

Compact Fluorescent Lamps

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Responsible Purchasing Considerations

- Air quality
- Climate change
- Energy efficiency
- Recycled content
- Reduce solid waste
- Reduce toxic chemicals

Benefits

- Lower energy bills
- Lower release of mercury, a persistent bioaccumulative toxin (PBT)
- Less maintenance

How To Buy

Washington State Contract [00802](#) offers high efficiency CFL lamps.

See [Pacific Northwest Utility Links](#) to learn about utility rebates for lighting projects.

★ **GOAL:** To reduce energy use by replacing incandescent lamps with energy efficient compact fluorescent lamps. ★

Overview

Using compact fluorescent lamps (CFLs) is another energy saving option. CFLs use up to 75 percent less electricity than incandescent light bulbs and last up to 10 times longer. This is according to [Energy Star](#), a U.S. Environmental Protection Agency (EPA) and Department of Energy efficiency-rating program.

All fluorescent lamps contain some mercury, a heavy metal that is toxic in extremely low doses. However, life-cycle analysis shows that much less mercury enters the environment through the use of CFLs than through the use of incandescent lights.

Mercury is released when coal is burned to generate electricity. Since incandescent lightbulbs use 75 percent more energy, significantly more mercury is released into the environment. Even Washington State, which is rich in hydropower, uses significant amounts of electricity generated by burning coal.

The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) credits can be earned for installing low-mercury lighting. An extra [LEED](#) point for existing buildings can be awarded if the mercury content is below 70 picograms per lumen hour (pg/l-hr).

The best method to conserve energy used by lights is to turn them off when leaving the room. However, the Rocky Mountain Institute ran a life-cycle analysis and found that CFLs tend to burn out more quickly when frequently turned on and off. To extend the life of the bulb, leave them on when leaving the room for less than 15 minutes.



Standards

There are two relevant standards in North America: The Energy Star rating for energy efficiency and Canada's EcoLogo certification for energy efficiency, low-mercury, and low-lead content.

Lamps rated by Energy Star must:

- Last at least 6,000 hours,
- Maintain at least 80 percent of their initial light output after 40 percent of their rated life, and
- Maintain a minimum amount of lumens per watt which varies by model wattage.

Canada's EcoLogo certification is more rigorous than Energy Star. It:

- Sets a higher minimum lamp life of 10,000 hours, and
- Restricts mercury to three milligrams per bulb.

Environmentally Preferable Purchasing Fact Sheet — Compact Fluorescent Lamps

Washington State Department of Ecology

Environmentally Preferable Purchasing

The Department of Ecology offers tools and resources to make environmentally preferable purchasing easier.

Learn about responsible products, standards and certifications, state EPP directives and more at our website:

www.ecy.wa.gov/beyondwaste/epp.html

Contact:
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Web Resources

[Association of Lighting and Mercury Recyclers](#)

[Consortium for Energy Efficiency](#)

[Fluorescent Lamps and Tubes.](#)

California Integrated Waste Management Board

[Fluorescent Lighting Home,](#)
Product Stewardship Institute

[Greening Federal Facilities,](#)
US Department of Energy

[Mercury-containing Lamps/ Light Bulbs,](#) Department of Ecology

[National Lighting Product Information](#)

[Responsible Purchasing Network](#)

[Shedding Light on Mercury in Fluorescents: A Workbook for Design Professionals,](#)
INFORM

Product Performance

CFLs are typically reliable, cost-effective, and widely available. CFLs pay back their higher purchase price in energy savings in just a few months. With a lifespan up to 15,000 hours, purchase and recycling costs are reduced as well.

Over 2,000 Energy Star rated products are available for purchase, including some that are low-mercury. CFLs come in a variety of sizes and shapes and for a variety of applications. Energy Star qualified models designed for dimming, outdoor fixtures, and enclosed fixtures are now available.



End-of-Life

All fluorescent lamps contain mercury. Roughly 400 to 500 pounds of mercury are released into the environment in Washington State each year from improper disposal of fluorescent lamps and bulbs into landfills and incinerators.

State contract [11601](#) offers recycling and disposal services for used or “spent” CFLs. For a fee, customers can have the vendor pick up the spent CFLs or request a recycling kit to send them directly to the company.

Recycling lamps under the Universal Waste Rule Act allows much easier management than typical Dangerous Waste Requirements. See the [Universal Waste Rule for Lamps](#).

Ecology supports the national [Fluorescent Lighting Dialogue](#), which promotes developing a financially sustainable national collection and recycling system. The Product Stewardship Institute is facilitating this multi-stakeholder project.

Laws and Directives

Executive Order 02-03	Requires sustainability practices by state agencies. This includes practices that do not sacrifice the needs of future generations.
Executive Order 04-01	Directs state agencies to adopt measures to reduce the use of equipment, supplies, and other products that contain persistent toxic chemicals.
Executive Order 05-01	Directs state agencies to reduce their energy purchases by 10% using all practicable and cost-effective means including energy efficiency programs.
Governor's Directive 04-01	Directs state agencies and institutions to recycle all fluorescent lamps at the end of their useful life.
Chapter 70.95M RCW Mercury Education Reduction Act 2003	States that: -The Department of General Administration (GA) shall give priority and preference to the purchase of equipment, supplies, and other products that contain no mercury-added compounds or components, with certain designated exceptions. -Fluorescent lamps containing mercury must be labeled as containing mercury to be sold in Washington State.