What Does Lighting Have To Do With It?

According to the U.S. Department of Energy (DOE), the average home contains 40 light fixtures which account for roughly 13 percent of the average household's electric bill; this means that paying attention to your light bulbs is very important.

This year, the first of several federal lightbulb efficiency standards kicked in, requiring manufacturers to stop making 100-watt (W) incandescent bulbs in favor of one's using less electricity to produce the same amount of light. This is great news considering those bulbs waste 90 percent of their energy producing heat instead of light, causing consumers to pay more for less.

New technologies are on the scene providing consumers several options when choosing lights: traditional incandescent lightbulbs, halogen incandescent lightbulbs, compact fluorescent lamps (CFLs), regular halogen bulbs, and light-emitting diodes (LEDs).

Most consumers are well aware of the energy savings of CFLs, and CVEA has promoted this type of bulb for years because these bulbs cut energy use by 75 percent compared to traditional incandescent bulbs and last up to 10 times longer. But for those consumers who don't like the pigtail shape of the CFL or who worry about the very small amount of mercury in them, another brighter option looms on the horizon. LEDs are beginning to show up on store shelves. LEDs also require 75-80 percent less energy than traditional incandescent bulbs but they can last 25 times longer-by far the longest lifespan yet.

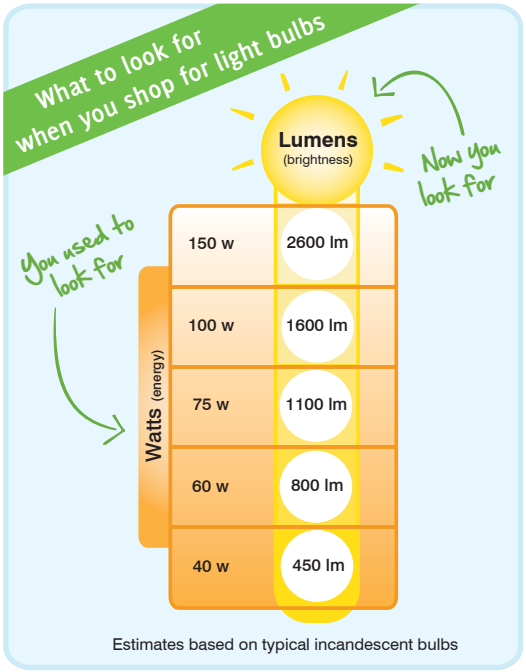
While LEDs are still much more expensive than other types of bulbs, improvements in manufacturing and increased demand are helping to drive costs down. By 2021, LED prices are expected to drop by a factor of 10.

Understanding how much energy different bulbs consume can be an easy way to save energy and money while maintaining a home that provides ample light.

Along with this move to more efficient bulbs comes a new way to shop for them. For years, people have chosen light bulbs by the watt, but wattage tells you only how much energy a bulb uses – not how bright it is. With newer light bulbs designed to use less energy, wattage is no longer a reliable way to gauge a bulb's brightness; that takes lumens.

For example, a standard 60-watt incandescent bulb produces about 800 lumens of light. By comparison, a CFL bulb produces that same 800 lumens using less than 15 watts.

When you shop for light bulbs, you'll also want to think about the light appearance or color temperature. Light appearance ranges from warm to cool. Warmer looks more yellow, cooler light appears more blue. To determine the lumens and the light appearance of a light bulb, simply look at the Lighting Facts label on the package. It tells you: brightness in lumens,



estimated yearly energy cost, expected bulb life, light appearance, wattage, and whether or not the bulb contains mercury. As of this year, Lighting Facts labels now appear on most everyday household light bulbs.

CVEA Director Carl Crosman, a retired electric industry wireman who now lives in Kenny Lake, recently set out to not only determine if LEDs were the best choice for his household, but to answer the LED question for many of his friends and neighbors.

To help demonstrate the differences, Carl went as far as to create a display to show the difference in regular incandescent and LED bulbs. The display has a regular incandescent 60 watt bulb, and four different types of LED bulbs including a single LED 60 watt equivalent, a flood light, a cool white fluorescent strip and a natural fluorescent strip. With this display Carl can demonstrate how much energy is being used and how much heat is being wasted, and use that to calculate energy savings.

What he learned is that LEDs have vastly improved and the prices are starting to come down, making them an excellent choice for anyone who enjoys the thought of only changing a lightbulb once every 20 years or so.

LEDs are 10 times more efficient than CFL bulbs and last 20,000-50,000 hours. LEDs don't have heat issues, like the old incandescent bulbs, and don't take time to warm up in frigid, below zero temperatures like those in the Copper Basin.

Carl now has LED floodlights illuminating his garage/work space and says they cost him only $1/month; he's so pleased with his results, he's now replacing lights throughout his house with LED bulbs.

If you're concerned about your lighting costs, Carl encourages you to consider lighting alternatives. He encourages you to do your homework and compare apples to apples by using the efficiency of the bulb; basically how many lumens per watt. As mentioned earlier, you can get this information on the Lighting Facts label on your lightbulb packaging. Carl is happy to answer any questions you might have and can be reached by email at cs5k@hotmail.com.

The bottom line….every time you change a lightbulb, buy a more energy efficient replacement; even though it costs more up front, you'll save money every time you flip on a light switch. ■

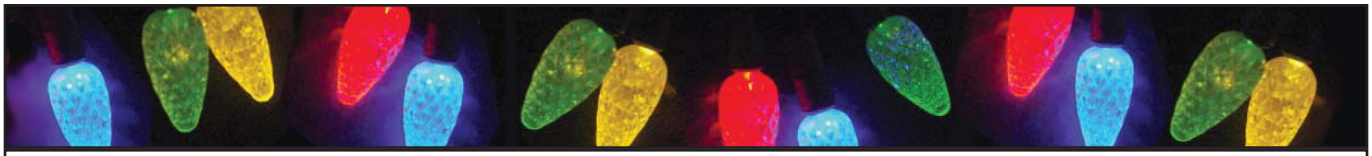
Learn more at www.energysavers.gov/Lighting
Source: energysavers.gov, energystar.gov, ftc.gov

Above Left, CVEA Director Carl Crosman comparing the heat generated by a typical 60 watt incandescent lightbulb and a new LED lightbulb.

Photo by Sharon Crisp

Above, examples comparing the brightness, light appearance, wattage, and cost of various LED lightbulbs and a typical incandescent. (cost based on 25 cents/kWh).

Photos and information by Carl Crosman



Deck the Halls with Cost-Saving, Energy-Efficient Lights

Holiday LEDs boast numerous benefits, including a variety of vibrant colors and big electric bill savings over traditional incandescent bulbs.

While LEDs are finally becoming more popular for everyday use, they've actually been popular for the holidays for a few years now. LEDs are finally on par with traditional holiday bulbs. Gone are the harsh, bright colors, they now come in warm, inviting colors with a variety of patterns and dimming speeds, giving you lots of creative options for decorating.

LEDs last longer than traditional lights, enough to last for 40 holiday seasons and they don't have glass or filament which makes them more durable. Because they're so much stronger, when one bulb goes out, it doesn't darken the whole strand.

LED bulbs use less energy, putting less strain on your electric bill; running them on a 6-ft. Christmas tree for 12 hours per day for 40 days can save 90 percent or more energy when compared to traditional lights. Because they use less energy, there's less risk of overloading the wall socket, and because they're cool to the touch, you reduce your risk of fire. *www.energystar.gov*