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This Little LED of Mine

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Tony Cenicola/The New York Times

Sales of bulbs using light-emitting diodes, like the one at left, are expected to increase sharply -- partly because some consumers complain about the bluish light produced by another energy-saving variety, compact fluorescents, like the one at right.

By DIANE CARDWELL

Nancy Finkelmeier tried to make the switch more than a year ago. After hearing that the long life of compact fluorescent bulbs would help her avoid changing the lights in her 15-foot ceilings so often, she got rid of her traditional incandescent bulbs in favor of the new ones.

But there was a problem. "I don't like that cool blue light that it emits," said Ms. Finkelmeier, a retired nurse from Cincinnati.

So she made another switch, to bulbs using a different technology called the light-emitting diode, or LED. It's a change that regulators and manufacturers, frustrated by consumer rejection of compact fluorescents, hope that others will make as well, especially the millions who have stuck with their energy-guzzling traditional incandescent bulbs, even hoarding them as stricter efficiency standards phase out most of them.

For several years, manufacturers have been making LED lights that increasingly mimic incandescents, while steadily bringing down their prices. Big-box retailers like Walmart are jumping into the market, offering their own brands of the bulbs, often for \$10 [2023 \$1.50] or less.

Regulators are getting involved, too. The Environmental Protection Agency recently finished overhauling lighting standards for its Energy Star program, making it easier for more LEDs to qualify for generous discounts. And California, a leader in all things green, is going even further, with elaborate new requirements to control not just how much electricity the bulbs use but how the light feels.

"We want a lamp that people fall in love with," said Gary Flamm, supervisor of the building standards development unit at the California Energy Commission, adding that with compact fluorescents the push toward low prices and high efficiency had sacrificed light quality. "Once they fall in love with it, they can all save significant energy over the incandescent."

Nationwide, incandescent bulbs, including newer, more efficient halogen models, accounted for roughly 75 percent of general lighting sales this year, according to the National Electrical Manufacturers Association, a trade group, with compact fluorescents making up most of the balance. Manufacturers concede that early versions of the compact fluorescents did not meet expectations for light quality and longevity. Despite advances that have improved their performance, consumers still tick off a host of complaints about the squiggly bulbs: They take time to light up, they do not dim smoothly, they don't fit with clip-on shades and, worst of all, they cast a harsh and unflattering light. They also contain mercury, raising concerns about breakage and disposal.

"I would, in a way, pay anything to avoid fluorescent," said Laura Stein, an artist who was picking up several different LEDs to try from a Manhattan Home Depot last week. "I can't stand them — I've always hated them and I will not use them."

Millions of consumers have come to the same conclusion, even though compact fluorescent bulbs use about 75 percent less electricity than standard incandescents.

LEDs offer a different proposition. Until recently, customers like Ms. Stein could pay about \$30 for a bulb — a significant premium even though electricity savings and a life span that extends into the decades can make up the difference in the long run. But several manufacturers — including well-known brands like General Electric, Osram Sylvania and Philips and newcomers like Cree — began offering bulbs for around \$10 or less this year. [2023 less than \$2].

The drop in price has helped increase demand for them, retailers and manufacturers say, although they still represent only about 1 percent of the bulbs in American homes, according to industry estimates. In the last few years, LED sales have doubled at retailers like Home Depot and Bulbs.com, executives there said, reaching roughly 20 percent of their lighting totals.

Ms. Finkelmeier, for instance, said she was very happy with the warmer light from her LEDs as well as with the savings on her electric bills.

LED sales are expected to sharply increase, especially given the steep subsidies utilities pay manufacturers and distributors to bring prices even lower by the time the products reach the lighting aisle. "We want to invest heavy now because we feel this is where the future is going to be," said Caroline Winn, vice president for customer services at San Diego Gas and Electric.

The subsidies — which are ultimately paid by ratepayers — generally go only to lights carrying an Energy Star designation. To get it, compact fluorescents and LEDs must use only a certain amount of energy and meet a variety of other requirements, like dispersing light in all directions and accurately rendering the color of objects they illuminate, that make them seem more like traditional bulbs.

California is taking the color requirements, among others, for LEDs even further. The specifications are voluntary, but only bulbs that meet them can qualify for utility rebates, potentially giving them a price advantage over other bulbs, even those that meet Energy Star guidelines.

"We're not going to spend public dollars on a lamp that doesn't meet this," Mr. Flamm said, "but people can still sell a noncompliant lamp in California."

Manufacturers are split on whether to pursue making LEDs for the California market.

Cree, which began marketing LED bulbs this year, has a product on shelves that it says meets the specifications. Sylvania says it expects a number of its bulbs to qualify and General Electric says it is considering making one.

But Philips is taking a different approach, said Todd Manegold, director of LED lamps at Philips Lighting North America, dismissing the higher color standard as meaningless to customers.

“What we’re focused on at the moment is actually making things like a typical 60-watt more affordable.”

Although the nation followed California in phasing out most standard bulbs, the federal government and other states may not follow this time.

“There is a place in the market for some of these high-color, high-quality products, but for the average consumer, I think it is perhaps not necessary,” said Dan Mellinger, lighting strategy manager of the Vermont Energy Investment Corporation, which operates the state’s Efficient Vermont energy conservation program. “Of course better color is always good — who wouldn’t want that? — but it comes at a surprisingly significant cost and efficiency penalty.”

European regulators have also been pushing consumers to switch to more efficient bulbs. Last year, the European Union completed its phaseout of 40-watt bulbs, the last common incandescent model still available.

In the end, consumers now face a bewildering choice. Customers who once walked into a store looking for a familiar measure of wattage are now being confounded by a dizzying array of technologies, shapes, brand names and hard-to-translate measures of brightness, energy consumption and appearance.

“I actually start hyperventilating in the light bulb department: sooooooo confusing,” Ms. Finkelmeier wrote in an email. She later said: “My problem has been, as in most houses, you’ve got all these different kinds of fixtures with different bases and you go in there and there’s words like Par 30, and the lumen thing. I am unclear how that translates.”

Karla Brizzi, a retired high school English teacher who lives in a suburb of Des Moines, also does not like compact fluorescents, and has relegated them to places like the laundry room where the light quality is not so important. But when she needs, “a good clear light,” she uses Philips Halogena bulbs, a type of incandescent that meets the new national standards but is much less efficient than compact fluorescents or LEDs.

“I’m old,” she said. “I want to be able to see.”

She likes them so much that she bought a case lest they, too, become unavailable. “I thought, by golly, I’m going to have these until I die.”

<http://www.nytimes.com/2013/11/02/business/energy-environment/this-little-led-of-mine.html>



Tony Cenicola/The New York Times

Comparing the light quality of, from left, a Sunlight compact fluorescent bulb, a Cree LED, and a GE incandescent.



J. Emilio Flores for The New York Times

A display of Cree California-compliant bulbs being sold at a Home Depot store in Burbank.