

Product Stewardship: Mercury-Containing Lighting

Background

The use of fluorescent lights has become more prevalent in the past few years because these lights use only about one-fourth as much energy as incandescent bulbs and can last up to 10 times longer. Compact fluorescent lamps (CFLs) now represent about 20 percent of all light bulb sales in the U.S., with an estimated 2.4 million CFLs sold in Oregon in 2007¹.

Saving energy reduces greenhouse gas impacts and the amount of mercury emissions from coal-fired power plants. Although Oregon gets most of its energy from hydropower, the state has one coal-fired plant, in Boardman.

Mercury in lighting

All fluorescent lights contain some mercury. Four-foot linear tubes average 13.3 milligrams (mg) with a range of 2.5 to 70 mg.² CFLs contain 3 to 4 mg of mercury.³

Mercury is a persistent, bioaccumulative and toxic pollutant, and its prevalence in the environment has made it a high-priority pollutant at both the state and national level. Mercury may be released into the atmosphere when a light breaks. Mercury then falls to the earth with rain and contaminates surface waters. It can build up in fish as methyl mercury, a neurotoxin that can affect the central nervous system in humans. Oregon currently has fish consumption advisories for mercury on 13 water bodies.⁴

In addition to the health concerns of mercury, virtually all of the mercury, glass and metal from mercury-containing lights can be recycled, and this opportunity is lost when the unwanted lights are disposed of. Less recycling means more virgin materials used, more waste generated, more energy consumed, and more greenhouse gas produced.

How are mercury-containing lights recycled now?

Oregon currently has limited opportunities to safely recycle fluorescent lights from households. For large generators Oregon has four fluorescent light recycling facilities. These services and others outside of Oregon also offer mail-back programs for recycling larger quantities of spent lights. Households, small

businesses and small nonprofits (not regulated under federal Resource Conservation and Recovery Act/RCRA rules and the Universal Waste Rule) can use local government-run household hazardous waste (HHW) management facilities serving Clackamas, Columbia, Deschutes, Hood River, Lane, Marion, Multnomah, Polk, Sherman, Wasco and Washington counties. Many of these facilities are open limited days and hours and may require appointments. Twenty-five Oregon counties do not have permanent HHW facilities. Periodic HHW collection events, sponsored by local governments and DEQ, also accept unwanted fluorescent lights. These events are usually held one or two times per year per jurisdiction, and not all counties or cities have events each year. IKEA and Home Depot also accept mercury-containing lights from their customers for recycling.

DEQ estimates that more than 6 million fluorescent bulbs are disposed of each year in Oregon, and only 2 percent of household lights and 30 percent of commercial lights are recycled.⁵

Product stewardship legislation

Product stewardship legislation (House Bill 3060) now under consideration by the 2009 Legislature will provide a statewide program for households, small businesses and small nonprofits (anyone bringing a small number of lights) to safely recycle their fluorescent lights and CFLs.

- Producers who want to sell their products in Oregon must finance and operate a state-approved, convenient collection, transportation and recycling program for the waste producers, including consumer education. (End-of-life costs are currently handled by local government solid waste programs.)
- Government's role in the system is limited to oversight, plan approval and monitoring of performance goals.
- Regulated hazardous waste generators (who typically have larger quantities of lights to discard) have access to existing infrastructure and are not intended to be covered by this legislation.



State of Oregon
Department of
Environmental
Quality

Land Quality Division Solid Waste Program

811 SW 6th Ave.
Portland, OR 97204
Phone: (503) 229-5696
(800) 452-4011
Fax: (503) 229-6977

Contact:
Jan Whitworth
(503) 229-6434

www.oregon.gov/DEQ/

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water

For more information:

Contact DEQ's Solid Waste Program in Portland: Jan Whitworth, (503) 229-6434, toll-free in Oregon at 1-800-452-4011, x6434; or Abby Boudouris, (503) 229-6108, toll-free in Oregon at 1-800-452-4011, x 6108.

Alternative formats

Alternative formats (Braille, large type) of this document can be made available. Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5696, or call toll-free in Oregon at 1-800-452-4011, ext. 5696.

Footnotes

¹Based on National Electrical Manufacturers Association (NEMA) U.S. sales data prorated for Oregon based on population.

²Interstate Mercury Education and Reduction Clearinghouse (IMERC) fact sheet, *Mercury Used in Lighting* (August 2008)

³NEMA, Recycling Household CFLs, September 2007. NEMA has voluntary mercury limits in CFLs: 5 mg for CFLs smaller than 25 watts; 6 mg for CFLs of 25 to 40 watts.

⁴Information from:

<http://oregon.gov/DHS/ph/envtox/fishconsumption.shtml>

⁵Association of Lighting & Mercury Recyclers, National Mercury Lamp Recycle Rate, November 2004.

⁶Based on general Home Depot prices for bulbs, March 2009