



Shift to CFLs Could Close 270 Power Plants¹

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Worldwide Shift from Incandescents to Compact Fluorescents Could Close 270 Coal-Fired Power Plants

On February 20, 2007, Australia announced it would phase out the sale of inefficient incandescent light bulbs by 2010, replacing them with highly efficient compact fluorescent bulbs that use one fourth as much electricity. If the rest of the world joins Australia in this simple step to sharply cut carbon emissions, the worldwide drop in electricity use would permit the closing of more than 270 coal-fired (500 megawatt) power plants. For the United States, this bulb switch would facilitate shutting down 80 coal-fired plants.

The good news is that the world may be approaching a social tipping point in this shift to efficient light bulbs. On April 25, 2007, just two months after Australia's announcement, the Canadian government announced it would phase out sales of incandescents by 2012. Mounting concerns about climate change are driving the bulb replacement movement.

In mid-March, a U.S. coalition of environmental groups—including the Natural Resources Defense Council, the Alliance to Save Energy, the American Coalition for an Energy-Efficient Economy, and the Earth Day Network—along with Philips Lighting launched an initiative to shift to the more-efficient bulbs in all of the country's estimated 4 billion sockets by 2016.

In California, the most populous state, Assemblyman [Lloyd Levine](#) is proposing that his state phase out the sale of incandescent light bulbs by 2012, four years ahead of the coalition's deadline. Levine calls his proposed law the "How Many Legislators Does It Take to Change a Light Bulb Act." On the East Coast, the New Jersey legislature is on the verge of requiring state government buildings to replace all incandescent bulbs with compact fluorescents by 2010 as part of a broader statewide effort to promote the shift to more-efficient lighting.

The European Union, now numbering 27 countries, announced in March 2007 that it plans to cut carbon emissions by 20 percent by 2020. Part of this cut will be achieved by replacing incandescent bulbs with compact fluorescents. In the United Kingdom, a nongovernmental group called Ban the Bulb has been vigorously pushing for a ban on incandescents since early 2006. Further east, Moscow is urging residents to switch to

¹ Source: <http://www.celsias.com/2007/05/10/shift-to-cfls-could-close-270-power-plants/>.



INCANDESCENT



FLUORESCENT

compact fluorescents. In New Zealand, Climate Change Minister, David Parker, has announced that his country may take similar measures to those adopted by Australia.

In April, Greenpeace urged the government of India to ban incandescents in order to cut carbon emissions. Since roughly 640 million of the 650 million bulbs sold each year in this fast-growing economy are incandescents, the potential for cutting carbon emissions, reducing air pollution, and saving consumers money is huge.

At the industry level, Philips, the world's largest lighting manufacturer, has announced plans to discontinue marketing incandescents in Europe and the United States by 2016. More broadly, the European Lamp Companies Federation (the bulb manufacturers' trade association) is supporting a rise in EU lighting efficiency standards that would lead to a phase-out of incandescent bulbs. (See [data at earthpolicy.org](http://data.earthpolicy.org))

At the commercial level, Wal-Mart, the world's largest retailer, announced a marketing campaign in November 2006 to boost its sales of compact fluorescents to 100 million by the end of 2007, more than doubling its annual sales. In the U.K., Currys, Britain's largest electrical retail chain, has announced that it will discontinue selling incandescent light bulbs.

Switching light bulbs is an easy way of realizing large immediate gains in energy efficiency. A study for the U.S. government calculated that the gasoline equivalent of the energy saved over the lifetime of one 24 watt compact fluorescent bulb is sufficient to drive a Prius from New York to San Francisco. While a worldwide phase out of the inefficient incandescents would reduce world electricity use by more than 3 percent, shifting to more-efficient street lighting and replacing older fluorescent tubes with newer, more-efficient ones might double this reduction in power use.

Although highly efficient compact fluorescent bulbs have been around for a generation, they have until recently been on the fringe, used only by environmentally-minded consumers and typically sold in hardware stores, but not in supermarkets. One reason consumers lacked interest was that the new bulbs can cost five times as much as incandescents. Only the more knowledgeable consumers knew that an incandescent bulb uses only one fourth as much electricity, lasts 10 times as long, and easily saves \$50 during its lifetime.

One disadvantage of compact fluorescents is that each bulb contains a small amount of mercury, roughly one fifth the amount in a watch battery. This mercury is only a small fraction of that released into the atmosphere by the additional coal burned to power an incandescent. Mercury released by coal-fired power plants is the principal reason why 44 of the 50 states in the United States have issued mercury intake advisories limiting the consumption of fish from freshwater streams and lakes. Nonetheless, worn-out compact fluorescents, watch batteries, and other items that contain mercury still need to be

recycled properly. Fortunately, this is possible, whereas the mercury spewing from coal smokestacks blankets the countryside, ending up in the water and food supply.

Shifting to the highly efficient bulbs sharply reduces monthly electricity bills and cuts carbon emissions, since each standard (13 watt) compact fluorescent over its lifetime reduces coal use by more than 210 pounds. Such a shift also substantially reduces air pollution, making it obviously attractive for fast-growing economies plagued with bad air like China and India.

In the United States, an ingenious website called 18seconds.org (the name derives from the time it takes to change a light bulb), provides a running tally of compact fluorescents sold nationwide since January 1, 2007. As of early May, it totaled nearly 37 million bulbs, yielding a reduction in carbon emissions comparable to taking 260,000 cars off the road. Sponsored by Yahoo! and Neilson, the site also provides data on how many dollars are being saved and how much less coal is burned. Data are available on the website for each state, providing a convenient way of monitoring local progress in replacing incandescents.

The challenge for each of us, of course, is to shift to compact fluorescents in our own homes if we have not already. But far more important, we need to contact our elected representatives at the city, provincial, or state level and at the national level to introduce legislation to raise lighting efficiency standards, in effect phasing out inefficient incandescent light bulbs. Few things can cut carbon emissions faster than this simple step.

In a world facing almost daily new evidence of global warming and its consequences, there is a need for a quick decisive victory in the effort to cut carbon emissions and stabilize climate. If we can engineer a rapid phase-out of incandescent light bulbs it would provide just such a victory, generating momentum for even greater advances in climate stabilization.

Note: Lester Brown is President of the [Earth Policy Institute](http://www.earthpolicyinstitute.org) and author of [Plan B 2.0: Rescuing a Planet Under Stress and a Civilization in Trouble](#). This shift to compact fluorescent light bulbs is one of a dozen or so measures to cut world carbon emissions 80 percent by 2020 to be outlined in the forthcoming book [Plan B 3.0: Mobilizing to Save Civilization](#) by Lester R. Brown.