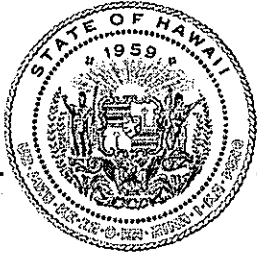


SB 181



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

NEIL ABERCROMBIE
GOVERNOR

RICHARD C. LIM
INTERIM DIRECTOR

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Statement of
RICHARD C. LIM
Director
Department of Business, Economic Development, and Tourism
before the
SENATE COMMITTEES
on
ENERGY AND ENVIRONMENT
and
WATER, LAND, AND HOUSING
and
PUBLIC SAFETY, GOVERNMENT OPERATIONS, AND MILITARY AFFAIRS

Thursday, February 10, 2011
4:15 p.m.
State Capitol, Conference Room 225

in consideration of

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

Chairs Gabbard, Dela Cruz, and Espero, Vice Chairs English, Solomon, and Kidani, and members of the committees.

The Department of Business, Economic Development, and Tourism (DBEDT) supports SB181 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.



Hawaii Solar Energy Association
Serving Hawaii Since 1977

February 10, 2011
4:15PM

SENATE
COMMITTEE ON ENERGY AND ENVIRONMENT
&
COMMITTEE ON WATER, LAND, AND HOUSING
&
COMMITTEE ON PUBLIC SAFETY, GOVERNMENT
OPERATIONS, AND MILITARY AFFAIRS
SB 181

Mark Duda

TESTIMONY IN STRONG SUPPORT

Aloha Chair Gabbard, Chair Dela Cruz, Chair Espero, and Members of the Committees:

HSEA supports this bill as a common sense measure that will generate considerable savings for Hawaii homeowners at no cost to the general fund. There are two sources of savings.

First, 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 best example of this 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. Everyone involved is better off if the home is pre-designed for PV at very modest additional cost than if the project must be done as a retrofit.

The second way that homeowners pay more when homes are not designed with PV in mind is if the roof is difficult for sitting PV modules. We can usually place a system somehow, but more panels may be required to make the same amount of power if the tilt or orientation of the roof is challenging. The solar industry realizes that not all of the proposed changes are easy for homebuilders. However, these concerns must be balanced against the desire of homeowners for clean renewable energy at a reasonable cost.

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.



Sierra Club

Hawai'i Chapter

PO Box 2577, Honolulu, HI 96803

808.538.6616 hawaii.chapter@sierraclub.org

**SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
SENATE COMMITTEE ON WATER, LAND, AND HOUSING
SENATE COMMITTEE ON PUBLIC SAFETY, GOVERNMENT OPERATIONS, AND
MILITARY AFFAIRS**

February 10, 2011, 4:15 P.M.

(Testimony is 1 page long)

TESTIMONY IN STRONG SUPPORT OF SB 181

Aloha Chair Gabbard, Chair Dela Cruz, Chair Espero 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 use¹ and over 36% of greenhouse gas emissions in the U.S.² We need to improve the resource consumption of all new buildings (such as making it easy to install a photovoltaic system). By taking these steps, we will also directly improve the future comfort and affordability of homes.

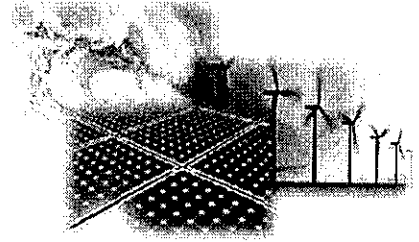
Buildings have a many-decade lifetime, and today's buildings will continue to be a majority of all buildings in 2050. Without a focused effort to reduce energy demand in existing buildings, it will be virtually impossible to meet even the most modest greenhouse gas reduction targets.

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.

¹ Buildings Energy Data Book September 2007: 1.1 Buildings Sector Energy Consumption.

² EIA 2006: Emissions of Greenhouse Gases in the United States.



**SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
SENATE COMMITTEE ON WATER, LAND, AND HOUSING
SENATE COMMITTEE ON PUBLIC SAFETY,
GOVERNMENT OPERATIONS, AND MILITARY AFFAIRS**

February 10, 2011, 4:15 P.M.

Room 225

(Testimony is 2 pages long)

TESTIMONY IN SUPPORT OF SB 181, SUGGESTED AMENDMENTS

Chairs Gabbard, Dela Cruz, and Espero and members of the Committees:

The Blue Planet Foundation supports SB 181, 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

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

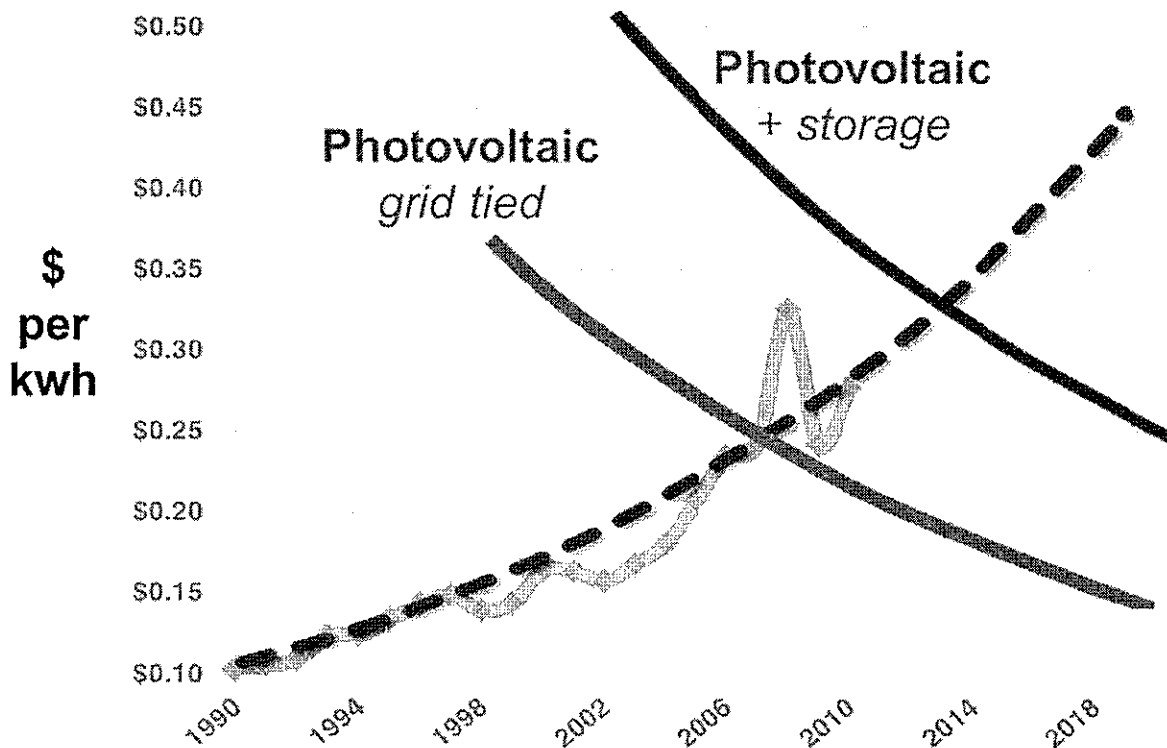
Blue Planet proposes that SB 181 be amended to include further requirements on new homes in order to maximize the benefit of solar energy to the future homeowner. These requirements could include:

- 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



Testimony for ENE/WLH/PGM 2/10/2011 4:15:00 PM SB181

Conference room: 225

Testifier position: support

Testifier will be present: No

Submitted by: Barbara Angelo

Organization: Individual

Submitted on: 2/8/2011

Comments:

I support energy self-sustainability at the source & beginning of construction.

SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
SENATE COMMITTEE ON WATER, LAND, AND HOUSING
SENATE COMMITTEE ON PUBLIC SAFETY, GOVERNMENT OPERATIONS, AND
MILITARY AFFAIRS
February 10, 2011, 4:15 P.M.

TESTIMONY IN STRONG SUPPORT OF SB 181

Aloha Chair Gabbard, Chair Dela Cruz, Chair Espero and Members of the Committees:

I would like to voice my strong support for 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 use¹ and over 36% of greenhouse gas emissions in the U.S.² We need to improve the resource consumption of all new buildings (such as making it easy to install a photovoltaic system). 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.

Best,

Brian Bell

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