
A BILL FOR AN ACT

RELATING TO ENERGY.

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

1 PART I

2 SECTION 1. The legislature finds that Hawaii's dependence
3 on petroleum for about ninety per cent of its energy needs is
4 more than any other state in the nation. This makes the State
5 extremely vulnerable to any oil embargo, supply disruption,
6 international market dysfunction, and many other factors beyond
7 the control of the State. Furthermore, the continued
8 consumption of conventional petroleum fuel negatively impacts
9 the environment. At the same time, Hawaii has among the most
10 abundant renewable energy resources in the world, in the form of
11 solar, geothermal, wind, biomass, and ocean energy assets.

12 The legislature also finds that increased energy efficiency
13 and use of renewable energy resources would increase Hawaii's
14 energy self-sufficiency, achieving broad societal benefits,
15 including increased energy security, resistance to increases in
16 oil prices, environmental sustainability, economic development,
17 and job creation.



1 Over the years, the legislature has worked steadily to
2 encourage the deployment of renewable energy resources and
3 energy efficiency initiatives. This includes:

4 (1) Establishing a net energy metering program,
5 interconnection standards, and renewable energy tax
6 credits;

7 (2) Establishing greenhouse gas and energy consumption
8 reduction goals for state facilities and requiring the
9 use of energy efficient products in state facilities;
10 and

11 (3) Providing incentives for the deployment of solar
12 energy devices.

13 The legislature also established an enforceable renewable
14 energy portfolio standard under which twenty per cent of
15 Hawaii's electricity is to be generated from renewable resources
16 by the end of 2020.

17 There now exists an unprecedented, historical opportunity
18 for Hawaii to emerge as a leader in the hydrogen economy.

19 Hydrogen technology development is already attracting
20 billions of dollars in investment capital not only in the United
21 States, but also in other countries in Europe, and Japan. On a
22 national level, federal initiatives are resulting in the



1 development of hydrogen and fuel cell technologies in
2 partnership with automakers and major energy companies.
3 Analysts predict that these initiatives, along with efforts in
4 other countries, will lead to the development of markets for
5 hydrogen and supportive hydrogen fuel cell technologies and
6 infrastructure. The question is no longer "if", but "when."

7 Locally, the historic confluence of the State's desire for
8 energy self-sufficiency through development of renewable energy
9 with the global opportunity of the emerging hydrogen economy
10 calls for a major, far-sighted initiative, sustainable over the
11 long-term, to develop Hawaii's renewable energy resources and,
12 ultimately, to transition Hawaii to an indigenous-resource-based
13 energy economy.

14 Right now, the greatest immediate opportunity to achieve
15 this vision resides on the island of Hawaii.

16 On the island of Hawaii, more electricity is produced from
17 renewable resources than can currently be used. Several wind
18 projects are expected to be completed in the near term,
19 exacerbating this problem. Furthermore, the Puna geothermal
20 project is planning to increase its energy contribution only if
21 the electric utility can take and use the energy. This provides
22 an opportunity to use excess geothermal and other renewable



1 energy resources to produce hydrogen using water electrolysis.
2 This clean, renewable hydrogen would then be used as an energy
3 carrier for stationary power and transportation fuels, making
4 the island self-sufficient.

5 Hydrogen could also be exported to Oahu and other islands
6 as the clean fuel of choice for power generation and
7 transportation fuels, achieving greater self-sufficiency for the
8 State of Hawaii.

9 To shape Hawaii's energy future and achieve the goal of
10 energy self-sufficiency for the State of Hawaii, our efforts
11 must continue on all fronts, integrating new and evolving
12 technologies, seizing upon economic opportunities to become more
13 energy efficient and economically diversified, and providing
14 incentives and assistance to address barriers.

15 The purpose of this Act is to provide a one segment of a
16 larger comprehensive approach to achieving energy self-
17 sufficiency for the State by:

- 18 (1) Increasing the renewable energy technologies income
19 tax credit for certain solar-thermal, wind-powered,
20 and photovoltaic energy systems and removing the tax
21 credits' 2008 sunset date;

- 1 (2) Establishing a program and strategy for increased
- 2 hydrogen and biofuel research and use in the State;
- 3 (3) Establishing state support for achieving alternate
- 4 fuels standards; and
- 5 (4) Establishing the pay as you save pilot project to
- 6 provide a financing mechanism to make purchases of
- 7 residential solar hot water heater systems more
- 8 affordable.

PART II

RENEWABLE ENERGY TECHNOLOGIES INCOME TAX CREDIT

SECTION 2. Section 235-12.5, Hawaii Revised Statutes, is amended as follows:

1. By amending subsection (a) to read:

"(a) When the requirements of subsection (c) are met, each individual or corporate resident taxpayer that files an individual or corporate net income tax return for a taxable year may claim a tax credit under this section against the Hawaii state individual or corporate net income tax. The tax credit may be claimed for every eligible renewable energy technology system that is installed and placed in service by a taxpayer during the taxable year. This credit shall be available for

1 systems installed and placed in service after June 30, 2003.

2 The tax credit may be claimed as follows:

3 (1) Solar thermal energy systems for:

4 (A) Single-family residential property: thirty-five
5 per cent of the actual cost or [~~\$1,750,~~] \$2,250,
6 whichever is less;

7 (B) Multi-family residential property: thirty-five
8 per cent of the actual cost or \$350 per unit,
9 whichever is less; and

10 (C) Commercial property: thirty-five per cent of the
11 actual cost or \$250,000, whichever is less;

12 (2) Wind-powered energy systems for:

13 (A) Single-family residential property: twenty per
14 cent of the actual cost or \$1,500, whichever is
15 less;

16 (B) Multi-family residential property: twenty per
17 cent of the actual cost or \$200 per unit,
18 whichever is less; and

19 (C) Commercial property: twenty per cent of the
20 actual cost or [~~\$250,000,~~] \$500,000, whichever is
21 less; and

22 (3) Photovoltaic energy systems for:

1 (A) Single-family residential property: thirty-five
2 per cent of the actual cost or [~~\$1,750,~~] \$5,000,
3 whichever is less;

4 (B) Multi-family residential property: thirty-five
5 per cent of the actual cost or \$350 per unit,
6 whichever is less; and

7 (C) Commercial property: thirty-five per cent of the
8 actual cost or [~~\$250,000,~~] \$500,000, whichever is
9 less;

10 provided that multiple owners of a single system shall be
11 entitled to a single tax credit; and provided further that the
12 tax credit shall be apportioned between the owners in proportion
13 to their contribution to the cost of the system.

14 In the case of a partnership, S corporation, estate, or
15 trust, the tax credit allowable is for every eligible renewable
16 energy technology system that is installed and placed in service
17 by the entity. The cost upon which the tax credit is computed
18 shall be determined at the entity level. Distribution and share
19 of credit shall be determined pursuant to section 235-110.7(a)."

20 2. By amending subsection (c) to read:

21 "(c) [~~The~~] For taxable years beginning after December 31,
22 2005, the dollar amount of [~~any new federal energy tax credit~~

1 ~~similar to the credit provided in this section that is~~
2 ~~established after June 30, 2003, and] any utility rebate[7]~~
3 shall be deducted from the cost of the qualifying system and its
4 installation before applying the state tax credit."

5 SECTION 3. Act 207, Session Laws of Hawaii 2003, is
6 amended by amending section 4 to read as follows:

7 "SECTION 4. This Act shall take effect on July 1, 2003[7
8 and shall be repealed January 1, 2008]."

9 PART III

10 RENEWABLE ENERGY RESEARCH AND DEVELOPMENT AND TRANSITION INTO A

11 RENEWABLE HYDROGEN ECONOMY

12 SECTION 4. Chapter 103D, Hawaii Revised Statutes, is
13 amended by adding a new section to be appropriately designated
14 and to read as follows:

15 "§103D- Biofuel preference. (a) Notwithstanding any
16 other law to the contrary, contracts for the purchase of diesel
17 fuel or boiler fuel shall be awarded to the lowest responsible
18 and responsive bidders, with preference given to bids for
19 biofuels or blends of biofuel and petroleum fuel.

20 (b) When purchasing fuel for use in diesel engines, the
21 preference shall be five cents per gallon of one hundred per
22 cent biodiesel. For blends containing both biodiesel and

1 petroleum-based diesel, the preference shall be applied only to
2 the biodiesel portion of the blend.

3 (c) When purchasing fuel for use in boilers, the
4 preference shall be five cents per gallon of one hundred per
5 cent biofuel. For blends containing both biofuel and petroleum
6 based boiler fuel, the preference shall be applied only to the
7 biofuel portion of the blend.

8 (d) As used in this section, "biodiesel" means a vegetable
9 oil-based fuel that meets ASTM International standard D6751,
10 "Standard Specification for Biodiesel (B100) Fuel Blend Stock
11 for Distillate Fuels", as amended.

12 (e) As used in this section, "biofuel" means fuel from
13 non-petroleum plant or animal based sources that can be used for
14 the generation of heat or power."

15 SECTION 5. Chapter 196, Hawaii Revised Statutes, is
16 amended by adding a new section to part III to be appropriately
17 designated and to read as follows:

18 **"§196-A State support for achieving alternate fuels**
19 **standards.** The State shall facilitate the development of
20 alternate fuels and support the attainment of a statewide
21 alternate fuel standard of ten per cent of highway fuel demand
22 to be provided by alternate fuels by 2010, fifteen per cent by



1 2015, and twenty per cent by 2020. For purposes of the
2 alternate fuels standard, ethanol produced from cellulosic
3 materials shall be considered the equivalent of 2.5 gallons of
4 noncellulosic ethanol. "Alternate fuels" shall have the same
5 meaning as contained in 10 Code of Federal Regulations Part 490;
6 provided that it shall also include liquid or gaseous fuels
7 produced from renewable feedstocks such as organic wastes, or
8 from water using electricity from renewable energy sources."

9 SECTION 6. Chapter 196, Hawaii Revised Statutes, is
10 amended by adding a new section to be appropriately designated
11 and to read as follows:

12 "§196-B Hawaii renewable hydrogen program. There is
13 established, within the department of business, economic
14 development, and tourism, a Hawaii renewable hydrogen program to
15 manage the State's transition to a renewable hydrogen economy.
16 The program shall design, implement, and administer activities
17 that include:

- 18 (1) Strategic partnerships for the research, development,
19 testing, and deployment of renewable hydrogen
20 technologies;
- 21 (2) Engineering and economic evaluations of Hawaii's
22 potential for renewable hydrogen use and near-term

1 project opportunities for the State's renewable energy
2 resources;

3 (3) Electric grid reliability and security projects that
4 will enable the integration of a substantial increase
5 of electricity from renewable energy resources on the
6 island of Hawaii;

7 (4) Hydrogen demonstration projects, including
8 infrastructure for the production, storage, and
9 refueling of hydrogen vehicles;

10 (5) A statewide hydrogen economy public education and
11 outreach plan focusing on the island of Hawaii, to be
12 developed in coordination with Hawaii's public
13 education institutions;

14 (6) Promotion of Hawaii's renewable hydrogen resources to
15 potential partners and investors;

16 (7) A plan, for implementation during the years 2007 to
17 2010, to more fully deploy hydrogen technologies and
18 infrastructure capable of supporting the island of
19 Hawaii's energy needs, including:

20 (A) Expanded installation of hydrogen production
21 facilities;

- 1 (B) Development of integrated energy systems,
- 2 including hydrogen vehicles;
- 3 (C) Construction of additional hydrogen refueling
- 4 stations; and
- 5 (D) Promotion of building design and construction
- 6 that fully incorporates clean energy assets,
- 7 including reliance on hydrogen-fueled energy
- 8 generation;
- 9 (8) A plan, for implementation during the years 2010 to
- 10 2020, to transition the island of Hawaii to a
- 11 hydrogen-fueled economy and to extend the application
- 12 of the plan throughout the State; and
- 13 (9) Evaluation of policy recommendations to:
- 14 (A) Encourage the adoption of hydrogen-fueled
- 15 vehicles;
- 16 (B) Continually fund the hydrogen investment capital
- 17 special fund; and
- 18 (C) Support investment in hydrogen infrastructure,
- 19 including production, storage, and dispensing
- 20 facilities."

1 SECTION 7. Chapter 211F, Hawaii Revised Statutes, is
2 amended by adding a new section to be appropriately designated
3 and to read as follows:

4 **"§211F- Hydrogen investment capital special fund. (a)**

5 There shall be established the hydrogen investment capital
6 special fund, into which shall be deposited:

- 7 (1) Appropriations made by the legislature to the fund;
- 8 (2) All contributions from public or private partners;
- 9 (3) All interest earned on or accrued to moneys deposited
10 in the special fund; and
- 11 (4) Any other moneys made available to the special fund
12 from other sources.

13 (b) Moneys in the fund shall be used to:

- 14 (1) Provide seed capital for and venture capital
15 investments in private sector and federal projects for
16 research, development, testing, and implementation of
17 the Hawaii renewable hydrogen program, as set forth in
18 section 196-B; and
- 19 (2) For any other purpose deemed necessary to carry out
20 the purposes of section 196-B."

21 SECTION 8. There is appropriated out of the general
22 revenues of the State of Hawaii the sum of \$200,000, or so much

1 thereof as may be necessary for fiscal year 2006-2007, to
2 conduct a statewide multi-fuel biofuels production assessment of
3 potential feedstocks and technologies, the economics of the
4 various renewable fuels pathways, and the potential for ethanol,
5 biodiesel, and renewable hydrogen production to contribute to
6 Hawaii's near-, mid-, and long-term energy needs.

7 The sum appropriated shall be expended by the department of
8 business, economic development, and tourism for the purposes of
9 this section.

10 SECTION 9. There is appropriated out of the general
11 revenues of the State of Hawaii the sum of \$150,000, or so much
12 thereof as may be necessary for fiscal year 2006-2007, to
13 provide assistance to the agricultural community interested in
14 developing energy projects, especially for the production of
15 biodiesel from energy crops and cellulosic ethanol from
16 agricultural waste streams, and to seek funding that may be
17 available from the United States Departments of Agriculture and
18 Energy, and other external sources.

19 The sum appropriated shall be expended by the department of
20 agriculture for the purposes of this section.

21 SECTION 10. There is appropriated out of the general
22 revenues of the State of Hawaii the sum of \$10,000,000, or so

1 much thereof as may be necessary for fiscal year 2006-2007, to
2 be deposited into the hydrogen investment capital special fund.

3 The sum appropriated shall be expended by the department of
4 business, economic development, and tourism for the purposes of
5 section 211F-__ (b), Hawaii Revised Statutes.

6 SECTION 11. There is appropriated out of the hydrogen
7 investment capital special fund the sum of \$10,000,000, or so
8 much thereof as may be necessary for fiscal year 2006-2007, to
9 be used for the purposes of the hydrogen investment capital
10 special fund established pursuant to section 211F-__, Hawaii
11 Revised Statutes.

12 The sum appropriated shall be expended by the department of
13 business, economic development, and tourism for the purposes of
14 section 211F-__ (b), Hawaii Revised Statutes.

15 SECTION 12. There is appropriated out of the general
16 revenues of the State of Hawaii the sum of \$100,000, or so much
17 thereof as may be necessary for fiscal year 2006-2007, for the
18 Hawaii natural energy institute to hire one full-time hydrogen
19 system program manager position.

20 The sum appropriated shall be expended by the University of
21 Hawaii through a contract with the Hawaii natural energy
22 institute for the purposes of this part.

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PART IV

SOLAR WATER HEATING PAY AS YOU SAVE

SECTION 13. **Solar water heating pay as you save program;**

purpose; establishment; tariff filing. (a) Solar water heating systems are a renewable energy technology that uses solar collectors placed on roofs to heat water. These systems decrease reliance on imported oil used to generate electricity to heat water because they use less energy than the electric hot water heating systems replaced.

The legislature finds that the up-front cost of installation is a barrier preventing many Hawaii residents from installing solar water heating systems. The legislature further finds that the renewable energy technologies income tax credit and electric utility rebates have not been enough of an incentive to overcome these up-front costs, especially for rental housing and homes in need of retrofit for these important energy-saving devices.

The purpose of this section is to authorize the public utilities commission to implement a pilot project to be called the "solar water heating pay as you save program".

1 (b) The public utilities commission shall implement a
2 pilot project to be called the "solar water heating pay as you
3 save program", which shall:

- 4 (1) Allow a residential electric utility customer to
5 purchase a solar water heating system:
6 (A) With no upfront payments; and
7 (B) By paying the cost of the system over time on the
8 customer's electricity bill;
9 provided that the estimated life cycle electricity
10 savings from the solar water heating system exceeds
11 the cost of the system;
- 12 (2) Provide for billing and payment of the solar water
13 heating system on the utility bill;
- 14 (3) Provide for disconnection of utility service for non-
15 payment of solar water heating system pay as you save
16 payments; and
- 17 (4) Allow for assignment of system repayment costs
18 attached to the meter location.

19 (c) The public utilities commission shall determine the
20 time frame of the pilot program and shall gather and analyze
21 information to evaluate the pilot program.

1 (d) No later than June 30, 2007, each electric utility
2 shall implement by tariff a pay as you save model system program
3 for residential consumers that is consistent with this section.
4 Each utility shall provide at least six months prior notice of
5 its proposed tariff to the public utilities commission as
6 prescribed in section 269-12(b), Hawaii Revised Statutes.
7 Within the prescribed notice period, the public utilities
8 commission shall review the proposed tariff and after a hearing
9 may require modifications to the proposed tariff as necessary to
10 comply with or effectuate the purposes of this section.

11 (e) The commission shall ensure that all reasonable costs
12 incurred by electric utilities to start up and implement the pay
13 as you save model system are recovered as part of the utility's
14 revenue requirement, including necessary billing system
15 adjustments and any costs for pay as you save model system
16 efficiency measures that are not recovered via participating
17 residential consumers' pay as you save model system bill
18 payments or otherwise.

19 PART V

20 MISCELLANEOUS PROVISIONS



1 SECTION 14. This Act does not affect rights and duties
2 that matured, penalties that were incurred, and proceedings that
3 were begun, before its effective date.

4 SECTION 15. In codifying the new sections added by this
5 Act, the revisor of statutes shall substitute appropriate
6 section numbers for the letters used in designating the new
7 sections in this Act.

8 SECTION 16. Statutory material to be repealed is bracketed
9 and stricken. New statutory material is underscored.

10 SECTION 17. This Act shall take effect upon its approval;
11 provided that section 2 of this Act shall apply to taxable years
12 beginning after December 31, 2005; provided further that the
13 increased tax credits established in section 2 of this Act shall
14 be available only to eligible renewable energy technology
15 systems installed after July 1, 2006; and provided further that
16 sections 8, 9, 10, 11, and 12 shall take effect on July 1, 2006.

Report Title:

Energy Self-sufficiency

Description:

Provides a framework for energy self-sufficiency, focusing on: increasing renewable energy tax credits; establishing a pay as you save program for solar water heating systems; establishing a bio-diesel preference in the state procurement law; establishing a Hawaii renewable hydrogen program and hydrogen investment capital special fund; and establishing state support for an alternate fuels standard. (CD1)

