SECOND REGULAR SESSION

ONE HUNDRED AND THIRTEENTH LEGISLATURE

Legislative Document NO. 2360

H.P. 1721 House of Representatives, February 25, 1988

Approved for introduction by a majority of the Legislative Council pursuant to Joint Rule 26.

Reference to the Committee on Energy and Natural Resources suggested and ordered printed.

EDWIN H. PERT, Clerk

Presented by Representative COLES of Harpswell.

Cosponsored by Representatives MICHAUD of East Millinocket, Vose of Eastport and Senator MATTHEWS of Kennebec.

STATE OF MAINE

IN THE YEAR OF OUR LORD
NINETEEN HUNDRED AND EIGHTY-EIGHT

AN ACT to Encourage the Efficient Use of Electrical Energy.

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 5 MRSA §5012, as enacted by PL 1985, c. 312, §2, is repealed.

Sec. 2. 5 MRSA §5012-A is enacted to read:

§5012-A. State standards for appliance energy efficiency

1. Definitions. As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

A. "ASHRAE Standard" means a standard established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers.

B. "Automatic defrost system" means a defrost system in which the defrosting action for all refrigerated surfaces is initiated and terminated automatically.

C. "AV" means the adjusted volume for refrigerator-freezers and freezers, as defined in the applicable text procedure.

D. "Freezer" means a cabinet designed as a unit for the storage of food at temperatures of about 0° Fahrenheit, having the ability to freeze food and having a source of refrigeration requiring an energy input;

E. "Manufacturer" means any business entity or person engaged in the original production or assembly of an appliance.

F. "New appliance" means an appliance that is sold, offered for sale or installed for the first time and specifically includes floor models and demonstrator units.

G. "Refrigerator" means a cabinet designed for the refrigerated storage of food at temperatures above 32° Fahrenheit and having a source of refrigeration requiring an energy input. It may include a cabinet with a compartment for the freezing and storage of food at temperatures below 32° Fahrenheit, but which does not provide a separate low temperature compartment designed for

the freezing of and the long-term storage of food at temperatures below 8° Fahrenheit. It has only one exterior door and may have interior doors on compartments; and

H. "Refrigerator-freezer" means a cabinet which consists of 2 or more compartments with at least one of the compartments designed for the refrigerated storage of foods at temperatures above 32° Fahrenheit and with at least one of the compartments designed for the freezing of and the storage of frozen foods at temperatures of 8° Fahrenheit or below. The source of refrigeration requires energy input.

I. "Storage-type water heater" means a water heater that heats and stores water within the appliance at a thermostatically controlled temperature for delivery on demand.

2. Efficiency standards. Efficiency standards shall be determined as follows.

A. Refrigerators, refrigerator-freezers and freezers shall be certified by the manufacturer not to exceed the values derived from the appropriate formulae where AV is the adjusted refrigerated volume in cubic feet and EC is the energy consumption in kilowatt hours per year. The following are minimum energy efficiency standards for new residential gas and electric water heaters, oil and gas furnaces and boilers, refrigerators, refrigerator-freezers and freezers:

APPLIANCE	STANDARD
(1) Refrigerators and refrigerator-freezers	
manual defrost	13.7 AV + 267
partial automatic defrost	17.4 AV + 344
automatic defrost with:	
top-mounted freezer without ice	16.7 AV + 336
side-mounted freezer without ice	22.4 AV + 395
bottom-mounted freezer without ice	22.4 AV + 395

top-mounted freezer with through-the-door ice.....18.5 AV + 374

side-mounted freezer with through-the-door ice.....24.8 AV + 438

(2) Upright freezers with:

manual defrost.....8.38 AV + 324

automatic defrost.....12.3 AV + 477

(3) Chest freezers and all other freezers.....6.3 AV + 282

(4) Water heaters

electric.....ASHRAE Standard 90A-1980 Section 7 Energy Factor (EF) = 48%

(5) Furnaces and boilers

oil.....No standard

gas.....No standard

B. The following residential appliances are covered by this section:

(1) Only storage-type water heaters;

(2) Gas furnaces and boilers; and

(3) Refrigerators, refrigerator-freezers and freezers which can be operated by alternating current electricity, excluding the following types:

(a) Those with total refrigerated volume exceeding 39 cubic feet;

(b) Those designed to be used without doors; and

(c) Those which do not include a compressor and a condenser unit as an integral part of the cabinet assembly.

C. This section does not apply to:

(1) New residential appliances manufactured in the State and sold outside the State;

(2) New appliances manufactured outside the State and sold at wholesale in the State for final retail sale and installation outside the State;

(3) Appliances installed in mobile homes at the time of construction;

(4) Appliances designed expressly for installation and use in recreational vehicles or other equipment designed for regular mobile use; and

(5) Appliances purchased outside of the State by Maine residents when the appliance is installed for use by the purchaser or installed in a single-family, detached structure.

3. Prohibitions. No new appliance may be sold, offered for sale or installed in the State on or after January 1, 1993, unless it is certified by the manufacturer to be in compliance with the standards adopted under subsection 2 or unless there is no state standard adopted for that type of appliance.

4. Test methods. The manufacturer shall cause the testing of samples of each model of each residential appliance covered by this section. The Office of Energy Resources shall use the United States Department of Energy approved test methods or, in the absence of those test methods, other appropriate nationally recognized test methods applicable to the respective appliances.

5. Office of Energy Resources. In order to reduce the wasteful, uneconomic, inefficient or unnecessary consumption of energy, the Office of Energy Resources shall:

A. Be responsible for the administration and

enforcement of the appliance standards established by this section; and

B. Apply to the United States Department of Energy for an exemption from federal preemption, pursuant to the United States National Appliance Energy Conservation Act of 1987, Section 327 (d), or its successor. The office shall base its application on the following facts:

(1) The State is unusually dependent on imported sources of energy, a condition which poses grave risks to the economic well-being and general welfare of its citizens;

(2) By 1993 and beyond, the current surplus in state and regional generating capacity may diminish, leaving the State unnecessarily vulnerable to shortages of electrical power;

(3) Energy efficiency standards are the most cost-effective means of conserving energy and market-induced improvements in energy efficiency will not be sufficient to meet state needs; and

(4) The energy situation in Maine is substantially different in nature than that in other areas of the country. There are compelling state interests in maintaining an aggressive energy conservation policy to reduce the risks associated with the State's current situation.

6. Penalty. Any person who violates this section either personally or through an agent or employee is subject to a civil penalty of not more than $500 for each violation. For purposes of this section, the sale, installation or offer for sale of any one new appliance which fails to meet the standards prescribed in subsection 2 shall constitute a violation.

Sec. 3. 5 MRSA §§5013 and 5014 are enacted to read:

§5013. State energy efficiency standards for fluorescent lighting and electric motors

1. Definitions. As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

A. "Ballast" or "fluorescent lamp ballast" means a device used to operate a fluorescent lamp by providing a starting voltage and current and limiting the current during normal operation. It must be designed to:

(1) Operate at nominal input voltages of 120 or 227 volts; and

(2) Operate with an input frequency of 60 hertz.

B. "Ballast efficiency factor" means the ratio of relative light output, expressed as a percent, to the power input, expressed in watts under test conditions.

C. "F40T12 lamp" means a tubular fluorescent lamp which is a nominal 40 watts, with a 48-inch tube, 1 1/2 inches in diameter. These lamps conform to American National Standards Institute standard C.78.1-1978.

D. "F96T12 lamp" means a tubular fluorescent lamp which is a nominal 75 watts, with a 96-inch tube, 1 1/2 inches in diameter. These lamps conform to American National Standards Institute standard C.78.3-1978.

E. "Luminaire" means a complete lighting unit consisting of a fluorescent lamp, or lamps, together with parts designed to distribute the light, to position and protect the lamps and to connect the lamps to the power supply.

F. "Manufacturer" means any person or business entity engaged in the original production or assembly of a fluorescent light tube or ballast.

G. "Nominal input voltage" means an input voltage within + 5% or - 5% of a specified value.

H. "Nominal lamp watts" means the wattage at which a fluorescent lamp is designed to operate.

I. "Operation" means the ability to start the lamp at least 8 times out of 10 with a minimum of one minute between attempts when tested under test conditions.

J. "Power input" means the rate of energy consumption in watts of a ballast and fluorescent lamp or lamps.

K. "Relative light output" means the test ballast light output divided by a reference ballast light output using the same reference lamp and expressing the value as a percent.

2. Efficiency standards for fluorescent lamp ballasts and luminaires. The following are minimum efficiency standards for new fluorescent lamp ballasts and luminaires.

A. Except as provided in this subsection, no fluorescent lamp ballast or luminaire manufactured on or after January 1, 1990, may have a ballast efficiency factor or contain a ballast with a ballast efficiency factor less than the following applicable values:

Ballasts Designed for the Operation of:	Nominal Input Voltage	Total Nominal Lamp Watts	Ballast Efficiency Factor
One F40T12 lamp	120	40	1.805
	277	40	1.805
Two F40T12 lamps	120	80	1.060
	277	80	1.050
Two F96T12 lamps	120	150	0.570
	277	150	0.570

B. The standards described in this subsection do not apply to the following types of fluorescent lamp ballasts:

(1) Those which have a dimming capability;

(2) Those intended for use in ambient temperatures of 0˚Fahrenheit or less; or

(3) Those with a power factor of less than 0.60.

3. Efficiency standards for electric motors. The following are minimum efficiency standards for new electric motors with a horsepower rating of 10 or greater. Except as provided in this subsection, no electric motor manufactured on or after January 1, 1990, may have an efficiency factor less than the applicable value enumerated in this subsection. An electric motor with a horsepower rating between the listed ratings shall have an efficiency factor not less than that designated for the closest rating value.

Horsepower Rating	Percentage Efficiency
10	87.7
15	87.9
20	89.5
25	90.5
30	91.3
40	92.8
50	93.4
60	93.4
75	94.0
100	95.0
125	95.1
150 and greater	95.4

4. Prohibitions. No new electric motor, fluorescent lamp ballast or new luminaire containing a ballast may be sold, offered for sale or installed in the State on or after January 1 , 1990, unless it is certified by the manufacturer to be in compliance with

the standards adopted under this section or unless there is no applicable standard.

5. Test methods. The manufacturer shall cause the testing of samples of each model of ballast luminaire or motor covered by this section. The Office of Energy Resources shall use the United States Department of Energy approved test methods or, in the absence of those test methods, other appropriate nationally recognized test methods applicable to the respective appliances.

6. Office of Energy Resources. In order to reduce the wasteful, uneconomic, inefficient or unnecessary consumption of energy, the Office of Energy Resources shall be responsible for the administration and enforcement of the standards established by this section.

7. Penalty. Any person who violates this section either personally or through an agent or employee is subject to a civil penalty of not more than $500 for each violation. For purposes of this section, the sale, installation or offer for sale of any one new ballast luminaire or motor which fails to meet the standards prescribed in subsection 2 or 3 shall constitute a violation.

§5014. Study of state electrical use

The Bureau of Public Improvements shall conduct, with assistance from the Office of Energy Resources and any other state agencies as necessary, a study of the State's use of electrical energy. The study shall review and update all previous studies of electrical energy conservation opportunities at state facilities. As part of the study, the bureau shall conduct an inventory of the categories of electrical energy use, including lighting, heating, cooling and other uses, and the proportion of the statewide electrical energy use in each of these sectors that is used in state facilities. The study shall examine the opportunities for improving the efficiency of electrical energy use at state facilities with particular attention to lighting, heating and cooling processes. The study

shall include a cost-benefit analysis of an aggressive program to improve the efficiency of the State Government's electrical energy use by 25% by the year 1995 through replacement of inefficient and worn-out lighting and other equipment.

The bureau shall hold at least one public hearing as part of the study and shall make the report available for public review at least 2 months prior to its submission to the Legislature on February 1, 1988.

Sec. 4. Effective date. The effective date of section 1 of this Act is January 1, 1993.

STATEMENT OF FACT

This bill accomplishes several energy conservation objectives in the areas of lighting, electric motors and residential appliances.

The federal efforts in energy conservation have been weak, delayed and intermittent. The most recent action embodied in the National Appliance Energy Conservation Act of 1987 did establish standards for a wide range of appliances. However, in the category of refrigerators and freezers, the federal legislation anticipates, although does not specify, new standards for these appliances in 1993. A number of states have enacted or are considering consistent statutory standards for refrigerators and freezers that will become effective in 1993. This action will allow manufacturers to accurately anticipate new requirements and will send the United States Department of Energy a clear and consistent message on necessary energy conservation standards. This bill would enact the necessary standards for refrigerators and freezers, effective on January 1, 1993.

This bill also establishes energy conservation standards for fluorescent lighting equipment and for electric motors larger than 10 horsepower. These types of equipment consume a significant fraction of energy in the commercial, institutional and industrial sectors.

Finally, this bill directs the Bureau of Public Improvements to update its assessment of electrical energy conservation opportunities in state facilities with particular emphasis on lighting.

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