
SUBSTITUTE SENATE BILL 6840

State of Washington 59th Legislature 2006 Regular Session

By Senate Committee on Water, Energy & Environment (originally sponsored by Senators Morton and Poulsen)

READ FIRST TIME 02/03/06.

1 AN ACT Relating to energy efficiency; and amending RCW 19.260.020,
2 19.260.030, 19.260.040, and 19.260.050.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

4 **Sec. 1.** RCW 19.260.020 and 2005 c 298 s 2 are each amended to read
5 as follows:

6 The definitions in this section apply throughout this chapter
7 unless the context clearly requires otherwise.

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

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

16 (3) "Commercial clothes washer" means a soft mount horizontal or
17 vertical-axis clothes washer that: (a) Has a clothes container
18 compartment no greater than 3.5 cubic feet in the case of a horizontal-
19 axis product or no greater than 4.0 cubic feet in the case of a

1 vertical-axis product; and (b) is designed for use by more than one
2 household, such as in multifamily housing, apartments, or coin
3 laundries.

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

9 (5)(a) "Commercial refrigerators and freezers" means refrigerators,
10 freezers, or refrigerator-freezers designed for use by commercial or
11 institutional facilities for the purpose of storing or merchandising
12 food products, beverages, or ice at specified temperatures that: (i)
13 Incorporate most components involved in the vapor-compression cycle and
14 the refrigerated compartment in a single cabinet; and (ii) may be
15 configured with either solid or transparent doors as a reach-in
16 cabinet, pass-through cabinet, roll-in cabinet, or roll-through
17 cabinet.

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

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

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

28 (8) "High-intensity discharge lamp" means a lamp in which light is
29 produced by the passage of an electric current through a vapor or gas,
30 and in which the light-producing arc is stabilized by bulb wall
31 temperature and the arc tube has a bulb wall loading in excess of three
32 watts per square centimeter.

33 (9) (~~"Illuminated exit sign" means an internally illuminated sign
34 that is designed to be permanently fixed in place to identify a
35 building exit and consists of an electrically powered integral light
36 source that illuminates the legend "EXIT" and any directional
37 indicators and provides contrast between the legend, any directional
38 indicators, and the background.~~

1 ~~(10)(a) "Low voltage dry type distribution transformer" means a~~
2 ~~distribution transformer that: (i) Has an input voltage of 600 volts~~
3 ~~or less; (ii) is air cooled; (iii) does not use oil as a coolant; and~~
4 ~~(iv) is rated for operation at a frequency of 60 hertz.~~

5 ~~(b) "Low voltage dry type transformer" does not include: (i)~~
6 ~~Transformers with multiple voltage taps, with the highest voltage tap~~
7 ~~equaling at least twenty percent more than the lowest voltage tap; or~~
8 ~~(ii) transformers, such as those commonly known as drive transformers,~~
9 ~~rectifier transformers, auto transformers, uninterruptible power system~~
10 ~~transformers, impedance transformers, regulating transformers, sealed~~
11 ~~and nonventilating transformers, machine tool transformers, welding~~
12 ~~transformers, grounding transformers, or testing transformers, that are~~
13 ~~designed to be used in a special purpose application and are unlikely~~
14 ~~to be used in general purpose applications.~~

15 ~~(11))~~ "Metal halide lamp" means a high-intensity discharge lamp in
16 which the major portion of the light is produced by radiation of metal
17 halides and their products of dissociation, possibly in combination
18 with metallic vapors.

19 ~~((12))~~ (10) "Metal halide lamp fixture" means a light fixture
20 designed to be operated with a metal halide lamp and a ballast for a
21 metal halide lamp.

22 ~~((13))~~ (11) "Pass-through cabinet" means a commercial
23 refrigerator or freezer with hinged or sliding doors on both the front
24 and rear of the unit.

25 ~~((14))~~ (12) "Probe-start metal halide ballast" means a ballast
26 used to operate metal halide lamps which does not contain an igniter
27 and which instead starts lamps by using a third starting electrode
28 "probe" in the arc tube.

29 ~~((15))~~ (13) "Reach-in cabinet" means a commercial refrigerator or
30 freezer with hinged or sliding doors or lids, but does not include
31 roll-in or roll-through cabinets or pass-through cabinets.

32 ~~((16))~~ (14)(a) "Roll-in cabinet" means a commercial refrigerator
33 or freezer with hinged or sliding doors that allow wheeled racks of
34 product to be rolled into the unit.

35 (b) "Roll-through cabinet" means a commercial refrigerator or
36 freezer with hinged or sliding doors on two sides of the cabinet that
37 allow wheeled racks of product to be rolled through the unit.

1 ~~((17))~~ (15)(a) "Single-voltage external AC to DC power supply"
2 means a device that: (i) Is designed to convert line voltage
3 alternating current input into lower voltage direct current output;
4 (ii) is able to convert to only one DC output voltage at a time; (iii)
5 is sold with, or intended to be used with, a separate end-use product
6 that constitutes the primary power load; (iv) is contained within a
7 separate physical enclosure from the end-use product; (v) is connected
8 to the end-use product via a removable or hard-wired male/female
9 electrical connection, cable, cord, or other wiring; and (vi) has a
10 nameplate output power less than or equal to 250 watts.

11 (b) "Single-voltage external AC to DC power supply" does not
12 include: (i) Products with batteries or battery packs that physically
13 attach directly to the power supply unit; (ii) products with a battery
14 chemistry or type selector switch and indicator light; or (iii)
15 products with a battery chemistry or type selector switch and a state
16 of charge meter.

17 ~~((18))~~ (16) "State-regulated incandescent reflector lamp" means
18 a lamp that is not colored or designed for rough or vibration service
19 applications, that has an inner reflective coating on the outer bulb to
20 direct the light, an E26 medium screw base, and a rated voltage or
21 voltage range that lies at least partially within 115 to 130 volts, and
22 that falls into one of the following categories:

23 (a) A bulged reflector or elliptical reflector bulb shape and which
24 has a diameter which equals or exceeds 2.25 inches;

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

27 ~~((19)) "Torchiere" means a portable electric lighting fixture with
28 a reflective bowl that directs light upward onto a ceiling so as to
29 produce indirect illumination on the surfaces below. "Torchiere" may
30 include downward directed lamps in addition to the upward, indirect
31 illumination.~~

32 ~~(20) "Traffic signal module" means a standard (a) 8 inch or 200 mm
33 or (b) 12 inch or 300 mm traffic signal indication, consisting of a
34 light source, a lens, and all other parts necessary for operation.~~

35 ~~(21))~~ (17) "Transformer" means a device consisting of two or more
36 coils of insulated wire and that is designed to transfer alternating
37 current by electromagnetic induction from one coil to another to change
38 the original voltage or current value.

1 ~~((+22+))~~ (18)(a) "Unit heater" means a self-contained, vented fan-
2 type commercial space heater that uses natural gas or propane, and that
3 is designed to be installed without ducts within a heated space.

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

8 **Sec. 2.** RCW 19.260.030 and 2005 c 298 s 3 are each amended to read
9 as follows:

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

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

29 **Sec. 3.** RCW 19.260.040 and 2005 c 298 s 4 are each amended to read
30 as follows:

31 The legislature establishes the following minimum efficiency
32 standards for the types of new products set forth in RCW 19.260.030.

33 (1)(a) Automatic commercial ice cube machines must have daily
34 energy use and daily water use no greater than the applicable values in
35 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
Remote condensing and remote compressor	air	<934	8.85 - .0038H	Not applicable
		>=934	5.3	Not applicable
Self-contained models	water	<200	11.40 - .0190H	191 - .0315H
		>=200	7.60	191 - .0315H
Self-contained models	air	<175	18.0 - .0469H	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. For the purposes of this section, capacity and modified energy 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:

Equipment Type	Doors	Maximum Daily Energy Consumption (kWh)
Reach-in cabinets, pass-through cabinets, and roll-in or roll-through cabinets that are refrigerators	Solid	$0.10V + 2.04$
	Transparent	$0.12V + 3.34$
Reach-in cabinets, pass-through cabinets, and roll-in or roll-through cabinets that are "pulldown" refrigerators	Transparent	$.126V + 3.51$
Reach-in cabinets, pass-through cabinets, and roll-in or roll-through cabinets that are freezers	Solid	$0.40V + 1.38$
	Transparent	$0.75V + 4.10$
Reach-in cabinets that are refrigerator-freezers with an AV of 5.19 or higher	Solid	$0.27AV - 0.71$

12 kWh= kilowatt hours

13 V= total volume (ft³)

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

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

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

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

~~(6)(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:~~

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.~~

~~(7)) 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.~~

~~((8)) (6)(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

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

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

8 ~~((+9)) (7)(a) State-regulated incandescent reflector lamps ((that
9 are not 50 watt elliptical reflector lamps must meet the minimum
10 efficacies in the following table:~~

11	Wattage	Minimum average lamp efficacy (lumens per watt)
12	40-50	10.5
13	51-66	11.0
14	67-85	12.5
15	86-115	14.0
16	116-155	14.5
17	156-205	15.0

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

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

24 ~~(11)(a) Traffic signal modules must have maximum and nominal
25 wattage that do not exceed the applicable values in the following
26 table:~~

27	Module Type	Maximum Wattage (at 74°C)	Nominal Wattage (at 25°C)
28	12" red ball (or 300 mm circular)	17	11
29	8" red ball (or 200 mm circular)	13	8
30	12" red arrow (or 300 mm arrow)	12	9
31			
32	12" green ball (or 300 mm circular)	15	15
33	8" green ball (or 200 mm circular)	12	12

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.")~~ shall meet the minimum average lamp efficacy requirements for federally regulated incandescent reflector lamps contained in 42 U.S.C. Sec. 6295(i)(1)(A).

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

(i) Lamps rated at fifty watts or less of the following types: BR 30, ER 30, BR 40, and ER 40;

(ii) Lamps rated at sixty-five watts of the following types: BR 30, BR 40, and ER 40; and

(iii) R 20 lamps of forty-five watts or less.

~~((12))~~ (8) Unit heaters must be equipped with intermittent ignition devices and must have either power venting or an automatic flue damper.

Sec. 4. RCW 19.260.050 and 2005 c 298 s 5 are each amended to read as follows:

(1) ~~((On or after January 1, 2007,))~~ No new commercial prerinse spray valve, commercial clothes washer, commercial refrigerator or freezer, ~~((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 manufactured on or after January 1, 2007, 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 RCW 19.260.040. ~~((On or after January 1, 2008,))~~ No new automatic commercial ice cube machine or metal halide lamp fixtures manufactured on or after January 1, 2008, 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 RCW 19.260.040.

(2) On or after January 1, 2008, no new commercial prerinse spray valve, commercial clothes washer, commercial refrigerator or freezer,

1 (~~illuminated exit sign, low voltage dry type distribution~~
2 ~~transformer,~~) single-voltage external AC to DC power supply, state-
3 regulated incandescent reflector lamp, (~~torchiere, traffic signal~~
4 ~~module,~~) or unit heater manufactured on or after January 1, 2007, may
5 be installed for compensation in the state unless the efficiency of the
6 new product meets or exceeds the efficiency standards set forth in RCW
7 19.260.040. On or after January 1, 2009, no new automatic commercial
8 ice cube machine or metal halide lamp fixtures manufactured on or after
9 January 1, 2008, may be installed for compensation in the state unless
10 the efficiency of the new product meets or exceeds the efficiency
11 standards set forth in RCW 19.260.040.

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

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