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S T A T E O F R H O D E I S L A N D

IN GENERAL ASSEMBLY

JANUARY SESSION, A.D. 2016

A N A C T

RELATING TO STATE AFFAIRS AND GOVERNMENT - MINIMUM ENERGY AND WATER EFFICIENCY STANDARDS

Introduced By: Representatives Handy, Fogarty, O`Grady, Ackerman, and McKiernan

Date Introduced: February 24, 2016

Referred To: House Environment and Natural Resources

It is enacted by the General Assembly as follows:

SECTION 1. Title 42 of the General Laws entitled "STATE AFFAIRS AND GOVERNMENT" is hereby amended by adding thereto the following chapter:

CHAPTER 140.5

MINIMUM ENERGY AND WATER EFFICIENCY STANDARDS

42-140.5-1. General purpose. – This chapter establishes minimum efficiency standards for certain products sold or installed in the state of Rhode Island.

42-140.5-2. Legislative findings. – The legislature finds that:

(1) Efficiency standards for certain products sold or installed in the state assure consumers and businesses that such products meet minimum efficiency performance levels, thus reducing energy and water waste and saving money on utility bills.

(2) Efficiency standards save energy and thus reduce pollution and other environmental impacts associated with the production, distribution, and use of electricity, natural gas, and other fuels.

(3) Water efficiency standards save water and thus reduce the strain on the water supply. Furthermore, improved water efficiency can reduce or delay the need for water and sewer infrastructure improvements.

(4) Efficiency standards can make electricity systems more reliable by reducing the strain on the grid during peak demand periods. Furthermore, improved efficiency can reduce or delay

the need for new power plants, power transmission lines, and power distribution system upgrades.

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

42-140.5-3. Definitions. – As used in this chapter:

(1) "'Arc power" means the entire output power of the ballast and delivered to all attached lamps.

(2) "Commissioner" means the commissioner of the office of energy resources.

(3) "Commercial hot food holding cabinet" means a heated, fully-enclosed compartment with one or more solid or transparent doors designed to maintain the temperature of hot food that has been cooked using a separate appliance. "Commercial hot food holding cabinet" does not include heated glass merchandizing cabinets, drawer warmers, or cook-and-hold appliances.

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

(5) "Deep-dimming fluorescent lamp ballast" means a fluorescent ballast that is capable of operating lamps in dimmed operating modes at any number of levels at or below fifty percent (50%) of full output. The term shall only apply to lamp ballasts designed to operate one, two (2), three(3), or four (4) TS or T8 four foot (4') linear or U-shape fluorescent lamps.

(6) The following definitions refer to general service lamps:

(i) "Incandescent lamp" means a lamp in which light is produced by a filament heated to incandescence by an electric current (including any tungsten-halogen lamp), and which has a rated wattage of thirty (30) or greater and a rated voltage or voltage range that lies at least partially within one hundred fifteen (115) and one hundred thirty (130) volts, but which does not contain an inner reflective coating on the outer bulb to direct the light.

(ii) "General service incandescent lamp" means an incandescent lamp that:

(A) Has a medium, intermediate, or candelabra screw base;

(B) Has a lumen range of not less than three hundred and ten (310) lumens and not more than three thousand three hundred (3300) lumens;

(C) Is capable of being operated at a voltage range at least partially within one hundred and ten (110) and one hundred and thirty (130) volts; and

(D) Is not one of the following incandescent lamp types:

(I) An appliance lamp of forty (40) watts or less and no more than four hundred (400)

lumens;

(II) A black light lamp;

(III) A bug lamp;

(IV) A colored lamp;

(V) An infrared lamp;

(VI) A marine lamp;

(VII) A marine signal service lamp;

(VIII) A plant light lamp;

(IX) A reflector lamp;

(X) A silver bowl lamp;

(XI) A showcase lamp;

(XII) A traffic signal lamp;

(XIII) A G shape lamp (as defined in ANSI C78.20-2003 and C79.1-2002) with a diameter of five inches (5") or more;

(XIV) A T shape lamp (as defined in ANSI C78.20-2003 and C79.1-2002) and that uses not more than forty (40) watts or has a length of more than ten inches (10"); and

(XV) A B, BA, CA, F, G16-1/2, G-25, G30, S, or M-14 lamp (as defined in ANSI C79.1-2002 and ANSI C78.20-2003) of thirty (30) watts or less.

(iii) "Compact fluorescent lamp" means an integrally ballasted fluorescent lamp with a medium screw base and a rated input voltage of one hundred and fifteen (115) to one hundred and thirty (130) volts, which is designed as a direct replacement for a general service incandescent lamp, but does not include any lamp specifically designed to be used in an application listed in subsection 3(a)(6)(ii)(D) of this section.

(iv) "Light-emitting diode" or "LED" means a p-n junction solid state device the radiated output of which is a function of the physical construction, material used, and exciting current of the device. The output of a light-emitting diode may be in:

(A) The infrared region;

(B) The visible region; or

(C) The ultraviolet region.

(v) "General service lamp" means a

(A) General service incandescent lamp;

(B) Compact fluorescent lamp; or

(C) General service light-emitting diode lamp.

(7) The following definitions refer to high color rendering index fluorescent lamps:

(i) "Fluorescent lamp" means a low pressure mercury electric-discharge source in which a fluorescing coating transforms some of the ultraviolet energy generated by the mercury discharge into light, and includes only the following:

(A) Any straight-shaped lamp (commonly referred to as four foot (4') medium bipin lamps) with medium bipin bases of nominal overall length of forty-eight inches (48") and rated wattage of twenty-five (25) or more.

(ii) "Color rendering index" or "CRI" means the measure of the degree of color-shift objects undergo when illuminated by a light source as compared with the color of those same objects when illuminated by a reference source of comparable color temperature.

(iii) "High color rendering index fluorescent lamp" means a fluorescent lamp with a color rendering index of eighty-seven (87) or greater.

(8) "Input power" means the power provided to the ballast, typically line alternating-current power as determined by Section 2.5.1.6 of 10 C.F.R. Part 430, Subpart 8, Appendix Q1 (2015).

(9) "Maximum arc power" means the maximum amount of power a dimming ballast will provide to lamps under normal operating conditions. It is the same power as the measured power at one hundred percent (100%) arc power.

(10) "Plumbing fitting" means a device that controls and guides the flow of water in a supply system. The following definitions apply to plumbing fittings:

(i) "Faucet" means a lavatory faucet, kitchen faucet, metering faucet, or replacement aerator for a lavatory or kitchen faucet.

(ii) "Flow rate" means the rate of water flow of a plumbing fitting.

(iii) "Public lavatory faucet" means a fitting intended to be installed in non-residential bathrooms that are exposed to walk-in traffic.

(iv) "Replacement aerator" means an aerator sold as a replacement, separate from the faucet to which it is intended to be attached.

(v) "Showerhead" means a device through which water is discharged for a shower bath and includes a body sprayer and handheld showerhead, but does not include a safety showerhead.

(vi) "Water use" means the quantity of water flowing through a showerhead or faucet, at point of use.

(11) "Plumbing fixture" means an exchangeable device, which connects to a plumbing system to deliver and drain away water and waste. The following definitions apply to plumbing fixtures:

(i) "Dual-flush effective flush volume" means the average flush volume of two (2)

reduced flushes and one full flush.

(ii) "Trough-type urinal" means a urinal designed for simultaneous use by two (2) or more persons.

(iii) "Dual-flush water closet" means a water closet incorporating a feature that allows the user to flush the water closet with either a reduced or a full volume of water.

(iv) "Urinal" means a plumbing fixture that receives only liquid body waste and conveys the waste through a trap into a drainage system.

(v) "Water closet" means a plumbing fixture having a water-containing receptor that receives liquid and solid body waste through an exposed integral trap into a drainage system.

(vi) "Water use" means the quantity of water flowing through a water closet or urinal at point of use.

(12) "Portable electric spa" means a factory-built portable electric spa that can be either cord- or non-cord-connected, supplied with equipment for heating and circulating water.

(13) The following definitions apply to room air cleaners:

(i) "Room air cleaner" means an electric-cord-connected, portable appliance with the primary function of removing particulate matter from the air and which can be moved from room to room.

(ii) "Combination product" means a room air cleaner that includes a secondary function, other than air cleaning technology, within the same housing, such as a humidifier or dehumidifier.

(iii) "Ozone generator" means a device intended to reduce or eliminate microorganisms within a room solely by means of introducing ozone into the room environment.

(iv) "Clean air delivery rate (CADR)" means the measure of the delivery of specified, particulate-free air produced by a household electric, cord-connected room air cleaner.

(v) "Standby mode" means the lowest power consumption mode which cannot be switched off (influenced) by the user and that may persist for an indefinite time when an air cleaner unit is connected to the main electricity supply and used in accordance with the manufacturer's instructions.

(vi) "Standby power" means the average power in standby mode, measured in Watts.

(14) The following definitions refer to water coolers:

(i) "Water cooler" means a freestanding (i.e., not wall mounted, under sink, or otherwise building integrated) device that consumes energy to cool and/or heat potable water.

(A) "Cold only" units dispense cold water.

(B) "Hot and cold units" dispense both hot and cold water. Some units also offer room-temperature water.

(C) "Cook and cold units" dispense both cold and room-temperature water.

(ii) "Storage-type" means thermally conditioned water is stored in a tank in the water cooler and is available instantaneously. Point of use, dry storage compartment, and bottled water coolers are included in this category.

(iii) "On demand" means the water cooler heats water as it is requested, which typically takes a few minutes to deliver.

(iv) "On mode with no water draw" means a test that records the twenty-four (24) hour energy consumption of a water cooler with no water drawn during the test period. This test was formerly known as "standby."

(15) "Weighted ballast luminous efficacy" means the weighted average ballast luminous efficacy as calculated by accepted industry standards.

42-140.5-4. Scope. – (a) The provisions of this chapter apply to:

(1) Commercial hot food holding cabinets;

(2) Deep-dimming fluorescent lamp ballasts;

(3) Residential portable electric spas and residential exercise spas (also known as swim spas) and portions of combination spas/swim spas that are used for bathing and are operated by a private owner;

(4) Room air cleaners, except those that are combination products or ozone generators;

(5) Plumbing fittings including lavatory faucets, kitchen faucets that are consumer products and faucet aerators; public lavatory faucets, and showerheads;

(6) Plumbing fixtures including urinals and water closets;

(7) Water coolers, including cold only units, hot and cold units, and cook and cold units, but excluding units that provide pressurized water and are not freestanding, and air-source units, and units with a water source other than bottled or tap water;

(8) High color rendering index fluorescent lamps;

(9) General service lamps; and

(10) Any other products as may be designated by the commissioner in accordance with §42-140.5-7.

(b) The provisions of this chapter do not apply to:

(1) New products manufactured in the state and sold outside the state;

(2) New products manufactured outside the state and sold at wholesale inside the state for final retail sale and installation outside the state;

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

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

42-140.5-5. Standards. – (a) Not later than one year after the date of enactment of this chapter, the director shall adopt regulations, in accordance with the provisions of chapter 35 of title 42 (administrative procedures), establishing minimum efficiency standards for the types of new products set forth in §42-104.5-4.

(b) The regulations shall provide for the following minimum efficiency standards:

(1) Commercial hot food holding cabinets with an interior volume of eight (8) cubic feet or greater shall have a maximum idle energy rate of forty (40) watts per cubic foot of interior volume, as determined by the "idle energy rate-dry test" in ASTM Standard F2140-11, "Test Method for the Performance of Hot Food Holding Cabinets" published by ASTM International. Interior volume shall be measured as prescribed in Version 2.0 of the ENERGY STAR program product specifications for commercial hot food holding cabinets as in effect on October 1, 2011.

(2) Deep-Dimming Fluorescent Lamp Ballasts shall meet the following energy conservation standards tested in accordance with accepted industry standards:

(i) Shall not consume more than 1 watt in standby mode;

(ii) Shall have a power factor of 0.9 or greater; and

(iii) Shall have a weighted ballast luminous efficacy greater than or equal to the threshold described in the following equation:

Weighted Ballast Luminous Efficacy $\geq AP_{100}$ */AP_{100} x 1.091 + 7.55

[*AP_{100} is shorthand for maximum arc power].

(3) Portable electric spas shall meet the requirements of the "American National Standard for Portable Electric Spa Energy Efficiency" (ANSl/APSP/ICC-14 2014) as in effect on September 12, 2014.

(4) Room air cleaners shall meet the following requirements:

(i) Produce a minimum fifty (50) clean air delivery rate (CADR) for Dust;

(ii) Achieve calculated CADR/Watt equal to or greater than 2.0 CADR/Watt (Dust);

(iii) For ozone-emitting models, measured ozone shall be less than or equal to fifty parts per billion (50 ppb);

(iv) Measured standby power shall be less than or equal to two (2) Watts; as measured in accordance with the test criteria prescribed in Version 1.2 of the ENERGY STAR program product specifications for room air cleaners as in effect on July 1, 2004.

(5) Plumbing fittings shall meet the following requirements:

(i) The flow rate of lavatory faucets, kitchen faucets, replacement aerators, and public lavatory faucets shall be not greater than the applicable values shown in Table 1 in accordance with the flow rate test procedure prescribed in Appendix S to Subpart B of Part 430 of Title 10 of

the Code of Federal Regulations - "Uniform Test Method for Measuring the Water Consumption of Faucets and Showerheads."

Table 1: Standards for faucets and aerators

Appliance	Maximum Flow Rate
Lavatory faucets and aerators	1.2 gpm at 60 pounds per square inch (psi)[1,2]
Kitchen faucets and aerators	1.8 gpm with optional temporary flow of 2.2 gpm at 60 psi
Public lavatory faucets and aerators	0.5 gpm at 60 psi

[1]Sprayheads with independently-controlled orifices and manual controls. The maximum flow rate of each orifice that manually turns on or off shall not exceed the maximum flow rate for a lavatory faucet.

[2]Sprayheads with collectively-controlled orifices and manual controls. The maximum flow rate of a sprayhead that manually turns on or off shall be the product of (a) the maximum flow rate for a lavatory faucet; and (b) the number of component lavatories (rim space of the lavatory in inches (millimeters) divided by twenty inches (20") five hundred eight millimeters (508 mm)).

(ii) The flow rate of showerheads shall not be greater than the applicable values shown in Table 2 when tested in accordance with the following:

(A) Maximum flow rate test procedure prescribed in Appendix S to Subpart 8 of Part 430 of Title 10 of the Code of Federal Regulations - "Uniform Test Method for Measuring the Water Consumption of Faucets and Showerheads."

(B) Minimum flow rate test procedure prescribed in ASME A112.18.1-2012 / CSA 8125.1-2012. Section 5.12.

(C) Showerheads with multiple nozzles shall be tested with all nozzles in use at the same time.

Table 2: Standards for Showerheads

Appliance	Maximum Flow Rate
Showerheads	2.0 gpm at 80 psi[1,2,3]

[1]The maximum flow rate shall be the highest value obtained through testing at a flowing pressure of 80 ±1 psi and shall not exceed the maximum flow rate in Table 2.

[2]Minimum flow rate. The minimum flow rate, determined through testing at a flowing pressure of 20 ±1 psi, shall be not less than sixty percent (60%) of the flow rate reported by the manufacturer pursuant to section 1606(a) of Title 20 of the California Code of Regulations. The minimum flow rate determined through testing at flowing pressures of 45 and 80 ±1 psi shall be not less than seventy-five percent (75%) of the flow rate in reported by the manufacturer pursuant

to section (a) of Title 20 of the California Code of Regulations.

[3]Showerheads with multiple nozzles. The total flow rate of showerheads with multiple nozzles must be less than or equal to the maximum flow rate in Table 2 when all nozzles are in use at the same time.

(6) Plumbing Fixtures shall meet the following requirements:

(i) The water consumption of urinals and water closets, other than those designed and marketed exclusively for use at prisons or mental health care facilities, shall be no greater than the values shown in subsections (b)(1)(i) through (b)(1)(iv) of this section when tested in accordance with the:

(A) Water consumption test prescribed in Appendix T to Subpart 8 of Part 430 of Title 10 of the Code of Federal Regulations - "Uniform Test Method for Measuring the Water Consumption of Water Closets and Urinals," as in effect on September 1, 2015.

(B) Waste Extraction Test for water closets (Section 7.10) of ASME A112.19.2/CSA 845.1-2013.

(I) Trough-type urinals shall have a maximum gallons per flush of:

Trough length (in inches)/16

(II) Wall-mounted urinals shall have a maximum flush volume of 0.125 gallons per flush. Other urinals shall have a maximum flush volume of 0.5 gallons per flush.

(III) Water closets, except for dual flush tank-type water closets, shall have a maximum flush volume of 1.28 gallons per flush.

(IV) Dual flush tank-type water closets shall have a maximum effective flush volume of 1.28 gallons per flush.

(7) Water coolers shall have on mode with no water draw energy consumption less than or equal to:

(i) 0.16 kilowatt-hours per day for cold only and cook and cold units;

(ii) 0.87 kilowatt-hours per day, for hot and cold units - storage type; and

(iii) 0.18 kilowatt-hours per day, for hot and cold units - on demand, as measured in accordance with the test criteria prescribed in version 2.0 of the ENERGY STAR program product specifications for water coolers as in effect on February 1, 2014.

(8) High color rendering index fluorescent lamps shall meet or exceed the following lamp efficacy standards, when tested in accordance with the test procedure prescribed in Appendix R to Subpart B of Part 430 of Title 10 of the Code of Federal Regulations - "Uniform Test Method for Measuring Average Lamp Efficacy (LE), Color Rendering Index (CRI), and Correlated Color Temperature (CCT) of Electric Lamps" - as in effect on September 1, 2015:

Lamp type	Correlated Color Temperature	Minimum Average Lamp Efficacy (lumens/watt)
4 foot (4') medium bipin	≤4500K	92.4
	>4500K & ≤7000K	88.7

(9) General service lamps shall meet or exceed a lamp efficacy standard of forty-five (45) lumens per watt, when tested in accordance with:

(i) For general service incandescent lamps, the test procedures prescribed in Appendix R to Subpart B of Part 430 of Title 10 of the Code of Federal Regulations - "Uniform Test Method for Measuring Average Lamp Efficacy (LE), Color Rendering Index (CRI), and Correlated Color Temperature (CCT) of Electric Lamp's - as in effect on September 1, 2015;

(ii) For general service fluorescent lamps, the test procedures prescribed for such products in Subpart B of Part 430 of Title 10 of the Code of Federal Regulations - as in effect on the date of enactment of this chapter.

(iii) For general service light-emitting diode lamps and other solid state lighting, test procedures prescribed by the U.S. Department of Energy, or if such procedures have not yet been adopted, the test procedures prescribed in IES LM-79-08 Electrical and Photometric Measurement of Solid State Lighting Products.

42-140.5-6. Implementation. – (a) On or after January 1, 2018 , no commercial hot food holding cabinet, deep-dimming fluorescent ballast, lavatory faucet, kitchen faucet, public lavatory faucet, replacement aerator, portable electric spa, room air cleaner, showerhead, urinal, water closet, water cooler, or high color rendering index fluorescent lamp 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 the regulations adopted pursuant to §42-140.5-5.

(b) On or after January 1, 2020, no general service lamp 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 the regulations adopted pursuant to §42-140.5-5.

(c) One year after the date upon which the sale or offering for sale of certain products becomes subject to the requirements of subsections (a) or (b) of this section, no such products may be installed for compensation in the state unless the efficiency of the new product meets or exceeds the efficiency standards set forth in the regulations adopted pursuant to §42-140.5-5.

42-140.5-7. New and revised standards. – (a) The commissioner may adopt regulations, in accordance with the provisions of chapter 35 of title 42, to establish increased efficiency standards for the products listed in §42-140.5-4. The commissioner may also establish standards for products not specifically listed in §42-140.5-4. In considering such new or amended

standards, the commissioner shall set efficiency standards upon a determination that increased efficiency standards would serve to promote energy or water conservation in the state and would be cost-effective for consumers who purchase and use such new products, provided that no new or increased efficiency standards shall become effective within one year following the adoption of any amended regulations establishing such increased efficiency standards.

42-140.5-8. Testing, certification, labeling, and enforcement. – (a) The manufacturers of products covered by this chapter shall test samples of their products in accordance with the test procedures adopted pursuant to this chapter or those specified in the state building code. The commissioner shall adopt by rule, test procedures for determining the energy efficiency of the products covered by §42-140.5-4 if such procedures are not provided for in §42-140.5-5 or in chapter 27.3 of title 23 (state building code). The commissioner shall adopt U.S. Department of Energy approved test methods, or in the absence of such test methods, other appropriate national or state test methods. The commissioner may adopt updated test methods when new versions of test procedures become available.

(b) Manufacturers of new products covered by §42-140.5-4 shall certify to the commissioner that such products are in compliance with the provisions of this chapter. Such certifications shall be based on test results. The commissioner shall promulgate regulations governing the certification of such products and shall coordinate with the certification programs of other states and federal agencies with similar standards.

(c) Manufacturers of new products covered by §42-140.5-4 shall identify each product offered for sale or installation in the state as in compliance with the provisions of this chapter by means of a mark, label, or tag on the product and packaging at the time of sale or installation. The commissioner shall promulgate regulations governing the identification of such 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. The commissioner shall allow the use of existing marks, labels, or tags which connote compliance with the efficiency requirements of this chapter.

(d) The commissioner may test products covered by §42-140.5-4. If products so tested are found not to be in compliance with the minimum efficiency standards established under §42-140.5-5, the commissioner shall:

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

(2) Make information available to the attorney general and the public on products found not to be in compliance with the standards.

(e) With prior notice and at reasonable and convenient hours, the commissioner may cause periodic inspections to be made of distributors or retailers of new products covered by §42-140.5-4 in order to determine compliance with the provisions of this chapter. The commissioner shall also coordinate with the state building code commissioner regarding inspections prior to occupancy of newly constructed buildings containing new products that are also covered by the chapter 27.3 of title 23.

(f) The commissioner shall investigate complaints received concerning violations of this chapter and shall report the results of such investigations to the attorney general. The attorney general may institute proceedings to enforce the provisions of this chapter. Any manufacturer, distributor, or retailer, or any person who installs a product covered by this chapter for compensation, who violates any provision of this chapter, shall be issued a warning by the commissioner for any first violation. Repeat violations shall be subject to a civil penalty of not more than two hundred fifty dollars ($250). Each violation shall constitute a separate offense, and each day that such violation continues shall constitute a separate offense. Penalties assessed under this subsection are in addition to costs assessed under subsection (d) of this section.

(g) The commissioner may adopt such further regulations as necessary to ensure the proper implementation and enforcement of the provisions of this chapter.

42-140.5-9. Severability of provisions. – The provisions of this chapter shall be severable and if the application of any clause, sentence, paragraph, subdivision, section or part of this chapter shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the application of any other clause, sentence, paragraph, subdivision, section or part of this chapter.

SECTION 2. This act shall take effect upon passage.

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EXPLANATION

BY THE LEGISLATIVE COUNCIL

OF

A N A C T

RELATING TO STATE AFFAIRS AND GOVERNMENT - MINIMUM ENERGY AND WATER EFFICIENCY STANDARDS

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This act would set specific, up-to-date standards for selected commercial and residential products. These energy and water efficiency standards are based on ENERGY STAR specifications or on standards adopted by various states.

This act would take effect upon passage.

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