Energy Efficiency Standards

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★ 2004 POLICY SUMMARY ★

Energy Efficiency Standards

Summary

- **Energy consumption in the United States continues to grow unabated.**
- **If energy consumption is not reduced, many states can expect power outages and blackouts, as well as increased energy prices.**
- **Energy efficiency standards for large appliances and equipment, enacted by Congress in 1987 and 1992, have proven successful.**
- **Many household and commercial electrical products are unnecessarily wasteful because they are not subject to minimum energy efficiency standards.**
- **Implementing efficiency standards protects public health and the environment, and saves money for states and consumers.**
- **States can enact legislation that sets energy efficiency standards for small appliances.**

Energy consumption in the United States continues to grow unabated.

During the 20th century, the amount of energy used in the United States doubled approximately every 20 years.[1] According to the U.S. Department of Energy, total energy consumption is projected to increase from 97 to 130 quadrillion British thermal units between 2001 and 2020.[2] If energy consumption is not reduced, states can expect power outages and blackouts, as well as increased energy prices.

Energy efficiency standards for large appliances and equipment, enacted by Congress in 1987 and 1992, have proven successful.

According to an analysis by the U.S. Department of Energy, federal efficiency standards reduced total U.S. electricity use by 2.5 percent in 2000. Reduced demand tends to lower prices for consumers.[3]

Many household and commercial electrical products are unnecessarily wasteful because they are not subject to minimum energy efficiency standards.

Common products such as torch lamps and ceiling fans continue to rely on outdated technology to govern their use of energy. While energy efficient versions of these and other products are available, insufficient incentives exist to create a robust market for them.

Efficiency standards save states and consumers money.

States can reduce their energy demands by up to five percent by implementing efficiency standards for 10 household and commercial products.[4] While efficiency standards have led to a modest increase in the price of regulated consumer goods, the savings reflected on lower energy bills are worth more than three times the additional costs.[5] Between 1990 and 2000, efficiency standards have saved consumers approximately $50 billion on their energy bills.[6]

Implementing efficiency standards protects public health and the environment.

Energy production and use account for nearly 80 percent of air pollution and emissions that contribute to smog, acid rain, respiratory problems, and other human and environmental hazards. For example, the energy needed to heat and light an average home produces twice the amount of greenhouse gases as the average car.[7] By lowering energy consumption, efficiency standards mean fewer power plants and lower emissions. This, in turn, means less smog, fewer asthma attacks, and reduced carbon dioxide emissions—the chief cause of climate change.

Businesses can benefit from new efficiency standards.

New jobs are created when businesses expand to meet the increased demand for energy-saving products. For example, the Maytag Corporation increased its workforce by 2,400 at one Illinois factory, and upgraded existing factories in AR, IN, MI and SC to comply with new refrigerator energy standards that went into effect in July 2001. In addition, standards encourage manufacturers to invest in energy efficient technologies, stimulating technological innovation in the marketplace.[8]

Energy efficiency standards can help safeguard national security.

The United States currently imports over half its oil, and the U.S. Department of Energy projects that U.S. reliance on imported oil will increase to two-thirds of consumption early this century. By reducing overall energy consumption, America's energy security becomes less dependent on foreign fossil fuels, and therefore less vulnerable to both price fluctuations and supply shortages.

States can enact legislation that sets energy efficiency standards for small appliances.

The Energy Efficiency Standards Small Appliances Act is based on California regulations instituted in 2000, which raise the efficiency standards for certain appliances and lighting fixtures sold in the state.

This policy summary relies in large part on information provided by the State Environmental Resource Center.

Endnotes

[1] Alliance to Save Energy, "Wasting Energy at Home?" February 22, 2002.

[2] Department of Energy: Energy Information Administration, "Annual Energy Outlook 2003 With Projections to 2025," January 9, 2003.

[3] American Council for an Energy Efficient Economy, "Appliance and Equipment Standards: One of America's Most Effective Energy-Saving Policies," 2002.

[4] Appliance Standards Awareness Project, "Why Standards?" 1999-2000.

[5] Ibid.

[6] "Appliance and Equipment Standards: One of America's Most Effective Energy-Saving Policies."

[7] "Change a Habit," *Grist Magazine*, January 17, 2002.

[8] Natalie Hildt, "Appliance and Equipment Efficiency Standards: New Opportunities for States," Appliance Standards Awareness Project, December 2001.

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For more information...

Center for Policy Alternatives
1875 Connecticut Avenue NW, Suite 710
Washington, DC 20009
202-387-6030
www.stateaction.org

State Environmental Resource Center
106 East Doty Street, Suite 200
Madison, Wisconsin 53703
608-252-9800
www.serconline.org

American Council for an Energy Efficient Economy
1001 Connecticut Avenue NW, Suite 801
Washington, DC 20036
202-429-8873
www.aceee.org

Appliance Standards Awareness Project
20 Belgrade Avenue, Suite 1
Boston, MA 02131
617-363-9101
www.asap.org

Consortium for Energy Efficiency
One State Street, Suite 1400
Boston, MA 02109
617-589-3949
www.cee1.org/home/html

U.S. Department of Energy
1000 Independence Avenue SW
Washington, DC 20585
1-800-342-5363
www.energy.gov/efficiency

Energy Efficiency Standards Act

Summary: The Energy Efficiency Standards Act, based on Massachusetts and Connecticut statutes and California regulations, sets specific energy efficiency standards on selected products similar to Energy Star, the Federal Energy Management Program, and Consortium for Energy Efficiency specifications. This model legislation only covers products for which standards can be easily determined.

SECTION 1. SHORT TITLE

This Act shall be called the "Energy Efficiency Standards Act."

SECTION 2. ENERGY EFFICIENCY STANDARDS

After section XXX, the following new section XXX shall be inserted:

(A) DEFINITIONS – In this section:

1. "Ceiling fan" means a non-portable device that is suspended from a ceiling for circulating air via the rotation of fan blades.
2. "Ceiling fan light kit" means equipment designed to provide light from a ceiling fan which can be integral, such that the equipment is hardwired to the ceiling fan, or attachable, such that at the time of sale the equipment is not physically attached to the ceiling fan, but may be included inside the ceiling fan package at the time of sale or sold separately for subsequent attachment to the fan.
3. "Commercial clothes washer" means a soft mount horizontal- or vertical-axis clothes washer that has a clothes container compartment no greater than 3.5 cubic feet in the case of a horizontal-axis product or no greater than 4.0 cubic feet in the case of a vertical-axis product, and is designed for use by more than one household, such as in multi-family housing, apartments, or coin laundries.
4. "Commercial refrigerators and freezers" means refrigerators, freezers, or refrigerator-freezers designed for use by commercial or institutional facilities for the purpose of storing food products, ice, or other perishable items at specified temperatures that incorporate most components involved in the vapor-compression cycle and the refrigerated compartment in a single package, and may be configured with either solid or transparent doors as a reach-in cabinet, pass-through cabinet, roll-in cabinet, or roll-through cabinet. This term does not include products with 85 cubic feet or more of internal volume, walk-in refrigerators or freezers, or consumer products that are federally regulated pursuant to 42 U.S. Code section 6291 and subsequent sections.
5. "Digital cable television box" means a device that acts as a tuner for cable television programming and converts digital signals received from a cable service provider to a signal usable by a television set.
6. "Digital television converter box" means a device that receives and decodes digital broadcast signals for display by an analog television set, and is not a digital cable television box or wireless television receiver.
7. "Illuminated exit sign" means an internally-illuminated sign that is designed to be permanently fixed in place to identify an exit and consists of an electrically powered integral light source that illuminates the legend "EXIT" and any directional indicators and provides contrast between the legend, any directional indicators, and the background.
8. "Large packaged air-conditioning equipment" means packaged air-conditioning equipment having 240,000 Btu / hour or more of cooling capacity that is built as a package and shipped as a whole to end-user sites.
9. "Low voltage dry-type distribution transformer" means a distribution transformer that has an input voltage of 600 volts or less, is air-cooled, does not use oil as a coolant, and is rated for operation at a frequency of 60 Hertz. The term "low voltage dry-type transformer" does not include transformers with multiple voltage taps, with the highest voltage tap equaling at least 20 percent more than the lowest

voltage tap, or transformers, such as those commonly known as drive transformers, rectifier transformers, auto-transformers, Uninterruptible Power System transformers, impedance transformers, harmonic transformers, regulating transformers, sealed and non-ventilating 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.
10. "Multi-function device" means a physically integrated electronic device that has the core function of a digital cable television box and one or more additional functionalities, such as Internet access, personal digital recording, or video game operation.
11. "Pass-through cabinet" means a commercial refrigerator or freezer with hinged or sliding doors on both the front and rear of the unit.
12. "Reach-in cabinet" means a commercial refrigerator or freezer with hinged or sliding doors or lids, but does not include roll-in or roll-through cabinets or pass-through cabinets.
13. "Roll-in cabinet" means a commercial refrigerator or freezer with hinged or sliding doors that allow wheeled racks of product to be rolled into the unit.
14. "Roll-through cabinet" means a commercial refrigerator or freezer with hinged or sliding doors on two sides of the cabinet that allow wheeled racks of product to be rolled through the unit.
15. "Secretary" means the Secretary of the Department of [Consumer Protection].
16. "Set-top box" means a digital cable television box, wireless television receiver, or digital television converter box.
17. "Torchiere" means a portable electric lamp with a reflective bowl that directs light upward onto a ceiling so as to produce indirect illumination on the surfaces below.
18. "Traffic signal module" means a standard 8-inch (200mm) or 12-inch (300mm) traffic signal indication, consisting of a light source, a lens, and all other parts necessary for operation.
19. "Transformer" means a device consisting of two or more coils of insulated wire and that is designed to transfer alternating current by electromagnetic induction from one coil to another to change the original voltage or current value.
20. "Unit heater" means a self-contained, vented fan-type commercial space heater that uses natural gas, propane or fuel oil that is designed to be installed without ducts, within a heated space except that such term does not include any products covered by federal standards established pursuant to 42 U.S. Code section 6291 and subsequent sections or any product that is a direct vent, forced flue heater with a sealed combustion burner.
21. "Wireless television receiver" means a device used in conjunction with a dish antenna to receive satellite or other wireless television programming and that converts signals from a dish antenna for use by a television set.

(B) ENERGY EFFICIENCY STANDARDS ESTABLISHED

1. Not later than January 1, 2005, the Secretary, in consultation with [heads of other appropriate agencies] shall adopt regulations stablishing minimum efficiency standards for the following types of new products. For each product, minimum efficiency standards shall be no less strict than the following:
a. Ceiling fans and ceiling fan light kits shall meet the Tier 1 criteria of Version 1.1 of the product specification contained in the "Energy Star Program Requirements for Residential Ceiling Fans" prescribed by the U.S. Environmental Protection Agency.
b. Commercial clothes washers shall meet the requirements shown in Table P-3 of section 1605.3 of the California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4: Appliance Efficiency Regulations that took effect on November 27, 2002.
c. Commercial refrigerators and freezers shall meet the August 1, 2004 requirements shown in Table A-6 of section 1605.3 of the California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4: Appliance Efficiency Regulations that took effect on November 27, 2002.
d. Illuminated exit signs shall meet the Version 2.0 Energy Star Program performance requirements for illuminated exit signs prescribed by the U.S. Environmental Protection Agency.

e. Large packaged air-conditioning equipment shall meet the Tier 2 efficiency levels of the "Minimum Equipment Efficiencies for Unitary Commercial Air Conditioners" or "Minimum Equipment Efficiencies for Heat Pumps," as appropriate, developed by the Consortium for Energy Efficiency, Boston, MA, as in effect on January 1, 2002.
f. Low voltage dry-type distribution transformers shall meet the Class 1 efficiency levels for 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).
g. Set-top boxes other than multi-function devices shall meet the Tier 1 criteria of the product specification of the U.S. Environmental Protection Agency's "Energy Star Program Requirements for Set-top Boxes" that took effect on January 1, 2001.
h. Torchieres shall consume not more than 190 watts and shall not be capable of operating with lamps that total more than 190 watts.
i. Red and green traffic signal modules shall meet the product specification of the "Energy Star Program Requirements for Traffic Signals" developed by the U.S. Environmental Protection Agency that took effect in February 2001 and shall be installed with compatible, electrically-connected signal control interface devices and conflict monitoring systems. The Commissioner, in consultation with the (Secretary of Transportation), may exempt specific traffic signals from this requirement upon a determination that installing compliant signals would not be cost-effective on a life-cycle cost basis.
j. Unit heaters shall be equipped with an intermittent ignition device and shall have either power venting or an automatic flue damper.

2. On or after January 1, 2006, no new commercial refrigerator or freezer, illuminated exit sign, large packaged air conditioning equipment, low voltage dry-type distribution transformer, torchiere, traffic signal module, or unit heater may be sold or offered for sale in the state unless the efficiency of the new product meets or exceeds the efficiency standards. On or after January 1, 2007, no new ceiling fan, ceiling fan light kit, commercial clothes washer, or set-top box may be sold or offered for sale in the state unless the efficiency of the new product meets or exceeds the efficiency standards.

3. On or after January 1, 2007, no new commercial refrigerator or freezer, illuminated exit sign, large packaged air conditioning equipment, low voltage dry-type distribution transformer, torchiere, traffic signal module, or unit heater may be installed in the state unless the efficiency of the new product meets or exceeds the efficiency standards. On or after January 1, 2008, no new ceiling fan, ceiling fan light kit, commercial clothes washer, or set-top box may be installed in the state unless the efficiency of the new product meets or exceeds the efficiency standards.

(C) REGULATORY AUTHORITY

1. The Secretary may establish increased efficiency standards on the products listed in Section (B)(1). The Secretary may also establish standards for products not specifically listed in Section (B)(1). In considering such new or amended standards, the Secretary, in consultation with the [heads of other appropriate departments], 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 such products. However, no new or increased efficiency standards shall become effective within one year following the adoption of any amended regulations providing for such increased efficiency standards. The Secretary may apply for a waiver of federal preemption in accordance with federal procedures for those products regulated by the federal government. The Secretary may adopt such further regulations as are necessary to implement the provisions of this section.

2. The Secretary, in consultation with [heads of other appropriate departments], shall adopt procedures for testing the energy efficiency of the new products covered by this section if such procedures are not provided for in the [state building code]. The Secretary shall use U.S. Department of Energy approved test methods, or in the absence of such test methods, other appropriate nationally recognized test methods. The

manufacturers of such products shall cause samples of such appliances to be tested in accordance with the test procedures adopted pursuant to this section or those specified in the [state building code].

3. Manufacturers of new products covered by this section shall certify to the Secretary that such products are in compliance with the provisions of this section. The Secretary shall promulgate regulations governing the certification of such products, and may propose to work in coordination with the certification programs of other states with similar standards.

4. The Secretary may test products covered by this section using an accredited testing facility. If tested products are found to be not in compliance with the minimum efficiency standards, the Secretary shall:
a. Charge the manufacturer of such product for the cost of product purchase and testing.
b. Provide information to the public on products found to be not in compliance with the standards.

5. The Secretary may cause periodic inspections to be made of distributors or retailers of new products covered by this section in order to determine compliance with the provisions of this section. The Secretary shall also work with the [head of building code administration] to coordinate inspections for new products that are also covered by the [state building code].

(D) EXEMPTIONS

The provisions of this section 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.

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

(E) ENFORCEMENT

1. The Secretary shall investigate complaints received concerning violations of this section and shall report the results of such investigations to the Attorney General. The Attorney General may institute proceedings to enforce the provisions of this section.

2. Any manufacturer, distributor or retailer who violates any provision of this section shall be issued a warning by the Secretary for any first violation. Repeat violations shall be subject to a civil penalty of not more than $250. Each violation of this section shall constitute a separate offense, and each day that such violation continues shall constitute a separate offense.

SECTION 3. SEVERABILITY

The provisions of this Act shall be severable, and if any phrase, clause, sentence, or provision is declared to be invalid or is preempted by federal law or regulation, the validity of the remainder of this Act shall not be affected.

SECTION 4. EFFECTIVE DATE

This Act shall take effect on July 1, 2004.