

## All about the Bulbs

March 18, 2011

You've heard plenty about the bulbs. You've even tried the bulbs. But what do you do if you know you should welcome a chance to live greener, but are still a little reluctant to make the big switch? On top of that, you know someday you will have to.

You learn more about them!

We can't deny the light bulb world is changing. From Edison's incandescent bulb of 1879, the need for more energy efficient bulbs are necessary. They are being replaced with compact fluorescent bulbs (CFLs) and light-emitting diodes (LEDs). What you may not realize is that the compact fluorescent is just a stepping stone to the LEDs.

Halogen light bulbs are another alternative. They will be available in maximum wattages of 29, 43, 53, and 72.

You might hear some people say they don't care for the light from a CFL bulb. Keep in mind they are continuously improving the technology and by 2014, we should have better lighting, at a better cost.

### **THE PHASE-OUT**

The goal: To save on electricity costs and limit pollution.

The timeline for incandescent bulbs:

January 1st, 2012 - 100-watt bulbs will no longer be manufactured.

January 1st, 2013 - 75-watt bulbs will no longer be manufactured.

January 1st, 2014 - 60 & 40-watt bulbs will no longer be manufactured.

This means that on January 1<sup>st</sup>, 2012, 100-watt bulbs cannot be manufactured anymore. You will still be able to buy them until the supply is exhausted. Those companies who make 100-watt bulbs may lower the wattage to a range between 88 and 92 allowing sales until January 1<sup>st</sup>, 2013.

Refrigerator bulbs, globes, shatter-proof and three-way bulbs are exempt from the phase out. However, they must be 70% more efficient.

## Some People are Disappointed

There are other complaints that the CFLs have a higher burnout rate in areas where lights are turned on and off frequently, such as bathrooms.

TWO important things to understand about the CFLs are about the **COLOR** of the light and the amount of light **OUTPUT**.

**Choosing the Right Color:** Light color is measured on the **Kelvin** scale (K).

Lower numbers mean the light appears yellowish and higher numbers mean the light is whiter or bluer.



## Choosing the Right Amount of Light Output

Try matching the lumen output (the quantity of light) with your old incandescent bulb.

<b>Incandescent Bulbs</b>	<b>Minimum Light Output</b>	<b>Qualified CFLs</b>
Watts	Lumens	Watts
40	450	9 - 13
60	800	13 - 15
75	1,100	18 - 25
100	1,600	23 - 30
150	2,600	30 - 52

### Can I use CFLs in enclosed light fixtures?

[GE Lighting FAQ's](#) recommends against using CFLs in totally enclosed, recessed fixtures because they create temperatures that are too high to allow the use of a compact fluorescent bulb.

[Seattle City Light](#) advises not to use standard CFLs in recessed cans and air-tight enclosed fixtures because of their heat sensitivity. They stress reading the *fine print* and only use CFLs that specifically state that they are for use in enclosed fixtures.

[Westinghouse](#) also discourages use of CFLs in enclosed indoor ceiling fixtures since these fixtures don't have any airflow, the temperature of the light bulb gets very hot, and the life of the CFL is shortened.

## Proper Disposal of CFL's

The only real drawback to using compact fluorescent bulbs is that each one contains about 5 mg of mercury. As a result, environmentalists recommend recycling CFLs so they don't end up in landfills. Here are 3 local sites who accept your used bulbs:

Richmond City Landfill Drop-Off Site  
5242 New Paris Pike  
Richmond, IN 47374  
(765) 966-0191

Lowe's  
Eaton Pike  
Richmond, IN 47374  
(765) 966-0191

Richmond Power & Light  
Customer Service Office  
44 South 8<sup>th</sup> Street  
Richmond, IN 47374  
(765) 973-7200

## What If a CFL Breaks?

Please take time to read the clean-up process from the [Environmental Protection Agency](#).

The site guides you through these detailed steps:

- Empty the room of people and pets
- Open a window
- Turn off heat/air conditioner
- Gather cleanup materials
- Carefully scoop up glass
- Use sticky tape
- Wipe with damp paper towels
- Determine if you need to vacuum
- Seal bulb debris and materials in a bag
- Wash your hands
- Air the room out for several hours

## LEDs are the Next Generation for the Home

The reasons LEDs have not yet replaced CFLs from the market are twofold: the first generation LED bulbs had a narrow and focused light beam and they are more expensive than the CFLs. However, both of those issues are on a decline because LEDs are being manufactured with wider beams so you will see them with standard bases which fit common household light fixtures. The greatest news is that the prices are coming down.

**The Pros:**

- Extremely energy efficient (75% less consumption than incandescents)
- Longer-lasting (approximate 20 year life-spans)
- Lights up immediately (not always the case with CFLs)
- Very durable
- Cool (they do not cause heat build-up)
- Mercury-free
- Uses only 2-10 watts of electricity (1/3rd to 1/30th of Incandescent or CFL)

**Cons:**

- Many are built into the light fixture
- Still a little expensive

The following comparison chart illustrates the value of the latest LED bulbs when compared with CFLs and incandescent for overall efficiency as well as cost-effectiveness.

### Compare LEDs, CFLs and Incandescent light bulbs

	LED	CFL	Incandescent
Projected lifespan	50,000 hours	10,000 hours	1,200 hours
Watts per bulb to equal a 60 watt bulb	6	14	60
Average cost per bulb	\$33.95	\$3.35	\$1.20
KWh of electricity used over 50,000 hours	300	700	3000
Cost of electricity at 0.08 per KWh*	\$24	\$56	\$240
Bulbs needed for 50k hours of use	1	5	42
Equivalent 50k hours bulb expense	\$33.95	\$16.75	\$50.40
Total cost for 50k hours	\$57.95	\$72.75	\$290.40

\*Average KWh at Richmond Power & Light (3/17/11).