

Change a Light, Change the World

National campaign helps change consumer attitudes, behaviors

By Pam Blair

In the late 1990s, many consumers had never heard of compact fluorescent lights (CFLs)—and the perception of those who had was negative. CFLs were viewed as ugly, expensive, too big for most fixtures, of poor quality and hard to find.

Today, CFLs account for about 20 percent of the U.S. light bulb market, with the 290 million sold in 2007 nearly double 2006 numbers.

Thanks to efforts a decade ago by the Northwest Energy Efficiency Alliance—including a “buydown” program that reduced the price customers paid for the bulbs—CFLs claim almost double that in the region: 34 percent.

What’s more, the cost of CFLs has dropped from \$20 to \$5 a bulb.

The typical U.S. home has five CFLs. The Northwest averages 10.

Nationwide, Energy Star’s “Change a Light, Change the World” program encourages consumers to replace incandescents with CFLs.



If each home changes just one bulb, it would save \$600 million a year in energy costs, save enough energy to light more than 3 million homes for a year and prevent greenhouse gases equivalent to

the emissions of more than 800,000 cars, according to the federal agency.

Lighting accounts for about 20 percent of the average home’s electric bill. CFLs use about 75 percent less energy and last up to 10 times longer than incandescents.

Incandescents work by heating a tungsten filament, or wire, until it glows. Because 90 percent of the energy used to generate that light is wasted as heat, incandescent bulbs are an inefficient lighting source.

The heat incandescents generate is not an efficient heat source, either. They are not designed to effectively distribute heat within a living space.

Fluorescents create a chemical reaction among gasses inside a glass tube, causing phosphors to

Equivalency Chart

Incandescents	CFLs
40 watts	9-13 watts
60 watts	13-15 watts
75 watts	18-25 watts
100 watts	23-30 watts
150 watts	30-52 watts

What About the Mercury?

According to the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, an average of 4 milligrams of mercury are sealed in the glass tubing of each compact fluorescent light (CFL). By comparison, older thermometers contain about 500 milligrams of mercury—an amount equal to 125 CFLs.

Manufacturers have reduced the mercury content in new CFLs to 1.4 to 2.5 milligrams. The actual amount varies by type of bulb and manufacturer. Standard linear fluorescents typically contain 8 to 14 milligrams.

Tips for Dealing With a Broken CFL

No mercury is released when bulbs are intact or in use. If the glass breaks, mercury can be released. As a precaution, EPA recommends the following actions:

1. Air out the room. Open a window for 15 minutes or more,



and shut off the forced air heating or cooling system.

2. Carefully scoop up glass fragments and powder using stiff paper or cardboard. Use tape to pick up glass and powder remnants. Wipe the area with damp towels. Place everything in a glass jar with a metal lid or a sealed plastic bag. Do not use a vacuum or broom on hard surfaces. If vacuuming carpet, discard the used vacuum bag in a sealed plastic bag.

3. Wash clothing exposed to mercury vapor, but discard clothing or bedding that comes into direct contact with broken glass or mercury-containing powder.

4. Immediately dispose of all cleanup materials in the trash outdoors. Wash your hands and shoes when finished.

5. Shut off the forced air system and open the window for at least 15 minutes before you vacuum the next several times.

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To have the best experience possible, keep the following tips in mind:
Use ENERGY STAR qualified bulbs in places where you will have the light on for at least 15 minutes at a time. Frequently turning a CFL on and off will shorten the bulb's lifetime.

illuminate. They produce 75 percent less heat, and provide the same light output at lower wattages (see chart, opposite page).

CFLs that resemble a traditional light bulb are available. The A-line shape (see above) is actually a coil-shaped bulb with a plastic or glass cover. The cover slightly reduces the amount of light produced. The “bare” product will provide more light for the same wattage. Bare CFLs also usually have longer lifetimes than covered products.

Most bare spiral CFLs perform like incandescent light bulbs. They turn on instantly and provide full brightness. Covered CFLs may take longer to reach full brightness.

Although incandescent light bulbs remain on the market, they must become more efficient to survive.

By 2012, the energy bill signed in 2007 will require all light bulbs to use 30 percent less energy than today’s incandescents. The phase-out starts with 100-watt bulbs and ends with 40-watt bulbs in 2014. A second tier requires all bulbs to be at least 70 percent more efficient—equivalent to today’s CFLs. ■

A Buyer’s Guide

- ▶ Look for Energy Star-qualified compact fluorescent lights (CFLs). They have passed product quality and performance tests.
- ▶ Frequently turning CFLs on and off shortens their life. Place them in fixtures you use at least 15 minutes at a time.
- ▶ Hold the base, not the glass, when you screw in the bulb.
- ▶ Select the best size and shape to meet your needs. CFLs are available for ceiling-mounted fixtures, wall sconces and table lamps. See shapes above.
- ▶ If using CFLs in torchieres or dimmable, three-way fixtures, check the package to make sure the bulb is designed for those uses. Not all are.
- ▶ Keep in mind most photocells and timers are not designed to work with CFLs.
- ▶ Use CFLs in hard-to-reach fixtures. You won’t have to change bulbs so often.
- ▶ Read the package to determine whether the CFL offers a warmer yellow (2,700 to 3,000 Kelvin) or cooler blue temperature (4,500 to 6,000 Kelvin).