

Efficient bulbs will light the way

By law, incandescents are on their way out

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NEW YORK -- Light-bulb makers have revamped some plants, closed others and invested enormous sums of money in preparation for a technological shift that they think will revolutionize the industry.

Yet the fact that the incandescent bulb, which has remained largely unchanged for more than a century, is about to be phased out by law is lost on the vast majority of the public.

The phaseout of the iconic light bulb begins in three years as part of the energy bill signed in 2007. They will be edged out by light-emitting diodes, or LEDs, made from semiconductors, and compact fluorescent bulbs, known by their twisty, tubular shape.

New regulations require, for example, that a typical 100-watt bulb be replaced by one that provides the same amount of light with 72 watts. Light bulbs will have to be even more efficient by 2020.

The author of the energy bill's lighting provision, Sen. Jeff Bingaman, D-N.M., said at the time that incandescents "will be virtually obsolete" by 2014.

Osram Sylvania, one of the world's largest bulb producers, commissioned a survey to find out whether the public agreed, only to find out that 80 percent of Americans don't know the light bulb, as we know it, is on the way out.

Major bulb manufacturers and retailers are meeting in Dallas this week to find ways to incorporate LEDs into more products, but they have been in transition mode for years.

General Electric has closed lighting plants in Brazil, Mexico and the U.S., and Osram Sylvania is modifying existing plants.

The European Union will start phasing out incandescent bulbs in September.

Specialty incandescent bulbs -- such as those used in appliances -- will be available on a limited basis.



FILE PHOTO

An LED floodlight, such as this one from Lighting Science Group Corp., is much more efficient than other bulbs.

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**Terry McGowan
American Lighting
Association**

The cost of switching over to LEDs and compact fluorescents could be a jolt to some consumers.

Royal Philips Electronics introduced a line of LEDs in Europe last year for about \$90. General Electric's base LED bulb sells for about \$35 to \$40.

Prices will come down as technology improves, said Charlie Jerabek, president and chief executive of Osram Sylvania.

And the new bulbs do eventually pay off, economically and in efficiency. A recent study by Rensselaer Polytechnic Institute in Troy, N.Y., estimates that global financial savings from LEDs could exceed \$10 trillion within 10 years because they last much longer.

Americans keep about 73 million lights on every day for a period of between four and 12 hours, with about 28 million powered by energy-efficient bulbs, according to the Department of Energy.

The new lighting standards coming online are expected to lower consumers' annual electricity bills by \$13 billion in 2020.

Incandescent bulbs, invented by Thomas Edison more than 120 years ago, brighten a room by heating a metal filament in a vacuum, but they waste large amounts of heat.

Compact fluorescent bulbs contain a gas that reacts with electricity to create invisible ultraviolet light. When that light hits material inside the bulb, it is converted into ordinary light.

But some people find the light from compact bulbs harsh, and the fluorescents contain mercury, which is toxic, so they shouldn't simply be thrown in the trash.

LEDs emit very little heat, do not contain mercury, are about 40 percent more efficient, and if installed correctly, last for more than 50,000 hours.

For lighting engineers, LEDs have become the new playground. They can be designed to change colors and have multiple applications, from mood lighting in the living room to the harsh environment of a rock concert.

"The way we interact with lighting systems is going to change dramatically," said Terry McGowan of the American Lighting Association. "It's limited only by your imagination, or your budget."

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