

Lights out for incandescent bulbs

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The incandescent lightbulbs that have been illuminating American homes and businesses since Thomas Edison first unveiled them in 1879 are finally coming off U.S. shelves.

After years of political and regulatory fights over everything from the bulbs' costs to their effect on former President Donald Trump's face color, the Department of Energy is starting this month to fully enforce rules that phase out nearly all the products.

Along with prohibiting the manufacture, import and retail sales of most incandescent bulbs, the rules finalized last year authorize DOE to slap penalties of [\\$542 on companies per each violation](#). That could mean millions of dollars in fines for large incandescent orders.

DOE enforcement is expected to further entrench U.S. market dominance for more efficient, light-emitting diode (LED) lightbulbs. Environmentalists and efficiency advocates, who have long touted the regulations as important for cutting greenhouse gas emissions, are now taking a victory lap.

"For the garden variety lightbulb, the era of the incandescent bulb has come to an end," Andrew deLaski, executive director of the Appliance Standards Awareness Project, said in an interview.

The lightbulb regulations, which DOE says could cut [222 million metric tons of carbon dioxide emissions](#), are part of a wave of Biden administration efficiency rules on home appliances ranging from gas stoves to consumer water heaters. DOE says "past and planned" efficiency rules under the administration will, over the next 30 years, cut \$570 billion from U.S. utility bills and avert 2.4 billion metric tons of greenhouse gas emissions.

Industry representatives say the sweep of regulations on various appliances will [spike upfront costs for consumers](#) in the market for appliances. Republican lawmakers on Capitol Hill [argue the Biden administration is waging a back-door campaign](#) to ban gas stoves and other appliances.

Under the new lightbulb rules, DOE [is expanding the list of regulated bulbs](#) and [imposing an efficiency standard](#) set by Congress in 2007 — 45 lumens per watt. While there's no direct ban on incandescent bulbs, experts say most — if not all — of the products can't meet the efficiency standards, meaning they do not provide enough light per watt used. LEDs can easily meet the standard with existing technology.

Incandescent bulbs provide light by heating a filament with an electric current until it glows, while LED bulbs pass an electric current through a microchip, which illuminates the diodes. LEDs last 25 to 50 times longer than incandescent bulbs, according to DOE.

The main industry group representing lightbulb manufacturers and importers, the National Electrical Manufacturers Association (NEMA), says companies are falling in line with the regulations.

"NEMA members are complying and ready to meet the enforcement deadline," Alex Baker, director of regulatory affairs at NEMA, said in a statement.

NEMA had previously contested the rules, arguing in a comment to DOE last year that industry challenges "preclude an immediate or even short-term effective date for any implementation of a 45 lumens per watt" standard. NEMA urged DOE to postpone implementation.

Roughly half of American households used LEDs in 2020, according to a U.S. Energy Information Administration report last year. Less than a decade ago, that number was approximately 4 percent of households. NEMA declined to provide internal data on incandescent sales.

After finalizing the lightbulb rules last year, DOE kicked off a period of progressive enforcement, which included the option to issue warning notices and reduced penalties. That lax approach elapsed at the end of 2022 for manufacturers and importers. Distributors and retailers were given seven additional months.

In April of last year, the department identified [July 2023 for full enforcement](#). Last week, DOE confirmed that full enforcement "has been underway," but did not say what day of the month it started.

Still, the regulations aren't the death knell for all incandescent bulbs.

Manufacturers will still be able to produce and sell varieties that are less than 310 lumens overall, which covers the dimmest bulbs. Lumens are a measure of brightness and light. Some of the most efficient lightbulbs now produce 5,000 lumens.

Lawmakers also exempted some bulbs in the 2007 legislation, including varieties used today in black lights, plant lights, outdoor signs and other applications. The Biden administration is reversing one of those exemptions. Incandescent reflector lamps, which are often used in track lighting, will now be regulated with the other incandescent bulbs.

'They can go after you'

For retail stores, the lightbulb regulations represent a new challenge. DOE typically exempts them from efficiency regulations, preferring to regulate importers and manufacturers further up the supply chain. This time, however, retailers were included.

"They can go after you if you're a brick-and-mortar store, an online retailer, a distributor, an importer. They can go after anyone in the [supply] chain they want," said Daniel Eisenberg, an attorney with Beveridge & Diamond PC. "It's going to impact a much wider sector of the economy than the typical Department of Energy appliance efficiency standard does."

The Retail Industry Leaders Association (RILA), which represents large retail stores like Lowe's and Home Depot, said its members are complying.

"The DOE one-year enforcement discretion seems to have been sufficient time for most of our members," said Melissa Murdock, a spokesperson for RILA. "We haven't heard additional concerns from retailers on this recently."

Lowe's and Home Depot did not respond to requests for comment. DeLaski said early signals point to compliance.

"I've been checking shelves in stores throughout this year, and major retailers have stopped selling noncompliant incandescent light bulbs," he said.

Still, Eisenberg says penalties could materialize soon.

"I would not read anything into the absence of [lightbulb] enforcement showing up yet," said Eisenberg. "I would expect, over the next year or two, we would start to see them pop up. And even that might just be the tip of the iceberg in terms of what's going on behind the scenes."

DOE declined to comment on whether it has issued warning notices for potential violators. Since the regulations were finalized, DOE has not issued any public enforcement orders or other penalties for lightbulb violations.

The enforcement deadline follows many lightbulb regulatory battles. In the waning days of the Obama administration, DOE published an expanded list of bulbs to be covered by regulations. Then, the Trump administration blocked that rule.

Trump also turned the issue into a political talking point, saying in 2019 that LED bulbs are "[no good](#)" and that they make him "look orange."

With 15 months until the next presidential election, environmentalists are bracing for a potential Republican takeover that could upend the Biden administration's aggressive action on climate change.

But for lightbulbs, that could be a challenge. Because the 45-lumen standard was passed by Congress, experts say lawmakers would have to pass new legislation to reverse the regulation.

Still, Eisenberg said a future Republican administration could potentially exempt more types of incandescent bulbs from the regulation.

“It’s possible a future administration could try to scale back the scope of the standard by again trying to narrow the definition” of incandescent bulbs, Eisenberg said.

DeLaski is banking on the success of LEDs, pointing to their current dominance in the market.

“With such a huge variety of low-cost LEDs on the market meeting every market niche, it’s hard to imagine any reason to roll back the standards,” he said.