

Are we moving too fast with LED lighting?

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By Lisa Cohn

With lighting making up about 20% of all energy used in the U.S. — and 40% of energy use in commercial buildings — the race is on to take advantage of the most efficient sources of light. But will this rush lead to bad decision-making?

That's the concern over light-emitting diodes, or LEDs, which are seen by some as a more environmentally sound alternative to compact fluorescent lights. In recent years we've seen a big push to install CFLs because they are about five times as efficient as incandescent light bulbs.

The problem with CFLs, however, is they contain the hazardous chemical mercury, which makes it difficult to dispose of them safely. And they pose safety hazards if they break and expose people to the mercury inside.

LEDs, on the other hand, don't contain mercury. They also have the potential to last a lot longer than CFLs. As for efficiency, they're pretty similar, says Jon Lin, commercial programs manager for Northeast Energy Efficiency Partnerships. "But wait a minute," adds the partnership's media manager, Carrie Nash, "LEDs are improving at blinding speed."

As for cost, it all depends on who you talk to. An LED at a local hardware superstore will cost about \$50, while a CFL runs about \$2, says Lin. LED manufacturers claim lower costs. For example, Bridgelux offers its Helion LEDs for \$20, and claims it is the lowest-cost solid-state module on the market, yielding a payback of about two years. The unit consumes up to 80% less than standard light sources and every part of it can be recycled, says Joanna Andrade, a company spokeswoman.

LEDs appear to be the clear leader in the push toward green lighting solutions. But there are too many questions about LEDs to embrace them so quickly, says Ron Harwood, president of Illuminating Concepts, in Farmington Hills, Mich.

Their light quality is not always acceptable, he says. The hue or color of the light is often too green or blue for consumers' tastes.

What's more, they emit more heat than some claim. And they may not always be safe.

"Just because it fits in the fixture and 'turns on' does not mean it is safe," he says. There's no way to know if LEDs are safe unless they have been tested by UL or other certified labs.

Given that LEDs are still being developed and in some cases don't deliver the same light quality as other products, just how hard should the U.S. government push their use?

That's a tough question, given their potential.

The Obama administration is now offering energy efficiency and conservation block grants to states, and in some cases these grants require that a portion of the money be spent on retrofitting existing light sources with more efficient sources, says Harwood. In some cases, the criteria don't name but seem to specify LEDs, he adds. "In effect, the government has dangled a big carrot in front of cities and states, through grant offerings, to begin retrofitting street lighting and interior lighting with LEDs."

It's too early to do that, he argues.

Instead, the most sensible option is to use LEDs for now where they're most effective and pose no safety hazards. Those applications include outdoor landscape lighting, night lights in offices and as alternatives to neon signs, says Harwood.

Nash agrees that we need to take a go-slow approach to LEDs. "For now, early adopters are willing and anxious to take the leap. It is imperative for the lighting industry and the efficiency community to protect today's consumers from poor quality and poor performers, to educate and inform them, and to steer them toward high quality."

If consumers are exposed to early models of LEDs and don't like them, they may end up steering away from them, even a few years from now, when the LEDs are better developed.

As Harwood says, if the Obama administration moves too quickly to fund the adaptation of LEDs, we may have little or no federal funding left for LEDs when they're mature and best suited to work their magic. *i*