



Indiana Department of Environmental Management

Lighting Alternatives**Office of Pollution Prevention and Technical Assistance**

(317) 232-8172 • (800) 988-7901

www.idem.IN.gov

100 N. Senate Ave., Indianapolis, IN 46204

Description:

With the phasing out of traditional incandescent lighting at the beginning of 2014, Hoosiers will have a choice in which kind of energy efficient bulb to install in home fixtures. Over the last decade, the cost of Compact fluorescent light bulbs (CFLs) and light-emitting diode bulbs (LEDs) has dropped dramatically, making them both eco and wallet friendly.

What are energy efficient alternatives to incandescent lighting?

- CFLs and LEDs are energy-efficient, money-saving replacements for traditional incandescent bulbs.
- CFLs and LEDs cost a little more at the register, but they provide a savings over the life of the bulb.
 - o CFLs cost approximately \$4 per bulb, LEDs range in cost from approximately \$11-\$39, depending on the brand and shape/function, while incandescent light bulbs generally cost \$1.50 per bulb.
 - o ENERGY STAR qualified CFLs and LEDs use up to 75 percent less energy than incandescent light bulbs. CFLs last up to 10 times longer, and LEDs last up to 25 times longer than incandescent bulbs.
- This chart, based on data from the U.S. Department of Energy, shows the energy savings by switching to LED or CFL bulbs:

	60W Traditional Incandescent	15W CFL	12W LED
Energy saved (%)	–	~75%	~75-80%
Annual energy cost*	\$4.80	\$1.20	\$1.00
Bulb life (years of usage)	1000 hours (<1 year)	10,000 hours (5 years)	25,000 hours (10 years)
Cost per bulb	\$1.50	\$3.95	\$11-\$39
Number of bulbs needed over 10 years of usage	12	2	1
Cost for 10 years of bulbs	\$18	\$7.90	\$11-\$39
Cost for 10 years of household usage**	\$1650	\$498	\$525-\$1225

*Based on 2 hrs/day of usage, an electricity rate of 11 cents per kilowatt-hour, shown in U.S. dollars.

** Assuming 25 bulbs per household running 2hrs/day at 11 cents per kilowatt-hour.

Environmental Impacts:

- Switching to energy efficient bulbs effectively reduces energy use at home and work, which can reduce air emissions from power plants. Lighting accounts for close to 20 percent of the average home's electric bill.
 - o As of January 2014, standard incandescent light bulbs will no longer be manufactured or imported due to the phase out implemented by the Energy Independence and Security Act of 2007 to help the U.S. become more energy independent and to make better use of our resources.
 - o Changing to CFL or LED bulbs reduces energy demand, which reduces the amount of

air toxins emitted when coal is burned as a fuel for power generation.

- CFLs contain a small amount of mercury. LEDs do not contain mercury.
 - CFLs contain an average of 4 milligrams of mercury, which is enough to cover the tip of a ballpoint pen. A watch battery contains about five times as much mercury.
 - The mercury is safely sealed inside the light bulb's glass tubing and is not emitted when CFLs are in use.
 - There is no substitute for mercury in CFLs, but many manufacturers have taken significant steps to reduce the amount of mercury inside their fluorescent lighting products
 - Using CFLs saves energy and yields significant air quality benefits that outweigh the potential impacts related to the small amount of mercury contained in the bulbs.

Citizen's Role:

- To prevent the release of mercury into the environment, take CFLs to your local recycling facility instead of throwing them away.
- Follow these guidelines to ensure proper handling, use and disposal of CFLs:
 - As with any light bulb, be careful when removing it from packaging, during installation, or when replacing it.
 - Always screw and unscrew the light bulb by its base (not the glass) and never forcefully twist the CFL into a light socket.
 - Always recycle burned-out and broken CFL or LED bulbs.
- Follow these guidelines for cleaning up a broken CFL:
 - Open a window and leave the room for 15 minutes to let the powder settle and vapors dissipate.
 - Using rubber gloves, carefully scoop up the bulb fragments and powder with stiff paper or cardboard and place in a sealable plastic bag, or a rigid container such as a five-gallon bucket or old paint can.
 - Pick up small glass shards with tape (such as duct tape or packaging tape). Wipe hard surfaces down with a damp paper towel or a disposable wet wipe and place the used towel or wipe in the plastic bag. Any traces of glass, such as that remaining on carpet surfaces after all other cleanup steps have been completed, may be vacuumed, but discard the vacuum cleaner bag after use.
 - Seal all clean up materials, including gloves, paper, and vacuum cleaner bag in the plastic bag. If you do not have a hard container to store the pieces and clean up materials in, then double-seal the plastic bag inside a second plastic bag and store outside or in the garage.
 - Take the sealed container and any other burned-out CFLs to your local solid waste management district or community household hazardous waste collection program for recycling. If a recycling facility is not available in your community, place the sealed container safely in the trash for collection and proper disposal.
- For more information on mercury handling and disposal, visit: www.idem.IN.gov/recycle/2348.htm.

IDEM's Role:

- The Indiana Department of Environmental Management (IDEM) is responsible for protecting human health and the environment while providing for safe industrial, agricultural, commercial and governmental operations vital to a prosperous economy.
- IDEM's Office of Pollution Prevention and Technical Assistance (OPPTA) provides information to local solid waste management districts and community mercury and household hazardous waste collection programs for items such as CFLs.

More Information:

- For information on recycling, and maps of local solid waste management districts, visit the Recycle Indiana Web site at www.idem.IN.gov/recycle.
- For questions and concerns, please call IDEM's Office of Pollution Prevention and Technical Assistance at (317) 232-8172 or toll free at (800) 988-7901.
- For information on the ENERGY STAR program, visit www.energystar.gov.