

LED Bulbs for the Home Near the Marketplace

The prospects of replacing today's inefficient incandescent light bulbs with long-lasting, low-power LEDs are increasing. Two of the lighting industry's three biggest manufacturers, Osram Sylvania and Philips, plan to sell energy-efficient LED bulbs this year that can replace a 60-watt bulb. **The third company, General Electric, will sell an LED equivalent to a 40-watt bulb this year.**

Beginning in January 2012, federal law will require that light bulbs, or lamps as the industry calls them, will need to be 30 percent more efficient than current incandescent bulbs. Standard incandescent lamps will most likely not be able to meet those requirements. LED makers hope their bulbs will. Osram's Ultra bulb, available in August, and Philips's EnduraLED, which will be in stores **in the fourth quarter, will use just 12 watts of power to equal the light output of a 60-watt bulb.**

"The 60-watt lamp is the most-sold bulb in America," said James R. Brodrick, the manager for solid-state lighting at the Energy Department. "These new bulbs should give consumers something to think about." The LED bulbs use 20 percent of the power of a current incandescent bulb and last up to 25,000 hours, compared with 2,000 hours for a standard bulb and 8,000 for a compact fluorescent. That's 17 years if the bulb is on four hours a day.

The companies say that, unlike compact fluorescents, these new LED lights completely mimic standard bulbs. They are dimmable, create light in all directions, and display virtually the same warmth and range of colors as incandescent bulbs. And most important, they work. "In our research, we mixed up these new LED lamps with regular bulbs, and when asked which was which, most selected the wrong lamps," said Guido van Tartwijk, a Philips group manager.

Unlike earlier versions, the new LED lamps look more like common light bulbs. The first products were heavy, with other-worldly metal fins attached to dissipate heat. Makers have now shrunk the fins and better incorporated them into the design. The major players are eager to begin selling the replacement lights, so people do not sour on LED lamps the way they did when poorly made compact fluorescents were first sold. Early compact fluorescents were plagued with harsh white light and short life.

"Some early LED lamps have performed so poorly we've removed them from the market," Mr. Brodrick said. This October, G.E. will introduce Energy Smart, its 40-watt LED equivalent that uses 9 watts of power; a 60-watt equivalent will be announced in a few months. "We decided to come out with a 40-watt lamp first so that we can meet Energy Star specifications," said Steven J. Briggs, a vice president for marketing at GE Lighting. "We want to make best-in-class products."

With the major players about to enter the LED market with products aimed at consumers, the big question shifts from quality to price. GE expects its 40-watt equivalent to cost \$40 to \$50, while both Osram Sylvania and Philips think initial retail prices could be about \$60. A lesser-known maker based in Satellite Beach, Fla., the Lighting Science Group, has said that its new 60-watt equivalent, Definity LED, will also be available later this year and cost around \$30.

All three major companies say they are working with regional utilities to offer rebates that could lower the price to something that could immediately be affordable. "By 2012 or 2013, we'll get the price down to around \$20," said Mr. van Tartwijk of Philips.