1992 Energy Policy Act

A Pacific Energy Center Factsheet

Pacific Gas and Electric Company
Pacific Energy Center

The Energy Policy Act of 1992 affected all users of electric lighting. In addition to instituting requirements for electric motors, utility distribution transformers and luminaires, the Energy Policy Act of 1992 established minimum efficiency standards for incandescent lamps and fluorescent lamps of certain types. Lamps not meeting these standards will no longer be available after specific dates specified in the Act. Therefore, facilities currently using obsolete lamps will need to plan a change in lamp technology. That plan may be as simple as switching to a different lamp type or it may involve installing an entirely new lighting system. In addition, new construction or major upgrades should consider the implications of the Energy Policy Act in the design process to avoid a potentially costly situation in the near future. The Energy Policy Act specifically addresses general service incandescent lamps, incandescent reflector lamps, compact fluorescent lamps, straight and "U" shaped fluorescent lamps, and high intensity discharge lamps. It prevents the manufacture or import of certain lamps within each of these categories. Following is a summary of the provisions for each lamp category.

General Service Incandescent Lamps

Products Included
Medium-base incandescent and tungsten halogen lamps, 115-130 volts, 30 watts and above, used for general service applications.

Products Exempted
Traffic signal, streetlighting, transportation, stage & studio, industrial, heating, reprographic, medical, scientific, decorative, showcase, colored, shatter resistant, and appliance lamps.

Requirements
All of the products included must meet certain labeling requirements, which will inform the consumer about energy efficiency performance. The performance data must be based on lamp operation at 120 volts, regardless of the rated lamp voltage.

Effective Dates
The Federal Trade Commission (FTC) must define the labeling rules no later than April 24, 1994. These rules will be in effect 12 months after publication.

The labeling is intended to help consumers select high energy efficient products to meet their needs. Similar labeling requirements will be enacted for medium-base compact fluorescent lamps, which will emphasize the relative cost of energy for these commonly used lamp types and encourage the use of more efficient ones.

Incandescent Reflector Lamps

Products Included
Medium-base Incandescent reflector lamps, R and PAR shaped, 115-130 volts, 40 watts and above, and diameter not exceeding 2.75 inches.

Products Exempted
Traffic signal, streetlighting, transportation, stage & studio, industrial, heating, reprographic, medical, scientific, decorative, showcase, colored, shatter resistant, appliance lamps, rough/vibration service, lamps with bases other than E26, ER and BR bulb shapes R20 or smaller, and Low Voltage lamps.

Requirements
All of the products included must meet certain labeling requirements which will inform the consumer about energy efficiency performance. The performance data must be based on lamp operation at 120 volts, regardless of the rated lamp voltage. In addition, lamps must meet minimum average lamp efficacy standards.

Nominal Lamp Wattage	Minimum Average Lamp Efficacy (LPW)
40 - 50	10.5
51-66	11.0
67-85	12.5
86-115	14.0
116-155	14.5
>155	15.0

Effective Dates
The FTC must define the labeling rules no later than April 24, 1994. These rules will be in effect 12 months after publication. Lamps not meeting the efficacy requirements cannot be manufactured after October 31, 1995.

In effect, lamps that do not employ halogen capsule technology will not meet the minimum efficiency standards, thereby requiring consumers to use the more efficient technology. Most R30, R40, and Incandescent PAR30 and PAR38 lamps will be eliminated from the marketplace.

Since many luminaires are designed to accommodate the longer neck of traditional R lamps, they may require socket extenders or long neck PAR lamps for replacement. During replacement, verify that the luminaire is rated for the new lamp type. If not, contact the luminaire manufacturer for advice. In any case, the replacement lamp type will likely change the optical performance characteristics of the luminaire, so some experimentation may be needed to ensure that the lighting requirements for the space are still satisfied.

Compact Fluorescent Lamps

Products Included
Medium-base compact fluorescent lamps with integral ballasts and a rated voltage of 115-130 volts, designed as direct replacements for general service incandescent lamps.

Products Exempted
None.

Requirements
All of the products included must meet certain labeling requirements, which will inform the consumer about energy efficiency performance. The performance data must be based on lamp operation at 120 volts, regardless of the rated lamp voltage.

Effective Dates
The FTC must define the labeling rules no later than April 24, 1994. These rules will be in effect 12 months after publication.

The labeling is intended to help consumers select higher energy efficient products to meet their needs. Similar labeling requirements will be enacted for medium-base incandescent lamps, which will emphasize the relative cost of energy for these commonly used lamp types and encourage the use of more efficient ones.

Straight and U-Shaped Fluorescent Lamps

Products Included
All fluorescent lamps that meet the following specifications:

- 2 ft T12 or T8 U-shaped with a medium bi-pin base
- 4 ft T8, T10 or T12 straight with a medium bi-pin base
- 8 ft T12 straight with double-contact base (high output)
- 8 ft T12 straight with single pin base (slimline).

Products Exempted
Lamps with a color rendering index of 82 or greater, plant growth, cold temperature, colored, impact resistant, reflectorized, reprographic or UV radiation lamps.

Requirements
All of the products included must meet certain labeling requirements as established by the FTC. In addition, lamps must meet a minimum average efficacy and color rendering index.

Type	Nominal Lamp Wattage	Minimum CRI	Minimum Average Lamp Efficacy (LPW)
2 ft. U	>35	69	68.0
2 ft. U	<35	45	64.0
4 ft. med bi-pin	>35	69	75.0
4 ft. med bi-pin	<35	45	75.0
8 ft. high output	>100	69	80.0
8 ft. high output	<100	45	80.0
8 ft. slimline	>65	69	80.0
8 ft. slimline	<65	45	80.0

Effective Dates
The FTC must define the labeling rules no later than April 24, 1994. These rules will be in effect 12 months after publication. Eight-foot lamps not meeting the efficacy and CRI requirements cannot be manufactured after April 30, 1994. All other lamp types that fall under this category and do not meet the requirements cannot be manufactured after October 31, 1995.

These standards will eliminate full-wattage lamps that use the lower-cost halophosphors, thereby, encouraging the use of reduced wattage, energy-saving lamps or lamps employing more efficacious rare earth tri-phosphors.

In many situations, the reduced wattage, energy-saving lamps will be an effective means of cutting back on energy usage in a building. In other cases, the reduced wattage lamps will not operate properly and it will be necessary to use full-wattage lamps with higher CRI's (typically with higher lumen output and no reduction in energy) or perform a lamp/ballast retrofit, which would require rewiring of the luminaire. Some of the situations in which reduced-wattage lamps may result in less than ideal lighting conditions are listed below.

?? In low-temperature conditions (below 60°F), reduced-wattage lamps may flicker. Low-temperature conditions can occur when a luminaire is located near a supply air diffuser blowing cold air across the lamps.

?? When used to operate reduced-wattage lamps, ballasts designed for full-wattage lamps will typically have lower ballast factors. Combined with the lower lumen output of the

lamp, the reduced-wattage lamp/full-wattage ballast combination will cause a significant drop in light level.

?? Uncorrected-power-factor ballasts may overheat.

?? Rapid start ballasts designed for low-temperature operation will not properly operate reduced-wattage lamps.

?? Dimming ballasts are generally designed for full-wattage lamps only.

?? Some electronic ballasts will not properly operate reduced-wattage lamps.

High Intensity Discharge Lamps

There are currently no specific standards in the Energy Policy Act for HID lamps, but the Department of Energy (DOE) is required to prescribe efficiency standards if they would result in significant energy savings and would be technically feasible and economically justifiable. If the DOE determines that standards are needed, they must be in place by October 1996 and in effect October 1999.

In Conclusion

Implementing the Energy Policy Act of 1992 may not be as simple as changing your light bulb. The best solution for a particular installation must be technically feasible, economically viable, and maintain or improve the quality of the lighting. Particularly for existing facilities, the Energy Policy Act represents a challenge to meet the goal of reducing energy consumption while still meeting the lighting requirements for the space.

Information

For information regarding energy technologies, products, and services, please call PG&E's Energy Efficiency Resource Center at 1-800-468-4743.