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## FAQ: The End of the Light Bulb as We Know It

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The incandescent light bulb, one of the most venerable inventions of its era but deemed too inefficient for our own, will be phased off the U.S. market beginning in 2012 under the new energy law just approved by Congress. Although this will reduce electricity costs and minimize new bulb purchases in every household in America, you may be feeling in the dark about the loss of your old, relatively reliable source of light. Here's a primer on the light bulb phase-out and what will mean to you:

**Why are they taking my light bulbs away?** Moving to more efficient lighting is one of the lowest-cost ways for the nation to reduce electricity use and greenhouse gases. In fact, it actually will save households money because of lower utility bills. Ninety percent of the energy that an incandescent light bulb burns is wasted as heat. And yet, sales of the most common high-efficiency bulb available--the compact fluorescent (CFL)--amount to only 5 percent of the light bulb market. Earlier this year, Australia became the first country to announce an outright ban by 2010 on incandescent bulbs. The changeover in the United States will be more gradual, not mandated to begin until 2012 and phased out through 2014. However, don't be surprised if some manufacturers phase out earlier.

**How do I save money, when a CFL costs six times as much as an old-fashioned bulb?** Each cone-shaped spiral CFL costs about \$3, compared with 50 cents for a standard bulb. But a CFL uses about 75 percent less energy and lasts five years instead of a few months. A household that invested \$90 in changing 30 fixtures to CFLs would save \$440 to \$1,500 over the five-year life of the bulbs, depending on your cost of electricity. Look at your utility bill and imagine a 12 percent discount to estimate the savings.

**I've heard that CFLs don't really last as long as they say.** Turning a CFL on and off frequently shortens its life, which is why the government's Energy Star program says to leave them on for at least 15 minutes at a time. Also, if you have dimmable light fixtures, make sure to buy CFLs labeled "dimmable." All CFLs that carry the government's Energy Star label are required to carry a two-year limited warranty, so contact the manufacturer if your bulb burns out prematurely. The Energy Star website has a good FAQ on CFLs.

**I don't think that I like the color of the light from CFLs.** When they first hit the market, CFLs had a limited range of tones. Now, manufacturers offer a wider variety, but there is not an agreed-upon labeling standard. The Energy Star program is working to change that. But for now, look for lower "Kelvin temperatures" like 2,700 to 3,000 for "redder" light, closer to old-fashioned incandescent bulbs, while bulbs with Kelvin temperatures of 5,000 and 6,500 provide more "blue" and intense light. A good photograph illustrating the difference is shown here.

**I've heard that CFLs have mercury in them--isn't that bad?** Consumers are rightly concerned about the toxic substance mercury that helps CFLs produce light. Even though the amount sealed in each bulb is small--one old-fashioned thermometer had about 100 times as much mercury--contact local trash collection for disposal instructions. Environmentalists agree that more work must be done on bulb recycling programs. Right now, you can return any CFL to any Ikea store for recycling, and the

Environmental Protection Agency and Earth911 have sites you can search for other recycling programs near your home.

**But if you break a CFL, you'll have a toxic spill in your home.** Maine's Department of Environmental Protection has developed the best advice on the procedures to follow if a CFL breaks. Don't use a vacuum. Maine officials studied the issue because of a homeowner in that state who received a \$2,000 light bulb clean-up bill from an environmental hazards company--a story that has circulated around the country and increased consumer concerns about CFLs. It turns out that the company's advice was overkill, and a subsequent analysis showed no hazard in the home. But the bulbs must be handled with caution. Using a drop cloth might be a good new routine to develop when screwing in a light bulb, to make the clean-up of any breaks easier.

**By the way, don't think that incandescent bulbs are mercury free.** In the United States, the chances are at least 50 percent that their light is generated by a coal-powered plant featuring mercury as well as other types of pollution. Popular Mechanics recently crunched the numbers to find that even if the mercury in a CFL was directly released into the atmosphere, an incandescent would still contribute almost double that amount of mercury into the environment over its lifetime.

**Isn't there efficient lighting without mercury?** Yes. By 2012, the chances are good that consumers will have many more options to replace incandescent bulbs. Manufacturers already are deploying advanced incandescent bulbs that are efficient enough to stay on the market after 2012, although they are not yet as efficient as CFLs. Even more exciting are the developments with light-emitting diodes (LEDs), which are jazzing up holiday lighting. The European electronics firm Philips this year acquired several pioneering small technology companies and plans a big push to make LEDs practical for ordinary lighting purposes. The lights on the New Year's Eve Times Square Ball could one day brighten your home. LEDs last even longer than CFLs and will make bulb buying more like an appliance purchase than a throw-away item.

**Is Thomas Edison turning over in his grave?** Perhaps, but the incandescent bulb has had a good run, with the technology little changed since 1879, when Edison produced light with a carbonized thread from his wife's sewing box. The breakthrough that ushered civilization out of the candle era was so revolutionary that the light bulb itself became the culture's iconic image to illustrate any thought, brainstorm, or idea. But energy-efficient bulbs are a better idea, says Andrew deLaski, director of the Appliance Standards Awareness Project. "It's hugely important," he says. "A 60 to 70 percent reduction in light bulb energy use will save as much energy annually as that used by all the homes in Texas last year." That's a big savings.