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Are we screwing in the wrong bulbs?

Despite what we're told, research on mercury poses an awkward question

BY NICK BUDNICK

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When it comes to light bulbs, the message has been blindingly clear. Environmentalists, energy experts, government agencies and pretty much everyone but the pope all say it's high time you replaced your old incandescent bulbs with compact fluorescent light bulbs, or CFLs. Last year, Congress passed a law banning incandescents by 2014.



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The long-lasting CFLs generate the same amount of light with less energy, thereby reducing greenhouse gas emissions and saving you money at the same time — and if you haven't heard this pitch, it may be time for fresh batteries in your hearing aid.

Away from the glowing spotlight, however, a rising number of environmentally minded folks say the War on Bulbs is being waged with false or incomplete information by groups who ought to know better.



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Specifically, these green skeptics say the mercury hazards of CFLs have been downplayed in the name of energy conservation.

While few say CFLs should be banned, new research highlights a stark contradiction between two cherished green goals: fighting global warming and ridding the environment of toxic pollution.

This dilemma puts conservationists in a bind. How do they warn consumers about the hazards of mercury, while at the same time promoting CFLs as a weapon against climate change?

“Energy is an important issue, and we need to get serious about conservation. But using fluorescent lamps is not a simple question,” says John Gilkeson, a principal planner with the Minnesota Pollution Control Agency who is considered a national expert on mercury. “This is a very politically charged issue. Everybody’s got an agenda: it’s money, it’s energy, or it’s whatever.”

When it comes to informing the public, many government agencies haven’t figured out how to balance the different agendas, says Deborah Rice, a mercury expert at the Maine Center for Disease Control who headed an EPA panel on environmental toxicology.

“The folks I talk to in other states are struggling with it,” she says. “You’re almost in a position of saying, ‘Yeah, you’re taking on some personal risk, but it’s better for everybody.’”

In the 1990s, government agencies, under pressure from enviros, launched a campaign against mercury based on studies showing the toxic metal can trigger mental retardation.

As the U.S. National Institutes of Health puts it, “Exposures to very small amounts of (mercury) can result in devastating neurological damage and death.”

Mercury thermometers? Gone. Mercury switches? Off. Mercury fillings? Bite your tongue.

Now, however, those same groups are uniting behind a light bulb that contains tiny amounts of — you guessed it — mercury.

What happened? First and foremost, the American public woke up to the inconvenient fact that global temperatures have been steadily rising. Faced with the possibility of planetary catastrophe, issues like energy conservation took on new urgency.

CFLs are a good illustration of how anxiety about global warming has pushed other environmental concerns, such as toxic risks, out of the limelight.

The U.S. Environmental Protection Agency, for instance, has joined with the U.S. Department of Energy in an energy efficiency program called Energy Star that promotes CFLs.

But its promotional campaign makes scant mention that the bulbs contain mercury and should be properly recycled. “There were (some) people in ... the EPA that were very upset about it,” Gilkeson says.

Exactly how big is the risk of mercury in CFLs? And in what way is their marketing disingenuous? Here are four questionable statements often made by CFL proponents.

- 1) The mercury in CFLs is not enough to hurt you.

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CFL advocates say each bulb contains less than 5 milligrams of mercury — less than the tip of a ballpoint pen.

While that much is true, a recent study by the state of Maine found that the mercury vapor released by a broken bulb is enough to pose a health hazard if the room is not evacuated and aired out for 15 minutes.

Rice, who assisted with the study, says that while a single exposure isn't much of a danger, you don't want children sniffing around the breakage. The real concern, she says, would be with families who break several bulbs in a room over a couple of years — and, unaware of the dangers, don't clean up properly.

Then there is the issue of long-term mercury exposure. Most CFLs are thrown in the trash and wind up in a landfill. Once fractured, the metallic mercury they contain eventually will be transformed by bacteria into the more dangerous methyl mercury. That's the kind that contaminates water, climbs the food chain, poisons fish and accumulates in the human fetus. This explains why many states (though not Oregon) ban dumping CFLs in your trash, instead treating them as hazardous waste.

Michael Read, a Milwaukie sanitation district official and former president of the national Water Environment Federation, calls the mass dumping of bulbs into landfills "a potential environmental nightmare."

2) To clean up a broken bulb, just vacuum and toss it in a bag.

The EPA and Oregon Department of Environmental Quality say that if you break a bulb, you should clean up by opening the windows for at least 15 minutes, evacuating the room, putting the breakage in a glass jar or plastic bag, and vacuuming your carpet.

But the Maine study found that mercury leaks right through plastic bags.

"It's just going to go right through the plastic bag and back out in the room," says Rice, the Maine mercury expert.

The study also found that vacuuming after breakage is a bad idea — and that the only way to eliminate the mercury hazard is to cut out the contaminated section of carpet.

"As soon as you start vacuuming you just bring this stuff out of the carpet," Rice says. "And it's ridiculous to think that nobody's never going to vacuum their floor again, so what do you do? Well, we say, 'Cut out that part of that carpet.' Well, that's ridiculous too."

3) CFLs actually cut down on mercury in the environment.

Proponents say CFLs actually *reduce* the amount of mercury in the environment, because coal-fired power plants are a major source of mercury emissions. More efficient bulbs mean burning less coal and releasing less mercury — or so the theory goes.

Unfortunately, the argument is bogus, says Robert McCullough, a former Portland General Electric executive. That's because using less electricity does not mean less coal is burned. Since coal is cheap, power companies tend to keep their coal-fired plants running day and night; when demand for electricity ebbs, they cut back on more expensive natural gas, not coal.

Gilkeson says proponents' power plant argument was discredited more than a decade ago by a largely forgotten EPA study.

"It's a diversion," he says of the argument. "In my opinion, that's a red herring."

4) You should replace all your bulbs with CFLs.

Federal law decrees that old-fashioned incandescents should be replaced with energy efficient bulbs by 2014. But experts warn against using CFLs everywhere.

“The advice is: Don’t put these bulbs in children’s rooms where they are likely to be tipped over,” Rice says. “I use them in my house, but I use them in ceiling fixtures and fixtures that are out of the way where I know the kittens are not going to knock over a lamp and spill it.”

Will bulbs blow green credibility?

Despite the gloom about CFLs, there is a glimmer of hope. Home Depot recently instituted a take-back program where consumers can drop off their spent bulbs. Shareholders are pressing Wal-Mart to follow suit. There’s even talk of setting up disposal centers in your local post office.

Meanwhile, technological advances in LEDs ultimately may yield bright, efficient bulbs that don’t rely on mercury.

Still, CFL supporter Michael Bender of the Vermont-based Mercury Policy Project thinks that his fellow proponents need to be more honest about the “small risk” that comes with CFLs — or risk a consumer backlash.

“There needs to be a balance,” he says.

Find out more

- To read the Maine study, go to www.maine.gov/dep/rwm/homeowner/cflreport.htm or www.tinyurl.com/65s58a
- U.S. government CFL site: tinyurl.com/ycdmem
- Mercury Policy Project: www.mercurypolicy.org



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