

SB 1173



**STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES**
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WRITTEN TESTIMONY
OF
RUSS K. SAITO, COMPTROLLER
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
TO THE
SENATE COMMITTEE
ON
WAYS AND MEANS
ON
March 5, 2009

S.B. 1173, S.D. 1

RELATING TO ENERGY EFFICIENCY

Chair Kim and members of the Committee, thank you for the opportunity to comment on S.B. 1173, S.D. 1.

The Department of Accounting and General Services (DAGS) supports S.B. 1173, S.D. 1.

This bill, which incorporates most of the measures of S.B. No. 871, which was submitted by the Administration, provides for effective establishment maintenance and achievement of energy efficiency portfolio standards. It requires that buildings and facilities be bench-marked, allows State departments to employ energy saving performance contracts, requires that public builds be retro-commissioned regularly, requires disclosure of energy consumption by sellers or lessors of real property, and authorizes a tax credit for owners of net-zero energy buildings. In short, this bill, if implemented properly, will help achieve most of the State's energy efficiency goals.

DAGS recommends that S.B. 1173, S.D. 1, be advanced.

Thank you for the opportunity to comment on this matter.

SENATE COMMITTEE ON WAYS AND MEANS

March 5, 2009, 10:20 A.M.
Room 211

(Testimony is 4 pages long)

TESTIMONY IN SUPPORT OF SB 1173 SD1, SUGGESTED AMENDMENTS

Chair Kim and members of the committee:

The Blue Planet Foundation supports SB 1173 SD1, implementing energy efficiency policies to provide a strong foundation for Hawaii's clean energy future. Energy efficiency, unfortunately, is the "dark horse" of clean energy resources. Energy efficiency—efficient lights, appliances, electronics, behavior changes, and the like—is the largest, cheapest, safest, and fastest energy option that Hawai'i can implement. Consider:

- Energy efficiency is the fastest-growing U.S. "energy source" (growth of ~2.5 to 3.5% annually)
- National energy efficiency programs save energy at an average cost of about 3 cents/kWh -- *about 1/10 the average electricity cost in Hawaii*
- Leading states are saving over 1% additional of total electricity sales annually
- Energy efficiency provides major local economic benefits: energy efficiency is 100% obtained from investment in local homes and businesses
- It is also the least visible, least understood, and most neglected

Efficiency Portfolio Standards

Blue Planet supports establishing energy efficiency portfolio standards. Directing the PUC to establish an energy efficiency portfolio standard would help Hawaii take advantage of this critical energy resource. The energy efficiency portfolio standard should complement a true renewable portfolio standard.

While Blue Planet supports the efficiency standards in SB 1173 SD1, we would prefer that the measure go further to establish aggressive building efficiency standards for new construction in Hawai'i. Strong energy efficiency building codes are critical to achieving our clean energy goals, as buildings are the largest consumer of electricity and the building stock turns over very slowly. **To this end, we support the adoption of more aggressive building code standards by the counties—30% higher than the most recent guideline established by International Energy Conservation Code (IECC).** Such a stringent building code would yield the construction of high

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performance buildings in Hawai'i—performance that would result in much lower energy bills over the life of the home or building.

Efficiency investments pay back to Hawaii's residents and economy in numerous ways.

1. First, the investment in efficiency pays back in savings during the home or building's occupancy and use.
2. Second, building more high performance buildings is typically more labor and material intensive than structures that are inefficient, resulting in more job creation—the tradeoff being money is directed toward local jobs and contractors instead of going overseas to purchase fossil fuel.
3. Finally, building high performance buildings is the only way for Hawai'i to achieve its clean energy future. We simply cannot meet our growing energy demands in the short term without radically improving the efficiency of our buildings.

State Building Efficiency Retrofits

Blue Planet supports the requirement that state-owned buildings to be retrofitted with efficiency improvements. It is critical that the state operate high performance buildings. Not only should be state be leading by example in energy efficiency, but taxpayers are paying the energy costs for state buildings. Blue Planet particularly appreciates the direction that state buildings must be retrofitted to achieve 30% higher than the most recent guideline established by the IECC, and the requirement that performance-based contracting be employed to meet the targets. This makes energy efficiency improvements more affordable, as the investment is paid off over time through energy cost savings.

Consumer Energy Efficiency Information

Blue Planet supports directing the PUC to establish a consumer information program on energy efficient properties. Home buyers or renters deserve to know what they will likely be paying per month for energy.

Hawaii residents pay the highest electricity rates in the nation. Many homeowners have vastly inefficient homes and operate inefficient appliances simply because they are not aware of the energy they are wasting or they don't want to make the investment to improve the situation. Unfortunately, energy efficiency investments are sometimes penalized in the marketplace as homes or apartments that have invested in energy efficient appliances or solar water heaters cost more up front (or have a higher rent)—despite being less expensive to live in on a monthly basis. This measure would change that by creating a program whereby potential homebuyers or tenants could see what the monthly energy cost of the home would be. This information disclosure would enable an honest assessment of the true costs of home ownership or renting and encourage energy efficiency investments by homeowners.

Blue Planet supports amending SB 1173 SD1 to go further in fostering high performance and energy efficient homes in Hawai'i by requiring that homes achieve a certain efficiency standard at the time of sale. Such a "Time of Sale Efficiency Standard" would ensure that homes in Hawai'i meet a minimum level of efficiency, saving homeowners money in energy bills over the long term. The standard should be tied to the energy code established for new buildings, such as 30% higher than the latest IECC.

Zero Net Energy Buildings

Blue Planet supports establishing tax credits for developers to build net-zero energy buildings. Blue Planet supports this incentive to encourage the development of high performance, zero energy buildings of the future in Hawai'i.

On-Bill Financing for Energy Efficiency

Senate Bill 1173 SD1 expands on-bill financing options to make energy efficiency investments more affordable to Hawai'i residents. On-bill financing is one of the most powerful tools to increase adoption of energy efficiency and clean energy investments. **Blue Planet believes that pay as you save, or "on-bill financing," should be required and made a regular program administered by the public benefits fund administrator.**

On-bill financing is a critical tool to overcome the biggest barrier to energy efficiency and clean energy investment: the up-front cost. Consumers have proven to be terribly myopic in their purchasing decisions when it comes to energy saving technologies. Despite the environmental and long-term economic advantages of converting to photovoltaic power, a miniscule percentage of Hawai'i homes take advantage of this technology. Even less expensive purchases, like high efficiency refrigerators, are passed over because of their initial cost. By eliminating the up-front cost and enabling residents to pay for the investment through the energy savings over time, adoption of efficiency and clean energy will accelerate.

An examination of some of the economic barriers present in the diffusion of energy efficiency technologies provides insight into the challenges of greater adoption of efficient appliances and photovoltaic. Empirical studies examining the purchase of energy-saving devices reveal that high initial investment costs—regardless of the money savings from reduced electricity use—fosters to a tendency to avoid energy saving innovations. These decisions can result in outcomes that are economically suboptimal considering likely investment alternatives available to the decision maker. By foregoing certain energy efficiency investments, individuals demonstrate implied discount rates that are frequently an order of magnitude or higher over the prevailing discount rate.

A 1983 study on refrigerators¹ is notable for being one of the first to use very specific data and a simple technique. They examined two refrigerator models sold by the same national retailer

¹ Meier, A., and Whittier, J. (1983). Consumer Discount Rates Implied by

between 1977 and 1979. The two refrigerators were identical in nearly every way except their energy use and cost: one used 410 kilowatt-hour (kWh) per year less electricity but cost \$60 more. Using a 6% discount rate and a 20-year lifetime, the more efficient refrigerator saved energy at an electricity cost of just over one cent per kWh—lower than electricity prices prevailing in every state at the time. Despite being widely advertised and being recommended by a prominent consumer magazine, the energy-efficient refrigerator was purchased by customers less frequently than the less expensive inefficient model. Using regional electricity cost data, Meier and Whittier calculated the implied discount rate by these purchases, which varied between 34% and 59%, depending on the region's prevailing residential electricity rate.

The issues that give rise to the "energy-efficiency paradox" are likely to be more pronounced in the decision to purchase a photovoltaic system, with high initial investment costs and lengthy payback times. Expanding the on-bill financing program to energy efficient appliances (such as high efficiency refrigerators) and residential photovoltaic systems will help to eliminate this barrier and make these money-saving technologies more accessible to local residents.

Renewable Energy Income Tax Credits

Blue Planet supports the tax credits amendments in SB 1173 SD 1. To further accelerate the adoption of residential clean energy technologies, we would additionally support making the solar and wind tax credits 100% refundable for individuals with limited income.

Thank you for the opportunity to testify.

Purchases of Energy-Efficient Refrigerators. *International Journal of Energy*, 8(12), 957-962.