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GreenSpace: Goodbye to Edison's bulb: LEDs bring 'new age of light'

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For those who cringe at energy-guzzling incandescents but still hate the icky light and mercury of compact fluorescents, 2010 is the year you've been waiting for.

Big-box stores are already reconfiguring their lighting aisles, making way for a super-efficient - albeit expensive - newcomer, the light emitting diode, or LED.

With LEDs, lighting is changing faster now than at any point since Edison invented the incandescent bulb in 1879, industry officials say.

"You're going to see an explosion of products and applications," says Kevin Dowling of Philips Electronics, one of the major bulb manufacturers. "What we're seeing in 2010 is a new age of light."

Among the pluses of LEDs: They are 80 percent more efficient and last up to 50,000 hours - longer than your roof. You could keep it lit four hours a day for 30 years and still bequeath it to your children.

The hurdles were that the light was both dim and distinctly bluish, and the price was prohibitive.

So while LEDs worked in nightlights and holiday lighting - a hugely popular application - the holy grail was an LED to sub for a 60-watt incandescent to work in the end table lamp. Early versions have been available at niche online sites.

About a year ago, C. Crane Co. brought out its GeoBulb, which was very nearly as bright as a 60-watt incandescent but consumed only 7.5 watts. It was \$120.

But prices are plummeting in LED land.

A few months ago, owner Bob Crane dropped the price to \$99. Last week, he dropped it again, to \$69.95. It comes in three versions, from warm white to cool, and the wattage is down to seven.

Other companies - Lemnis Lighting Inc. and Array Lighting - have bulbs I've also been testing at home. They work great and cost roughly \$40 to \$50. But they're not the only ones.

Now, the big bulb companies are getting into the act, planning major LED debuts in 2010. Many are starting with "downlights" - for spotlights, accent lights and track lighting - which takes advantage of the fact that LED lighting is directional.

GE is putting a bevy of LED downlights plus a candelabra bulb for chandeliers in stores such as Target, Home Depot, and Wal-Mart. If they're not in your neighborhood store, bug the manager.

Sylvania's LED replacement for the 40-watt incandescent will be in 300 Lowe's stores nationwide by January. (They're also available online for \$29.99.)

Philips is putting about 20 lamp products into Home Depot stores in coming weeks.

Alas, unlike Crane and a few other small companies, none of the mainstream manufacturers has introduced a suitable LED replacement for the 60-watt incandescent in that end table lamp - the most popular wattage in the U.S., with about 425 million sold a year.

Philips has come up with a prototype, however, which is the first entry in the Department of Energy's "L Prize" competition, launched to spur development of the 60-watt replacement.

According to the DOE, subbing out the nation's 60-watt incandescents with LEDs could save enough energy in one year to power the lights of 17.4 million households.

None of this is coming too soon. New national efficiency regulations for light bulbs will result in a phase-out of the incandescent bulb starting in 2012.

Meanwhile, the economics are starting to work.

A research firm, Cleantech Approach in New York City, concluded in October that the residential payback rate for an LED is shy of three years if you're replacing an incandescent or halogen bulb.

That jumps to just north of five years if you're replacing a compact fluorescent. But, says partner David Raezer, "the industry is improving . . . It's only going to get more compelling."

Crane says LED bulbs start to make economic sense at electric rates of 12 cents or more a kilowatt hour; in this region, rates are roughly 15 cents and above.

If you don't see what you need now in the lighting aisle, just wait a bit. "Every three to six months we get improved LEDs that offer more light for the package or lower cost for the package," says GE's Gus Lanese.

LEDs are supposed to be so big eventually that the Federal Trade Commission has proposed new labels for light bulbs that are based on light output - lumens - rather than wattage, the energy to produce the light. That would unsaddle the industry from the endless "watt equivalent" labels, which very soon will make very little sense.

For those who want to start with LEDs, officials advise picking a light that's on many hours a day - say, in the kitchen. Or at least not a place where it can be easily swiped. Expand from there.

After all, LED is a whole new way to see the light.