

NO. 152. AN ACT RELATING TO ESTABLISHING ENERGY  
EFFICIENCY STANDARDS FOR CERTAIN APPLIANCES.

(H.253)

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

Sec. 1. 9 V.S.A. chapter 74 is added to read:

CHAPTER 74. ENERGY EFFICIENCY STANDARDS  
FOR APPLIANCES AND EQUIPMENT

§ 2791. GENERAL PURPOSE

This chapter establishes minimum efficiency standards for certain products sold or installed in the state.

§ 2792. FINDINGS

The general assembly finds that:

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

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

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

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

§ 2793. DEFINITIONS

As used in this chapter:

(1) “Ballast” means a device used with an electric discharge lamp to obtain necessary circuit conditions (voltage, current, and waveform) for starting and operating the lamp.

(2) “Commissioner” means the commissioner of the department of public service.

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

(4) “Electricity ratio (ER)” is the ratio of furnace electricity use to total furnace energy use.  $ER = (3.412 * E_{AE}) / (1000 * E_F + 3.412 E_{AE})$  where  $E_{AE}$  (average annual auxiliary electrical consumption) and  $E_F$  (average annual fuel energy consumption) are defined in 10 C.F.R. Part 430, Subpart B, Appendix N.

(5) “High-intensity discharge lamp” means a lamp in which light is produced by the passage of an electric current through a vapor or gas and in

which the light-producing arc is stabilized by bulb wall temperature, and the arc tube has a bulb wall loading in excess of three watts per square centimeter.

(6) “Medium voltage dry-type distribution transformer” means a transformer that:

(A) has an input voltage of more than 600 volts but less than or equal to 34,500 volts;

(B) is air-cooled;

(C) does not use oil as a coolant; and

(D) is rated for operation at a frequency of 60 Hertz.

(7) “Metal halide lamp” means a high intensity discharge lamp in which the major portion of the light is produced by radiation of metal halides and their products of dissociation, possibly in combination with metallic vapors.

(8) “Metal halide lamp fixture” means a light fixture designed to be operated with a metal halide lamp and a ballast for a metal halide lamp.

(9) “Probe-start metal halide ballast” means a ballast used to operate metal halide lamps which does not contain an ignitor and which instead starts lamps by using a third starting electrode probe in the arc tube.

(10) “Residential boiler” means a self-contained appliance that is primarily designed for space heating by means of steam or hot water and that uses only single-phase electric current in conjunction with natural gas, propane, or home heating oil, and which has a heat input rate of less than 300,000 Btus per hour.

(11) “Residential furnace” means a self-contained space heater designed to supply heated air through ducts of more than 10 inches in length and which utilizes only single-phase electric current or single-phase electric current or DC current in conjunction with natural gas, propane, or home heating oil, and which:

(A) is designed to be the principal heating source for the living space of one or more residences;

(B) is not contained within the same cabinet with a central air conditioner whose rated cooling capacity is above 65,000 Btus per hour; and

(C) has a heat input rate of less than 225,000 Btus per hour.

(12) “Single-voltage external AC to DC power supply” means a device that:

(A) is designed to convert line voltage AC input into lower voltage DC output;

(B) is able to convert to only one DC output voltage at a time;

(C) is sold with, or intended to be used with, a separate end-use product that constitutes the primary power load;

(D) is contained within a separate physical enclosure from the end-use product;

(E) is connected to the end-use product via a removable or hard-wired male or female electrical connection, cable, cord, or other wiring;

(F) does not have batteries or battery packs, including those that are removable, that physically attach directly to the power supply unit;

(G) does not have a battery chemistry or type selector switch and indicator light; or does not have a battery chemistry or type selector switch and a state of charge meter; and

(H) has a nameplate output power less than or equal to 250 watts.

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

(A) a blown PAR (BPAR), bulged reflector (BR), or elliptical reflector (ER) bulb shape, with a diameter which equals or exceeds 2.25 inches; or

(B) a reflector (R), parabolic aluminized reflector (PAR), or similar bulb shape with a diameter of 2.25 to 2.75 inches.

(14)(A) “Transformer” means a device that consists of two or more coils of insulated wire and that is designed to transfer alternating current by electromagnetic induction from one coil to another, in order to change the original voltage or current value.

(B) The term “transformer” does not include:

(i) devices with multiple voltage taps, with the highest voltage tap equaling at least 20 percent more than the lowest voltage tap; or

(ii) devices, such as those commonly known as drive transformers, rectifier transformers, auto transformers, uninterruptible power system transformers, impedance transformers, regulating transformers, sealed and nonventilating transformers, machine tool transformers, welding transformers, grounding transformers, or testing transformers, that are designed to be used in a special purpose application and are unlikely to be used in general purpose applications.

#### § 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) 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.

#### § 2795. EFFICIENCY STANDARDS

Not later than June 1, 2007, 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:

(1) Medium voltage dry-type distribution transformers shall meet minimum efficiency levels three-tenths of a percentage point higher than the Class 1 efficiency levels for medium voltage distribution transformers specified in Table 4-2 of the “Guide for Determining Energy Efficiency for Distribution Transformers” published by the National Electrical Manufacturers Association (NEMA Standard TP-1-2002).

(2) 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 ballast.

(3)(A) Residential furnaces and residential boilers shall meet or exceed the following Annual Fuel Utilization Efficiency (AFUE) and electricity ratio values:

Product Type	Minimum AFUE	Maximum electricity ratio
Natural gas- and propane-fired furnaces	90%	2.0%
Oil-fired furnaces $\geq$ 94,000 Btus/hour in capacity	83%	2.0%
Oil-fired furnaces $<$ 94,000 Btus/hour in capacity	83%	2.3%
Natural gas-, oil-, and propane- fired hot water residential boilers	84%	Not applicable
Natural gas-, oil-, and propane-fired steam residential boilers	82%	Not applicable

(B) AFUE shall be measured in accordance with the federal test method for measuring the energy consumption of furnaces and boilers contained in Appendix N to subpart B of part 430, Title 10, Code of Federal Regulations.

(C) The commissioner may adopt rules to exempt compliance with these residential furnace or residential boiler AFUE standards at any building, site, or location where complying with these standards would be in conflict with any local zoning ordinance, building or plumbing code, or other rule regarding installation and venting of residential boilers or residential furnaces.

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

Nameplate output power	Minimum efficiency in Active Mode
0 to < 1 watt	0.49* Nameplate Output
$\geq 1$ watt and $\leq 49$ watts	$0.09 * \ln(\text{Nameplate Output power}) + 0.49$
> 49 watts	0.84
	Maximum Energy Consumption in No-Load Mode
0 to < 10 watts	0.5 watts
$\geq 10$ watts and $\leq 250$ watts	0.75 watts

\* Where  $\ln(\text{Nameplate Output}) = \text{Natural logarithm of the nameplate output expressed in watts.}$

(B) This standard applies to single voltage AC to DC power supplies that are sold individually and to those that are sold as a component of or in conjunction with another product. Single voltage AD to DC power supplies that are made available by a product manufacturer as accessories, service parts, or spare parts for its products manufactured prior to January 1, 2008 shall be exempt from the requirements of this standard.

(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 Program, “Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies (August 11, 2004).”

(5)(A) State-regulated incandescent reflector lamps shall meet the minimum average lamp efficacy requirements for federally regulated incandescent reflector lamps contained in 42 U.S.C. § 6295(i)(1)(A).

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

(i) lamps rated at 50 watts or less of the following types: BR30, ER30, BR40, and ER40;

(ii) lamps rated at 65 watts of the following types: BR30, BR40, and ER40; and

(iii) R20 lamps of 45 watts or less.

#### § 2796. IMPLEMENTATION

(a) No new medium voltage dry-type distribution transformer, state-regulated incandescent reflector lamp, or single-voltage external AC to DC power supply 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 the rules adopted pursuant to section 2795 of this title.

(b) On or after January 1, 2009, no new metal halide lamp fixture 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 rules adopted pursuant to section 2795 of this title.

(c) No later than six months after the date of enactment of this chapter, the commissioner, in consultation with the attorney general, shall determine if implementation of state standards for residential furnaces and residential boilers requires a waiver from federal preemption. If the commissioner determines that a waiver from federal preemption is not needed, those state standards shall go into effect on June 1, 2008, or if this determination is made after June 1, 2007, those standards shall go into effect one year after the date of this determination. If the commissioner determines that a waiver from federal preemption is required, the commissioner shall apply for that waiver within one year of that determination and upon approval of that waiver application, the applicable standards shall go into effect at the earliest date permitted by federal law.

(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.

(e) Owners and operators of commercial and industrial facilities shall be allowed to utilize appliances and equipment that do not meet the requirements of section 2795 of this title for the repair or replacement of existing equipment, provided that the equipment being repaired or replaced was acquired before the implementation date determined according to the provisions of this section. At

the discretion of the owners and operators, these appliances and equipment may be used at any time before or after the effective date of those requirements.

#### § 2797. REVISED STANDARDS

The commissioner may adopt rules, in accordance with the provisions of 3 V.S.A. chapter 25, to revise efficiency standards for the products listed in section 2794 of this title, in order to make the standards conform to standards in effect in other states, where to do so is in the interests of the electrical energy consumers of the state. In considering increased standards, the commissioner shall set efficiency standards upon a determination that increased efficiency standards would serve to promote energy conservation in the state and would be cost-effective for consumers who purchase and use those products. No increased efficiency standards shall become effective within one year following the adoption of any amended rules establishing those increased efficiency standards. The commissioner may apply for a waiver of federal preemption in accordance with federal procedures (42 U.S.C. § 6297(d)) for state efficiency standards for any product regulated by the federal government.

#### § 2798. TESTING, CERTIFICATION, LABELING, AND ENFORCEMENT

(a) The commissioner shall adopt test protocols for determining the energy efficiency of the new products covered by section 2794 of this title if those protocols are not provided for in section 2795 of this title or in the residential

building energy standards adopted under 21 V.S.A. § 266. The commissioner shall require U.S. Department of Energy-approved test methods, or in the absence of those test methods, other appropriate nationally recognized test methods. The manufacturers of these products shall cause samples of their products to be tested in accordance with the test protocols adopted pursuant to this chapter or those specified in the residential building energy standards. The commissioner may adopt updated test methods when new versions of test protocols become available.

(b) Manufacturers of new products covered by section 2794 of this title, except for single voltage external AC to DC power supplies, shall certify to the commissioner that these products are in compliance with the provisions of this chapter. These certifications shall be based on test results. The commissioner shall adopt rules governing the certification of those products and shall coordinate with the certification programs of other states with similar standards.

(c) Manufacturers of new products covered by section 2794 of this title shall identify each product offered for sale or installation in the state as being 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 adopt rules governing the identification of these products and packaging, which shall be coordinated to the greatest practical extent with the labeling programs of other states and federal agencies with equivalent

efficiency standards. 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 section 2794 of this title. If any product so tested is found not to be in compliance with the minimum efficiency standards established under section 2795 of this title, the commissioner shall:

(1) Charge the manufacturer of that product for the cost of product purchase and testing.

(2) Make available to the public information 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 section 2794 of this title in order to determine compliance with the provisions of this chapter.

(f) The commissioner is granted the authority to adopt further rules as necessary to ensure the proper implementation of the provisions of this chapter.

(g) Any manufacturer, or distributor, or any person who installs a product covered by this chapter for compensation, who violates any provision of this chapter shall be subject to a civil penalty of not more than \$250.00. 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.

Sec. 2. 4 V.S.A. § 437 is amended to read:

§ 437. CIVIL JURISDICTION OF DISTRICT COURT

The district court shall have jurisdiction of the following actions:

- (1) Appeals of final decisions of the judicial bureau.

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(12) Proceedings to enforce 9 V.S.A. chapter 74 relating to energy efficiency standards for appliances and equipment.

Approved: May 16, 2006