

JAN 23 2009

A BILL FOR AN ACT

RELATING TO ENERGY RESOURCES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. The legislature finds that solar water heating
2 systems provide numerous financial, economic, and environmental
3 benefits to Hawaii's residents, businesses, electric utility
4 companies, and to the State itself. Solar water heating systems
5 that are appropriate for the Hawaiian Islands have design lives
6 in excess of fifteen years and can reduce the average
7 homeowner's monthly electric bill by thirty to fifty per cent.
8 The State of Hawaii annually exports between three and seven
9 billion dollars to import fossil fuels. By using the sun
10 instead of expensive and polluting fossil fuel to heat water,
11 Hawaii immediately benefits from one of its best and least
12 expensive import substitution opportunities.

13 A conventional solar water heating system will save an
14 average of four barrels of imported oil each year over its
15 useful operating life. With approximately 100,000 solar systems
16 now in service in Hawaii, the annual energy savings at \$50/per
17 barrel of oil is \$20,000,000. These savings increase annually



1 as new systems are installed or as energy prices increase. Of
2 equal importance, this money remains in the local economy
3 supporting job growth, consumer spending, and new business
4 investment. Hawaii's installed base of solar water heating
5 systems annually mitigates thousands of tons of carbon dioxide
6 (CO₂), sulfur dioxide (SO₂), nitrogen oxide (NO_x), and airborne
7 particulate matter (PM₁₀) that contributes to both global
8 climate change and local air quality.

9 The legislature finds that the State of Hawaii leads the
10 nation in the per-capita installation of solar water heating
11 systems. Since 1996, the Hawaiian Electric Industries' group of
12 electric utility companies, pursuant to the public utilities
13 commission's directives, has sponsored the nation's most
14 effective and successful residential solar water heating
15 programs for both existing homes and new construction by
16 providing rebates for over forty thousand systems. In 2007,
17 nearly half of the installed solar water heating systems in the
18 United States were installed in Hawaii. Over thirty-five per
19 cent of these installations were installed in new homes and the
20 trend line is quickly accelerating in this area.

21 The primary reason for Hawaii's predominance in solar water
22 heating has been the State's consistent support of renewable



1 energy utilization and development. Since 1976, when Act 189
2 first established Hawaii's energy conservation income tax
3 credits, the legislature has understood the importance of
4 consistent energy policy in developing and maintaining the
5 renewable energy industry infrastructure required to deliver the
6 products and services necessary to effect change in this area.

7 While the federal and other state governments have wavered
8 in their commitment to renewable energy development over the
9 past thirty years, primarily at times when oil prices have been
10 low, the legislature has remained cognizant of the seamless
11 interrelationship in Hawaii between energy prices and the
12 overall health of the State's economy and environment.

13 Given Hawaii's nearly complete dependence on imported oil,
14 and in recognition of the fact that oil prices remain highly
15 volatile, the legislature finds that the State must move with
16 all due haste and determination to make all of Hawaii's new and
17 existing homes and buildings, including state and county
18 government buildings, significantly more energy efficient.
19 There are many ways to do this, including the continuation of
20 cost-effective market mechanisms like tax credits and utility
21 and third-party demand-side management rebates.



1 Finding an expeditious path to reducing dependence of the
2 State upon fossil fuel consumption, the legislature in 2008
3 enacted Act 204 to require the installation of solar water
4 heating systems for all new single-family dwellings constructed
5 after December 31, 2009.

6 The legislature finds that for public policy to be truly
7 successful, the outcome must lead to a quantifiable increase in
8 energy savings from mandated solar water heating systems as
9 measured in kilowatt hours (kWh) and utility system capacity
10 benefits as measured in kilowatts (kW). The kW capacity benefit
11 plays an important role in electric utility company generation
12 planning and in delaying the necessity of adding costly new
13 utility generation plants. To achieve this purpose, the
14 required solar water heating systems must provide nominal energy
15 savings (kWh) of no less than ninety per cent of the fossil
16 energy required by a conventional electric water heater.

17 Solar water heating systems also shall be designed and
18 installed in accordance with prescriptive guidelines that
19 deliver the quantitative benefits (kWh savings) outlined above
20 to both the ratepayer and the electric utility company for no
21 less than fifteen years. The vast majority of the solar water
22 heating systems installed within the electric utility company



1 demand-side management programs since 1995, will last far longer
2 than fifteen years with minimal maintenance.

3 System longevity must be assured by the establishment of
4 rigorous component and equipment standards that protect
5 ratepayers from both substandard products and specious
6 performance claims. Comprehensive third-party system
7 inspections such as those presently conducted by the electric
8 utility companies shall be maintained to verify adherence to the
9 established performance and prescriptive standards and
10 specifications.

11 The purpose of this Act is to clarify provisions of Act
12 204, Session Laws of Hawaii 2008, and to limit to an absolute
13 minimum the circumstances by which a fossil fuel fired water
14 heater of any type may be substituted. It is intended that the
15 variances provided for in this Act should be rarely if ever
16 exercised or granted. The overwhelming burden of proof shall
17 lie on the applicant for a variance to prove that a solar water
18 heating system in the Hawaiian Islands, regardless of location
19 or circumstances, is not cost effective in the context of a
20 thirty-year mortgage term. This requires the use of realistic
21 assumptions about interest rates, discount rates, inflation
22 rates, and the expected average cost of electricity by island



1 over the thirty-year period, regardless of the cost of
2 electricity, or of oil or some other fossil fuel, at a specific
3 point in time.

4 The legislature further finds that the continuation of the
5 popular and cost-effective renewable energy, technologies income
6 tax credit shall remain available for all single-family
7 dwellings built before January 1, 2010.

8 SECTION 2. Section 196-6.5, Hawaii Revised Statutes, is
9 amended by amending subsections (a) and (b) to read as follows:

10 "(a) On or after January 1, 2010, no building permit shall
11 be issued for a new single-family dwelling that does not include
12 a solar water heater system [~~that~~] which meets the standards
13 established pursuant to section 269-44, unless the [~~energy~~
14 ~~resources coordinator~~] public benefits fee administrator
15 approves a variance. The public benefits fee administrator
16 shall prescribe and publish objective criteria for variances
17 allowed under this subsection. A variance application shall
18 only be [~~approved~~] accepted if submitted by an architect or
19 mechanical engineer licensed under chapter 464 who attests that:

20 (1) Installation is impracticable due to poor solar
21 resource;



1 (2) Installation is cost-prohibitive based upon a life
2 cycle cost-benefit analysis that incorporates the
3 average residential utility bill and the cost of the
4 new solar water heater system with a life cycle that
5 does not exceed fifteen years; or

6 (3) A substitute renewable energy technology system, as
7 defined in section 235-12.5, is used as the primary
8 energy source for heating water[~~+~~~~or~~

9 ~~(4) A demand water heater device approved by Underwriters~~
10 ~~Laboratories, Inc., is installed; provided that at~~
11 ~~least one other gas appliance is installed in the~~
12 ~~dwelling. For the purposes of this paragraph, "demand~~
13 ~~water heater" means a gas tankless instantaneous water~~
14 ~~heater that provides hot water only as it is needed].~~

15 (b) A request for a variance shall be submitted to the
16 [~~energy resources coordinator~~] public benefits fee administrator
17 on an application prescribed by the [~~energy resources~~
18 ~~coordinator~~] public benefits fee administrator and shall
19 include, but not be limited to, a description of the location of
20 the property and justification for the approval of a variance
21 using the criteria established in subsection (a). A variance
22 shall be deemed approved if not denied within thirty working



1 days after receipt of the variance application. The public
2 benefits fee administrator shall make public:

3 (1) All applications for a variance within seven days
4 after receipt of the variance application; and

5 (2) The deposition of all applications for a variance
6 within seven days of the determination on the variance
7 application."

8 SECTION 3. Section 235-12.5, Hawaii Revised Statutes, is
9 amended by amending subsection (a) to read as follows:

10 "(a) When the requirements of subsection (c) are met, each
11 individual or corporate taxpayer that files an individual or
12 corporate net income tax return for a taxable year may claim a
13 tax credit under this section against the Hawaii state
14 individual or corporate net income tax. The tax credit may be
15 claimed for every eligible renewable energy technology system
16 that is installed and placed in service in the State by a
17 taxpayer during the taxable year. This credit shall be
18 available for systems installed and placed in service in the
19 State after June 30, 2003. The tax credit may be claimed as
20 follows:

21 (1) Solar thermal energy systems for:



- 1 (A) Single-family residential property for which a
2 building permit for a single-family dwelling was
3 issued prior to January 1, 2010: thirty-five per
4 cent of the actual cost or \$2,250, whichever is
5 less;
- 6 (B) Multi-family residential property: thirty-five
7 per cent of the actual cost or \$350 per unit,
8 whichever is less; and
- 9 (C) Commercial property: thirty-five per cent of the
10 actual cost or \$250,000, whichever is less;
- 11 (2) Wind-powered energy systems for:
- 12 (A) Single-family residential property: twenty per
13 cent of the actual cost or \$1,500, whichever is
14 less[+], unless all or a portion of the system is
15 used to fulfill the substitute renewable energy
16 requirement pursuant to section 196-6.5(a)(3),
17 then the credit shall be reduced by twenty per
18 cent of the actual system cost or \$1,500,
19 whichever is less;
- 20 (B) Multi-family residential property: twenty per
21 cent of the actual cost or \$200 per unit,
22 whichever is less; and



- 1 (C) Commercial property: twenty per cent of the
2 actual cost or \$500,000, whichever is less; and
- 3 (3) Photovoltaic energy systems for:
- 4 (A) Single-family residential property: thirty-five
5 per cent of the actual cost or \$5,000, whichever
6 is less[+], unless all or a portion of the system
7 is used to fulfill the substitute renewal energy
8 requirement pursuant to section 196-6.5(a)(3),
9 then the credit is reduced by thirty five per
10 cent of the actual system cost or \$2,250,
11 whichever is less;
- 12 (B) Multi-family residential property: thirty-five
13 per cent of the actual cost or \$350 per unit,
14 whichever is less; and
- 15 (C) Commercial property: thirty-five per cent of the
16 actual cost or \$500,000, whichever is less;
17 provided that multiple owners of a single system shall be
18 entitled to a single tax credit; and provided further that the
19 tax credit shall be apportioned between the owners in proportion
20 to their contribution to the cost of the system.

21 In the case of a partnership, S corporation, estate, or
22 trust, the tax credit allowable is for every eligible renewable



1 energy technology system that is installed and placed in service
2 in the State by the entity. The cost upon which the tax credit
3 is computed shall be determined at the entity level.
4 Distribution and share of credit shall be determined pursuant to
5 section 235-110.7(a)."

6 SECTION 4. Section 269-44, Hawaii Revised Statutes, is
7 amended to read as follows:

8 "~~+~~§269-44~~+~~ **Solar water heater system standards.** (a)

9 Not later than July 1, 2009, or as soon as reasonably
10 practicable, the public utilities commission shall adopt or
11 establish by rule, tariff, or order, standards for solar water
12 heater systems to include, but not be limited to, specifications
13 for the performance, materials, components, durability,
14 longevity, proper sizing, installation, and quality to promote
15 the objectives of section 269-124.

16 (b) The public utilities commission, to the extent
17 reasonably practicable, shall harmonize its standards for solar
18 water heating systems with those adopted or established by the
19 public benefits fee administrator.

20 (c) The public utilities commission shall use a portion of
21 the moneys collected by Hawaii's electric utilities from its
22 ratepayers through a demand-side management surcharge to support



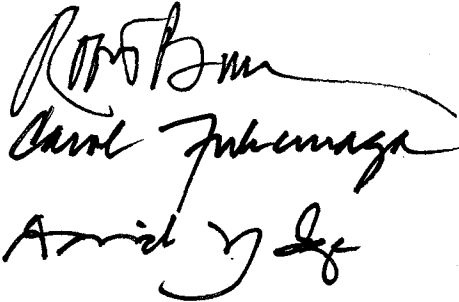
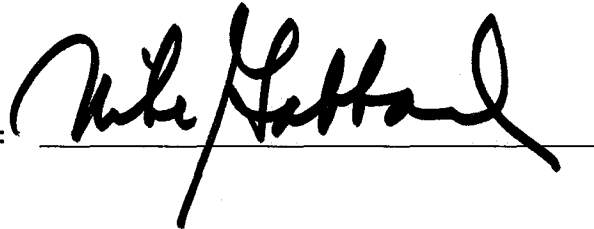
1 compliance with subsection (a) in the form of post-installation
2 verification inspections of the water heating technology
3 installed pursuant section 196.5."

4 SECTION 5. Statutory material to be repealed is bracketed
5 and stricken. New statutory material is underscored.

6 SECTION 6. This Act, upon its approval, shall take effect
7 retroactive to January 1, 2009.

8

INTRODUCED BY:



Report Title:

Energy Resources; Solar Water Heating

Description:

Amends the law mandating solar water heater systems for single-family dwellings by clarifying its application to new dwellings; clarifying variance request procedures and authority; reducing the tax credit for substitute renewable energy systems installed under the mandate; providing guidance for solar water heater system standards; and allowing use of demand-side management surcharge moneys for verification inspections.

