
ENGROSSED SUBSTITUTE SENATE BILL 5098

State of Washington 59th Legislature 2005 Regular Session

By Senate Committee on Water, Energy & Environment (originally sponsored by Senators Poulsen, Morton, Franklin, Kline and Kohl-Welles; by request of Governor Locke)

READ FIRST TIME 02/10/05.

- AN ACT Relating to energy efficiency; adding a new chapter to Title
- 2 19 RCW; and prescribing penalties.
- 3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:
- 4 NEW SECTION. **Sec. 1.** The legislature finds that:
- 5 (1) According to estimates of the department of community, trade,
- 6 and economic development, the efficiency standards set forth in this
- 7 act will save nine hundred thousand megawatt-hours of electricity,
- 8 thirteen million therms of natural gas, and two billion gallons of
- 9 water in the year 2020, fourteen years after the standards have become
- 10 effective, with a total net present value to buyers of four hundred
- 11 ninety million dollars in 2020.
- 12 (2) Efficiency standards for certain products sold or installed in
- 13 the state assure consumers and businesses that such products meet
- 14 minimum efficiency performance levels thus saving money on utility
- 15 bills.
- 16 (3) Efficiency standards save energy and reduce pollution and other
- 17 environmental impacts associated with the production, distribution, and
- 18 use of electricity and natural gas.

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(4) Efficiency standards contribute to the economy of Washington by helping to better balance energy supply and demand, thus reducing pressure for higher natural gas and electricity prices. By saving consumers and businesses money on energy bills, efficiency standards help the state and local economy, since energy bill savings can be spent on local goods and services.

- (5) Efficiency standards can make electricity systems more reliable by reducing the strain on the electricity grid during peak demand periods. Furthermore, improved energy efficiency can reduce or delay the need for new power plants, power transmission lines, and power distribution system upgrades.
- NEW SECTION. Sec. 2. The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.
 - (1) "Automatic commercial ice cube machine" means a factory-made assembly, not necessarily shipped in one package, consisting of a condensing unit and ice-making section operating as an integrated unit with means for making and harvesting ice cubes. It may also include integrated components for storing or dispensing ice, or both.
 - (2) "Ballast" means a device used with an electric discharge lamp to obtain necessary circuit conditions, such as voltage, current, and waveform, for starting and operating the lamp.
 - (3) "Commercial clothes washer" means a soft mount horizontal or vertical-axis clothes washer that: (a) Has a clothes container compartment no greater than 3.5 cubic feet in the case of a horizontal-axis product or no greater than 4.0 cubic feet in the case of a vertical-axis product; and (b) is designed for use by more than one household, such as in multifamily housing, apartments, or coin laundries.
 - (4) "Commercial prerinse spray valve" means a handheld device designed and marketed for use with commercial dishwashing and warewashing equipment and that sprays water on dishes, flatware, and other food service items for the purpose of removing food residue prior to their cleaning.
- (5)(a) "Commercial refrigerators and freezers" means refrigerators, freezers, or refrigerator-freezers designed for use by commercial or institutional facilities for the purpose of storing or merchandising food products, beverages, or ice at specified temperatures that: (i)

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Incorporate most components involved in the vapor-compression cycle and the refrigerated compartment in a single cabinet; and (ii) may be configured with either solid or transparent doors as a reach-in cabinet, pass-through cabinet, roll-in cabinet, or roll-through cabinet.

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- (b) "Commercial refrigerators and freezers" does not include: (i) Products with 85 cubic feet or more of internal volume; (ii) walk-in refrigerators or freezers; (iii) consumer products that are federally regulated pursuant to 42 U.S.C. Sec. 6291 et seq.; (iv) products without doors; or (v) freezers specifically designed for ice cream.
- (6) "Compensation" means money or any other valuable thing, regardless of form, received or to be received by a person for services rendered.
- 14 (7) "Department" means the department of community, trade, and 15 economic development.
 - (8)(a) "Digital television adapter" means an electronic product for which the sole purpose is the conversion of digital video terrestrial broadcast signals to analog national television system committee video signals for use by an analog device such as a television.
 - (b) "Digital television adapter" does not include cable or satellite television set-top boxes.
 - (9) "High-intensity discharge lamp" means a lamp in which light is produced by the passage of an electric current through a vapor or gas, and in which the light-producing arc is stabilized by bulb wall temperature and the arc tube has a bulb wall loading in excess of three watts per square centimeter.
 - (10) "Illuminated exit sign" means an internally illuminated sign that is designed to be permanently fixed in place to identify a building exit and consists of an electrically powered integral light source that illuminates the legend "EXIT" and any directional indicators and provides contrast between the legend, any directional indicators, and the background.
 - (11)(a) "Low-voltage dry-type distribution transformer" means a distribution transformer that: (i) Has an input voltage of 600 volts or less; (ii) is air cooled; (iii) does not use oil as a coolant; and (iv) is rated for operation at a frequency of 60 hertz.
- 37 (b) "Low-voltage dry-type transformer" does not include: (i) 38 Transformers with multiple voltage taps, with the highest voltage tap

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- 1 equaling at least twenty percent more than the lowest voltage tap; or
- 2 (ii) transformers, such as those commonly known as drive transformers,
- 3 rectifier transformers, auto transformers, uninterruptible power system
- 4 transformers, impedance transformers, regulating transformers, sealed
- 5 and nonventilating transformers, machine tool transformers, welding
- 6 transformers, grounding transformers, or testing transformers, that are
- 7 designed to be used in a special purpose application and are unlikely
- 8 to be used in general purpose applications.
- 9 (12) "Metal halide lamp" means a high-intensity discharge lamp in 10 which the major portion of the light is produced by radiation of metal
- 11 halides and their products of dissociation, possibly in combination
- 12 with metallic vapors.
- 13 (13) "Metal halide lamp fixture" means a light fixture designed to
- 14 be operated with a metal halide lamp and a ballast for a metal halide
- 15 lamp.
- 16 (14) "Pass-through cabinet" means a commercial refrigerator or
- 17 freezer with hinged or sliding doors on both the front and rear of the
- 18 unit.
- 19 (15) "Probe-start metal halide ballast" means a ballast used to
- 20 operate metal halide lamps which does not contain an igniter and which
- 21 instead starts lamps by using a third starting electrode "probe" in the
- 22 arc tube.
- 23 (16) "Reach-in cabinet" means a commercial refrigerator or freezer
- 24 with hinged or sliding doors or lids, but does not include roll-in or
- 25 roll-through cabinets or pass-through cabinets.
- 26 (17)(a) "Roll-in cabinet" means a commercial refrigerator or
- 27 freezer with hinged or sliding doors that allow wheeled racks of
- 28 product to be rolled into the unit.
- 29 (b) "Roll-through cabinet" means a commercial refrigerator or
- 30 freezer with hinged or sliding doors on two sides of the cabinet that
- 31 allow wheeled racks of product to be rolled through the unit.
- 32 (18)(a) "Single-voltage external AC to DC power supply" means a
- 33 device that: (i) Is designed to convert line voltage alternating
- 34 current input into lower voltage direct current output; (ii) is able to
- 35 convert to only one DC output voltage at a time; (iii) is sold with, or
- 36 intended to be used with, a separate end-use product that constitutes
- 37 the primary power load; (iv) is contained within a separate physical
- 38 enclosure from the end-use product; (v) is connected to the end-use

product via a removable or hard-wired male/female electrical connection, cable, cord, or other wiring; and (vi) has a nameplate output power less than or equal to 250 watts.

- (b) "Single-voltage external AC to DC power supply" does not include: (i) Products with batteries or battery packs that physically attach directly to the power supply unit; (ii) products with a battery chemistry or type selector switch and indicator light; or (iii) products with a battery chemistry or type selector switch and a state of charge meter.
- (19) "State-regulated incandescent reflector lamp" means a lamp that is not colored or designed for rough or vibration service applications, that has an inner reflective coating on the outer bulb to direct the light, an E26 medium screw base, and a rated voltage or voltage range that lies at least partially within 115 to 130 volts, and that falls into one of the following categories:
- 16 (a) A bulged reflector or elliptical reflector bulb shape and which 17 has a diameter which equals or exceeds 2.25 inches;
 - (b) A reflector, parabolic aluminized reflector, or similar bulb shape and which has a diameter of 2.25 to 2.75 inches.
 - (20) "Torchiere" means a portable electric lighting fixture with a reflective bowl that directs light upward onto a ceiling so as to produce indirect illumination on the surfaces below. "Torchiere" may include downward directed lamps in addition to the upward, indirect illumination.
 - (21) "Traffic signal module" means a standard (a) 8-inch or 200 mm or (b) 12-inch or 300 mm traffic signal indication, consisting of a light source, a lens, and all other parts necessary for operation.
 - (22) "Transformer" means a device consisting of two or more coils of insulated wire and that is designed to transfer alternating current by electromagnetic induction from one coil to another to change the original voltage or current value.
 - (23)(a) "Unit heater" means a self-contained, vented fan-type commercial space heater that uses natural gas or propane, and that is designed to be installed without ducts within a heated space.
 - (b) "Unit heater" does not include any products covered by federal standards established pursuant to 42 U.S.C. Sec. 6291 et seq. or any product that is a direct vent, forced flue heater with a sealed combustion burner.

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NEW SECTION. Sec. 3. (1) This chapter applies to the following types of new products sold, offered for sale, or installed in the state: (a) Automatic commercial ice cube machines; (b) commercial clothes washers; (c) commercial prerinse spray valves; (d) commercial refrigerators and freezers; (e) digital television adapters; (f) illuminated exit signs; (g) low-voltage dry-type distribution transformers; (h) metal halide lamp fixtures; (i) single-voltage external AC to DC power supplies; (j) state-regulated incandescent reflector lamps; (k) torchieres; (l) traffic signal modules; and (m) unit heaters. This chapter applies equally to products whether they are sold, offered for sale, or installed as a stand-alone product or as a component of another product.

(2) This chapter does not apply to (a) new products manufactured in the state and sold outside the state, (b) new products manufactured outside the state and sold at wholesale inside the state for final retail sale and installation outside the state, (c) products installed in mobile manufactured homes at the time of construction or (d) products designed expressly for installation and use in recreational vehicles.

NEW SECTION. Sec. 4. The legislature establishes the following minimum efficiency standards for the types of new products set forth in section 3 of this act.

(1)(a) Automatic commercial ice cube machines must have daily energy use and daily water use no greater than the applicable values in the following table:

26				Maximum	Maximum condenser
27			Harvest rate	energy use	water use
28	Equipment type	Type of cooling	(lbs. ice/24 hrs.)	(kWh/100 lbs.)	(gallons/100 lbs. ice)
29	Ice-making head	water	<500	7.800055H	200022H
30			>=500<1436	5.580011H	200022H
31			>=1436	4.0	200022H
32	Ice-making head	air	450	10.260086Н	Not applicable
33			>=450	6.890011H	Not applicable
34	Remote condensing but	air	<1000	8.850038	Not applicable
35	not remote compressor		>=1000	5.10	Not applicable

	Remote condensing and	air	<934	8.850038H	Not applicable
	remote compressor		>=934	5.3	Not applicable
•	Self-contained models	water	<200	11.400190Н	1910315H
			>=200	7.60	1910315H
•	Self-contained models	air	<175	18.00469H	Not applicable
			>=175	9.80	Not applicable

Where H = harvest rate in pounds per twenty-four hours which must be reported within 5% of the tested value.

"Maximum water use" applies only to water used for the condenser.

- (b) For purposes of this section, automatic commercial ice cube machines shall be tested in accordance with ARI 810-2003 test method as published by the air-conditioning and refrigeration institute. Ice-making heads include all automatic commercial ice cube machines that are not split system ice makers or self-contained models as defined in ARI 810-2003.
- (2) Commercial clothes washers must have a minimum modified energy factor of 1.26 and a maximum water consumption factor of 9.5. For the purposes of this section, capacity, modified energy factor, and water consumption factor are defined and measured in accordance with the current federal test method for clothes washers as found at 10 C.F.R. Sec. 430.23.
- (3) Commercial prerinse spray valves must have a flow rate equal to or less than 1.6 gallons per minute when measured in accordance with the American society for testing and materials' "Standard Test Method for Prerinse Spray Valves," ASTM F2324-03.
- (4)(a) Commercial refrigerators and freezers must meet the applicable requirements listed in the following table:

27	Equipment Type	Doors	Maximum Daily Energy Consumption (kWh)
28	Reach-in cabinets, pass-through cabinets,	Solid	0.10V + 2.04
29	and roll-in or roll-through cabinets that are	Transparent	0.12V + 3.34
	refrigerators		
30	Reach-in cabinets, pass-through cabinets,	Transparent	.126V + 3.51
31	and roll-in or roll-through cabinets that are		
32	"pulldown" refrigerators		
33	Reach-in cabinets, pass-through cabinets,	Solid	0.40V + 1.38
34	and roll-in or roll-through cabinets that are	Transparent	0.75V + 4.10
	freezers		

1	Reach-in cabinets that are refrigerator-	Solid	0.27AV - 0.71
2	freezers with an AV of 5.19 or higher		

- 3 kWh = kilowatt hours
- 4 $V = \text{total volume (ft}^3)$

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- 5 AV = adjusted volume = $[1.63 \text{ x freezer volume } (\text{ft}^3)] + \text{refrigerator volume } (\text{ft}^3)$
 - (b) For purposes of this section, "pulldown" designates products designed to take a fully stocked refrigerator with beverages at 90 degrees F and cool those beverages to a stable temperature of 38 degrees F within 12 hours or less. Daily energy consumption shall be in accordance with the American national standards measured institute/American society οf heating, refrigerating and conditioning engineers test method 117-2002, except that the backloading doors of pass-through and roll-through refrigerators and freezers must remain closed throughout the test, and except that the controls of all appliances must be adjusted to obtain the following product temperatures.

17	Product or compartment type	Integrated average product temperature in degrees Fahrenheit
18	Refrigerator	38 ± 2
19	Freezer	0 ± 2

- (5) Digital television adapters may not use more than 1 watt in "passive standby" mode and may not use more than 8 watts in "on" mode. For the purposes of this section, "passive standby" mode and "on" mode power consumption is measured in accordance with international electrotechnical commission test method 62087:2002(E), "Methods of Measurement for the Power Consumption of Audio, Video, and Related Equipment."
- (6) Illuminated exit signs must have an input power demand of five watts or less per illuminated face. For the purposes of this section, input power demand is measured in accordance with the United States environmental protection agency's energy star exit sign program's conditions for testing, version 3.0. Illuminated exit signs must meet all applicable building and safety codes.
- (7)(a) Low-voltage dry-type distribution transformers shall have efficiencies not less than the applicable values in the following table when tested at thirty-five percent of the rated output power:

1	Single Phase			Three Phase		
2	Rated pow	er output in	Minimum	Rated power	er output in	Minimum
3	k	Va	efficiency %	kV	⁷ a	efficiency %
4	≥ 15	<25	97.7	≥ 15	<30	97.0
5	≥ 25	<37.5	98.0	≥ 30	<45	97.5
6	≥ 37.5	< 50	98.2	≥ 45	<75	97.7
7	≥ 50	<75	98.3	≥ 75	<112.5	98.0
8	≥ 75	<100	98.5	≥ 112.5	<150	98.2
9	≥ 100	<167	98.6	≥ 150	<225	98.3
10	≥ 167	<250	98.7	≥ 225	<300	98.5
11	≥ 250	<333	98.8	≥ 300	< 500	98.6
12	333		98.9	≥ 500	<750	98.7
13				≥ 750	<1000	98.8
14				1000		98.9

kVa = kilovolt amperes

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- (b) For the purposes of this section, low-voltage dry-type distribution transformer efficiency is measured in accordance with the national electrical manufacturers association TP 2-1998 test method.
- (8) Metal halide lamp fixtures designed to be operated with lamps rated greater than or equal to 150 watts but less than or equal to 500 watts shall not contain a probe-start metal halide lamp ballast.
- (9)(a) Single-voltage external AC to DC power supplies shall meet the requirements in the following table:

24	Nameplate output	Minimum Efficiency in Active Mode
25	< 1 Watt	0.49 * Nameplate Output
26	> or = 1 Watt and < or = 49 Watts	0.09 * Ln (Nameplate Output) + 0.49
27	> 49 Watts	0.84
28		Maximum Energy Consumption in No-Load Mode
29	< 10 Watts	0.5 Watts
30	> or = 10 Watts and < or = 250 Watts	0.75 Watts

Where Ln (Nameplate Output) - Natural Logarithm of the nameplate output expressed in Watts

(b) For the purposes of this section, efficiency of single-voltage external AC to DC power supplies shall be measured in accordance with the United States environmental protection agency's "Test Method for Calculating the Energy Efficiency of Single-Voltage External AC to DC and AC to AC Power Supplies", by Ecos Consulting and Power Electronics Application Center, dated August 11, 2004.

(10)(a) State-regulated incandescent reflector lamps that are not 50 watt elliptical reflector lamps must meet the minimum efficacies in the following table:

7	Wattage	Minimum average lamp efficacy (lumens per watt)
8	40 - 50	10.5
9	51 - 66	11.0
10	67 - 85	12.5
11	86 - 115	14.0
12	116 - 155	14.5
13	156 - 205	15.0

(b) Lamp efficacy must be measured in accordance with the applicable federal test method as found at 10 C.F.R. Sec. 430.23.

(11) Torchieres may not use more than 190 watts. A torchiere is deemed to use more than 190 watts if any commercially available lamp or combination of lamps can be inserted in a socket and cause the torchiere to draw more than 190 watts when operated at full brightness.

(12)(a) Traffic signal modules must have maximum and nominal wattage that do not exceed the applicable values in the following table:

Module Type	Maximum Wattage (at 74°C)	Nominal Wattage (at 25°C)
12" red ball (or 300 mm circular)	17	11
8" red ball (or 200 mm circular)	13	8
12" red arrow (or 300 mm arrow)	12	9
12" green ball (or 300 mm circular)	15	15
8" green ball (or 200 mm circular)	12	12
12" green arrow (or 300 mm arrow)	11	11

mm = millimeter

(b) For the purposes of this section, maximum wattage and nominal wattage must be measured in accordance with and under the testing

conditions specified by the institute for transportation engineers "Interim LED Purchase Specification, Vehicle Traffic Control Signal Heads, Part 2: Light Emitting Diode Vehicle Traffic Signal Modules."

- (13) Unit heaters must be equipped with intermittent ignition devices and must have either power venting or an automatic flue damper.
- NEW SECTION. Sec. 5. (1) On or after January 1, 2007, no new commercial clothes washer, commercial prerinse spray valve, commercial refrigerator or freezer, digital television adapter, illuminated exit sign, low-voltage dry-type distribution transformer, single-voltage external AC to DC power supply, state-regulated incandescent reflector lamp, torchiere, traffic signal module, or unit heater may be sold or offered for sale in the state unless the efficiency of the new product meets or exceeds the efficiency standards set forth in section 4 of this act. On or after January 1, 2008, no new automatic commercial ice cube machine or metal halide lamp fixtures may be sold or offered for sale in the state unless the efficiency of the new product meets or exceeds the efficiency standards set forth in section 4 of this act.
- (2) On or after January 1, 2008, no new commercial clothes washer, commercial prerinse spray valve, commercial refrigerator or freezer, digital television adapter, illuminated exit sign, low-voltage dry-type distribution transformer, single-voltage external AC to DC power supply, state-regulated incandescent reflector lamp, torchiere, traffic signal module, or unit heater may be installed for compensation in the state unless the efficiency of the new product meets or exceeds the efficiency standards set forth in section 4 of this act. On or after January 1, 2009, no new automatic commercial ice cube machine or metal halide lamp fixtures may be installed for compensation in the state unless the efficiency of the new product meets or exceeds the efficiency standards set forth in section 4 of this act.
- (3) Standards for metal halide lamp fixtures and state-regulated incandescent reflector lamps are effective on the dates in subsections (1) and (2) of this section.
 - NEW SECTION. Sec. 6. The department may recommend updates to the energy efficiency standards and test methods for products listed in section 3 of this act. The department may also recommend establishing state standards for additional nonfederally covered products. In

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making its recommendations, the department shall use the following 1 2 criteria: (1) Multiple manufacturers produce products that meet the proposed standard at the time of recommendation, (2) products meeting 3 the proposed standard are available at the time of recommendation, (3) 4 5 the products are cost-effective to consumers on a life-cycle cost basis using average Washington resource rates, (4) the utility of the energy 6 7 efficient product meets or exceeds the utility of the comparable product available for purchase, and (5) the standard exists in at least 8 two other states in the United States. For recommendations concerning 9 commercial clothes washers, the department must also consider the 10 fiscal effects on the low-income, elderly, and student populations. 11 Any recommendations shall be transmitted to the appropriate committees 12 13 of the legislature sixty days before the start of any regular 14 legislative session.

- NEW SECTION. Sec. 7. (1) The manufacturers of products covered by this chapter must test samples of their products in accordance with the test procedures under this chapter or those specified in the state building code.
 - (2) Manufacturers of new products covered by section 3 of this act, except for single-voltage external AC to DC power supplies, shall certify to the department that the products are in compliance with this chapter. This certification must be based on test results unless this chapter does not specify a test method. The department shall establish rules governing the certification of these products and may coordinate with the certification programs of other states and federal agencies with similar standards.
 - (3) Manufacturers of new products covered by section 3 of this act shall identify each product offered for sale or installation in the state as in compliance with this chapter by means of a mark, label, or tag on the product and packaging at the time of sale or installation. The department shall establish rules governing the identification of these products and packaging, which shall be coordinated to the greatest practical extent with the labeling programs of other states and federal agencies with equivalent efficiency standards.
- 35 (4) The department may test products covered by section 3 of this 36 act. If products so tested are found not to be in compliance with the 37 minimum efficiency standards established under section 4 of this act,

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the department shall: (a) Charge the manufacturer of the product for the cost of product purchase and testing; and (b) make information available to the public on products found not to be in compliance with the standards.

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- (5) The department shall obtain in paper form the test methods specified in section 4 of this act, which shall be available for public use at the department's energy policy offices.
- (6) The department shall investigate complaints received concerning violations of this chapter. Any manufacturer or distributor who violates this chapter shall be issued a warning by the director of the department for any first violation. Repeat violations are subject to a civil penalty of not more than two hundred fifty dollars a day. Penalties assessed under this subsection are in addition to costs assessed under subsection (4) of this section.
- 15 (7) The department may adopt rules as necessary to ensure the 16 proper implementation and enforcement of this chapter.
- 17 (8) The proceedings relating to this chapter are governed by the 18 administrative procedure act, chapter 34.05 RCW.
- NEW SECTION. Sec. 8. If any provision of this act or its application to any person or circumstance is held invalid, the remainder of the act or the application of the provision to other persons or circumstances is not affected.
- NEW SECTION. Sec. 9. Sections 1 through 8 of this act constitute a new chapter in Title 19 RCW.

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