

## How Much Carbon & Cost Does a Light Bulb Save?

Incandescent bulbs have been banned because they waste so much power. “Swirly” compact fluorescent lamps (CFL) have been replaced by more efficient LED (light-emitting diodes) bulbs.



Unless you’re operating on renewable power, Louisville-area light bulbs run on power from fossil-fueled power plants—whose emissions harm health and include global warming, greenhouse gases (GHG).

Here’s how to replace your incandescent and CFL bulbs with LED bulbs and calculate how much money and carbon pollution you would save:

1. List the incandescent or CFL bulbs you’re using. Note their wattage and light output (lumens), and whether you’d prefer any of them to be brighter?
2. Visit a hardware, home goods or home-improvement store to choose LEDs:
  - a. Rated the equivalent wattage or similar (or higher, if desired) lumens (LEDs are very bright; use no more than 10W for outdoor fixtures.)
  - b. Rated “Energy Star” for durability
  - c. Rated warm white, cool white or daylight (Be consistent; don’t mix light colors. Most people prefer warm white at home. Avoid using daylight outdoors.)
3. Complete the table on the back of this handout, referring to its example, to compute your annual dollars saved and GHG emissions prevented.

Fluorescent bulbs contain the potent neurotoxin mercury. Please dispose safely: <https://louisvilleky.gov/government/public-works/services/hazardous-materials-disposal-haz-bin>

Learn more at <https://www.louisvillecan.org/lighting>

The example below is for substituting **one**, 10W LED bulb for a comparable 60W incandescent bulb. Substituting a 10W LED for a 15W CFL “swirly” bulb saves \$1.09/year and 19.3# of greenhouse gases each! Either way, it adds up!

A	B	C	D	E	F
(Old – New)	$A \div 1000$		$B \times C \times 52$	$D \times \$0.10^*$	$D \times 1.77\#$
<b>Reduced Wattage</b>	<b>Reduced Kilowatts (kW)</b>	<b>“on” hrs/wk</b>	<b>kW-hours (kWh)/year</b>	<b>\$/year saved</b>	<b># GHG reduced</b>
60W -10W = 50W	0.05	42	$0.05 \times 42 \times 52$ = 109	109 x \$0.10 = <b>\$10.92</b>	109 x 1.77# = <b>193#</b>

\* Commercial customers substitute \$0.12/kWh commercial rate for the \$0.10/kWh residential rate when computing \$/year saved (column E).

\*\* Based on 2020 data from the [2023 Kentucky Energy Profile](#)