



# COMPACT FLUORESCENT LIGHTS

## INTRODUCTION

Compact fluorescent light bulbs (CFLs) are being heavily promoted as an energy-saving alternative to traditional incandescent bulbs, but they contain mercury vapor which makes them a hazard to human health and to our landfills.

## BACKGROUND

- Incandescent bulbs will be banned in Canada in 2012. Current and future phase-out plans are happening in Australia, New Zealand, Japan, Brazil, Cuba, the US and the European Union.
- Switching to fluorescent light bulbs and tubes is an energy efficient measure that is easy to implement at home. CFLs can immediately replace traditional incandescent bulbs in most existing fixtures.
- CFLs use up to 75% less energy than incandescents and last up to 10 times longer. Recent technological advances have improved light quality and reduced mercury content.
- Ikea was the first major retailer to implement a recycling program for CFL bulbs in 2001 for all its North American locations. Home Depot, RONA and London Drugs also run national take-back programs.
- Ontario's province-wide CFL recycling program began in April 2010. In the US, state-wide programs are in place in Maine and Massachusetts, while California has banned mercury-containing items from its landfills. The State of Washington aims to launch a recycling program by 2013.

## MERCURY AND CFLs

Fluorescent lamps require mercury vapour to produce light. The amount of mercury in a bulb is proportional to the size of the lamp and contributes to its long lifespan. A bulb contains approximately 5mg of mercury, while a 4-ft tube contains roughly 12mg. In contrast, a mercury thermometer contains approximately 500 mg, while an older mercury thermostat contains about 3000 mg.

The US Environmental Protection Agency found that using CFLs can actually reduce the amount of mercury in the atmosphere. The largest source of atmospheric mercury occurs when fossil fuels are used to produce energy. In fact, because of their energy efficiency, the power required to run a CFL generates 2.4 mg of mercury compared to an incandescent bulb which generates 10mg of mercury pollution.

When CFLs are recycled, mercury and other materials are recovered and reused, preventing them from entering the environment.

## HANDLING A BROKEN BULB OR TUBE:

According to Natural Resources Canada, broken CFLs do not pose an immediate health risk due to the small quantity of mercury in the lamps. The US EPA recommends opening a window for 15 minutes to allow the vapour to dissipate. Afterwards, using rubber gloves, sweep or scoop up the glass fragments and phosphor powder, then wipe the area with a damp towel. On carpet, sticky tape can be used to collect the remnants. Double bag the CFL remains and all cleaning supplies before disposing in the garbage.

## ENVIRONMENTAL IMPACT

As more incandescent bulbs are replaced with CFLs the amount of energy saved will have a significant impact on the environment. If the province of British Columbia were to replace all of its household lights with CFLs it would save 2 million megawatt hours of energy annually, that's enough to power 200,000 homes or the equivalent of taking 86,000 cars off the road.

On the other hand, more CFLs means that more mercury could be ending up in our landfills and watersheds. Fluorescent lights must be disposed of properly, through conveniently located recycling depots.

### LIGHTRECYCLE

The BC Fluorescent Lighting Recycling Program launched July 1, 2010. Eco-fees are charged on new bulbs and tubes at the point of sale. End-of-life products can be dropped off free-of-charge at depots throughout the province for recycling. For a complete list of depots locations, contact the Recycling Council of BC Hotline at 604-RECYCLE (604-732-9253) or 1-800-667-4321 or search the RCBC Recyclepedia at [www.rcbc.bc.ca](http://www.rcbc.bc.ca).

### What Happens to the Bulbs?

Returned products are sent to four processing plants in BC and five additional plants across Canada. Lamps are broken under negative air pressure and separated into their component parts (glass, aluminum, mercury, phosphor powder, other metals, plastic and ceramic). Nearly 100% of each lamp is recovered and recycled. Glass and metals, including mercury, are cleaned and forwarded to downstream recyclers. Plastics are burned during smelting, generating energy for the system. At this time, ceramic bases are waste material.

## WHAT YOU CAN DO

The best way to ensure you keep up with the latest developments on bans and other sustainability issues and have your voice heard is to join RCBC. You will receive the latest RCBC publications that explore these issues and more. By being a member of RCBC, whether you are a consumer, a retailer, a recycler or a brand owner, you will become part of the made-in-BC solution that fits our province's waste management objectives as we work together for a sustainable future.

## FOR MORE INFORMATION

RCBC: [www.rcbc.bc.ca](http://www.rcbc.bc.ca)

BC Ministry of Environment: <http://www.env.gov.bc.ca/epd/>

Product Care: <http://www.productcare.org/lights>

BC Hydro: [http://www.bchydro.com/guides\\_tips/green-your-home/lighting\\_guide/](http://www.bchydro.com/guides_tips/green-your-home/lighting_guide/)

[Replace Incandescent Bulbs With CFLs.html](http://www.bchydro.com/guides_tips/green-your-home/lighting_guide/Replace_Incandescent_Bulbs_With_CFLs.html)

Natural Resources Canada: <http://www.nrcan-rncan.gc.ca/media/newcom/2007/200735a-eng.php>

[http://oee.nrcan.gc.ca/publications/infosource/pub/home/Household\\_Lighting\\_Section4.cfm?attr=4#cfl](http://oee.nrcan.gc.ca/publications/infosource/pub/home/Household_Lighting_Section4.cfm?attr=4#cfl)

California Product Stewardship Council: <http://www.calpsc.org/products/lamps.html>

Ontario Industry Product Stewardship: <http://www.takebackthelight.ca>

## OR CALL

RCBC Recycling Hotline at 604-732-9253 or 1-800-667-4321

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### RCBC Mission Statement

RCBC is a multi-sectoral non-profit organization promoting the principles of Zero Waste through information services, the exchange of ideas and research.

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