

Lighting

Legislation under the Energy Independence and Security Act put restrictions on how much energy light bulbs use. Traditional bulbs, called **incandescent** bulbs, have been replaced by more efficient bulbs like **halogens**, **compact fluorescents**, and **light emitting diodes** (LEDs) on store shelves.

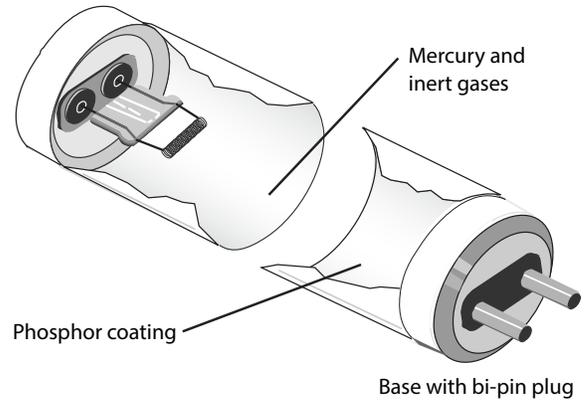
Lighting accounts for five percent of a home's energy use, which translates to about 11% of the home's electricity bill. Much of this is the result of using inefficient lighting. Many homes still use incandescent lighting. Only 10 percent of the energy consumed by an incandescent bulb actually produces light; the rest is given off as heat. There are other more efficient lighting choices on the market, including halogens, fluorescents, and LEDs. Halogens are sometimes called energy-saving incandescent bulbs because they last slightly longer, and use less energy than traditional incandescent bulbs, however they can burn hotter than incandescent lights do. Fluorescent lights produce very little heat and are even more efficient. Most schools use fluorescent tube lighting throughout the building, but may use incandescent bulbs in other spaces around the school.

Fluorescent lights use 75 percent less energy than traditional incandescents and reduce environmental impacts. Converting to compact fluorescent light bulbs (CFLs) in your home is one of the quickest and easiest ways to decrease your electricity bill. You will save a \$30-\$80 in electricity costs over the lifetime of every 100-watt incandescent bulb you replace. CFLs provide the same amount of light and save energy.

A fluorescent lamp is a glass tube lined inside with a phosphor coating. The tube is filled with argon gas and a small amount of mercury. At the ends of the tube are electrodes that generate an electric field when electricity flows through them. The energized electrons cause the mercury gas to emit UV (ultra violet) light. The invisible UV light strikes the phosphor coating, which emits visible light.

Fluorescent lights have ballasts that help move the electricity through the gas inside the bulb. There are two types of ballasts, magnetic and electronic. Electronic ballasts are more efficient than magnetic ballasts and can eliminate flickering and noise.

Fluorescent Tube Lamp



In fluorescent tubes, a very small amount of mercury mixes with inert gases to conduct the electric current. This allows the phosphor coating on the glass tube to emit light.

Compact Fluorescent Light Bulbs



CFLs come in a variety of styles for different purposes. CFLs use about one-third the energy of a halogen incandescent.

Did You Know?

Only 10 percent of the energy used by a traditional incandescent bulb produces light. The rest is given off as heat.



INCANDESCENT BULB **HALOGEN BULB** **CFL BULB** **LED BULB**



LEDs offer better light quality than incandescent bulbs and halogens, last 25 times as long, and use even less energy than CFLs. LEDs now have a wide array of uses because technology has improved and costs have decreased. It is possible to see CFL use decrease as LED costs continue to improve.

Inside an LED

