

H.410

An act relating to adding products to Vermont's energy efficiency standards for appliances and equipment

It is hereby enacted by the General Assembly of the State of Vermont:

Sec. 1. PURPOSE

(a) In 9 V.S.A. § 2792, the General Assembly found that efficiency standards for products sold or installed in the State provide benefits to consumers and businesses, including saving money on utility bills, saving energy and thereby reducing the environmental impacts of energy consumption, reducing or delaying the need for new power plants and upgrades to the electric transmission and distribution system, and allowing the energy cost savings to be spent on other goods and services within the State's economy.

(b) The purpose of this act is to obtain the benefits found in 9 V.S.A. § 2792 for the following products to which the State's efficiency standards do not currently apply: air compressors, commercial dishwashers, commercial fryers, commercial hot-food holding cabinets, commercial steam cookers, computers and computer monitors, faucets, high color rendering index fluorescent lamps, portable air conditioners, portable electric spas, residential ventilating fans, showerheads, spray sprinkler bodies, telephones, uninterruptible power supplies, urinals, water closets, and water coolers.

Sec. 2. 9 V.S.A. § 2793 is amended to read:

§ 2793. DEFINITIONS

As used in this chapter:

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(16) With respect to air compressors, the following definitions apply:

(A) “Air compressor” means a compressor that is designed to compress air that has an inlet open to the atmosphere or other source of air and that consists of the bare compressor, also known as the compression element; one or more drivers; mechanical equipment to drive the compression element; and any ancillary equipment.

(B) “Compressor” means a machine or apparatus that converts different types of energy into the potential energy of gas pressure for displacement and compression of gaseous media to any higher-pressure values above atmospheric pressure and has a pressure ratio at full-load operating pressure greater than 1.3.

(17) “Commercial dishwasher” means a machine designed to clean and sanitize plates, pots, pans, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution, with or without blasting media granules, and a sanitizing rinse. The phrase “commercial dishwasher” does not include dishwashers intended for consumer use as defined in 10 C.F.R. § 430.2.

(18) “Commercial fryer” means an appliance, including a cooking vessel, in which oil is placed to such a depth that the cooking food is supported

by displacement of the cooking fluid rather than by the bottom of the vessel.
Heat is delivered to the cooking fluid by means of an immersed electric
element of band-wrapped vessel or by heat transfer from gas burners either
through the walls of the fryer or through tubes passing through the cooking
fluid.

(19) “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. The phrase “commercial hot-food holding cabinet” does not include
heated glass merchandizing cabinets, drawer warmers, or cook-and-hold
appliances.

(20) “Commercial steam cooker” means a device with one or more
food-steaming compartments in which the energy in the steam is transferred to
the food by direct contact. A commercial steam cooker may also be known as
a compartment steamer.

(21) “Computer” means a device that performs logical operations and
processes data, whether or not input devices or displays are included when the
device is shipped.

(A) At a minimum, a computer includes:

(i) a central processing unit (CPU) to perform operations or, if no
CPU is present, then the device functions as a client gateway to a server, and
the server acts as a computational CPU;

(ii) the ability to support user input devices such as a keyboard, mouse, or touch pad; and

(iii) an integrated display screen or the ability to support an external display screen to output information.

(B) The term “computer” includes both stationary and portable units and includes a desktop computer, a portable all-in-one, a notebook computer, a mobile gaming system, a high-expandability computer, a small-scale server, a thin client, and a workstation.

(C) The term “computer” does not include a tablet, a game console, a television, a device with an integrated and primary display that has a screen size of 20 square inches or less, a server other than a small-scale server, or an industrial computer.

(22) “Computer monitor” means an analog or digital device composed of a display screen and associated electronics that has a diagonal screen size greater than or equal to 17 inches and less than or equal to 61 inches, that has a pixel density of greater than 5,000 pixels per square inch (psi), and that is designed primarily for the display of computer-generated signals for viewing by one person in a desk-based environment. The term “computer monitor” does not include:

(A) displays with integrated or replaceable batteries designed to support primary operation without AC mains or external DC power, such as

electronic readers, mobile phones, tablets, battery-powered digital picture frames; or

(B) a television or signage display.

(23) “ENERGY STAR Program” means the federal program initiated by the U.S. Environmental Protection Agency pursuant to 42 U.S.C. § 7403(g) that includes certification of energy-saving products, buildings, and tools, and includes other resources for saving energy.

(24) With respect to faucets and showerheads, the following definitions apply:

(A) “Faucet” means a lavatory faucet, kitchen faucet, metering faucet, public lavatory faucet, or replacement aerator for a lavatory, public lavatory, or kitchen faucet. As used in this subdivision (24)(A):

(i) “Metering faucet” means a fitting that, when turned on, will gradually shut itself off over a period of several seconds.

(ii) “Public lavatory faucet” means a fitting intended to be installed in nonresidential bathrooms that are exposed to walk-in traffic.

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

(B) “Showerhead” means an accessory to a supply fitting for spraying water onto a bather, typically from an overhead position. The term includes a body spray and handheld shower. As used in this subdivision

(24)(B):

(i) “Body spray” means a shower device for spraying water onto a bather other than from the overhead position.

(ii) “Handheld shower” means a showerhead that can be held or fixed in place for the purpose of spraying water onto a bather and that is connected to a flexible hose.

(25) “High color rendering index (CRI) fluorescent lamp” means a fluorescent lamp with a color rendering index of 87 or greater that is not a compact fluorescent lamp.

(26) “Portable electric spa” means a factory-built electric spa or hot tub, which may or may not include any combination of integral controls, water heating, or water circulating equipment.

(27) With respect to portable air conditioners, the following definitions apply:

(A) “Portable air conditioner” means a portable encased assembly, other than a packaged terminal air conditioner, room air conditioner, or dehumidifier, that includes a source of refrigeration; delivers cooled, conditioned air to an enclosed space; and is powered by single-phase electric current. The assembly may include additional means for air circulation and heating and may be a single-duct or a dual-duct portable air conditioner.

(B) “Single-duct portable air conditioner” means a portable air conditioner that draws all of the condenser inlet air from the conditioned space without the means of a duct and discharges the condenser outlet air outside the

conditioned space through a single duct attached to an adjustable window bracket.

(C) “Dual-duct portable air conditioner” means a portable air conditioner that draws some or all of the condenser inlet air from outside the conditioned space through a duct attached to an adjustable window bracket, may draw additional condenser inlet air from the conditioned space, and discharges the condenser outlet air outside the conditioned space by means of a separate duct attached to an adjustable window bracket.

(28) “Residential ventilating fan” means a ceiling, wall-mounted, or remotely mounted in-line fan designed to be used in a bathroom or utility room, or a kitchen range hood, whose purpose is to move air from inside the building to the outdoors.

(29) With respect to spray sprinkler bodies, the following definitions apply:

(A) “Pressure regulator” means a device that maintains constant operating pressure immediately downstream from the device, given higher pressure upstream.

(B) “Spray sprinkler body” means the exterior case or shell of a sprinkler incorporating a means of connection to the piping system designed to convey water to a nozzle or orifice.

(30) “Telephone” means an electronic product whose primary purpose is to transmit and receive sound over a distance using a voice or data network.

The term does not include a cellular telephone as defined in the “ENERGY STAR Program Product Specification for Telephony,” Version 3.0.

(31) “Uninterruptible power supply” means a battery charger consisting of a combination of convertors, switches, and energy storage devices, such as batteries, constituting a power system that maintains continuity of load power in case of input power failure.

(32) With respect to urinals and water closets, the following definitions apply:

(A) “Dual-flush effective flush volume” means the average flush volume of two reduced flushes and one full flush.

(B) “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.

(C) “Plumbing fixture” means an exchangeable device that connects to a plumbing system to deliver and drain away water and waste.

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

(E) “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.

(F) “Trough-type urinal” means a urinal designed for simultaneous use by two or more persons.

(33) With respect to water coolers, the following definitions apply:

(A) “Cold-only unit” means a water cooler that dispenses cold water only.

(B) “Cook and cold unit” means a water cooler that dispenses both cold and room-temperature water.

(C) “Hot and cold unit” means a water cooler that dispenses both hot and cold water. A hot and cold unit also may dispense room-temperature water.

(D) “On demand” means that a water cooler heats water as it is requested, which typically takes a few minutes to deliver.

(E) “Storage-type” means that a water cooler stores thermally conditioned water in a tank and the conditioned water is available instantaneously. Storage-type water coolers include point-of-use, dry storage compartment, and bottled water coolers.

(F) “Water cooler” means a freestanding device that consumes energy to cool or heat potable water, or both.

Sec. 3. 9 V.S.A. § 2794 is amended to read:

§ 2794. SCOPE

(a) The provisions of this chapter apply to the following types of new products sold, offered for sale, or installed in the State:

(1) Medium voltage dry-type distribution transformers.

(2) Metal halide lamp fixtures.

- (3) Residential furnaces and residential boilers.
- (4) Single-voltage external AC to DC power supplies.
- (5) State-regulated incandescent reflector lamps.
- (6) General service lamps.
- (7) Air compressors.
- (8) Commercial dishwashers.
- (9) Commercial fryers.
- (10) Commercial hot-food holding cabinets.
- (11) Commercial steam cookers.
- (12) Computers and computer monitors.
- (13) Faucets.
- (14) High CRI fluorescent lamps.
- (15) Portable air conditioners.
- (16) Portable electric spas.
- (17) Residential ventilating fans.
- (18) Showerheads.
- (19) Spray sprinkler bodies.
- (20) Telephones.
- (21) Uninterruptible power supplies.
- (22) Urinals.
- (23) Water closets.
- (24) Water coolers.

(25) Each other product for which the Commissioner is required to adopt an efficiency or water conservation standard by rule pursuant to section 2795 of this title.

~~(8)~~(26) Any other product that may be designated by the Commissioner in accordance with section 2797 of this title.

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

(1) New products manufactured in the State and sold outside the State and the equipment used in manufacturing those products.

(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.

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

Sec. 4. 9 V.S.A. § 2795 is amended to read:

§ 2795. EFFICIENCY AND WATER CONSERVATION STANDARDS

(a) The Commissioner shall adopt rules in accordance with the provisions of 3 V.S.A. chapter 25 establishing minimum efficiency standards for the types of new products set forth in section 2794 of this title. The rules shall provide for the following minimum efficiency standards for products sold or installed in this State:

* * *

(4)(A) Single-voltage external AC to DC power supplies shall meet the energy efficiency requirements of the following table:

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(C) For purposes of this subdivision (4), the efficiency of single-voltage external AC to DC power supplies shall be measured in accordance with the test methodology specified by the ~~U.S. Environmental Protection Agency's Energy Star~~ ENERGY STAR Program, "Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies (August 11, 2004)."

* * *

(6) In the rules, the Commissioner shall adopt minimum efficiency and water conservation standards for each product that is subject to a standard under 10 C.F.R. §§ 430 and 431 as those provisions existed on January 19, 2017. The minimum standard and the testing protocol for each product shall be the same as adopted in those sections of the Code of Federal Regulations, except that for faucets, showerheads, urinals, and water closets, the minimum standard and testing protocol shall be as otherwise set forth in this section.

(7) In the rules, the Commissioner shall adopt a minimum efficacy standard for general service lamps of 45 lumens per watt, when tested in accordance with 10 C.F.R. § 430.23(gg) as that provision existed on January 19, 2017.

(8) In this subdivision (8), “final rule” means the document setting forth a final action by the U.S. Department of Energy (DOE) with respect to a final rule for “Energy Conservation Standards for Air Compressors,” docket no. EERE-2013-BT-STD-0040, approved by DOE on December 5, 2016. Air compressors that meet the 12 criteria to be codified under 10 C.F.R. § 431.345(a) and set forth on pages 350 to 351 of the final rule shall meet the requirements contained in Table 1 on page 352 of the final rule using the instructions to be codified under 10 C.F.R. § 431.345(b) and set forth on page 353 of the final rule. Compliance with these requirements shall be measured in accordance with 10 C.F.R. Part 431, Subpart T, Appendix A, entitled “Uniform Test Method for Certain Air Compressors,” as in effect on July 3, 2017.

(9) Commercial dishwashers included in the scope of the “ENERGY STAR Program Requirements Product Specification for Commercial Dishwashers,” Version 2.0, shall meet the qualification criteria of that specification.

(10) Commercial fryers included in the scope of the “ENERGY STAR Program Requirements Product Specification for Commercial Fryers,” Version 2.0, shall meet the qualification criteria of that specification.

(11) Commercial hot-food holding cabinets shall have a maximum idle energy rate of 40 watts per cubic foot of interior volume, as determined by the “idle energy rate-dry test” in ASTM F2140-11, “Standard Test Method for Performance of Hot-Food Holding Cabinets,” ASTM International (2011).

Interior volume shall be measured as prescribed in the “ENERGY STAR Program Requirements Product Specification for Commercial Hot-Food Holding Cabinets,” Version 2.0.

(12) Commercial steam cookers shall meet the requirements of the “ENERGY STAR Program Requirements Product Specification for Commercial Steam Cookers,” Version 1.2.

(13) Computers and computer monitors shall meet the requirements of 20 California Code of Regulations (C.C.R.) § 1605.3(v) and compliance with these requirements shall be measured in accordance with test methods prescribed in 20 C.C.R. § 1604(v). The referenced portions of the C.C.R. shall be those adopted on or before the effective date of this section.

(14) Faucets, except for metering faucets, and showerheads shall meet the standards set forth in this subdivision (14) when tested in accordance with 10 C.F.R. Part 430, Subpart B, Appendix S, entitled “Uniform Test Method for Measuring the Water Consumption of Faucets and Showerheads,” as in effect on January 3, 2017.

(A) Lavatory faucets and replacement aerators shall not exceed a maximum flow rate of 1.5 gallons per minute (gpm) at 60 pounds per square inch (psi).

(B) Residential kitchen faucets and replacement aerators shall not exceed a maximum flow rate of 1.8 gpm at 60 psi, with optional temporary

flow of 2.2 gpm, provided they default to a maximum flow rate of 1.8 gpm at 60 psi after each use.

(C) Public lavatory faucets and replacement aerators shall not exceed a maximum flow rate of 0.5 gpm at 60 psi.

(D) Showerheads shall not exceed a maximum flow rate of 2.0 gpm at 80 psi.

(15) High CRI fluorescent lamps shall meet the minimum efficacy requirements contained in 10 C.F.R. § 430.32(n)(4) as that subsection existed on January 3, 2017. Compliance with requirements shall be measured in accordance with 10 C.F.R. Part 430, Subpart B, Appendix R, entitled “Uniform Test Method for Measuring Average Lamp Efficacy (LE), Color Rendering Index (CRI), and Correlated Color Temperature (CCT) of Electric Lamps,” as that appendix existed on January 3, 2017.

(16) Urinals and water closets, other than those designed and marketed exclusively for use at prisons or mental health facilities, shall meet the standards set forth in this subdivision (16) when tested in accordance with 10 C.F.R. Part 430, Subpart B, Appendix T, entitled “Uniform Test Method for Measuring the Water Consumption of Water Closets and Urinals,” as in effect on January 3, 2017 and shall pass the waste extraction test for water closets set forth in Sec. 7.10 of the American Society of Mechanical Engineers (ASME) standard A112.19.2-2013/CSA B.45.1, as that standard exists on the effective date of this section.

(A) Urinals, except for trough-type urinals, shall have a maximum flush volume of 0.5 gallons per flush.

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

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

(17) Portable air conditioners shall have a Combined Energy Efficiency Ratio (CEER), that is greater than or equal to: $1.04 \times [SACC / (3.7177 \times SACC^{0.6384})]$.

(A) In this subdivision (17), "SACC" means seasonally adjusted cooling capacity expressed in British thermal units per hour.

(B) The CEER shall be measured in accordance with 10 C.F.R. Part 430, Subpart B, Appendix CC, entitled "Uniform Test Method for Measuring the Energy Consumption of Portable Air Conditioners," as in effect on January 3, 2017.

(18) Portable electric spas shall meet the requirements of the American National Standard for Portable Electric Spa Energy Efficiency, ANSI/APSP/ICC-14 2014, as that standard exists on the effective date of this section.

(19) Residential ventilating fans shall meet the qualification criteria of the "ENERGY STAR Program Requirements Product Specification for Residential Ventilating Fans," Version 3.2.

(20) Spray sprinkler bodies shall include an integral pressure regulator and shall meet the water efficiency and performance criteria and other requirements of the Environmental Protection Agency’s “WaterSense Specification for Spray Sprinkler Bodies,” Version 1.0. However, this subdivision (20) shall not apply to spray sprinkler bodies that are specifically excluded from the scope of that specification.

(21) Telephones included in the scope of the “ENERGY STAR Program Product Specification for Telephony,” Version 3.0, shall meet the certification criteria of that specification, except that the performance requirements for external power supplies in section 3.2.2 of the specification shall not apply.

(22) In this subdivision (22), “final rule” means the document setting forth a final action by DOE with respect to a final rule for “Energy Conservation Standards for Uninterruptible Power Supplies,” docket no. EERE-2016-BT-STD-0022, approved by DOE on December 28, 2016. Uninterruptible power supplies that use a National Electrical Manufacturer Association (NEMA) 1-15P or 5-15P input plug and have an alternating current (AC) output shall have an average load-adjusted efficiency that meets or exceed the values shown to be codified under 10 C.F.R. § 430.32(z)(3) and set forth on pages 193–194 of the final rule. Compliance with these requirements shall be measured in accordance with 10 C.F.R. Part 430, Subpart B, Appendix Y, entitled “Uniform Test Method for Measuring the Energy Consumption of Battery Chargers,” as in effect on January 11, 2017.

(23) Water coolers included in the scope of the “ENERGY STAR Program Requirements Product Specification for Water Coolers,” Version 2.0, shall have “on mode with no water draw” energy consumption less than or equal to the following values, measured in accordance with the test requirements of that specification:

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

(B) 0.87 kWh per day for storage type hot and cold units; and

(C) 0.18 kWh per day for on-demand hot and cold units.

(b) When a minimum efficiency standard as described in subsection (a) of this section sets forth requirements that change over time, the rules shall provide for compliance with the changed requirements as they come into effect.

Sec. 5. 9 V.S.A. § 2796 is amended to read:

§ 2796. IMPLEMENTATION

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~~(d) One year after the date upon which the sale or offering for sale of certain products becomes subject to the requirements of subsection (a) or (b) of this section, no new products may be installed for compensation in the State unless the efficiency of a new product meets or exceeds the efficiency standards set forth in the rules adopted pursuant to section 2795 of this title.~~

(1) On or after July 1, 2020, no new air compressor, commercial dishwasher, commercial fryer, commercial hot-food holding cabinet, commercial steam cooker, computer or computer monitor, faucet, high CRI fluorescent lamp, portable air conditioner, portable electric spa, residential ventilating fan, showerhead, spray sprinkler body, telephone, uninterruptible power supply, urinal, water closet, or water cooler may be sold or offered for sale, lease, or rent in the State unless the efficiency of the new product meets or exceeds the efficiency standards set forth in the rules adopted pursuant to section 2795 of this title.

(2) The prohibition set forth in subdivision (1) of this subsection shall not apply to a product that the seller or lessor purchased on or before June 30, 2020.

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Sec. 6. RULEMAKING

On or before May 1, 2019, the Commissioner of Public Service shall file with the Secretary of State proposed rules to implement Secs. 2 through 4 of this act.

Sec. 7. EFFECTIVE DATE

This act shall take effect on July 1, 2018.