors gained this experience, there were incentives created based on their hands on experience, to encourage the private projects to incorporate green or sustainable design.

Finally, we strongly recommend that the Legislature develop a full understanding of the economic impacts created by this type of legislation. Perhaps the Legislature should conduct its own analysis or comparison to determine, at a minimum, the following:

1. What specific outcome or range of outcomes would each of the bills achieve;
2. Discuss the public benefits among the different outcomes and assess whether or not government involvement is necessary;
3. If government involvement is desired, assess the pros and cons of providing incentives or mandating compliance to achieve the desired outcomes.

While we see interest in the market moving toward more energy efficiency and sustainable designs, we believe there is much more that needs to be done before public policy makers “Mandate” any more “green or sustainable” legislation.

Thank you for the opportunity to share our views with you.



Hawaii Solar Energy Association
Serving Hawaii Since 1977

February 1, 2008

SB151: Testimony in Support of Some Provisions and Opposition to Others

Dear Chair Gabbard, Vice Chair English, and Members of the Committee:

Hawaii Solar Energy Association (HSEA) is comprised of more than 30 installers, distributors, manufacturers and financiers of solar energy systems, both hot water and PV, most of which are Hawaii based, owned and operated. Our primary goals are: (1) to further solar energy and related arts, sciences and technologies with concern for the ecologic, social and economic fabric of the area; (2) to encourage the widespread utilization of solar equipment as a means of lowering the cost of energy to the American public, to help stabilize our economy, to develop independence from fossil fuel and thereby reduce carbon emissions that contribute to climate change; (3) to establish, foster and advance the usefulness of the members, and their various products and services related to the economic applications of the conversion of solar energy for various useful purposes; and (4) to cooperate in, and contribute toward, the enhancement of widespread understanding of the various applications of solar energy conversion in order to increase their usefulness to society.

HSEA members manufacture and install the vast majority of solar water heating systems deployed in the State of Hawaii. Our comments on this measure are based on this expertise, and our related experience in other renewable energy technologies.

HSEA would like to begin by noting that there are seven bills in this hearing that attempt to alter, fix, or expand the requirement that new homes use solar water heating systems to heat the water for their homes. Because the seven proposals in many cases overlap and/or implement some of the same changes in different ways, HSEA has decided that it will be most valuable to the committee to provide a comprehensive response to the issues raised in these seven bills, followed by specific testimony on each bill. This comprehensive response unfolds as discussion of the five most important issues raised by these 'solar mandate' bills, followed by a statement of HSEA's position on each issue.

ISSUE #1: Clarifying that the Trigger for Applicability of the Mandate is the Origination of a Permit to Build a New Single Family Home, Rather than the Origination any New Building Permit. Some argue that Act 204 created ambiguity regarding whether the origination of any new building permit (including permits for unrelated activities, such as adding a bathroom) would trigger the requirement that a solar water heater be installed on the dwelling. Others argue that the language is currently

specific enough to avoid this confusion. Several bills attempt to solve the problem definitively by removing any and all ambiguity.

HSEA Position: HSEA supports the goal of restricting the applicability of the solar water system mandate to new dwelling units. Although HSEA members, as installers of the majority of solar water heating systems in the state, would likely benefit from a requirement that anyone who wants to do any form of home improvement must also install a solar water heating system, this seems not to have been the intent of the legislation. HSEA sides here with the public interest in maintaining a clear linkage between legislative intent and legislative consequences.

Bills in this hearing that successfully clarify the issue are: SB390, SB1198

ISSUE #2: *Variances Developers May Use to Avoid the Requirement for Solar Hot Water and Incentive Parity across Technologies for Heating water.* Act 204 established four categories of variances that could be granted to developers that would allow them not to install solar water system on new homes built under building permits originated after the effective date of the mandate. These are: (1) inadequacy of the solar resource; (2) unreasonable payback period; (3) use of wind or solar photovoltaics to heat water instead; (4) use of a tankless gas water heater to heat water.

Variance categories (1) and (2) are standard approaches to the challenge of granting necessary and reasonable exceptions to avoid unintentionally requiring inappropriate/inadequate systems for heating water that could result in the need to buy an additional water heating system or deal with the inconvenience of water that is not hot enough.

Variance (3) is generally seen as either a more costly way to heat water (PV) or has not achieved any meaningful level of market penetration in Hawaii (wind) for single-family residences. Some have argued that these are not appropriate reasons to forbid developers from using them if they so choose. Others have argued that the issue is not the choice of renewable technology but the tax incentive asymmetry that results from a mandate that eliminates tax incentives for one technology (solar hot water) while other technologies (PV and wind) retain their tax incentives.

Variance (4) is something of a loophole in what is widely referred to as the 'solar mandate act.' Some argue that allowing a gas variance is acceptable on the grounds that burning gas to heat water requires less fossil fuel and, hence, emits less carbon than heating water with electricity. This appears, however, to be a matter of dispute, as others argue that this comparison does not take account of the energy used in transforming petroleum into the synthetic gas that is the only kind of gas available in Hawaii. In addition, HSEA notes that the share of grid power produced by burning fossil fuels varies across utilities and over the course of the day. For instance, HELCO recently hit 60% renewables for a brief period and has averaged over 30% for longer periods.

HSEA Position:

Variance (3). HSEA is strongly in favor of efforts to lower the use of fossil fuels in the state of Hawaii. To this end, HSEA supports the existence of the wind/PV variance.

However, HSEA prefers that solar water heating not have its subsidy reduced while those of other technologies remain in place. HSEA is indifferent as to whether this is achieved by reinstating the subsidy for solar hot water or by reducing the subsidy for PV and wind by an amount equivalent to that lost by solar hot water under Act 204.

Bills that close the subsidy gap across technologies by reinstating tax credits for solar hot water: SB554

Bills that close the subsidy gap across technologies by reducing the tax credit for PV and wind: SB390

Variance (4). HSEA strongly opposes the existence of variance 4. HSEA believes that any pathway that allows compliance with a ‘solar mandate’ by burning fossil fuels is fundamentally flawed and goes directly against the spirit and intent of the legislation. Further, existence of the gas loophole runs in direct opposition to broader initiatives in Hawaii to achieve energy security by weaning the state off of fossil fuels. The existence of the gas variance is especially problematic because the cost of installing a tankless gas water heater is substantially below that of a solar water heating system, which will lead many developers to choose it in order to keep the selling price of their homes as low as possible, particularly during these difficult economic times.

Bills that eliminate the gas variance: SB390

ISSUE #3: *Extending the Mandate to Structure Types besides Single Family Detached Housing.* If a sound public policy justification exists for requiring solar water heating on single family detached housing it is reasonable to ask why the same justification does not apply to single-family attached housing and other types of non-detached homes. Several bills attempt this extension but do so in various ways (*e.g.*, by requiring adoption of rules in county building codes versus including under existing mandate section of HRS 196-6.5) and with varying project size thresholds for applicability.

HSEA Position: As installers of solar water heating and PV systems, HSEA members are extremely well placed to understand variations in the market for solar after heating systems across single family detached homes, condominiums and townhomes. From this perspective, HSEA notes that very few systems are installed on townhomes and condominiums while the market for such systems on single-family detached homes is strong. HSEA believes that this is a result in many cases of differences in the ability to access tax incentives across different structure types. For this reason, a mandate requiring solar to be sited on such homes may serve an important public policy goal assuming (1) the tax code is not changed to make it easier to finance solar projects on condominiums and (2) compliance by installing fossil fuel-based technologies such as tankless gas heaters is not permitted.

Bills that extend the mandate to townhomes and condos:

SB151 (blanket expansion via §196-6.5);

SB148 (expansion to 6+ single-family unit projects and all multi-family via county building code requirement §46);

SB156 (expansion to projects 50+ units via §196-6.5)

Issue #4: *Changes to the RETITC Level and/or Cap.* In addition to addressing issues about the applicability and/or implementation of the requirement for solar water heating, several of the bills make changes to the amount of a project's cost that can be recovered under the Renewable Energy Technologies Investment Tax Credit. This occurs either by raising the share of the project that is eligible for state tax credits (*e.g.*, by raising the credit share from 35% to 50%) or by raising the per system caps available to the purchaser/investor of the system (*e.g.*, by raising the cap from \$350 to \$1,000).

HSEA Position: HSEA's members are well placed to understand the current market place impediments to the broader penetration of solar. In a commercial context, the most important of these by a significant margin is the inability to monetize the RETITC. That is, the 35% level of the credit is not the problem; the inability to turn the credit into money at any level is the problem. To this end, HSEA notes that increasing the credit level on commercial systems is unlikely to markedly increase penetration of renewable energy, though some benefit would undoubtedly result. HSEA therefore supports these measures to increase the credit amount and cap limit.

For single-family residential systems, increasing the credit would increase penetration of PV if it were paired with an increase in cap levels. HSEA therefore favors increasing the credit levels for residential PV and especially increasing the cap level.

Under current rules, the multi-family credit is useless for PV and of marginal importance for solar hot water (HSEA is not aware of any multi-family wind systems). Increasing the cap level from \$350 to \$1,000 would be an important step in the right direction. Increasing the credit level would have little effect for PV because all systems would run into the cap. Depending on project size/design and scope, it may have an impact for solar hot water. HSEA therefore favors increasing credit level multi-family property and especially favors increasing the multi-family tax credit per system cap.

Bills that change RETITC levels and caps: SB151, SB155,

Issue #5: *Expanding the Mandate to PV.* Despite all of the discussion about clean energy in Hawaii, little has been said about the need to require PV on new or existing homes. As a result, there is little background debate to summarize here.

HSEA Position: HSEA notes that there are many open dockets and dozens of legislative initiatives that would potentially bear on the need for such a mandate. In addition, there are marketplace developments that may substantially reduce the need for such a mandate, including at least one firm that is working with DBEDT to come to Hawaii in the second quarter of 2009. In addition, HSEA notes that the establishment of such a PV mandate would require a very involved docket for standards and specifications development. (Such a docket was required even for solar water heating where the state has had a standard approach since 1996.) Devising standards and specifications for PV will be far more difficult, and time consuming at a time when most of the relevant expertise in the state, including at the PUC, is fully engaged in related dockets. For all of these reasons, HSEA recommends that this proposal not be examined during this legislative session.

Bills that would mandate PV for new single family homes: SB155

Specific Comments on SB151

1. HSEA supports the extension of the so-called ‘solar mandate’ to townhomes and condominiums, provided that the mandate cannot be complied with using any fossil fuel based technology, such as the current tankless gas loophole. Unintended problems within the tax code currently reduce the ability of market-based measures to achieve significant penetration for these structure types. Requiring clean, efficient solar water heating technology may increase penetration and move Hawaii in the direction of energy independence.
2. HSEA favors increasing the tax credit levels from 35% to 50% from solar thermal and from 35% to 75% for PV. These changes will increase the penetration of renewables in the state. HSEA notes, however, that the increase in the number of systems encouraged by the change will likely be modest, and that the change does not address the current difficulties faced by investors seeking to monetize the RETITC.
3. HSEA favors the increase in the RETITC cap levels. These changes will lower the installed cost of many solar systems in the state and should increase the penetration of renewable energy.



SENATE COMMITTEE ON ENERGY AND ENVIRONMENT

February 3rd, 2008, 2:45 P.M.

Room 225

(Testimony is 2 pages long)

TESTIMONY IN SUPPORT OF SB 151

Chair Gabbard and members of the committee:

The Blue Planet Foundation strongly supports SB 151, expanding last year's historic Solar Roofs Act to include townhomes and condominiums and increasing the tax credit for existing homes. We believe that the environmental and economic benefits provided by the Solar Roofs Act should extend to residents in multifamily dwellings. We also believe that increased tax incentive should be offered to encourage the 75% of homeowners who currently lack solar water heaters to invest in this money- and energy-saving device.

In regards to other amendments to last year's Solar Roofs Act, Blue Planet supports the changes proposed in SB 390, particularly the changes to remove the on-demand gas water heater variance and to clarify that the solar tax credit still applies to homes built prior to January 1, 2010.

Our testimony in support of the Solar Roofs Act in general follows.

The 2008 Solar Roofs Law will provide far-reaching environmental and economic benefits for Hawai'i and is the type of transformative policy that will help define our clean energy future. Based on current solar adoption rates, this new policy will reduce the need for thousands of barrels of oil annually and reduce greenhouse gas emissions by thousands of tons from the residential sector. For the first time, the Act established in law the creation of quality and performance standards for new solar water heaters. Starting in 2010, with solar water heaters a standard feature on new homes, residents will be more accustomed to the benefits of solar, turning more of them into potential customers for photovoltaic and other renewable energy devices.

Last year's historic Solar Roofs Act has broad support. People get it. It rings true. Houses should be built with solar up front. To spend more to retrofit a home later just doesn't make as much sense. Last year's bill passed with the support of numerous organizations (including the AIA), many individuals, and the editorial boards of both Honolulu dailies. The law also put Hawai'i on the map as a national leader in clean energy. Being the first state in the nation with

Jeff Mikulina, executive director • jeff@blueplanetfoundation.org

55 Merchant Street 17th Floor • Honolulu, Hawai'i 96813 • 808-954-6142 • blueplanetfoundation.org

such a progressive energy requirement launched Hawaii into the pages of the *New York Times* and *USA Today* and onto MSNBC and CNN.

Solar water heating is a foundation block in building Hawaii's clean energy future. A solar water system is the most basic renewable energy device to harness the clean energy from the sun. The technology is mature, tested, and works (the Romans, in fact, used solar energy to heat the water flowing to baths in aqueducts). Solar water heaters provide the greatest energy savings per dollar for reducing substantial residential energy demand. The Solar Roofs Act ensures that the vast majority of new homes come equipped with this clean energy device, and helps to smooth the transition toward zero-energy homes of the future.

With 60,000 new homes planned for O'ahu alone over the next 20 years, the Solar Roofs Act is critically needed to ensure that we build them energy-smart and minimize the need for additional electricity demand. The first step toward zero-energy homes is the use of solar water heaters (the next step is to reduce electricity demand with efficient appliances and lighting, and the final step is to meet the remaining electricity demand with solar photovoltaic or other clean energy device). New homes, of course, are only part of the picture—hundreds of thousands of existing housing units in Hawai'i need to be retrofit with solar water heaters as well.

While Hawai'i leads the nation in the percentage of installed residential solar water heaters, some 75% of homes still lack this basic amenity. That means hundreds of thousands of housing units in Hawai'i rely on fossil fuel to keep their showers hot. Some local builders are starting to offer solar water heating as an option for new home buyers, but the majority of new homes built in Hawai'i do not use solar. Even with the established solar industry in Hawai'i and ample incentives, the most new homes are not converting to solar. Considering that we are adding around 5,000 new homes in Hawai'i annually, the Solar Roofs Act will go a long way to reduce fossil fuel use and greenhouse gas emissions.

Solar water heating is the single best "clean" energy alternative for residences in Hawai'i. A typical family home with solar water heating avoids over 2.5 tons of carbon dioxide from being emitted annually (about 3000 kilowatt-hours avoided). If approximately 5000 new homes are built annually and only 25% eventually have water heaters installed, the Solar Roofs Act prevent nearly 10,000 tons of greenhouse gases additionally from being emitted every year and over 3 million tons after 25 years. What's more, the energy from the sun is stored in the form of hot water, offsetting the electrical system peak that occurs in the evening. This helps offset the need for expensive new power plants—another societal benefit from increased residential solar energy use.

The Solar Roofs Act will greatly increase the efficiency and affordability of new homes built in Hawai'i. Solar water heaters are among the most effective means of reducing the high electricity cost burden that residents now endure. The solar roofs bill makes the cost of living more affordable by slashing the electric utility bill of an average new home by 30 to 40 percent—saving over \$1000 annually for an average household on Kaua'i.

With average household use, most solar water heaters will pay for themselves in energy savings between 3 and 7 years. When systems are built into a home during construction—and when many systems are installed simultaneously in a larger subdivision and economies of scale are realized—solar water heaters are less expensive than an electric heater retrofit. When rolled into a 30-year mortgage, homeowners with solar will start saving money on day one. Even with other financing schemes, solar is a no-brainer investment that brings down the monthly cost of living. If current trends continue, the cost of residential electricity will continue to grow, making electric water heating even more expensive—and solar water heating more of a “no-brainer.”

The cost of living is a top-of-mind issue for many in Hawai'i. The Solar Roofs Act makes new home ownership more affordable by reducing the monthly utility burden.

Legend has it the demigod Maui used his fishing net to capture the sun over Haleakala so his mother could dry her tapa cloth. We can take a lesson from Maui and require new homes statewide to capture the sun to heat water. At 22 degrees latitude, Hawai'i is blessed with substantial solar resource. The most populated parts of the state receive between 450 and 500 calories of solar radiation per square centimeter every day. To put into perspective, an average rooftop space of 1100 square feet receives the energy equivalent of approximately 15 gallons of gasoline daily. We are the Saudi Arabia of sun. While some parts of Hawai'i receive less (some parts of Puna, for instance), there is still ample sun to keep water hot. The Solar Roofs Act would put that hot energy to work, reducing fossil fuel use and the cost of living.

While bold, the Solar Roofs Act is not without precedent. Israel has mandated that all new homes in the country come equipped with solar water heaters and now they are standard on some 95% of homes. Since January, 2007, Spain has required solar water heaters on all new residential construction. Here in Hawai'i, the Navy has been building all of its new residential units with solar thermal. In fact, the Army and Air Force are starting to build solar photovoltaic into some of its new residential units. This is construction performed by private contractors—the same type of contractors who would install solar for new civilian residential units. While Hawai'i is the first state in the nation with such a residential solar requirement, solar mandates have been successfully used elsewhere to decrease energy costs and reduce fossil fuel use.

Blue Planet strongly supports expanding last year's historic Solar Roofs Act to include townhomes and condominiums, as well as increasing the current tax credit for solar water heaters and photovoltaic for existing homes.

Thank you for the opportunity to testify.

TAXBILLSERVICE

126 Queen Street, Suite 304

TAX FOUNDATION OF HAWAII

Honolulu, Hawaii 96813 Tel. 536-4587

SUBJECT: INCOME, Energy conservation tax credits

BILL NUMBER: SB 151

INTRODUCED BY: Sakamoto

BRIEF SUMMARY: Amends HRS section 235-12.5 to increase the income tax credit for single-family residential solar thermal energy systems from 35% to 50% and the dollar amount from \$2,250 to \$5,000; multi-family residential solar thermal energy systems, for which a building permit was issued prior to January 1, 2010, from 35% to 50% and the dollar amount from \$350 to \$1,000; solar thermal energy systems installed on commercial property from 35% to 50%; single-family residential photovoltaic energy systems from 35% to 75% and the dollar amount from \$5,000 to \$12,500; multi-family residential photovoltaic energy systems from 35% to 75% and the dollar amount from \$350 to \$1,000; commercial photovoltaic energy systems from 35% to 70% and the dollar amount from \$500,000 to \$1,000,000.

Amends HRS section 235-12(g) to provide that a residential developer shall not be eligible to claim the renewable energy technologies tax credit for multi-family residential solar thermal energy systems.

Stipulates that the increase in tax credits shall be repealed when the energy resources coordinator: (1) determines that 50% of the households in the state have installed solar thermal energy systems and 20% of the households in the state have installed photovoltaic energy systems; and (2) the governor: (a) issues a proclamation and publishes a notice statewide of (1); and (b) notifies the revisor of statutes of the occurrence of the conditions requiring the repeal of section 3 of this Act.

EFFECTIVE DATE: July 1, 2009

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. Last year the legislature by Act 204: (1) provided that after 1/1/10 no building permit shall be issued for a single-family dwelling that does not include a solar water heater system; (2) provided that the income tax credit for solar thermal energy systems shall only be available to single-family residential properties for which a building permit was issued prior to 1/1/10; and (3) provided that the renewable energy technologies tax credit may not be claimed by residential home developers for systems placed in service in 2009.

The proposed measure increases the tax credits for solar thermal energy systems and photovoltaic energy 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. The combined total credit of 65% together with rising electric bills will spur those who are on the edge of being able to afford the installation of these devices to acquire them. Those who do not have the means need other forms of assistance including low-interest/no interest loans or a pay as you save plan that will pay for the devices with the amount of the avoided cost.

If it is the intent of the legislature to encourage a greater use of renewable energy systems by increasing and expanding the existing system of energy tax credits, as an alternative, consideration should be given to a program of low-interest loans available to all income levels. 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 these proposals focus 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.

Finally, instead of providing tax incentives for the purchase of existing technology, lawmakers may want to take advantage of Hawaii's natural environment which lends itself to all sorts of possibilities to explore and develop more efficient means of harnessing the natural resources that pervade the Islands, from wind to sun to geothermal to hydrogen from Hawaii's vast resources, all of which could be further developed with the assistance and cooperation of government in Hawaii.

BIA-HAWAII
BUILDING INDUSTRY ASSOCIATION

February 3, 2009

Senator Mike Gabbard, Chair
Committee on Energy and Environment
Conference Room 225
State Capitol
415 South Beretania Street

Senator Gabbard:

Subject: **Senate Bills No. SB 151, SB 155, SB 148, SB 156 and SB 554 relating to Energy; Renewable Energy and Energy Resources**

I am Karen Nakamura, Chief Executive Officer of the Building Industry Association of Hawaii (BIA-Hawaii). Chartered in 1955, the Building Industry Association of Hawaii is a professional trade organization affiliated with the National Association of Home Builders, representing the building industry and its associates. BIA-Hawaii takes a leadership role in unifying and promoting the interests of the industry to enhance the quality of life for the people of Hawaii.

BIA-HAWAII is opposed to all of the bills listed.

Last session the Senate passed SB No. 644 which effectively:

1. Required all new single family residences constructed after January 1, 2010 to include a solar water heater system;
2. Eliminated the Solar thermal energy systems tax credits on all single-family residential properties after 1/1/2010; and
3. Prohibited a single family residential developer from claiming any renewable energy technologies tax credits for systems installed between now and 2010.

Government "Mandates" that attempts to direct the free market system generally result in penalizing one section of the market. For example, in this case, while the arguments that a \$7,000 thermal solar water heating system can easily be incorporated into the mortgage of the average priced home in Hawaii resulting in the homeowner realizing a net savings as energy cost rise over time, the mandate does not recognize or provide a mechanism to assist buyers seeking units priced for residents making less than 80% and less than 120% of the Housing and Urban Development (HUD) median income levels in Hawaii. For Honolulu, the HUD median income for a family of four is \$77,300. Irrespective of costs, developers are required to provide generally 20% of their total units for families making 120% or less of the HUD median income and 10% of their total units for families making 80% or less of the HUD median income.

Adding the cost of a thermal solar water heating unit to these houses effectively means the buyer gets \$7,000 "less" house.

If the goal was really to significantly reduce our 90% dependency on imported oil, wouldn't it have made more of an impact on our energy dependency to require all existing housing units (approximately 491,000 as of July 2005) to convert to solar water heaters as opposed to requiring only new units to have solar (approximately 5,700 units in 2006). Why do you think the focus was on new units as opposed to existing?

No one disagrees with the intended goal of moving the state toward becoming more energy self sufficient. The concern is in the manner our elected leaders are choosing to accomplish this goal. Building on the mandates from last year, the following is a list that attempts to summarize what is being proposed in each of the five (5) bills being heard.

Bill Number	SB 151	SB 155	SB 148	SB 156	SB 554
Mandatory	Yes	PV--Yes	Yes for 6 or more units	Yes Requires 25% of all new construction by 2015; 50% of all new construction by 2020.	No
Tax Credits					
Solar Thermal	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Removes tax credit for developers; but reinstates tax credits for individual units
SFR	50% or \$5,000	35% or \$2,250	35% or \$2,250	35% or \$2,250	35% or \$2,250
MFR	50% or \$1,000	35% or \$350	35% or \$350	35% or \$350	35% or \$350
Commercial	50% or \$250,000	35% or \$250,000	35% or \$250,000	35% or \$250,000	35% or \$250,000
Wind Power					
SFR	20% or \$1,500	20% or \$1,500	20% or \$1,500	20% or \$1,500	20% or \$1,500
MFR	20% or \$200	20% or \$200	20% or \$200	20% or \$200	20% or \$200
Commercial	20% or \$500,000	20% or \$500,000	20% or \$500,000	20% or \$500,000	20% or \$500,000
Photovoltaic					
SFR	75% or \$12,500	75% or \$12,500	35% or \$5,000	35% or \$5,000	35% or \$5,000
MFR	75% or \$1,000	75% or \$1,000	35% or \$350	35% or \$350	35% or \$350
Commercial	75% or \$1,000,000	75% or \$1,000,000	35% or \$500,000	35% or \$500,000	35% or \$500,000

In general, we are concerned because the proposed legislation focuses again on "Mandates" with little or no incentives. In addition, as was the case last session, none of the legislation clearly identifies the specific problem or problems that need to be addressed through the proposed legislation. If the underlying intent is to encourage more energy efficient perhaps the proposed legislation should be expanded to include an

assessment and analysis of the various proposed legislation with clearly articulated criteria for outcomes that unintended consequences of the proposed legislation.

Perhaps, as in other Cities or municipalities, government in Hawaii should lead by example. In other Cities, policy makers “mandated” government projects to achieve a certain green or sustainable design standard. In so doing, the design professionals and contractors in these Cities were educated and developed the necessary hands on experience to build a green or sustainable project. AFTER the design professionals and contractors gained this experience, there were incentives created based on their hands on experience, to encourage the private projects to incorporate green or sustainable design.

Finally, we strongly recommend that the Legislature develop a full understanding of the economic impacts created by this type of legislation. Perhaps the Legislature should conduct its own analysis or comparison to determine, at a minimum, the following:

1. What specific outcome or range of outcomes would each of the bills achieve;
2. Discuss the public benefits among the different outcomes and assess whether or not government involvement is necessary;
3. If government involvement is desired, assess the pros and cons of providing incentives or mandating compliance to achieve the desired outcomes.

While we see interest in the market moving toward more energy efficiency and sustainable designs, we believe there is much more that needs to be done before public policy makers “Mandate” any more “green or sustainable” legislation.

Thank you for the opportunity to share our views with you.



Executive Vice President & Chief Executive Officer
BIA-Hawaii



February 3, 2009

Senator Mike Gabbard, Chair
Committee on Energy and Environment
Conference Room 225
State Capitol
415 South Beretania Street

Senator Gabbard:

Subject: **Senate Bills No. SB 151, SB 155, SB 148, SB 156 and SB 554 relating to Energy; Renewable Energy and Energy Resources**

My name is Dean Uchida, Vice President of the Hawaii Developers' Council (HDC). We represent over 200 members and associates in development-related industries. The mission of Hawaii Developers' Council (HDC) is to educate developers and the public regarding land, construction and development issues through public forums, seminars and publications.

It is also the goal of HDC to promote high ethics and community responsibility in real estate development and related trades and professions.

The HDC opposed to all of the bills listed.

Last session the Senate passed SB No. 644 which effectively:

1. Required all new single family residences constructed after January 1, 2010 to include a solar water heater system;
2. Eliminated the Solar thermal energy systems tax credits on all single-family residential properties after 1/1/2010; and
3. Prohibited a single family residential developer from claiming any renewable energy technologies tax credits for systems installed between now and 2010.

Government "Mandates" that attempts to direct the free market system generally result in penalizing one section of the market. For example, in this case, while the arguments that a \$7,000 thermal solar water heating system can easily be incorporated into the mortgage of the average priced home in Hawaii resulting in the homeowner realizing a net savings as energy cost rise over time, the mandate does not recognize or provide a mechanism to assist buyers seeking units priced for residents making less than 80% and less than 120% of the Housing and Urban Development (HUD) median income levels in Hawaii. For Honolulu, the HUD median income for a family of four is \$77,300. Irrespective of costs, developers are required to provide

generally 20% of their total units for families making 120% or less of the HUD median income and 10% of their total units for families making 80% or less of the HUD median income.

Adding the cost of a thermal solar water heating unit to these houses effectively means the buyer gets \$7,000 "less" house.

If the goal was really to significantly reduce our 90% dependency on imported oil, wouldn't it have made more of an impact on our energy dependency to require *all existing housing units* (approximately 491,000 as of July 2005) to convert to solar water heaters as opposed to requiring only new units to have solar (approximately 5,700 units in 2006). Why do you think the focus was on new units as opposed to existing?

No one disagrees with the intended goal of moving the state toward becoming more energy self sufficient. The concern is in the manner our elected leaders are choosing to accomplish this goal. Building on the mandates from last year, the following is a list that attempts to summarize what is being proposed in each of the five (5) bills being heard.

Bill Number	SB 151	SB 155	SB 148	SB 156	SB 554
Mandatory	Yes	PV--Yes	Yes for 6 or more units	Yes Requires 25% of all new construction by 2015; 50% of all new construction by 2020.	No
Tax Credits					
Solar Thermal	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Limited to units with permits issued prior to 1/1/2010	Removes tax credit for developers; but reinstates tax credits for individual units
SFR	50% or \$5,000	35% or \$2,250	35% or \$2,250	35% or \$2,250	35% or \$2,250
MFR	50% or \$1,000	35% or \$350	35% or \$350	35% or \$350	35% or \$350
Commercial	50% or \$250,000	35% or \$250,000	35% or \$250,000	35% or \$250,000	35% or \$250,000
Wind Power					
SFR	20% or \$1,500	20% or \$1,500	20% or \$1,500	20% or \$1,500	20% or \$1,500
MFR	20% or \$200	20% or \$200	20% or \$200	20% or \$200	20% or \$200
Commercial	20% or \$500,000	20% or \$500,000	20% or \$500,000	20% or \$500,000	20% or \$500,000
Photovoltaic					
SFR	75% or \$12,500	75% or \$12,500	35% or \$5,000	35% or \$5,000	35% or \$5,000
MFR	75% or \$1,000	75% or \$1,000	35% or \$350	35% or \$350	35% or \$350
Commercial	75% or \$1,000,000	75% or \$1,000,000	35% or \$500,000	35% or \$500,000	35% or \$500,000

In general, we are concerned because the proposed legislation focuses again on “Mandates” with little or no incentives. In addition, as was the case last session, none of the legislation clearly identifies the specific problem or problems that need to be addressed through the proposed legislation. If the underlying intent is to encourage more energy efficient perhaps the proposed legislation should be expanded to include an assessment and analysis of the various proposed legislation with clearly articulated criteria for outcomes that unintended consequences of the proposed legislation.

Perhaps, as in other Cities or municipalities, government in Hawaii should lead by example. In other Cities, policy makers “mandated” government projects to achieve a certain green or sustainable design standard. In so doing, the design professionals and contractors in these Cities were educated and developed the necessary hands on experience to build a green or sustainable project. AFTER the design professionals and contractors gained this experience, there were incentives created based on their hands on experience, to encourage the private projects to incorporate green or sustainable design.

Finally, we strongly recommend that the Legislature develop a full understanding of the economic impacts created by this type of legislation. Perhaps the Legislature should conduct its own analysis or comparison to determine, at a minimum, the following:

1. What specific outcome or range of outcomes would each of the bills achieve;
2. Discuss the public benefits among the different outcomes and assess whether or not government involvement is necessary;
3. If government involvement is desired, assess the pros and cons of providing incentives or mandating compliance to achieve the desired outcomes.

While we see interest in the market moving toward more energy efficiency and sustainable designs, we believe there is much more that needs to be done before public policy makers “Mandate” any more “green or sustainable” legislation.

Thank you for the opportunity to share our views with you.



Sierra Club

Hawai'i Chapter

PO Box 2577, Honolulu, HI 96803

808.537.9019 hawaii.chapter@sierraclub.org

SENATE COMMITTEE ON ENERGY AND ENVIRONMENT

February 3, 2009, 2:45 P.M.

(Testimony is 1 page long)

TESTIMONY IN SUPPORT OF SB151 WITH AMENDMENTS

Chair Gabbard and members of the Committee:

The Sierra Club, Hawai'i Chapter, with 5500 dues paying members statewide, supports SB 151 with amendments. The Sierra Club has reviewed the preliminary comments made by the Hawai'i Solar Energy Association ("HSEA") and is in general comport with the statements made therein. Without repeating the same points made by HSEA, the Sierra Club generally observes it supports efforts to increase the penetration of the so-called mandatory solar hot water heater act to townhouses and condominiums. Further the Sierra Club supports removing the gas variance, inasmuch as this would further the intent of the bill, namely to increase the use of solar water heaters and reduce Hawai'i's dependence on fossil fuels.

The solar mandate was a critical step in securing Hawaii's energy future, reducing our contribution to global climate change, and improving the affordability of housing in Hawai'i. As any with any good measure, however, improvements could be made. To the extent these improvements result in a solar water heater on each and every home in Hawai'i, the Sierra Club supports these efforts.

Thank you for the opportunity to testify.