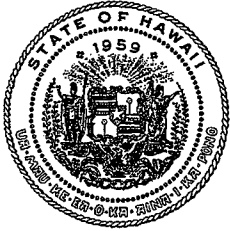


**SB 2990**



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

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

Department of Business, Economic Development, and Tourism  
before the

**COMMITTEE ON ENERGY AND ENVIRONMENT**

Tuesday, February 5, 2008

3:00 p.m.

State Capitol, Conference Room 414

in consideration of

**SB 2990**

**RELATING TO RENEWABLE ENERGY.**

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

The Department of Business, Economic Development, and  
Tourism (DBEDT) strongly supports SB 2990, an Administration Bill  
which requires the electric utilities to use electricity  
generation from renewable resources only to meet the renewable  
portfolio standard (RPS) established in Section 269-91 and 269-  
92, Hawaii Revised Statutes, to ensure the increased use and  
development of renewable energy resources.

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 exposure to the volatile prices of the world oil market, and resulting to less dollars leaving Hawaii's economy;
2. Reduced cost of fuel for electricity generation;
3. Risk management by increased diversification of the electricity generation portfolio;
4. Economic benefits including increased economic activity, economic development and diversification, and job creation; and
5. Reduced greenhouse emissions and the attendant negative impact on climate change and global warming, and on Hawaii's environment.

The Governor has set the vision for a 20% renewable energy by 2020 to achieve energy security, independence, and sustainability. The long-term path and effort to achieve this objective cannot be delayed today.

The significance of this bill 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.

The utilities will face myriad challenges in cutting its 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 objective set by the bill. 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 photovoltaic 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.

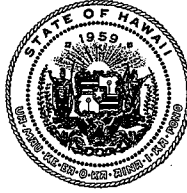
Hawaii's current renewable portfolio standard (RPS) includes electricity energy savings from the use of renewable displacement or off-set technologies and from energy efficiency programs. DBEDT unequivocally supports all cost-effective, technically feasible energy efficiency and conservation resources and off-set technologies, and does not in any way prevent, preclude, or inhibit the use of such resources 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 this bill is to ensure that more renewable sources will be deployed to meet the renewable portfolio standard and increase renewable electricity generation, which is the true intent of setting a renewable

portfolio standard. This is supported by the fact that 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 off-set technologies and energy efficiency programs decrease electricity demand, but do not lead to increase deployment of renewable sources for electricity generation. Further, energy savings from off-set technologies and 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 almost 14% renewable portfolio standard, which includes renewable generation and energy efficiency and conservation savings. However, the utilities achieved RPS based on renewable generation is only 8.2%.

This adjustment of the renewable portfolio standard to a classic RPS will help ensure achieving the State vision of increasing the use and development of renewable energy resources.

Thank you for the opportunity to offer these comments.



LINDA LINGLE  
GOVERNOR  
  
JAMES R. AIONA, JR.  
LT. GOVERNOR

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LAWRENCE M. REIFURTH  
DIRECTOR  
  
RONALD BOYER  
DEPUTY DIRECTOR

TO THE SENATE COMMITTEE ON ENERGY AND ENVIRONMENT  
  
THE TWENTY-FOURTH LEGISLATURE  
REGULAR SESSION OF 2008

Tuesday, February 5, 2008  
3:00 p.m.

TESTIMONY OF CATHERINE P. AWAKUNI, EXECUTIVE DIRECTOR,  
DIVISION OF CONSUMER ADVOCACY, DEPARTMENT OF COMMERCE AND  
CONSUMER AFFAIRS TO THE HONORABLE SENATOR MENOR, CHAIR  
AND MEMBERS OF THE COMMITTEE

**SENATE BILL NO. 2990 – RELATING TO RENEWABLE ENERGY.**

**DESCRIPTION:**

This measure requires that the renewable portfolio standards (“RPS”) of 10 percent of electricity sales by 2010, 15 percent of electricity sales by 2015, and 20 percent of electricity sales by 2020 be met by classic electricity generation from renewable sources.

**POSITION:**

The Division of Consumer Advocacy (“Consumer Advocate”) supports the intent of this Administration measure, which amends the resources eligible by utilities for meeting the RPS to eliminate displacement and energy efficiency savings brought about by use of renewable resources.

S.B. No. 2990  
Senate Committee on Energy and Environment  
Tuesday, February 5, 2008, 3:00 p.m.

COMMENTS:

Hawaii has an abundance of renewable energy resources that can and should be used as alternatives to fossil fuels. The Consumer Advocate has previously questioned the appropriateness of utilities using energy efficiency savings to accurately measure the utilities' "net electricity sales" for RPS purposes. This is not to suggest, however, that energy efficiency savings should not be vigorously pursued. We firmly believe that displacement and energy efficiency savings are the "low hanging fruit" that should be sought by utilities and customers alike as a significant means of lessening the overall demand on electric utility systems.

To ensure that important displacement technologies (sea water air conditioning district cooling systems is a good example of such a technology) are not left without a means of providing benefit to the utilities and their customers, the law must be clear that either such displacement technologies are renewable resources "counted" toward the RPS or are demand-side management technologies subject to administration by a public benefits fund administrator. It is our preference that the public benefits fund law be made clear to include oversight over displacement technology savings.

The Consumer Advocate's preference would be to have a two tiered system for RPS requirements – a set of classic renewable use percentages that must be met by utilities and a set of displacement and energy efficiency savings that must be met by a public benefits fund administrator.

While we firmly believe that significant percentages of renewable resources can and should be used by electric utilities, we are unsure whether electric utilities can reasonably meet all of the established requirement years (2010, 2015, 2020), given the short amount of time between passage of such a measure and the next requirement. We understand that the Hawaii Public Utilities Commission ("Commission") is required to conduct a study with the Hawaii Natural Energy Institute of the University of Hawaii ("HNEI") to determine whether the RPS percentages should be amended. Review of the report to be produced by the Commission and HNEI may be required before determining what percentages are attainable and should be used for RPS.

Thank you for this opportunity to testify.



**Testimony before the  
Senate Committee on  
Energy and Environment**

**S.B. 2990 – Relating to Renewable Energy**

**Tuesday, February 5, 2008  
3:00 pm, Conference Room 414**

**By Arthur Seki,  
Director of Technology  
Hawaiian Electric Company, Inc.**

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

My name is Arthur Seki – I am the Director of Technology at Hawaiian Electric Company. I am testifying on behalf of Hawaiian Electric Company (HECO) and its subsidiary utilities, Maui Electric Company (MECO) and Hawaii Electric Light Company (HELCO) (hereinafter collectively referred to as HECO).

As you know, the discussions on RPS at the Legislature over the past several years have gone through a variety of iterations and, based on the contents of the bills, varying levels of support by HECO. In 2001, HECO supported a RPS bill that led to Act 272. In 2004, HECO supported a RPS bill that led to Act 95. This Act created RPS levels for the electric utilities of 8% in 2005, 10% in 2010, 15% in 2015 and 20% in 2020. Act 95 contained a number of safeguards to allow the law to be revised and recalculated as needs dictated. In 2006, HECO supported a RPS bill that allowed the PUC to establish standards provided at least 50% of the RPS must be from renewable energy generation (Act 62). This bill was part of a package developed by the Hawaii Energy Policy Forum members.

S.B. 2990 removes electrical energy savings from off-set and energy efficiency technologies. We feel that the current RPS definitions are all useful in reducing oil use in Hawaii. Other states have RPS definitions that also include:

- solar water heating (Arizona, Delaware, Illinois, Missouri, Nevada, New Hampshire, North Carolina, Pennsylvania, Texas and Vermont);
- energy savings from efficiency and conservation programs (Colorado, Connecticut, Illinois, Nevada, North Carolina, Pennsylvania, Vermont and Washington); and
- distributed generation/combined heat and power (Arizona, Connecticut, Maine, New York, North Carolina, Pennsylvania, and Washington).

We do not feel that S.B. 2990 is needed since the PUC already has the authority to dictate what percentage should come from renewable energy generation. The previous Acts call for the PUC to have the Hawaii Natural Energy Institute conduct an update of the RPS law in 2009. We would recommend that we wait for the outcome of this study before making any changes to the current RPS law.

We take the RPS law very seriously and have demonstrated through our actions the commitment of our company to achieving these levels. There have been a number of renewable energy projects and initiatives related to renewable energy that we have undertaken:

- integrate wind generated electricity from 3 new wind farms--Hawi (10 MW) and Pakini Nui (20 MW) at South Point on the Big Island and Kaheawa (30 MW) on Maui;
- signed a power purchase contract for a wood energy facility on the Big Island;
- negotiating for new contracts related to wind on Maui and Oahu, solar and geothermal on the Big Island and ocean energy for Oahu;
- will soon release a (100 MW) non-firm Renewable Energy Request for Proposal for Oahu;
- committed the 2009 power plant (100 MW) at Campbell Industrial Park to be 100% biofueled;
- tested biodiesel blends in its diesel engines and combustion turbine at Maalaea power plant;
- partnering with biofuels developer to build a 40 million gallon per year biodiesel production plant on Maui;

- developing test plans biofuel blends demonstration in a steam boiler generating unit on Oahu;
- implement biodiesel blend tests in a diesel engine at Big Island unit;
- implement glycerin tests (biodiesel by-product) in a Kahului steam boiler;
- provided seed funding to the Hawaii Agriculture Research Center (HARC) and the agriculture departments at the University of Hawaii's Manoa and Hilo campuses to conduct biofuel crop research; and
- evaluating micro-algae for biofuels and ocean energy projects.

In summary, HECO has demonstrated its concerted effort to increase renewable energy in Hawaii. We have done a lot and will do more.

Thank you for the opportunity to testify.

Testimony on

## **S.B. NO. 2990 - RELATING TO RENEWABLE ENERGY**

Before the

Senate Committee on Energy and Environment  
Tuesday, February 5, 2008, 3:00 p.m., Conference Room 414

by

David Rezachek, Honolulu Seawater Air Conditioning LLC

Honolulu Seawater Air Conditioning LLC (HSWAC) **STRONGLY OPPOSES** S.B. 2990, Relating to Renewable Energy, which “requires that the renewable portfolio standards of 20 per cent by 2020 be met by classic electricity generation from renewable sources” and which amends the definition of “renewable energy” to include only those renewable energy technologies that produce electricity.

S.B. 2990 seeks to remove solar water heating, seawater air conditioning district cooling systems, and solar air-conditioning from the existing statutory definition of renewable energy technologies. HSWAC **STRONGLY OPPOSES** this change for the following reasons:

- **Displacement of electricity use by thermal applications of renewable energy technologies is just as important and beneficial as electricity generation from renewable resources.** While these technologies do not generate electricity, they provide electricity savings by displacement of the electricity used to perform the same tasks. And, they definitely use renewable energy resources.
- **Displacement technologies may actually be more beneficial than using renewable energy generated electricity to provide energy for the same end use.** Using renewable energy generated electricity for water heating or space cooling, makes no more sense than using fossil fuel generated electricity for the

same purpose. Solar thermal allows direct use of solar energy. SWAC allows direct use of cold, deep seawater.

- **Displacement technologies are generally sited at, or near, the end user and reduce or eliminate transmission and distribution (T&D) losses.** In addition to the benefits of direct use of thermal energy, displacement technologies reduce the T&D losses of electricity by more than 11%. More of the electricity produced goes to end users.
- **Solar water heating and SWAC have the potential to provide more than 30% of the renewables needed to meet the 20% requirement for Oahu in 2020.** If these displacement technologies are not included in RPS requirements, other renewable energy technologies will have to make up the difference. For example, an additional 340 megawatts of PV would be required, in addition to that already needed by 2020. This is 10 times the goal of the State's recently announced Department of Transportation initiative. This is also equivalent to nearly 126,000 residential PV systems at 2.5 kW each. Or, as an alternative, an additional 223 megawatts of wind would be required to provide the equivalent energy.
- **Solar water heating and SWAC are cost effective and available today and can be developed in a rapid manner.** More than 56,000 solar water heating systems have already been installed on Oahu, to-date. A reasonable goal is 100,000 systems by 2020. A 25,000-ton SWAC system is currently under development for Downtown Honolulu. Three to five more SWAC systems of this size are possible on Oahu.
- **It is critical that we accelerate renewable energy development to address greenhouse gas and global climate change problems, immediately – we cannot afford to wait – or to eliminate any renewable energy technologies from being counted.** Hawaii needs to use all renewables, in any form (i.e., electricity, thermal, mechanical) to reduce the use of fossil fuel.

- **Some renewable energy technologies are not available and/or cost effective yet. Their contribution may be a little farther in the future. Some may not be able to make a significant contribution before 2020.**
- **With a large population and electricity demand, and limited land for siting of renewable energy systems, eliminating renewable displacement technologies will make it much more difficult to reach 20% by 2020.**  
Including such electricity displacement technologies will help the utilities to more easily reach RPS mandates and will increase the number of candidate renewable energy technologies. This is particularly important for a high population, high electricity use location with limited land area, such as Oahu.
- **Redefining renewable, electricity displacement technologies will adversely impact marketing efforts.** Potential customers of both solar water heating and SWAC systems want to use renewable energy. Displacement technologies are renewable, and this fact helps to market them.

HSWAC maintains that these important renewable energy, electricity displacement technologies should be included in any RPS for Hawaii.

S.B. 2990 expresses a concern about “double counting the energy savings in calculating the renewable portfolio standard achieved by the electric utilities.”

HSWAC agrees that energy efficiency should be removed from the definition of renewable energy. This would eliminate any potential double counting of the contribution of these technologies.

It is then very simple to calculate the contribution of renewable energy, electricity displacement technologies.

Therefore, HSWAC respectfully requests that the definition of renewable portfolio standard be amended as follows:

" 'Renewable portfolio standard' means the percentage of the total of electrical energy sales and electrical energy displacement that is represented by renewable energy."

The percentage of renewables can then be calculated as follows:

$$\% \text{ Renewables} = \frac{\text{Renewable Generated Electricity} + \text{Renewable Displacement}}{\text{Renewable Displacement} + \text{Total Electricity Production}}$$

If the goal of the bill is to provide more renewables (rather than energy efficiency), then two options are to: (1) raise the requirement to 30+%, or more; or (2) keep displacement technologies with renewable generated electricity and develop a separate but compatible and complimentary energy efficiency portfolio standard.

HSWAC prefers the establishment of a "Energy Efficiency and Demand Reduction Portfolio Standard" that includes the following energy efficiency and demand reduction technologies: heat pump water heating, ice storage, quantifiable energy conservation measures, 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.

S.B. 2990 also apparently supports this in stating that "that in addition to strengthening Hawaii's renewable portfolio standards ... the separate establishment of similarly robust energy efficiency standards is an extremely attractive policy option and deserves serious consideration on its own merits, which are undeniably significant."

Therefore, HSWAC **STRONGLY OPPOSES** the proposed change in the definition of renewable energy and respectfully requests that this bill be held.

HSWAC recommends that this issue be addressed in a PUC proceeding to make sure that no renewable energy technology is overlooked, and that energy efficiency technologies also are emphasized. We need to accelerate the development of both.

Thank you for this opportunity to testify.



LATE TESTIMONY

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

TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION  
IN REGARD TO S.B. 2990  
RELATING TO RENEWABLE ENERGY  
BEFORE THE  
SENATE COMMITTEE ON ENERGY & ENVIRONMENT  
ON  
TUESDAY, FEBRUARY 5, 2008

Chair Menor, Vice-Chair Hooser and members of the committee, my name is Richard Reed and I represent the Hawaii Solar Energy Assn. (HSEA). HSEA believes that the proposed definitional change to Act 240, in regard to Renewable Portfolio Standards, is premature. Until and unless this legislation is accompanied by a companion bill that establishes an equally robust and viable Energy Efficiency Portfolio Standard, the proposed change may do more harm than good.

The HECO, MECO, and HELCO demand-side management (DSM) programs, which provide cash incentives to consumers and businesses for installing energy efficiency measures and displacement renewables including solar water heating systems, premium efficiency motors, and commercial lighting retrofits, will transition in January, 2009 to a new third-party public benefits administrator. All – repeat ALL – of the details regarding this transition remain unclear. The PUC has opened Docket No. 2007 – 0323 to choose the administrator and to develop and define the new market structure.

We do not know who will administer the public benefits fund. We do not know the budget. We do not know what DSM programs and measures the new entity will focus on. In short, there is much so uncertainty in this transition that the last thing we need is for DSM and displacement renewables to be inadvertently devalued which, in an unintended way, this bill will do.

The fact that our electric utilities presently can count efficiency and displacement renewables toward their statutory RPS goals gives them an additional reason to actively pursue all cost-effective DSM resources. The elimination of this incentive will be counter productive in the near-term. We need all the renewables we can get, displacement and generation, and there is no debate that solar water heating and seawater air conditioning are renewable energy resources. If RPS in Hawaii is ultimately to be about renewables and not efficiency so be it, but the definition must remain broad enough to include all renewable energy resources.

The purpose clause of this bill states that the inclusion of renewable displacement technologies and energy efficiency within RPS is, “**unique** among the twenty-nine states that have renewable portfolio requirements”. This is not the case. I have attached an



exhibit from the Interstate Renewable Energy Council (IREC) that shows that TEN other states presently count solar water heating within their standards.

With the emergence of biofuels as a possible substitute for diesel, might it not be time to reconsider the rather arbitrary RPS goal of 20% renewable generation by 2020? It would be appropriate at that time to raise the mandatory percentage of generation renewables within RPS to a level above 10% of the total portfolio.

Make no mistake, the definition of "renewable electrical energy" within RPS will drive both utility and public benefits fund administrator behavior in the future. HSEA believes that a truly sound RPS of relevance to Hawaii must include all cost-effective renewable energy resources regardless of whether they generate or displace electrons. It may make the definition a bit messier than some might prefer, but you cannot exclude – nor should you wish to – a viable renewable from the definition of RPS simply because it displaces rather than generates electricity.

Thank you for the opportunity to testify.

# Renewables Portfolio Standards

