



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

NEIL ABERCROMBIE  
GOVERNOR

RICHARD C. LIM  
INTERIM 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  
**RICHARD C. LIM**  
Director  
Department of Business, Economic Development, and Tourism  
before the  
**HOUSE COMMITTEES**

on  
**ENERGY & ENVIRONMENTAL PROTECTION**  
and  
**HOUSING**  
and  
**WATER, LAND & OCEAN RESOURCES**

Thursday, March 17, 2011

9:30 a.m.

State Capitol, Conference Room 325

in consideration of

**SB181,SD1**  
**RELATING TO RELATING TO PHOTOVOLTAIC-READY NEW RESIDENTIAL HOMES.**

Acting Chair Coffman, Chair Cabanilla, Chair Chang, Vice Chairs Chong and Har and members of the committees.

The Department of Business, Economic Development, and Tourism (DBEDT) supports SB181,SD1, which requires that new single-family residential construction incorporate design elements and minimum equipment installation at the time of construction to facilitate the future adoption of a photovoltaic system.

The cost of including photovoltaic-equipment and blueprints should be minimal at the time of construction. Our discussions with the solar industry indicate that the cost to bring a new home to photovoltaic ready is about \$100 to \$500 per home, but the cost to retrofit a home is

several thousands of dollars. Therefore, these preparatory measures will help homeowners reduce their cost and transition to a renewable future. With the increase of public awareness of the need to reduce oil imports and the value of using photovoltaics, the installation of photovoltaics has become increasingly popular.

Including photovoltaics in the blue prints when a new home is designed will determine what photovoltaic system sizing is possible, based on roof exposure. The system sizing will govern the conduit and panel box. In addition, if the designer must include photovoltaics in the design, then the designer may realize how little space has been allocated to allow for solar and may well correct that error to expand the use of photovoltaics in the future.

We support this measure which will bring us closer to our Hawaii Clean Energy Initiative goal of 70 percent clean energy by 2030. By achieving higher levels of energy efficiency and utilizing renewable energy in new homes, the State of Hawaii would save energy, resources, and money, as well as work toward achieving the Hawaii Clean Energy Initiative's goal of 70% clean energy by 2030, that is 30% energy efficiency and 40% renewable energy.

Thank you for the opportunity to provide these comments.



**Testimony to the House Committees on Energy and Environmental  
Protection, Housing, and Water, Land & Ocean Resources  
Thursday, March 17, 2011  
9:30 a.m.  
State Capitol - Conference Room 325**

**RE: SENATE BILL NO. 181 SD1 RELATING TO PHOTOVOLTAIC-READY NEW  
RESIDENTIAL HOMES**

Chairs Coffman, Cabanilla and Chang, Vice Chairs Chong and Har, and members of the committees:

The Chamber of Commerce of Hawaii is opposed to S.B. No 181 as presently drafted.

The Chamber is the largest business organization in Hawaii, representing more than 1,100 businesses. Approximately 80% of our members are small businesses with less than 20 employees. As the "Voice of Business" in Hawaii, the organization works on behalf of its members, which employ more than 200,000 individuals, to improve the state's economic climate and to foster positive action on issues of common concern.

The purpose of this Act is to require new single-family residential construction incorporate design elements and minimum equipment installation at the time of construction to facilitate the future adoption of a photovoltaic system.

In this case, the law is ambiguous on the size of the photovoltaic system that the new home should accommodate. The PV capacity of the residence is a function of the area of the roof and location of the dwelling. PV or any type of solar energy system will not work efficiently in areas that do not receive large amounts of sunlight (i.e. valleys, proximity to mountains, higher elevations, etc.). Furthermore, this mandate does not account for the changes in this rapidly growing technology. What is standard today maybe obsolete in a few months or years as new more efficient breakthroughs are realized.

As a general policy, the Chamber is opposed to legislative mandates. We would encourage the legislature to consider the use of incentives to influence the market. From a public policy perspective, this mandate on new home construction focuses essentially on the few hundred or thousand new residential units constructed annually. It does not address the existing 500,000 homes on Oahu that have already been constructed.

Thank you for this opportunity to express our views.

coffman3 - Sean

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**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Wednesday, March 16, 2011 5:10 PM  
**To:** EEPtestimony  
**Cc:** testimony.hi.legislature@gmail.com  
**Subject:** Testimony for SB181 on 3/17/2011 9:30:00 AM

Testimony for EEP/HSG/WLO 3/17/2011 9:30:00 AM SB181

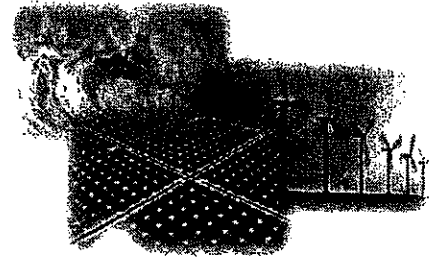
Conference room: 325  
Testifier position: oppose  
Testifier will be present: No  
Submitted by: Jon Shimizu  
Organization: Individual  
Address:  
Phone:  
E-mail: [testimony.hi.legislature@gmail.com](mailto:testimony.hi.legislature@gmail.com)  
Submitted on: 3/16/2011

**Comments:**

Thank you for the opportunity to testify; please disregard (with the exception of the last paragraph) my previous submittal for SB367, mistakenly sent to SB181:

While the underlying intent of SB181 SD1 is noble, I oppose it in favor of initiating a more comprehensive and substantive study of implementing photovoltaic systems for the following reason: relative to the overall goal of 70% clean energy by 2030, the efficacy of this measure, as written, is dubious. For example, in 2008, the estimated energy consumption by the entire residential sector was only 13% for Hawaii. Also in 2008 (granted, a declining market), new single family homes accounted for only 0.5% of the entire housing inventory, or approximately .06% of total consumption. As written, this measure is likely to produce little by way of an increase in renewable energy use.

On the other hand, a more comprehensive study - involving all end-user sectors, and a comparison of the effectiveness of a variety of incentives - offered coherently and in tandem - plus a review of applicable county zoning and energy codes, sustainable development standards, etc. - would result in a broader more-lasting mandate. Although this may not be a popular political alternative in a climate that appears to favor quick solutions, regardless of cost, it stands to reason that a broader reach would be a more viable solution, one that should be compared to other schemes - for example, big wind - before one solution overcomes all other alternatives. As it stands, it is too convenient to later erroneously conclude that PV-readiness or PV in general was not a viable means towards the 2030 goal. The only thing that would have failed is a measure to truly effect change.



**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION  
HOUSE COMMITTEE ON HOUSING  
HOUSE COMMITTEE ON WATER, LAND, & OCEAN RESOURCES**

March 17, 2011, 9:30 A.M.

Room 325

(Testimony is 2 pages long)

**TESTIMONY IN SUPPORT OF SB 181 SD1, SUGGESTED AMENDMENTS**

Acting Chair Coffman, Chairs Cabanilla and Chang, and members of the Committees:

The Blue Planet Foundation supports SB 181 SD1, a measure requiring new homes built after January 1, 2014, be constructed to be "photovoltaic ready." The idea behind this policy is to ensure homes designed today are ready for 21st century technology and that the costs of adopting new clean technologies are kept to a minimum. Blue Planet believes that this measure could be expanded to require other solar-ready features in new homes (see amendments at end of testimony).

Starting last, over 80% of new homes in Hawai'i are built with solar water heaters already installed, thanks to the historic Solar Roofs law the legislature passed in 2008. Now it is time to expand the benefits of solar power to future homebuyers by ensuring that new homes will be ready for photovoltaic systems. This policy requires that new single-family residential construction incorporate solar design elements and minimal equipment installation (such as wiring conduits) to enable the home to easily be converted to solar electric power.

Hawai'i is blessed with solar energy. The islands are the "Saudi Arabia of sun," with the average home rooftop receiving the equivalent of 19 gallons of gasoline in the form of sunshine each day. New homes—and 25% of existing homes—currently use solar water heaters to reduce the demand for electric water heating (which can use up to 40% of the total energy use of the home). Less than 1% of homes use photovoltaic (PV), or solar electric, to power their homes, although the percentage is growing rapidly. As the costs of PV systems continue to fall, the installation of residential PV systems will become increasingly cost effective (please see chart on following page). The installation of these systems on existing homes, however, is sometimes impeded by design features implemented at the time of construction that limit the physical space available for PV systems and related equipment.

**Jeff Mikulina, executive director • [jeff@blueplanetfoundation.org](mailto:jeff@blueplanetfoundation.org)**

55 Merchant Street 17<sup>th</sup> Floor • Honolulu, Hawai'i 96813 • 808-954-6142 • [blueplanetfoundation.org](http://blueplanetfoundation.org)

This measure would reduce the impediments to installing PV on homes built after 2014. While this is a relatively new policy option across the country, solar ready policies are being implemented in a variety of states and municipalities, including New Mexico, Colorado, Tucson, California, and New Jersey.

**SUGGESTED AMENDMENT**

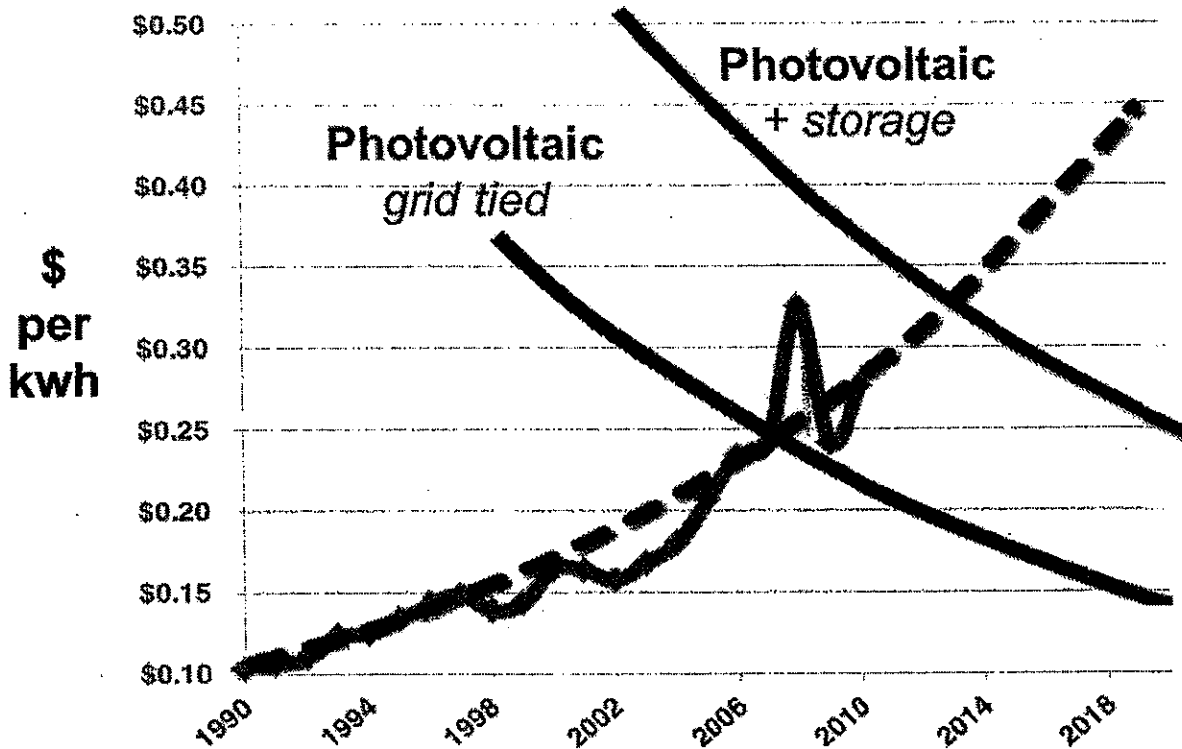
Blue Planet proposes that SB 181 SD1 be amended to include further requirements on new homes in order to maximize the benefit of solar energy to the future homeowner. These requirements could include:

- Requiring that some amount of the roof space be unimpeded and south-facing with a 15% to 25% pitch; and
- Designating roof space for PV equipment, including installing the mandatory solar hot water heating system in a location that does not inhibit future PV installation.

Thank you for the opportunity to testify.

*Approximations of current trends in residential electricity options*

## Residential Electricity Cost Trends





# Sierra Club

## Hawai'i Chapter

PO Box 2577, Honolulu, HI 96803

808.538.6616 hawaii.chapter@sierraclub.org

**HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION  
HOUSE COMMITTEE ON HOUSING  
HOUSE COMMITTEE ON WATER, LAND, & OCEAN RESOURCES**

March 17, 2011, 9:30 A.M.

(Testimony is 1 page long)

**TESTIMONY IN STRONG SUPPORT OF SB 181, SD1**

Aloha Chair Coffman, Chair Cabanilla, Chair Chang and Members of the Committees:

The Hawai'i Chapter of the Sierra Club, with 8,000 dues-paying members and supporters, ***strongly supports*** SB 181. This measure requires all new buildings to contain the necessary design components to readily incorporate a photovoltaic system. This bill would add an insignificant cost to construction (estimated to be around \$100), but would greatly assist future residents who attempt to save a little money and reduce their carbon footprint by installing a photovoltaic system.

In order to meet Hawai'i's aggressive greenhouse gas reduction and energy security goals, it is necessary to transform the building sector. Buildings account for 72% of electricity use<sup>1</sup> and over 36% of greenhouse gas emissions in the U.S.<sup>2</sup> Improving the resource consumption of all new buildings, such as making it easy to install a photovoltaic system, is a vital step towards energy independence. By taking these steps, we will also directly improve the future comfort and affordability of homes.

Buildings have a many-decade lifetime, and today's buildings will continue to be a majority of all buildings in 2050. Without a focused effort to reduce energy demand in existing buildings, it will be virtually impossible to meet even the most modest greenhouse gas reduction targets.

While this measure may not, by itself, solve Hawai'i's energy problems, it is a strong step towards providing clean energy for everyone.

Mahalo for this opportunity to provide testimony.

<sup>1</sup> Buildings Energy Data Book September 2007: 1.1 Buildings Sector Energy Consumption.

<sup>2</sup> EIA 2006: Emissions of Greenhouse Gases in the United States.

**coffman3 - Sean**

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**From:** Kim &/or Steve [lonomullen@earthlink.net]  
**Sent:** Wednesday, March 16, 2011 8:06 PM  
**To:** EEPtestimony  
**Subject:** SB181

Attn: Denny Coffman, Rida Cabinalla and Jerry Chang  
HB: SB181 Solar Ready Homes  
Hearing: 9:30 AM, 3-17-11  
Rm: 325

This bill makes so much sense! I am writing as a citizen who is acutely aware that we must do everything we can to wean ourselves from fossil fuel and the answer is partially right outside our door.

When we were making improvements to our home seven years ago, we wanted to put in a solar water heater. Well, first our architect didn't want to make room for panels on our roof because he said they didn't look nice. And then we realized the only place we could put our water heater was far from our showers which means it takes forever for them to warm up. We did it anyway and I'm glad we did. But, this bill will gear architects and draftsmen to automatically think about solar options. It can't be that expensive or difficult to do. It's a simple thing that could have tremendous advantages. We should remember what the Hawaiians used to do when building their homes. They always planned their new homes to capture the trade winds for natural air- conditioning.

Thanks for your time,  
Kim Osborn Mullen  
363 Auwinala Road  
Kaiula, 96734



**coffman3 - Sean**

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**From:** damian sempio [damiansempio@yahoo.com]  
**Sent:** Wednesday, March 16, 2011 8:44 PM  
**To:** EEPtestimony  
**Subject:** SB181

Aloha Committee Chairs Coffman, Cabanilla, and Chang,

I stand in support of SB181 which is scheduled to be heard by EEP/HSGWLO on Thursday, 03-17-11 9:30AM in House conference room 325.

Thank you for hearing my voice.

Damian Sempio  
45-1047 Pahuwai Place Kaneohe, HI 96744

live simply so others can simply live,

ghandi-

**coffman3 - Sean**

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**From:** Jerome Bautista [jbautista619@yahoo.com]  
**Sent:** Wednesday, March 16, 2011 8:50 PM  
**To:** EEPtestimony  
**Subject:** Bill SB181

To committee chairs Denny Coffman, Riba Cabanilla and Jerry Chang,

My name is Jerome Bautista, a hopeful homeowner and resident of Honolulu at 400 Hobron Lane #2307, Honolulu, HI 97815. I am writing in support of bill SB181, scheduled to be heard tomorrow at 9:30AM. I feel that having solar power ready homes provides Hawaii residents a much more affordable option towards greener energy options. As an island, it is dangerous to rely too much on imported energies. While it may be a while before Hawaii (or any state for that matter) can become independent on fossil fuels, having an affordable and solar ready home would open doors to a cleaner energy source. After the recent disasters that have affected Japan and Hawaii, Hawaii should use cleaner energy sources such as solar and wind to provide other sources of energy. If we can harness these energy sources, we might be able to have natural energy come a disaster.

Mahalo,

Jerome Bautista

coffman3 - Sean

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**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Wednesday, March 16, 2011 9:56 PM  
**To:** EEPtestimony  
**Cc:** merway@hawaii.rr.com  
**Subject:** Testimony for SB181 on 3/17/2011 9:30:00 AM

Testimony for EEP/HSG/WLO 3/17/2011 9:30:00 AM SB181

Conference room: 325  
Testifier position: support  
Testifier will be present: No  
Submitted by: Marjorie Erway  
Organization: Individual  
Address:  
Phone:  
E-mail: [merway@hawaii.rr.com](mailto:merway@hawaii.rr.com)  
Submitted on: 3/16/2011

**Comments:**

Please pass this bill -- it will reduce costs of installing solar panels when a house is being built. That's the time for it! Adding the entire structure onto an already-built house is far more expensive. This is an no-brainer!! Support, please!



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

March 17, 2011

HOUSE

Mark Duda

9:30AM

**COMMITTEE ON ENERGY AND ENVIRONMENTAL  
 PROTETCTION  
 &  
 COMMITTEE ON HOUSING  
 &  
 COMMITTEE ON WATER, LAND, & OCEAN  
 RESOURCES  
 SB 181 SD1**

**TESTIMONY IN STRONG SUPPORT**

Aloha Chair Coffman, Chair Cabanilla, Chair Chang, and Members of the Committees:

HSEA supports this bill as a common sense measure that will generate considerable savings for Hawaii homeowners. There are two sources of these savings proposed by the measure, both of which stem from the fact that a portion of the work that our industry does could be done much more easily and cheaply during the construction phase of the home, rather than as a retrofit project.

The first issue of this addressed in the bill is running conduit from the roof to the homes electrical panel. The cost of doing this is on the order of a few hundred dollars at the time of construction and several thousands later on. Further, when the PV industry has to run conduit there is often no alternative to putting it on the outside of the home in ways that can be unsightly.

The second issue is the need to upgrade the electrical service to accommodate the power flow from the PV system. To remedy this the measure would require an electrical panel that is oversized relative to the project load at the home, in anticipation of the interconnection of a distributed renewable energy system (not necessarily PV) at a later time. In this context, HSEA notes that developers rarely include PV because they do not receive the same tax benefits as the owner of the system and so it makes more sense for the owner to make this investment.

In short, homes pre-designed for PV at a very modest initial cost can have substantial benefits later when these measures must be added as a retrofit project must be done as a retrofit.

Thank you for the opportunity to testify on this measure.

Mark Duda  
President, Hawaii Solar Energy Association

**About Hawaii Solar Energy Association**

*Hawaii Solar Energy Association (HSEA) is comprised of 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.*

coffman3 - Sean

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**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Wednesday, March 16, 2011 11:45 PM  
**To:** EEPtestimony  
**Cc:** abaalto@gmail.com  
**Subject:** Testimony for SB181 on 3/17/2011 9:30:00 AM

Testimony for EEP/HSG/WLO 3/17/2011 9:30:00 AM SB181

Conference room: 325  
Testifier position: support  
Testifier will be present: No  
Submitted by: anthony aalto  
Organization: Individual  
Address:  
Phone:  
E-mail: [abaalto@gmail.com](mailto:abaalto@gmail.com)  
Submitted on: 3/16/2011

Comments:  
Aloha Chairs Coffman, Cabanilla and Chang

Sometimes government regulation can seem excessive and prove expensive. That is not the case with this bill. On the contrary. It mandates a relatively tiny extra expense in the cost of construction of a new house in return for facilitating the potential saving of thousands of dollars at a later date, making it easier and cheaper for homeowners to install photovoltaic systems and thereby assisting Hawaii's move to a clean energy future. Please approve this bill.