

# As seen in *Colorado Country Life*: “Need to know” tips of LED lighting

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As the project specialist who manages LPEA’s lighting rebates, I’m regularly fielding questions our members have about upgrading their lighting to energy efficient LED (light-emitting diode) lamps.

A light-emitting diode, or LED, is a type of solid-state lighting that uses a semiconductor to convert electricity into light. Today’s LED bulbs are much more energy efficient than incandescent lights and cut energy use by more than 80 percent.

As your incandescents burn out, it’s a good time to switch to LED bulbs. But remember, the bulbs are still considerably more expensive. The impressive lifespan of 20 years or more helps justify the purchase, plus LPEA offers rebates to encourage members to upgrade. Still, it pays to do some homework.

**Tip #1:** You can’t realize energy efficiency if a lamp isn’t on. Change out the lamps that you use the most to maximize the energy savings and justify the additional cost of the bulb. As a guideline, switch to LEDs with bulbs that are on three hours or more a day. Typically, 20 percent of your lamps produce 80 percent of a lighting load.

**Tip #2:** It’s not about watts anymore! Get a sense of brightness in lumens. The higher the lumen light output, the more light emitted. Compare wattage in the bulb to be replaced with the LED lumens to get the equivalent light output. Older people require more light (at age 65 we need twice as much light to see as well as we did at age 20), and are much more sensitive to glare. See the adjacent chart for a watts-to-lumens comparison.

**Tip #3:** LEDs can display different hues – a color range from warm reds to a spectrum of cool whites. To replace the light of a typical incandescent bulb in your home, look for “Warm White” or “Soft White” on the packaging. Bulbs labeled as “White Light” or “Daylight” produce a whiter light often used for outdoors, shops and task lighting.

**How Much Light Do I Need?**

Incandescent Bulbs WATTS	Minimum Light Output LUMENS
40	450
60	800
75	>1,100
100	1,600
150	2,600

**Tip #4:** Most LEDs can be dimmed, however LEDs consume such a low wattage, many existing dimmers made for high wattage incandescents may not function well. Read the packaging and ask a knowledgeable salesperson before you purchase LED bulbs and dimmers. Use the LED manufacturer recommended low wattage dimmers or find LED bulbs compatible with traditional dimmers.

**Tip #5:** Thermal Management: Don’t enclose that LED! LEDs DO produce a small amount of heat, so if placed in an enclosed housing, the heat will have no place to go except back to the bulb, thus reducing the life of the lamp. Look for LEDs designed for enclosed spaces or those built into the fixture.

Still have questions? Join us for a Lunch & Lights workshop, which are held regularly throughout the year. Visit [www.lpea.coop](http://www.lpea.coop) to sign up for email alerts, or contact me, 970.382.7770 or [rpierrotti@lpea.coop](mailto:rpierrotti@lpea.coop).

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