



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
File:

COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

S.B. 2842, SD2, RELATING TO LIGHTING

Testimony of Chiyome Leinaala Fukino, M.D.
Director of Health

March 13, 2008
9:00am

1 **Department's Position:** The Department respectfully opposes the measure.

2 **Fiscal Implications:** The bill directs the Department to develop a statewide recycling program for
3 fluorescent bulbs and appropriates unspecified amount from the environmental management special
4 fund. The use of this fund will jeopardize the regulatory functions of the Department's solid waste
5 program.

6 **Purpose and Justification:** S.B. 2842, SD2 proposes to phase out and ban the use of lighting products
7 with lead and mercury; establishes a statewide lighting efficiency standard; and directs the Department
8 of Health to develop a statewide recycling program for mercury containing compact fluorescent bulbs.

9 The Department supports energy-efficiency initiatives and the use of renewable energy sources,
10 but this bill presents problems.

11 HRS §342J, Management of Hazardous Waste, is not the appropriate chapter to deal with
12 lighting efficiency standards and general consumer product requirements. S.B. 2842, SD2 amends HRS
13 §342J by changing the title to include universal waste and adds a section to deal with universal waste;
14 lighting products. Devices that contain a hazardous substance are not hazardous waste until they can no

1 longer be used for its intended purpose. As an example, paint thinner is not hazardous waste until it is
2 used and discarded. A fluorescent bulb is not a hazardous waste until it is destined for disposal or
3 recycling. For this reason, HRS §342J is not the appropriate chapter to deal with manufacturer's
4 lighting standards, nor is the Department the appropriate agency to develop lighting efficiency
5 standards.

6 Part IV of SB 2842, SD 2 directs the Department to develop a statewide program for the
7 recycling of mercury-containing compact fluorescent bulbs before January 1, 2011. Recycling of waste
8 compact fluorescent bulbs is currently an option under the hazardous waste regulations. The department
9 can provide and incorporate more education and promotion of recycling fluorescent bulbs for businesses
10 that generate hazardous waste under its existing Pollution Prevention/Waste Minimization program.

11 We respectfully oppose the development of a new and separate recycling program. The bill calls
12 for a report before the commencement of the 2011 regular session on funds and legislation necessary to
13 implement the recycling program. In light of the additional personnel and continued funding required to
14 implement the proposed program, the Department requests that any provision of resources not adversely
15 affect the priorities in our executive supplemental budget request.

16 Thank you for the opportunity to testify on this measure.

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Sierra Club Hawai'i Chapter

PO Box 2577, Honolulu, HI 96803
808.537.9019 hawaii.chapter@sierraclub.org

HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION March 13th, 2008, 9:00 A.M.

(Testimony is 2 pages long)

TESTIMONY IN STRONG SUPPORT OF SB 2842 SD2

Chair Morita and members of the Committee:

The Sierra Club, Hawai'i Chapter, with 5500 dues paying members statewide, strongly supports SB 2842 SD2, establishing a statewide lighting efficiency standard. We support a policy that establishes a lumens-based standard for general purpose bulbs as SB 2842 SD2 does as opposed to an outright ban on one technology or another.

Incandescent lights are basically electric space heaters that give off light as a byproduct. They are highly inefficient, wasting most of the power they consume as heat. Some countries (Australia, Canada) have passed outright bans on incandescent bulbs. While this is an option, most policy experts agree that the superior approach is to set the desired efficiency standards rather than prescribe the actual technology (i.e. incandescent, compact fluorescent, light-emitting diode, glowworms, etc.). A lighting efficiency standard would not directly prohibit or promote any one technology over another—it would simply set the efficiency bar that any light source has to achieve, regardless of technology. Lights needed for medical, emergency, or safety lighting is properly excluded from this standard (although we believe the exemption list in SB 2842 SD2 could be tightened).

A lighting standard is necessary because far too often consumers make poor energy purchasing decisions. Consumers usually focus on the first cost of an energy-consuming product instead of its lifecycle or energy use cost. This leads to highly irrational purchasing decisions, where consumers end up expending far more on basic energy use than needed. This wouldn't necessarily be a problem requiring government intervention, but the corollaries to a consumer's energy money wasting is excess greenhouse gas pollution, increased oil dependency, and utility system strain. All three of these impacts affect society as a whole.

Consider a typical lighting need for a small reading lamp. Let's say a Kaua'i resident uses a typical 40-watt incandescent bulb for the lamp. The resident could use an equivalent 10-watt compact fluorescent light (CFL) or even a new 4-watt light emitting diode (LED) bulb. The table on the following page presents the various costs and impacts for the three options if the lamp is illuminated for an average of 5 hours per day (at the current \$0.35 per kilowatt-hour on Kaua'i).

Bulb	Wattage	Lumens	Eff (Lum/W)	Watt-hours	kWh	\$	CO ₂ (lbs)	Initial Cost	5 year cost
<i>Incandescent</i>	40	420	10.5	73000	73	\$25.55	147	\$ 0.75	\$ 128.50
<i>Compact Fluorescent</i>	10	520	52	18250	18.25	\$ 6.39	37	\$ 2.50	\$ 34.44
<i>Light Emitting Diode</i>	4	230	57.5	7300	7.3	\$ 2.56	15	\$ 30.00	\$ 42.78

Despite the increased initial cost of both a CFL and an LED, the savings become dramatic over a few years. In this example, in fact, it would take just over one month for a CFL to recoup its initial cost in electricity savings! After that the resident would enjoy 75% savings every hour the bulb is used.

Even more striking is the greenhouse gas savings offered by a higher efficiency light (CFL or LED). One year of incandescent usage as stated above would produce roughly 150 pounds of greenhouse gas. Switching to a CFL would produce about 40 pounds, and switching to a LED would produce only 15 pounds—90% less than an incandescent.

We believe that the timeline for the lighting standards set forth in this measure are achievable and fair. Given the strong market pressure for more energy efficient lighting and appliances, the cost of high-efficiency lighting—particularly LEDs—is likely to drop significantly by the time the new Hawai'i standards take effect.

The Sierra Club also strongly supports the establishment of a CFL recycling program as described in Section 5 of SB 2842 SD2. An education campaign to ensure full participation in the recycling program should be part of this effort. An alternative approach to capture used CFLs and prevent mercury from entering Hawaii's landfills or H-POWER would be to require that light bulb retailers take back the CFLs that they sell.

Please forward SB 2842 SD2. We are available to work with the Committee on a House draft to address the following issues if there is interest:

1. Tightening the lighting efficiency standards exemption list; and
2. Increasing the standard for the year 2016 (perhaps 60 or 80 lumens per watt).

Thank you for the opportunity to testify.

LIFE OF THE LAND

Ua Mau Ke Ea O Ka Aina I Ka Pono

76 North King Street, Suite 203, Honolulu, Hawai'i 96817

Phone: (808) 533-3454 * E-Mail: henry.lifeoftheland@gmail.com

COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Chair: Rep. Hermina M. Morita

Vice Chair: Rep. Mele Carroll

Date: Thursday, March 13, 2008

Time: 9:00 a.m.

Room: 312

SB 2842 SD2 Lighting

SUPPORT

Aloha Chair Morita, Vice Chair Carroll and Members of the Committee,

Life of the Land is Hawai'i's own environmental and community action group advocating for the people and the `aina since 1970. Our mission is to preserve and protect the life of the land through sustainable land use and energy policies and by promoting open government through research, education, advocacy, and litigation.

As bills to replace incandescent lights with CFLs have advanced here at the Legislature, many have said "what about the mercury in CFLs". This is a false argument. All systems pollute, and many systems impact greenhouse gas emissions. CFLs may appear to create less mercury, especially when one considers only one single point in the lifecycle of a bulb. But like financial statements, biofuels and life itself, lifecycle analysis of a bulb reveals a more complex picture. Including the electricity the bulb burns alters the equation.

An article in Popular Mechanics: "Compact Fluorescent Bulbs and Mercury: Reality Check " (June 11, 2007) stated:

"On average, CFLs require about 25 percent of the electricity as their incandescent counterparts to produce equivalent light. ... Approximately 0.0234 mg of mercury—plus carbon dioxide, sulfur dioxide and nitrogen oxide—releases into the air per 1 kwh of electricity that a coal-fired power plant generates. Over the 7500-hour average range of one CFL, then, a plant will emit 13.16 mg of mercury to sustain a 75-watt incandescent bulb but only 3.51 mg of mercury to sustain a 20-watt CFL (the lightning equivalent of a 75-watt traditional bulb). Even if the mercury contained in a CFL was directly released into the atmosphere, an incandescent would still contribute 4.65 more milligrams of mercury into the environment over its lifetime."
(www.popularmechanics.com/blogs/home_journal_news/4217864.html)

An article the Honolulu Advertiser By Jan TenBruggencate in "Plants reduce mercury emissions" (February 14, 2005) stated:

"AES Hawai'i power plant ... uses low-sulfur, low mercury coal ... Electric generation is the biggest U.S. source of atmospheric mercury pollution. In 1999, power plants produced nearly 50 percent of all mercury emissions. No other individual category has even 10 percent, according to EPA reports. ... The biggest [Hawaii] mercury generator — Hawaiian Electric's oil-fired plant at Kahe Point" (<http://the.honoluluadvertiser.com/article/2005/Feb/14/ln/ln12p.html>)

From a climate perspective -- bulbs which require less electricity and also produce less heat thus requiring less air conditioning -- should be favored.

Mahalo,

Henry Curtis
Executive Director

Testimony before the
House Committee on
Energy & Environmental Protection

S. B. 2842 SD2 - Relating to Lighting

Thursday, March 13, 2008
9:00 a.m., Conference Room 312

by Alan K.C. Hee
Manager, Energy Services Department
Hawaiian Electric Company, Inc.

Chair Morita, Vice Chair Carroll and Members of the Committee:

My name is Alan Hee and I am testifying on behalf of Hawaiian Electric Company, Inc., and its subsidiaries, Maui Electric Company (MECO) and Hawaii Electric Light Company, Inc. (HELCO).

Hawaiian Electric strongly supports the installation of energy efficient lighting products and strongly supports SB 2842 SD2. The response to our demand-side management compact fluorescent lamp (CFL) rebate program by customers and distributors has been excellent, resulting in greater awareness and availability of these energy efficient lighting products.

Thank you for this opportunity to testify.