
A BILL FOR AN ACT

RELATING TO ENERGY EFFICIENCY.

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

1 SECTION 1. The legislature finds that:

2 (1) Hawaii is the most oil-dependent State in the nation,
3 with about ninety per cent of our energy demand
4 supplied by petroleum. This dependence on imported
5 oil raises long run concerns regarding economic
6 impacts, environmental harms, and energy security.
7 Hawaii's dependence on fossil fuels is expected to
8 grow over the coming decade unless action is taken to
9 conserve energy use and develop renewable
10 alternatives. One of the most cost-effective ways to
11 conserve energy is through appliance energy efficiency
12 standards;

13 (2) Efficiency standards for certain products sold or
14 installed in the State assure consumers and businesses
15 that such products meet minimum efficiency performance
16 levels thus saving money on utility bills;

17 (3) Such efficiency standards save energy and thus reduce
18 pollution and other environmental impacts associated



1 with the production, distribution, and use of
2 electricity, natural gas, and oil;

3 (4) Such efficiency standards can make electricity systems
4 more reliable by reducing the strain on the
5 electricity grid during peak demand periods.
6 Furthermore, improved energy efficiency can reduce or
7 delay the need for new power plants, power
8 transmission lines, and power distribution system
9 upgrades;

10 (5) Energy efficiency standards contribute to the economy
11 of this State by helping to better balance energy
12 supply and demand, thus reducing pressure for higher
13 natural gas and electricity prices. By saving
14 consumers and businesses money on energy bills,
15 efficiency standards help the State and local economy,
16 since energy bill savings can be spent on local goods
17 and services; and

18 (6) According to estimates of the Appliance Standards
19 Awareness Project and the American Council for an
20 Energy-Efficient Economy, the efficiency standards set
21 forth in this Act will save approximately one million
22 kilowatt-hours of electricity in the year 2020, with a

1 total cumulative energy bill savings to consumers from
2 2010 to 2030 of approximately \$.

3 The purpose of this Act is to establish minimum energy
4 efficiency standards for certain products sold or installed in
5 the State.

6 SECTION 2. The Hawaii Revised Statutes is amended by
7 adding a new chapter to be appropriately designated and to read
8 as follows:

9 **"CHAPTER**

10 **ENERGY EFFICIENCY STANDARDS FOR CERTAIN PRODUCTS**

11 **§ -1 Definitions.** As used in this chapter:

12 "Ballast" means a device used with an electric discharge
13 lamp to obtain necessary circuit conditions (voltage, current
14 and waveform) for starting and operating the lamp.

15 "Bottle-type water dispenser" means a water dispenser that
16 uses a bottle or reservoir as the source of potable water.

17 "Commercial hot food holding cabinet" means an appliance
18 that is a heated, fully-enclosed compartment with one or more
19 solid doors, and is designed to maintain the temperature of hot
20 food that has been cooked in a separate appliance. A commercial
21 hot food holding cabinet does not include heated glass



1 merchandising cabinets, drawer warmers, or cook-and-hold
2 appliances.

3 "Compact audio product", also known as a mini, mid, micro,
4 or shelf audio system, means an integrated audio system encased
5 in a single housing that includes an amplifier and radio tuner,
6 attached or separable speakers, and can reproduce audio from one
7 or more of the following media: magnetic tape, compact disc,
8 digital versatile disc, or flash memory. Compact audio product
9 does not include products that can be independently powered by
10 internal batteries or that have a powered external satellite
11 antenna, or that can provide a video output signal.

12 "Compensation" means money or any other valuable thing,
13 regardless of form, received or to be received by a person for
14 services rendered.

15 "Digital versatile disc" and "DVD" mean a laser-encoded
16 plastic medium capable of storing a large amount of digital
17 audio, video, and computer data.

18 "Digital versatile disc player" and "digital versatile disc
19 recorder" mean commercially-available electronic products
20 encased in a single housing that includes an integral power
21 supply and for which the sole purpose is, respectively, the
22 decoding and production or recording of digitized video signal



1 on a digital versatile disc. The term "digital versatile disc
2 recorder" does not include models that have an electronic
3 programming guide function that provides an interactive,
4 onscreen menu of television listings, and that downloads program
5 information from the vertical blanking interval of a regular
6 television signal.

7 "Energy resources coordinator" means the director of the
8 department of business, economic development, and tourism.

9 "High-intensity discharge lamp" means a lamp in which light
10 is produced by the passage of an electric current through a
11 vapor or gas and in which the light-producing arc is stabilized
12 by bulb wall temperature and the arc tube has a bulb wall
13 loading in excess of three watts per square centimeter.

14 "Liquid-immersed distribution transformer" means a
15 transformer that:

- 16 (1) Has an input voltage of 34,500 volts or less;
17 (2) Has an output voltage of six hundred volts or less;
18 (3) Uses oil or other liquid as a coolant; and
19 (4) Is rated for operation at a frequency of sixty hertz.

20 "Medium voltage dry-type distribution transformer" means a
21 transformer that:



1 (1) Has an input voltage of more than six hundred volts
2 but less than or equal to 34,500 volts;

3 (2) Is air-cooled;

4 (3) Does not use oil as a coolant; and

5 (4) Is rated for operation at a frequency of sixty hertz.

6 "Metal halide lamp" means a high intensity discharge lamp
7 in which the major portion of the light is produced by radiation
8 of metal halides and their products of dissociation, possibly in
9 combination with metallic vapors.

10 "Metal halide lamp fixture" means a light fixture designed
11 to be operated with a metal halide lamp and a ballast for a
12 metal halide lamp.

13 "Portable electric spa" means a factory-built electric spa
14 or hot tub, supplied with equipment for heating and circulating
15 water.

16 "Probe-start metal halide ballast" means a ballast used to
17 operate metal halide lamps that does not contain an igniter and
18 that instead starts lamps by using a third starting electrode
19 probe in the arc tube.

20 "Residential pool pump" means a pump used to circulate and
21 filter residential swimming pool water in order to maintain
22 clarity and sanitation.

1 "Single-voltage external AC to DC power supply" means a
2 device that:

- 3 (1) Is designed to convert line voltage AC input into
4 lower voltage DC output;
- 5 (2) Is able to convert to only one DC output voltage at a
6 time;
- 7 (3) Is sold with, or intended to be used with, a separate
8 end-use product that constitutes the primary power
9 load;
- 10 (4) Is contained within a separate physical enclosure from
11 the end-use product;
- 12 (5) Is connected to the end-use product via a removable or
13 hard-wired male/female electrical connection, cable,
14 cord or other wiring;
- 15 (6) Does not have batteries or battery packs, including
16 those that are removable, that physically attach
17 directly to the power supply unit;
- 18 (7) Does not have a battery chemistry or type selector
19 switch and indicator light; or does not have a battery
20 chemistry or type selector switch and a state of
21 charge meter; and

1 (8) Has a nameplate output power less than or equal to two
2 hundred fifty watts.

3 "State-regulated incandescent reflector lamp" means a lamp,
4 not colored or designed for rough or vibration service
5 applications, with an inner reflective coating on the outer bulb
6 to direct the light, an E26 medium screw base, a rated voltage
7 or voltage range that lies at least partially within one hundred
8 fifteen to one hundred thirty volts, and that falls into either
9 of the following categories:

- 10 (1) A blown PAR (BPAR), bulged reflector (BR), or
11 elliptical reflector (ER) bulb shape with a diameter
12 equal to or greater than two and one-fourth inches; or
13 (2) A reflector (R), parabolic aluminized reflector (PAR)
14 or similar bulb shape with a diameter of two and one-
15 fourth to two and three-fourths inches, inclusive.

16 "Transformer" means a device consisting of two or more
17 coils of insulated wire and that is designed to transfer
18 alternating current by electromagnetic induction from one coil
19 to another to change the original voltage or current value.

20 This term does not include:



- 1 (1) Devices with multiple voltage taps, with the highest
2 voltage tap equaling at least twenty per cent more
3 than the lowest voltage tap; or
- 4 (2) Devices, such as those commonly known as drive
5 transformers, rectifier transformers, auto-
6 transformers, uninterruptible power system
7 transformers, impedance transformers, regulating
8 transformers, sealed and non-ventilating transformers,
9 machine tool transformers, welding transformers,
10 grounding transformers, or testing transformers, that
11 are designed to be used in a special purpose
12 application and are unlikely to be used in general
13 purpose applications.

14 "Walk-in refrigerator" and "walk-in freezer" mean a space
15 refrigerated to temperatures, respectively, at or above and
16 below thirty-two degrees Fahrenheit that can be walked into.

17 "Water dispenser" means a factory-made assembly that
18 mechanically cools and heats potable water and that dispenses
19 the cooled or heated water by integral or remote means.

20 § -2 **Scope.** (a) This chapter shall apply to the
21 following types of new products sold, offered for sale, or
22 installed in the State:



- 1 (1) Bottle-type water dispensers;
- 2 (2) Commercial hot food holding cabinets;
- 3 (3) Compact audio products;
- 4 (4) Digital versatile disc players and digital versatile
- 5 disc recorders;
- 6 (5) Liquid-immersed distribution transformers;
- 7 (6) Medium voltage dry-type distribution transformers;
- 8 (7) Metal halide lamp fixtures;
- 9 (8) Portable electric spas
- 10 (9) Residential pool pumps;
- 11 (10) Single-voltage external AC to DC power supplies;
- 12 (11) State-regulated incandescent reflector lamps;
- 13 (12) Walk-in refrigerators and walk-in freezers; and
- 14 (13) Any other products as may be designated by the energy
- 15 resources coordinator in accordance with section
- 16 -5.
- 17 (b) This chapter shall not apply to:
- 18 (1) New products manufactured in the State and sold
- 19 outside the State;
- 20 (2) New products manufactured outside the State and sold
- 21 at wholesale inside the State for final retail sale
- 22 and installation outside the State;



1 (3) Products installed in mobile manufactured homes at the
2 time of construction; or

3 (4) Products designed expressly for installation and use
4 in recreational vehicles.

5 § -3 **Efficiency standards.** (a) Not later than one year
6 after the effective date of this Act, the energy resources
7 coordinator, pursuant to chapter 91, shall adopt rules
8 establishing minimum efficiency standards for the types of new
9 products set forth in section -2.

10 (b) The rules shall provide for the minimum efficiency
11 standards set forth in subsections (c) to (n).

12 (c) Bottle-type water dispensers designed for dispensing
13 both hot and cold water shall not have standby energy
14 consumption greater than one and two-tenths kilowatt-hours per
15 day, as measured in accordance with the test criteria contained
16 in version one of the United States Environmental Protection
17 Agency's "Energy Star Program Requirements for Bottled Water
18 Coolers", except units with an integral, automatic timer shall
19 not be tested using section D, "Timer Usage", of the test
20 criteria;

21 (d) Commercial hot food holding cabinets shall have a
22 maximum idle energy rate of forty watts per cubic foot of

1 interior volume, as determined by the "idle energy rate-dry
2 test" in ASTM F2140-01, "Standard Test Method for Performance of
3 Hot Food Holding Cabinets" published by ASTM International.
4 Interior volume shall be measured in accordance with the method
5 shown in the United States Environmental Protection Agency's
6 "Energy Star Program Requirements for Commercial Hot Food
7 Holding Cabinets", in effect on August 15, 2003;

8 (e) Compact audio products shall not use more than two
9 watts in standby-passive mode for those without a permanently
10 illuminated clock display and four watts in standby-passive mode
11 for those with a permanently illuminated clock display, as
12 measured in accordance with International Electrotechnical
13 Commission test method 62087:2002(E), "Methods of measurement
14 for the power consumption of audio, video, and related
15 equipment".

16 (f) Digital versatile disc players and digital versatile
17 disc recorders shall not use more than three watts in standby-
18 passive mode, as measured in accordance with International
19 Electrotechnical Commission test method 62087:2002(E), "Methods
20 of measurement for the power consumption of audio, video, and
21 related equipment".



1 (g) Medium voltage dry-type distribution transformers
2 shall meet minimum efficiency levels three-tenths of a
3 percentage point higher than the Class 1 efficiency levels for
4 medium voltage distribution transformers specified in Table 4-2
5 of the "Guide for Determining Energy Efficiency for Distribution
6 Transformers" published by the National Electrical Manufacturers
7 Association (NEMA Standard TP-1-2002).

8 (h) Liquid-immersed distribution transformers shall meet
9 minimum efficiency levels two-tenths of a percentage point
10 higher than the Class 1 efficiency levels specified in Table 4-1
11 of the "Guide for Determining Energy Efficiency for Distribution
12 Transformers" published by the National Electrical Manufacturers
13 Association (NEMA Standard TP-1-2002).

14 (i) Metal halide lamp fixtures designed to be operated
15 with lamps rated greater than or equal to one hundred fifty
16 watts but less than or equal to five hundred watts shall not
17 contain a probe-start metal halide ballast.

18 (j) Portable electric spas shall not have a standby power
19 greater than $5(V^{2/3})$ watts where V=the total volume in gallons,
20 as measured in accordance with the test method for portable
21 electric spas contained in section 1604, title 20, California
22 Code of Regulations;



1 (k) (1) Residential pool pump motors may not be split-phase or
2 capacitor start-induction run type motors;

3 (2) Pool pump motors with a capacity of one horsepower or
4 more shall have the capability of operating at two or
5 more speeds with a low speed having a rotation rate
6 that is no more than one-half of the motor's maximum
7 rotation rate. Pool pump motor controls shall have
8 the capability of operating the pool pump at least two
9 speeds. The default circulation speed shall be the
10 lowest speed, with a high speed override capability
11 being for a temporary period not to exceed one normal
12 cycle;

13 (l) (1) Single-voltage external AC to DC power supplies shall
14 meet the energy efficiency requirements in the
15 following table:

	<u>Minimum Efficiency</u> <u>In Active Mode</u>
<u>Nameplate Output Power</u>	
0 to <1 watt	0.49* Nameplate Output
≥1 watt and ≤49 watts	0.09*Ln(Nameplate Output Power) +0.49
>49 watts	0.84
	<u>Maximum Energy</u> <u>Consumption In No-Load Mode</u>
0 to <10 watts	0.5 watts
≥10 watts and ≤250 watts	0.75 watts

Where Ln (Nameplate Output) = Natural Logarithm of the nameplate output expressed in watts

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(2) This standard applies to single voltage AC to DC power supplies that are sold individually and to those that are sold as a component of or in conjunction with another product.

(3) For purposes of this subsection, the efficiency of single-voltage external AC to DC power supplies shall be measured in accordance with the test methodology specified by the United States Environmental Protection Agency's Energy Star Program, "Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies (August 11, 2004)";

(m) (1) State-regulated incandescent reflector lamps shall meet the minimum average lamp efficacy requirements for federally-regulated incandescent reflector lamps contained in 42 U.S. Code 6295 (i) (1) (A);

(2) The following types of incandescent reflector lamps are exempt from these requirements:

(A) Lamps rated at fifty watts or less of the following types: BR30, ER30, BR40, and ER40;

1 (B) Lamps rated at sixty-five watts of the following
2 types: BR30, BR40, and ER40; and

3 (C) R20 lamps of forty-five watts or less;

4 (n) (1) Walk-in refrigerators and walk-in freezers with the
5 applicable motor types shown in the table below shall
6 include the required components shown.

<u>Motor Type</u>	<u>Required Components</u>
All	Interior lights: light sources with an efficacy of 45 lumens per watt or more, including ballast losses (if any). This efficacy standard does not apply to LED light sources until January 1, 2010.
All	Automatic door closers that firmly close all reach-in doors
All	Automatic door closers that firmly close all walk-in doors no wider than 3.9 feet and no higher than 6.9 feet that have been closed to within one inch of full closure.
All	Wall, ceiling, and door insulation at least R-28 for refrigerators and at least R-34 for freezers



All Floor insulation at least R-28 for freezers (no requirement for refrigerators)

Condenser fan motors of under one horsepower (i) Electronically commutated motors, (ii) Permanent split capacitor-type motors, or (iii) Polyphase motors of 1/2 horsepower or more

Single-phase Evaporator fan Motors of under One horsepower And less than 460 volts Electronically commutated motors

1 (2) In addition to the requirements in paragraph (1),
2 walk-in refrigerators and walk-in freezers with
3 transparent reach-in doors shall meet the following
4 requirements:

5 (A) Transparent reach-in doors shall be of triple
6 pane glass with either heat-reflective treated
7 glass or gas fill;

8 (B) If the appliance has an anti-sweat heater without
9 anti-sweat controls, then: the appliance shall
10 have a total door rail, glass, and frame heater
11 power draw of no more than forty watts if it is a
12 freezer or seventeen watts if it is a
13 refrigerator per foot of door frame width; and

1 (C) If the appliance has an anti-sweat heater with
2 anti-sweat heat controls, and the total door
3 rail, glass, and frame heater power draw is more
4 than forty watts if it is a freezer or seventeen
5 watts if it is a refrigerator per foot of door
6 frame width, then the anti-sweat heat controls
7 shall reduce the energy use of the anti-sweat
8 heater in an amount corresponding to the relative
9 humidity in the air outside the door or to the
10 condensation on the inner glass pane.

11 § -4 **Implementation.** (a) On or after January 1, 2008,
12 no new bottle-type water dispenser, commercial hot food holding
13 cabinet, compact audio product, digital versatile disc player or
14 digital versatile disc recorder, liquid-immersed distribution
15 transformer, medium voltage dry-type distribution transformer,
16 metal halide lamp fixture, portable electric spa, residential
17 pool pump, state-regulated incandescent reflector lamp, single-
18 voltage external AC to DC power supply, or walk-in refrigerator
19 or walk-in freezer may be sold or offered for sale in the State
20 unless the efficiency of the new product meets or exceeds the
21 efficiency standards set forth in the regulations adopted
22 pursuant to section -3.



1 (b) Notwithstanding subsection (a), residential pool pumps
2 that do not meet the efficiency standards contained in section
3 -3(k)(2) may be sold in the State until January 1, 2010.

4 (c) One year after the date upon which the sale or
5 offering for sale of certain products becomes subject to the
6 requirements of subsection (a), no such products may be
7 installed for compensation in the State unless the efficiency of
8 the new product meets or exceeds the efficiency standards as
9 required under section -3.

10 § -5 **New and revised standards.** The energy resources
11 coordinator, pursuant to chapter 91, may adopt rules to
12 establish increased efficiency standards for the products listed
13 in section -2. The energy resources coordinator may also
14 establish standards for products not specifically listed in
15 section -2. In considering such new or amended standards,
16 the energy resources coordinator, shall set efficiency standards
17 upon a determination that increased efficiency standards would
18 serve to promote energy conservation in the State and would be
19 cost-effective for consumers who purchase and use such new
20 products, provided that no new or increased efficiency standards
21 shall become effective within one year following the adoption of
22 any amended rules establishing such increased efficiency



1 standards. The energy resources coordinator may apply for a
2 waiver of federal preemption in accordance with federal
3 procedures (42 U.S. Code 6297 (d)) for state efficiency
4 standards for any product regulated by the federal government.

5 **§ -6 Testing, certification, labeling, and enforcement.**

6 (a) The manufacturers of products covered by this chapter shall
7 test samples of their products in accordance with the test
8 procedures adopted pursuant to this chapter. The energy
9 resources coordinator, pursuant to chapter 91, shall adopt test
10 procedures for determining the energy efficiency of the products
11 covered by section -2 if such procedures are not provided for
12 in section -3 of this chapter. The energy resources
13 coordinator shall adopt United States Department of Energy
14 approved test methods, or in the absence of such test methods,
15 other appropriate nationally recognized test methods. The
16 energy resources coordinator may adopt updated test methods when
17 new versions of test procedures become available.

18 (b) Manufacturers of new products covered by section -2
19 of this chapter, except for single voltage external AC to DC
20 power supplies, walk-in refrigerators, and walk-in freezers,
21 shall certify to the energy resources coordinator that such
22 products are in compliance with this chapter. The



1 certifications shall be based on test results. The energy
2 resources coordinator shall adopt rules, pursuant to chapter 91,
3 governing the certification of such products and shall
4 coordinate with the certification programs of other states and
5 federal agencies with similar standards.

6 (c) Manufacturers of new products covered by section -2
7 shall identify each product offered for sale or installation in
8 the State as in compliance with this chapter by means of a mark,
9 label, or tag on the product and packaging at the time of sale
10 or installation. The energy resources coordinator, pursuant to
11 chapter 91, shall adopt rules governing the identification of
12 those products and packaging that shall be coordinated to the
13 greatest practical extent with the labeling programs of other
14 states and federal agencies with equivalent efficiency
15 standards. The energy resources coordinator shall allow the use
16 of existing marks, labels, or tags that connote compliance with
17 the efficiency requirements of this chapter.

18 (d) The energy resources coordinator may test products
19 covered by section -2. If products so tested are found not
20 to be in compliance with the minimum efficiency standards
21 established under section -3, the energy resources
22 coordinator shall:



1 (1) Charge the manufacturer of such product for the cost
2 of product purchase and testing; and

3 (2) Make information available to the public on products
4 found not to be in compliance with the standards.

5 (e) With prior notice and at reasonable and convenient
6 hours, the energy resources coordinator may cause periodic
7 inspections to be made of distributors or retailers of new
8 products covered by section -2 in order to determine
9 compliance with this chapter. The energy resources coordinator
10 shall also coordinate with the building code administrators of
11 the various counties regarding inspections prior to occupancy of
12 newly constructed buildings containing new products that are
13 also covered by this chapter.

14 (f) The energy resources coordinator shall investigate
15 complaints received concerning violations of this chapter and
16 shall report the results of those investigations to the attorney
17 general. The attorney general may institute proceedings to
18 enforce the provisions of this chapter.

19 (g) Any manufacturer, distributor, or retailer, or any
20 person who installs a product covered by this chapter for
21 compensation, who violates any provision of this chapter shall
22 be issued a warning by the energy resources coordinator for any



1 first violation. Repeat violations shall be subject to a civil
 2 penalty of not more than \$250. Each violation shall constitute
 3 a separate offense, and each day that such violation continues
 4 shall constitute a separate offense. Penalties assessed under
 5 this subsection are in addition to costs assessed under
 6 subsection (d) of this section.

7 (h) The energy resources coordinator may adopt such
 8 further rules, pursuant to chapter 91, as necessary to insure
 9 the proper implementation and enforcement of this chapter."

10 SECTION 3. If any provision of this Act, or the
 11 application thereof to any person or circumstance is held
 12 invalid, the invalidity does not affect other provisions or
 13 applications of the Act, which can be given effect without the
 14 invalid provision or application, and to this end the provisions
 15 of this Act are severable.

16 SECTION 4. This Act shall take effect upon its approval.
 17

INTRODUCED BY:

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HB 3050

Report Title:

Energy; Consumer Products

Description:

Establishes minimum energy efficiency standards for certain products sold in the State.

