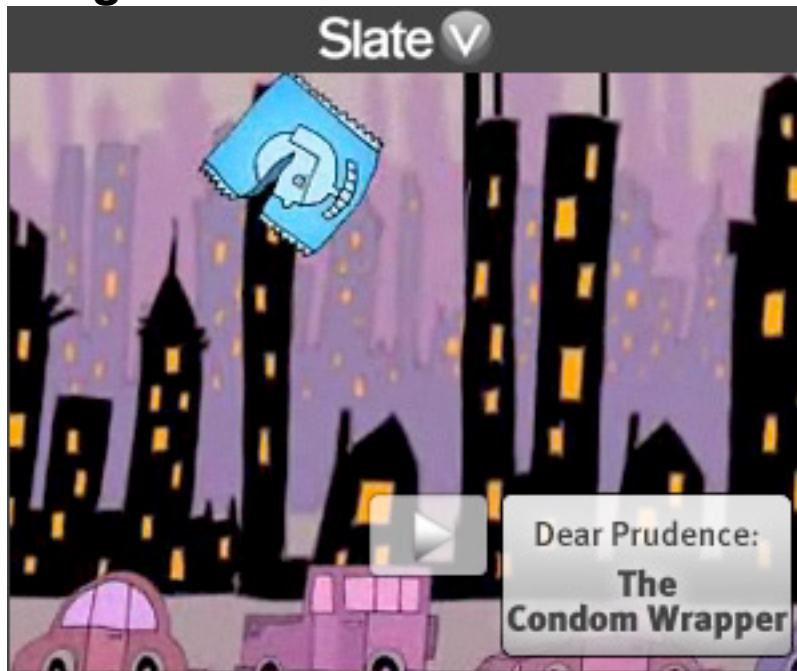


## the green lantern



### The Case for CFLs

Compact fluorescent light bulbs are safe, and they look great, too.

By Brendan I. Koerner

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**I'm constantly being told that the simplest way to improve my green cred is to start using [compact fluorescent lights](#). Yet some naysayers—like [one of your Slate colleagues](#)—argue that the environmental benefits of CFLs are negated by their mercury content. Who's right?**

The case against CFLs is built largely on half-truths and innuendo. Yes, the energy-saving bulbs contain mercury, a neurotoxin responsible for a tremendous amount of human

suffering over the years. And safely recycling CFLs remains far more difficult than it should be. But these facts don't justify sticking with inefficient incandescent technology that has barely changed since the invention of the tungsten filament nearly a century ago.

CFLs are lauded by environmentalists because they require far less electrical power than their incandescent counterparts. A 26-watt CFL bulb produces the same [lumens](#) as a 100-watt incandescent bulb. Assuming that you keep one of those bulbs aglow for six hours a day, switching to a CFL will save you 126 kilowatt-hours of electricity per year, which translates to 170 pounds of carbon dioxide emissions on average. Now, how many bulbs do you have in your house? Twenty? Thirty? Replace them all and you could conceivably (assuming six-hour-a-day use throughout the building) reduce your annual CO<sub>2</sub> output by upward of 2.3 metric tons—about 10 percent of the average American household's annual carbon footprint.

Just look at what's forecast for Australia, which last year became the first nation to mandate a gradual [phase-out](#) of incandescent bulbs. According to Australia's Environment Minister, the measure will eventually slash the country's greenhouse gas emissions by 4 million metric tons per year—the equivalent of taking 1 million vehicles off the road.

But what about the mercury? The toxic heavy metal is integral to the design of current CFL bulbs: Electricity agitates the mercury molecules, causing them to emit ultraviolet light. That light then spurs a bulb's phosphor coating to give off visible light. But the amount contained in each bulb is barely enough to cover the tip of a ballpoint pen, and won't cause any bodily harm as long as simple precautions are taken. The [National Electrical Manufacturers Association](#) has voluntarily imposed a limit of 5 milligrams per bulb on all CFLs sold in the United States—about 1 percent of the mercury contained in an [old home thermometer](#). Since manufacturers are well aware that health fears are preventing the widespread adoption of CFLs, most have committed to making bulbs with even less mercury than NEMA's standard. The average CFL bulb now contains around 4 milligrams of mercury, and that figure should drop closer to 2 milligrams in the very near future. Much of the credit for these reductions goes to Wal-Mart, which has [pressured](#) GE, Royal Phillips, and Osram Sylvania to cut down on the quicksilver.

The irony of CFLs is that they actually reduce overall mercury emissions in the long run. Despite recent improvements in the industry's technology, the burning of coal to produce electricity emits roughly 0.023 milligrams of mercury per kilowatt-hour. Over a year, then, using a 26-watt CFL in the average American home (where half of the electricity comes from coal) will result in the emission

of 0.66 milligrams of mercury. For 100-watt incandescent bulbs, which produce the identical amount of light, the figure is 2.52 milligrams.

Ah, but what if your CFL bulb shatters? First off, don't panic: Unless you plan on picking up the glass with bare hands and then licking it, you're almost certainly safe from harm. Just follow the EPA's [easy cleanup guidelines](#), which include placing the remnants in a sealed plastic bag and washing your hands when the chore is finished, and all should be well. (Also, use common sense and don't place CFLs where they can be damaged by young children.) As for that oft-told horror story about the woman in Maine who was quoted a price of \$2,000 to dispose of a busted CFL bulb, don't believe it—at least not entirely. She may have been the mark for a shady contractor; get the facts [here](#) (PDF) and [here](#).

Even a broken CFL bulb won't leak too much toxic metal. According to the EPA, just 6.8 percent of the mercury in a CFL bulb—that's at most 0.34 milligrams—is released if it shatters. OSHA's [permissible exposure limit](#) for mercury vapor in the workplace is 0.1 milligrams per cubic meter, so you'd have to break that bulb in an extremely cramped space for there to be an appreciable hazard.

Critics of CFLs have stressed that the mercury savings may be negligible in areas such as the Pacific Northwest, where hydropower is prevalent. (A Seattle newspaper columnist makes the case [here](#).) But keep in mind that all

power grids are at least partly dependent on coal; according to the EPA's [Power Profiler](#), for example, Washington's [Puget Sound Energy](#) still derives 34 percent of its fuel from coal. As a result, CFLs still have a significant edge in terms of mercury emissions, to say nothing of greenhouse gas emissions.

There is one major knock on CFLs, though, and that's the current dearth of recycling options. Because of the mercury issues, it's unwise—and often illegal—to throw spent CFL bulbs in the trash. (A single broken bulb is one thing, but thousands upon thousands of broken bulbs in a garbage dump could be seriously bad news.) You can find local recycling centers [here](#), take your bulbs to the [nearest IKEA](#), or use a mail-in service such as [RecyclePak](#). All of these options, alas, require a bit more motivation than tossing your beer cans in a blue bin. But look for several major retailers to set up recycling drop-off boxes this year, in order to goose their CFL sales.

The last, desperate swipe at CFLs—as [elucidated](#) by the Lantern's colleague last week—is that their light is cold and dreadful. Perhaps this was true in years past, but the Lantern just doesn't see it anymore: In a [recent test](#), *Popular Mechanics* rated CFL light as far superior to that produced by incandescent bulbs. Don't believe the hype? You've got nothing to lose by trying a single CFL bulb (one that's received EnergyStar certification) and seeing for

yourself. And then, once you've become a convert, please spread the word.

Is there an environmental quandary that's been keeping you up at night? Send it to [ask.the.lantern@gmail.com](mailto:ask.the.lantern@gmail.com), and check this space every Tuesday.

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