

Shedding New Light on the U.S. Energy Efficiency Standards For Everyday Light Bulbs

In 2007, the U.S. Congress adopted and President Bush signed into law energy efficiency standards for new screw-based light bulbs. These standards took effect in 2012 and will phase out the inefficient incandescent light bulb that dates back more than 125 years for better-performing, more energy-efficient options. New bulbs are required to use 25 to 30 percent less energy and, as a result of lighting innovation spurred by the standards, there's more lighting options on store shelves than ever before.

As there are more than 4 billion screw-based sockets in the United States, the transition to more efficient light bulbs will provide massive national benefits, including:

- electric bill savings of nearly \$13 billion per year, or approximately \$100 per year per household;
- electricity savings equivalent to 30 large power plants; and
- reduced carbon pollution of approximately 100 million tons of carbon dioxide (CO₂) per year.

Replacing all the nation's inefficient bulbs with energy efficient ones will save as much electricity annually as that consumed by all the homes in Texas.

WHY PHASE-OUT INEFFICIENT LIGHT BULBS?

The old incandescent light bulb wastes up to 90 percent of the electricity it consumes as heat. Standards are needed because out of the 4 billion screw-based sockets in the United States, more than 3 billion contain these inefficient bulbs.

WHAT DO THE NEW INCANDESCENT BULBS LOOK LIKE? EXACTLY LIKE THE OLD BULBS

New 72-watt bulb



- ▶ **Similar brightness**
- ▶ **Same shape and size**
- ▶ **New bulbs use at least 28 percent less electricity**

Old 100-watt bulb



efficient. The standards also do not require consumers to buy compact fluorescent light bulbs (CFLs). The first phase of the standard requires new bulbs to use at least 25 to 30 percent less energy. In 2020, the second phase of the standard will go into effect and will require new light bulbs to use approximately 65 percent less energy than conventional incandescent bulbs.

HOW WILL THE STANDARD IMPACT CONSUMERS?

Consumers will continue to have a wide selection of light bulbs from which to choose. These will include new and more efficient incandescent light bulbs that use halogen technology and look and perform just like today's ordinary light bulbs, compact fluorescent light bulbs (CFLs), and light emitting diodes (LEDs). All these types of bulbs are already widely available at leading retailers such as Home Depot, Lowes, and Wal-mart, as well as most local hardware stores. These new bulbs will also save consumers money. While some of the newer and more efficient bulbs may cost more to buy, they will save the consumer more in the long run. For example, because these bulbs last longer and are so much more efficient, a single CFL can save \$30 or more in electricity over its lifetime.

HOW DOES THE STANDARD WORK?

The standards are technology neutral, which means any type of bulb can be sold provided it meets the efficiency requirements. The standards do NOT ban incandescent light bulbs—they only require these bulbs to become more



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For more information on energy-efficient light bulbs and our full consumer light bulb buying guide, go to www.nrdc.org/lightbulbs.

DO LIGHTING MANUFACTURERS SUPPORT THE STANDARDS?

Yes. Through their trade association, the National Electrical Manufacturers Association (NEMA), all the leading lighting manufacturers have publicly expressed their support. The standards have provided the industry with several years lead time to transition their supply chains over to the more efficient alternatives.

WHAT ABOUT JOBS?

The standards have jumpstarted domestic industry investment in research and development (R&D) and production of more efficient lighting products. As a result of the standard, a considerable number of new lighting-related jobs have been created. For example:

- The U.S. energy-efficient lighting sector currently employs more than 14,000 workers in assembly and manufacturing, research, engineering, marketing and other professions, according to the Brookings Institution.
- Several thousand U.S. jobs have been created by companies across the country like GE and TCP in Ohio, Cree in North Carolina, and Philips Lighting (the world's biggest lighting company) to produce the next generation of energy efficient LED light bulbs.
- Osram Sylvania retooled its St. Marys, Pennsylvania factory to produce new energy-saving incandescents that meet the standards.
- In 2012, TCP—one of the world's largest makers of CFLs—brought some of its production back to the U.S. from China with the opening of a new CFL factory in Aurora, Ohio to help meet new demand for energy-efficient bulbs.
- GE recently invested \$60 million to create a Global Center of Excellence for linear fluorescent lamp manufacturing in Bucyrus, Ohio—an action that will double the number of jobs at that plant.

WILL I HAVE TO BUY A CFL?

No. A wide range of products meeting the technology-neutral standards are already on the market. These include more efficient incandescents that use halogen technology, CFLs, and LEDs—all of which are available from multiple manufacturers. Product offerings have only increased as the new standards have been implemented.

ARE CFLS A GOOD CHOICE?

Today, CFLs represent the best value for consumers as they use one-fourth the power of a comparable incandescent light bulb and last up to 10 times longer. As a result, each CFL will save the consumer at least \$30 in the form of lower

electricity costs over the life of the bulb. The new improved incandescents will save much less, but some consumers may still prefer to stick with products with which they are most familiar.

WHAT ABOUT THE MERCURY CONTAINED IN A CFL?

CFLs contain very low levels of mercury—2 to 5 milligrams—in order to operate. In comparison, older thermometers contained nearly 500 milligrams of mercury—equivalent to the amount in more than 100 CFLs combined. Buying CFLs reduces the environmental impact of lighting because efficient bulbs reduce power plant emissions, including carbon dioxide, mercury, and sulfur dioxide. On a life cycle basis, CFLs cause less mercury to be emitted into the environment than incandescent bulbs because they need less electricity from coal burning power plants to operate. In addition, several major retailers including Lowes, Home Depot, and IKEA now offer free nation-wide collection points for CFL recycling. CFLs are completely safe to use as the low levels of mercury they contain remain in the bulb. In the unlikely event a CFL is broken, the Environmental Protection Agency's website provides instructions for clean-up.

WHAT ABOUT SPECIALTY LAMPS?

Specialty lamps designed to operate in unique environments are exempted from the standards. For example, items such as refrigerator or oven bulbs, aquarium lights, and airport runway lights are not covered.

WHEN DOES THE STANDARD GO INTO EFFECT?

The standards go into effect in stages as shown below. (Please note that each of these dates goes into effect one year earlier in California.) Last January, the old 100-watt incandescent bulbs as we used to know them were phased out nationally for more energy-efficient models and as of January 1, 2013 the old 75-watt bulbs must become more efficient too. The first year of the standards went smoothly and we expect subsequent phases of the standards to provide similar hassle free transitions to better-performing, more energy-efficient light bulbs.

Today's Bulbs		After the Standard	Effective Date
100 W	→	≤ 72 W	1/1/2012
75 W	→	≤ 53 W	1/1/2013
60 W	→	≤ 43 W	1/1/2014
40 W	→	≤ 29 W	1/1/2014