
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.

1 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.

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

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

12 NEW SECTION. **Sec. 2.** The definitions in this section apply
13 throughout this chapter unless the context clearly requires otherwise.

14 (1) "Automatic commercial ice cube machine" means a factory-made
15 assembly, not necessarily shipped in one package, consisting of a
16 condensing unit and ice-making section operating as an integrated unit
17 with means for making and harvesting ice cubes. It may also include
18 integrated components for storing or dispensing ice, or both.

19 (2) "Ballast" means a device used with an electric discharge lamp
20 to obtain necessary circuit conditions, such as voltage, current, and
21 waveform, for starting and operating the lamp.

22 (3) "Commercial clothes washer" means a soft mount horizontal or
23 vertical-axis clothes washer that: (a) Has a clothes container
24 compartment no greater than 3.5 cubic feet in the case of a horizontal-
25 axis product or no greater than 4.0 cubic feet in the case of a
26 vertical-axis product; and (b) is designed for use by more than one
27 household, such as in multifamily housing, apartments, or coin
28 laundries.

29 (4) "Commercial prerinse spray valve" means a handheld device
30 designed and marketed for use with commercial dishwashing and
31 warewashing equipment and that sprays water on dishes, flatware, and
32 other food service items for the purpose of removing food residue prior
33 to their cleaning.

34 (5)(a) "Commercial refrigerators and freezers" means refrigerators,
35 freezers, or refrigerator-freezers designed for use by commercial or
36 institutional facilities for the purpose of storing or merchandising
37 food products, beverages, or ice at specified temperatures that: (i)

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

6 (b) "Commercial refrigerators and freezers" does not include: (i)
7 Products with 85 cubic feet or more of internal volume; (ii) walk-in
8 refrigerators or freezers; (iii) consumer products that are federally
9 regulated pursuant to 42 U.S.C. Sec. 6291 et seq.; (iv) products
10 without doors; or (v) freezers specifically designed for ice cream.

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

14 (7) "Department" means the department of community, trade, and
15 economic development.

16 (8)(a) "Digital television adapter" means an electronic product for
17 which the sole purpose is the conversion of digital video terrestrial
18 broadcast signals to analog national television system committee video
19 signals for use by an analog device such as a television.

20 (b) "Digital television adapter" does not include cable or
21 satellite television set-top boxes.

22 (9) "High-intensity discharge lamp" means a lamp in which light is
23 produced by the passage of an electric current through a vapor or gas,
24 and in which the light-producing arc is stabilized by bulb wall
25 temperature and the arc tube has a bulb wall loading in excess of three
26 watts per square centimeter.

27 (10) "Illuminated exit sign" means an internally illuminated sign
28 that is designed to be permanently fixed in place to identify a
29 building exit and consists of an electrically powered integral light
30 source that illuminates the legend "EXIT" and any directional
31 indicators and provides contrast between the legend, any directional
32 indicators, and the background.

33 (11)(a) "Low-voltage dry-type distribution transformer" means a
34 distribution transformer that: (i) Has an input voltage of 600 volts
35 or less; (ii) is air cooled; (iii) does not use oil as a coolant; and
36 (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

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

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

4 (b) "Single-voltage external AC to DC power supply" does not
5 include: (i) Products with batteries or battery packs that physically
6 attach directly to the power supply unit; (ii) products with a battery
7 chemistry or type selector switch and indicator light; or (iii)
8 products with a battery chemistry or type selector switch and a state
9 of charge meter.

10 (19) "State-regulated incandescent reflector lamp" means a lamp
11 that is not colored or designed for rough or vibration service
12 applications, that has an inner reflective coating on the outer bulb to
13 direct the light, an E26 medium screw base, and a rated voltage or
14 voltage range that lies at least partially within 115 to 130 volts, and
15 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;

18 (b) A reflector, parabolic aluminized reflector, or similar bulb
19 shape and which has a diameter of 2.25 to 2.75 inches.

20 (20) "Torchiere" means a portable electric lighting fixture with a
21 reflective bowl that directs light upward onto a ceiling so as to
22 produce indirect illumination on the surfaces below. "Torchiere" may
23 include downward directed lamps in addition to the upward, indirect
24 illumination.

25 (21) "Traffic signal module" means a standard (a) 8-inch or 200 mm
26 or (b) 12-inch or 300 mm traffic signal indication, consisting of a
27 light source, a lens, and all other parts necessary for operation.

28 (22) "Transformer" means a device consisting of two or more coils
29 of insulated wire and that is designed to transfer alternating current
30 by electromagnetic induction from one coil to another to change the
31 original voltage or current value.

32 (23)(a) "Unit heater" means a self-contained, vented fan-type
33 commercial space heater that uses natural gas or propane, and that is
34 designed to be installed without ducts within a heated space.

35 (b) "Unit heater" does not include any products covered by federal
36 standards established pursuant to 42 U.S.C. Sec. 6291 et seq. or any
37 product that is a direct vent, forced flue heater with a sealed
38 combustion burner.

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

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

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

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

Equipment type	Type of cooling	Harvest rate (lbs. ice/24 hrs.)	Maximum energy use (kWh/100 lbs.)	Maximum condenser water use (gallons/100 lbs. ice)
Ice-making head	water	<500	7.80 - .0055H	200 - .022H
		>=500<1436	5.58 - .0011H	200 - .022H
		>=1436	4.0	200 - .022H
Ice-making head	air	450	10.26 - .0086H	Not applicable
		>=450	6.89 - .0011H	Not applicable
Remote condensing but not remote compressor	air	<1000	8.85 - .0038	Not applicable
		>=1000	5.10	Not applicable

1	Remote condensing and remote compressor	air	<934	8.85 - .0038H	Not applicable
2			>=934	5.3	Not applicable
3	Self-contained models	water	<200	11.40 - .0190H	191 - .0315H
4			>=200	7.60	191 - .0315H
5	Self-contained models	air	<175	18.0 - .0469H	Not applicable
6			>=175	9.80	Not applicable

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

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

9 (b) For purposes of this section, automatic commercial ice cube
10 machines shall be tested in accordance with ARI 810-2003 test method as
11 published by the air-conditioning and refrigeration institute. Ice-
12 making heads include all automatic commercial ice cube machines that
13 are not split system ice makers or self-contained models as defined in
14 ARI 810-2003.

15 (2) Commercial clothes washers must have a minimum modified energy
16 factor of 1.26 and a maximum water consumption factor of 9.5. For the
17 purposes of this section, capacity, modified energy factor, and water
18 consumption factor are defined and measured in accordance with the
19 current federal test method for clothes washers as found at 10 C.F.R.
20 Sec. 430.23.

21 (3) Commercial prerinse spray valves must have a flow rate equal to
22 or less than 1.6 gallons per minute when measured in accordance with
23 the American society for testing and materials' "Standard Test Method
24 for Prerinse Spray Valves," ASTM F2324-03.

25 (4)(a) Commercial refrigerators and freezers must meet the
26 applicable requirements listed in the following table:

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

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 = total volume (ft³)

5 AV = adjusted volume = [1.63 x freezer volume (ft³) + refrigerator volume (ft³)

6 (b) For purposes of this section, "pulldown" designates products
7 designed to take a fully stocked refrigerator with beverages at 90
8 degrees F and cool those beverages to a stable temperature of 38
9 degrees F within 12 hours or less. Daily energy consumption shall be
10 measured in accordance with the American national standards
11 institute/American society of heating, refrigerating and air-
12 conditioning engineers test method 117-2002, except that the back-
13 loading doors of pass-through and roll-through refrigerators and
14 freezers must remain closed throughout the test, and except that the
15 controls of all appliances must be adjusted to obtain the following
16 product temperatures.

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

20 (5) Digital television adapters may not use more than 1 watt in
21 "passive standby" mode and may not use more than 8 watts in "on" mode.
22 For the purposes of this section, "passive standby" mode and "on" mode
23 power consumption is measured in accordance with international
24 electrotechnical commission test method 62087:2002(E), "Methods of
25 Measurement for the Power Consumption of Audio, Video, and Related
26 Equipment."

27 (6) Illuminated exit signs must have an input power demand of five
28 watts or less per illuminated face. For the purposes of this section,
29 input power demand is measured in accordance with the United States
30 environmental protection agency's energy star exit sign program's
31 conditions for testing, version 3.0. Illuminated exit signs must meet
32 all applicable building and safety codes.

33 (7)(a) Low-voltage dry-type distribution transformers shall have
34 efficiencies not less than the applicable values in the following table
35 when tested at thirty-five percent of the rated output power:

Single Phase			Three Phase		
Rated power output in kVa	Minimum efficiency %		Rated power output in kVa	Minimum efficiency %	
≥ 15	<25	97.7	≥ 15	<30	97.0
≥ 25	<37.5	98.0	≥ 30	<45	97.5
≥ 37.5	<50	98.2	≥ 45	<75	97.7
≥ 50	<75	98.3	≥ 75	<112.5	98.0
≥ 75	<100	98.5	≥ 112.5	<150	98.2
≥ 100	<167	98.6	≥ 150	<225	98.3
≥ 167	<250	98.7	≥ 225	<300	98.5
≥ 250	<333	98.8	≥ 300	<500	98.6
333		98.9	≥ 500	<750	98.7
--		--	≥ 750	<1000	98.8
--		--	1000		98.9

kVa = kilovolt amperes

(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:

Nameplate output	Minimum Efficiency in Active Mode
< 1 Watt	0.49 * Nameplate Output
> or = 1 Watt and < or = 49 Watts	0.09 * Ln (Nameplate Output) + 0.49
> 49 Watts	0.84
	Maximum Energy Consumption in No-Load Mode
< 10 Watts	0.5 Watts
> 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

1 Calculating the Energy Efficiency of Single-Voltage External AC to DC
 2 and AC to AC Power Supplies", by Ecos Consulting and Power Electronics
 3 Application Center, dated August 11, 2004.

4 (10)(a) State-regulated incandescent reflector lamps that are not
 5 50 watt elliptical reflector lamps must meet the minimum efficacies in
 6 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

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

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

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

23	Module Type	Maximum Wattage (at 74°C)	Nominal Wattage (at 25°C)
24	12" red ball (or 300 mm circular)	17	11
25	8" red ball (or 200 mm circular)	13	8
26	12" red arrow (or 300 mm arrow)	12	9
27			
28	12" green ball (or 300 mm circular)	15	15
29	8" green ball (or 200 mm circular)	12	12
30	12" green arrow (or 300 mm arrow)	11	11

31 mm = millimeter

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

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

4 (13) Unit heaters must be equipped with intermittent ignition
5 devices and must have either power venting or an automatic flue damper.

6 NEW SECTION. **Sec. 5.** (1) On or after January 1, 2007, no new
7 commercial clothes washer, commercial prerinse spray valve, commercial
8 refrigerator or freezer, digital television adapter, illuminated exit
9 sign, low-voltage dry-type distribution transformer, single-voltage
10 external AC to DC power supply, state-regulated incandescent reflector
11 lamp, torchiere, traffic signal module, or unit heater may be sold or
12 offered for sale in the state unless the efficiency of the new product
13 meets or exceeds the efficiency standards set forth in section 4 of
14 this act. On or after January 1, 2008, no new automatic commercial ice
15 cube machine or metal halide lamp fixtures may be sold or offered for
16 sale in the state unless the efficiency of the new product meets or
17 exceeds the efficiency standards set forth in section 4 of this act.

18 (2) On or after January 1, 2008, no new commercial clothes washer,
19 commercial prerinse spray valve, commercial refrigerator or freezer,
20 digital television adapter, illuminated exit sign, low-voltage dry-type
21 distribution transformer, single-voltage external AC to DC power
22 supply, state-regulated incandescent reflector lamp, torchiere, traffic
23 signal module, or unit heater may be installed for compensation in the
24 state unless the efficiency of the new product meets or exceeds the
25 efficiency standards set forth in section 4 of this act. On or after
26 January 1, 2009, no new automatic commercial ice cube machine or metal
27 halide lamp fixtures may be installed for compensation in the state
28 unless the efficiency of the new product meets or exceeds the
29 efficiency standards set forth in section 4 of this act.

30 (3) Standards for metal halide lamp fixtures and state-regulated
31 incandescent reflector lamps are effective on the dates in subsections
32 (1) and (2) of this section.

33 NEW SECTION. **Sec. 6.** The department may recommend updates to the
34 energy efficiency standards and test methods for products listed in
35 section 3 of this act. The department may also recommend establishing
36 state standards for additional nonfederally covered products. In

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

12 NEW SECTION. **Sec. 7.** (1) The manufacturers of products covered by
13 this chapter must test samples of their products in accordance with the
14 test procedures under this chapter or those specified in the state
15 building code.

16 (2) Manufacturers of new products covered by section 3 of this act,
17 except for single-voltage external AC to DC power supplies, shall
18 certify to the department that the products are in compliance with this
19 chapter. This certification must be based on test results unless this
20 chapter does not specify a test method. The department shall establish
21 rules governing the certification of these products and may coordinate
22 with the certification programs of other states and federal agencies
23 with similar standards.

24 (3) Manufacturers of new products covered by section 3 of this act
25 shall identify each product offered for sale or installation in the
26 state as in compliance with this chapter by means of a mark, label, or
27 tag on the product and packaging at the time of sale or installation.
28 The department shall establish rules governing the identification of
29 these products and packaging, which shall be coordinated to the
30 greatest practical extent with the labeling programs of other states
31 and federal agencies with equivalent efficiency standards.

32 (4) The department may test products covered by section 3 of this
33 act. If products so tested are found not to be in compliance with the
34 minimum efficiency standards established under section 4 of this act,
35 the department shall: (a) Charge the manufacturer of the product for
36 the cost of product purchase and testing; and (b) make information

1 available to the public on products found not to be in compliance with
2 the standards.

3 (5) The department shall obtain in paper form the test methods
4 specified in section 4 of this act, which shall be available for public
5 use at the department's energy policy offices.

6 (6) The department shall investigate complaints received concerning
7 violations of this chapter. Any manufacturer or distributor who
8 violates this chapter shall be issued a warning by the director of the
9 department for any first violation. Repeat violations are subject to
10 a civil penalty of not more than two hundred fifty dollars a day.
11 Penalties assessed under this subsection are in addition to costs
12 assessed under subsection (4) of this section.

13 (7) The department may adopt rules as necessary to ensure the
14 proper implementation and enforcement of this chapter.

15 (8) The proceedings relating to this chapter are governed by the
16 administrative procedure act, chapter 34.05 RCW.

17 NEW SECTION. **Sec. 8.** If any provision of this act or its
18 application to any person or circumstance is held invalid, the
19 remainder of the act or the application of the provision to other
20 persons or circumstances is not affected.

21 NEW SECTION. **Sec. 9.** Sections 1 through 8 of this act constitute
22 a new chapter in Title 19 RCW.

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