

SUSTAINABLE LIVING GUIDE: 62. HOW TO SHOP FOR LOW-ENERGY LIGHTBULBS¹

Emily Main[©]

It was on this day, October 21, 131 years ago, that Thomas Edison successfully tested the first lightbulb sold to the public. Yet, despite the Industrial Revolution that followed that bright idea, we're still using essentially the same bulb nearly a century and a half later. True, incandescent bulbs are getting more efficient, especially since Congress decreed in 2007 that the bulbs needed a 30 percent improvement in energy use by 2014. But for people who wanted to save money—and protect the environment—by using lower-energy bulbs, the only alternative for the past decade or so has been compact fluorescents. They can be unreliable, and pose a small risk of mercury exposure if broken.

THE DETAILS: Compact fluorescent bulbs (CFLs) are still a good, energy-saving choice for the budget-minded, says Brian Clark Howard, coauthor of a new book called *Green Lighting* (McGraw Hill, 2010) and Web editor of TheDailyGreen.com. But early adopters might want to consider light-emitting diode (LED) lightbulbs that are nearly 90 percent more efficient than incandescents and about 40 percent more efficient than CFLs. For a while, they cost more than US\$50 a piece but they're getting cheaper and better suited to overhead light fixtures and table lamps.

"LEDs have come a long way over the past year," Howard says, "And they come considerably closer to replicating the light quality and output of incandescents" than earlier LED bulbs did. Whereas, earlier versions of LEDs were used in flashlights, traffic lights, and task lamps that required very focused lighting, newer bulbs are better at projecting the ambient light most of us like from incandescents, he adds.

The "color temperatures" (whether a lightbulb puts out a nice warm glow or that cold, public-bathroom-like blue color) of LEDs are still cooler than incandescents, he says, "but I find this newest generation considerably better, and also I prefer it to fluorescents, which I think are harsher."

WHAT IT MEANS: LEDs are still more expensive than incandescents and CFLs, ranging in price from US\$20 to US\$50, but if you don't want to mess with the mercury issue or just don't like CFLs, they're worth the investment, says Howard. Some LED bulbs can last as long as 19 years. "They will absolutely pay for themselves in a few years with normal home use," he adds.

If you are interested in splurging on some LEDs, Howard offers a few shopping tips:

Buy from major retailers. Some LED manufacturers attracted bad press recently by selling LED duds, so to make sure you get your money's worth, Howard suggests sticking with major brands. Philips, GE, and Sylvania are all coming out with LED bulbs for home use, he notes, and Home Depot is debuting some under its in-store EcoSmart brand for about US\$20 each. He has tested the EcoSmart bulbs and gives them a thumbs up, and also recommends the Pharox 300 bulbs made by a company called Lemnis, which run about US\$30 each.

¹ Rodale News, October 22, 2010

One last benefit to buying from major companies is that the bulbs often come with warranties, so if they burn out faster than their stated life span, you may be able to recoup some of the cost.

Know your Kelvins and lumens. Buying lightbulbs has become a bit of a science experiment, now that shoppers can't rely on wattage or terms like "soft white" to help them separate a really bright bulb from one with less power. Rather than use wattage as a measure of light output, look on a bulb's package for its lumen output. A 300- to 900-lumen LED bulb (which uses 6 to 8 watts of energy) puts out roughly the same amount of light as a 60-watt incandescent, and a 1,600 lumen LED bulb (using about 13 watts) would work well in a reading lamp, putting out the same amount of light as a 100-watt incandescent.

Kelvins (k) are a measure of color temperature; the lower the Kelvin temperature, the warmer the light, and vice versa. Warm light, similar to an incandescent bulb's, runs 2,700 k, while cooler light is 3,500 k. Bulbs with 5,000 k or more are most similar to daylight and are best for outdoor flood lamps or garage workspaces.

Try it out. If all that just seems too confusing, be willing to experiment, says Howard. If the store doesn't have a display where you can test them out, buy one and use it in a few fixtures at home. "If you hate it, you can ask the store to give you an exchange or put it somewhere where it's less critical," he says. "Even in a closet, an LED will save you money eventually."