



Attachment D

Bay Area Hazardous Waste Management Facility Allocation Committee

Administered by:
Association of Bay Area Governments

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<http://www.abag.ca.gov/hazwaste>

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510/464-7961

May 18, 2009

To: Hazardous Waste Management Facility Allocation Committee
From: Jennifer Krebs, Senior Environmental Planner
Re: Revised 2006/2007 Hazardous Waste Report

Background:

At the January 2009 Hazardous Waste Management Committee meeting, ABAG staff presented a draft 2006/2007 report on Hazardous Waste Generation and Treatment Trends. Committee members suggested revisions and raised a number of issues. These included:

- ◆ Why more hazardous wastes were being treated outside the Bay Area than inside, and what can be done to treat more wastes locally?
- ◆ How much it costs to treat/dispose of hazardous wastes?
- ◆ Who recycles compact fluorescent lamps and where they are located?

In response to these concerns, staff convened a Technical Advisory Committee meeting in March 2009. This memo summarizes the staff and TAC responses to the above issues.

A revised draft 2006/07 report, *Hazardous Waste Generation and Treatment Trends San Francisco Bay Area 2006 and 2007 Manifest Data* is attached. Staff is seeking Committee approval of the report, including the facility allocations and recommended actions.

Issues/Responses:

1) Which wastes are being treated outside the Bay Area & why.

TAC member Colby LaPlace suggested that staff provide a table of the largest volume wastes generated within the region. This table is now included in the attached Draft 2006/07 Hazardous Waste report as Table 4.

This table indicates that the two most common wastes in 2007 were **inorganic solids** and **waste oil**. Both of these wastes are generated by hundreds of generators throughout the Bay Area. Among the large generators of inorganics were Caltrans (lead paint waste & construction debris), cities (miscellaneous construction debris), Chevron and Evergreen Oil (refinery wastes).

The top recipient of the Bay Area's inorganic wastes was Chemical Waste Management's Kettleman Hills Facility in Kings County (roughly 85,000 tons).

The second top recipient was Clean Harbors Buttonwillow landfill in Kern County (roughly 20,600 tons). The remainder go to a variety of facilities in the Bay Area (Romic & Clean Harbors), and to out-of-state (US Ecology in Beatty, NV).

Much of the waste oil generated in the Bay Area is locally recycled at Evergreen Oil (20,000 plus tons in 2007).

Presumably a generator selects a facility because it is the most cost-effective choice. TSD facilities are reluctant to provide price lists: treatment processes are considered trade secrets. There are likely many variables in disposal cost consideration: type of waste, total volume from a facility, toxicity of wastes after treatment, etc.

As is noted in the report, 79 percent of the region's hazardous waste was treated in California (though only 17 percent within the region). Thus, while the Bay Area may not be entirely self-sufficient in regards to hazardous waste treatment and disposal, most wastes are not going out of state.

2) How much does it cost to dispose of hazardous wastes?

Because TSDs are reluctant to provide price sheets for waste disposal, it is difficult to estimate the total cost of disposing of the region's hazardous wastes on an annual basis. However, a number of the region's Household Hazardous Waste (HHW) programs provided ABAG staff with summaries of their hazardous waste disposal costs for common household hazardous wastes. Their information is summarized in a table that begins on page 4 of this memo. The cost/ton reported from three HHW programs varied from \$86/ton to recycle auto batteries to \$1,338/ton for flammable solids.

3) Who recycles compact fluorescents & where?

An EPA website refers to an industry listing of all the US fluorescent light recyclers <http://www.lamprecycle.org/>. A pdf of this listing is attached. Also attached is a US EPA fact sheet on compact fluorescents.

Draft 2006/2007 Report

The attached draft 2006/07 report has been revised to address these issues and others raised at the January 30, 2009 meeting. In the report, staff lists the following recommended actions. If approved, the actions will form the core of staff work plan for the 2009/10 fiscal year:

- ◆ Continue discussions with DTSC regarding pollution prevention initiatives (such as the Green Business Program) and their Green Chemistry Initiative. Per a recent report, DTSC's top recommended actions are to:
 - Expand pollution prevention and product stewardship programs to more business sectors

- Broaden technical assistance programs beyond hazardous and solid waste reduction by adding green chemistry and engineering lifecycle approaches
- Create incentive programs to assist California businesses that adopt green chemistry and engineering practices¹
- ◆ Work with DTSC, California Integrated Waste Management Board, and the California Product Stewardship Council on development/ dissemination of information, tools and resources for local governments related to Environmentally Preferable Purchasing (EPP), Extended Producer Responsibility (EPR), and related topics.
- ◆ Track progress of local governments who are implementing EPP policies (as a follow up to the Environmentally Preferable Purchasing Conference held in March of 2009). As appropriate, write case studies of local government success and report back to the Committee as well as the ABAG Executive Board.
- ◆ Host a follow-up EPP Conference in FY 2009/2010.
- ◆ Continue to monitor legislation pertinent to hazardous waste issues, and, when appropriate, seek support from ABAG's Legislation & Governmental Organizations Committee and Executive Board.
- ◆ Analyze the 2008 and 2009 Hazardous Waste Manifest data in 2010 (or when available from DTSC). Meet with TAC prior to presentation of report to Committee to discuss reformatting the report for accessibility and timeliness of issues for the committee's consideration.

Action Requested:

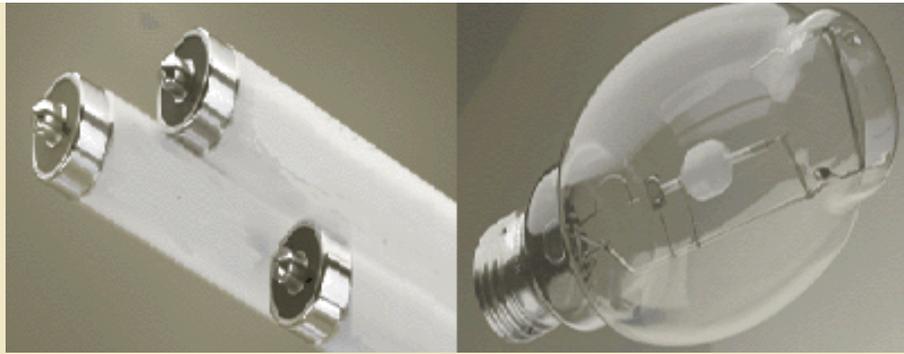
Approve the Revised 2006/2007 Hazardous Waste Report, including the facility allocations and recommended actions.

¹ California Green Chemistry Initiative: SUMMARY OF RECOMMENDED POLICY ACTIONS, December 2008, For more information please visit: dtsc.ca.gov/GreenChemistry

HOUSEHOLD HAZARDOUS WASTE DISPOSAL COSTS				
Alameda	Tons	Cost (2007/08)	cost/ton	Hauler
Largest Waste Stream: Latex Paint	507.80	\$ 140,884.00	\$277.44	Locally recycled or to Amazon in Riverside County, Fernley in Nevada or others
Number 2 Waste Stream: Oil Based Paint	490.35	\$ 229,125.00	\$467.27	Phillips, Kent Washington
Number 3 Waste Stream: Auto Batteries	52.78	\$ 4,560.00	\$86.40	Kinsbursky, Anaheim, CA
				Master Contract with Clean Harbors, San Jose

Sonoma	Tons	2008 Costs	cost/ton	Hauler
Largest Waste Stream: Oil Based Paint Related Material - Bulk 55Dm	251.99	\$ 45,600.00	\$577.81	Clean Harbors
Number 2 Waste Stream: Oil Based Paint Related Material - Qts. CUYD	70.89	\$ 88,800.00	\$1,252.62	Clean Harbors
Number 3 Waste Stream: Flammable Liquids - Bulk 55DM	36.78	\$ 24,940.00	\$678.17	Clean Harbors
Number 4 Waste Stream: Flammable Solids	34.98	\$ 46,800.00	\$1,338.06	Clean Harbors

Marin	Tons	Cost (2007/08)	cost/ton	Hauler
Largest Waste Stream: Oil Based Paints	214.45	\$ 161,640.00	\$753.74	Phillips Services Corporation (Kent, WA)
Number 2 Waste Stream: Latex Products	231.97	\$ 91,086.00	\$392.67	Phillips Services Corporation
Number 3 Waste Stream: Covered E-wastes	96.78	\$ 80,781.60	\$834.68	Alameda County Computer Resource Center
Oil and Antifreeze				Evergreen Oil, Newark
Auto Batteries				Simms Metals (San Jose & Rancho Cordova, CA)



[Home](#)

[About Lamprecycle.org](#)

[Benefits of Recycling](#)

[2004 Lamp Recycling Rate](#)

[State Lamp Recycling Regulations & Contacts](#)

[Lamp Recyclers \(U.S. & Canada\)](#)

[EPA Regulations](#)

[EPA Lamp Recycling Promotion](#)

[Lamp Distributor Requirements \(brochure\)](#)

[Recycling Household Lamps](#)

[Handling Broken Fluorescent Lamps](#)

[Massachusetts](#)

List of Companies Claiming to Recycle or Handle Spent Mercury Containing Lamps (last update July 2007)

NEMA maintains these lists of companies in the United States and Canada that either claim to recycle spent mercury-containing lamps or claim to handle those lamps so that they end up at a recycling facility. Recyclers are companies that claim to conform to the RCRA 40 CFR §273.6 definition of a "Destination facility" and operate under a state permit or RCRA-equivalent authority to perform lamp recycling. Handlers are either generators or third party firms that claim to collect lamps and get them to recyclers.

INCLUSION ON THESE LISTS DOES NOT CONSTITUTE AN ENDORSEMENT OR RECOMMENDATION BY NEMA OF THE COMPANIES OR THEIR TECHNOLOGIES. NEMA RESERVES THE RIGHT IN ITS SOLE DISCRETION TO EXCLUDE COMPANIES FROM THIS LISTING. PERSONS CONTACTING THE LISTED COMPANIES SHOULD MAKE THEIR OWN INVESTIGATIONS AND DETERMINATIONS ABOUT THE COSTS AND APPROPRIATENESS OF THE ACTIVITIES OF THE LISTED COMPANIES.

The Association of Lighting and Mercury Recyclers (ALMR) is a national organization that represents lamp recyclers, Universal Waste Handlers and related equipment manufacturers. ALMR member companies network with each other so that lamps from anywhere in the country can be collected and recycled. Additional information about lamp recycling can be found at www.almr.org. The International Association of Lighting Maintenance Companies (NALMCO, www.nalmco.org) represents lighting maintenance companies in the United States, which may provide spent lamp management recycling services as part of their lighting maintenance operations.

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- [ALMR Lamp Recyclers](#)
 - [Other Lamp Recyclers](#)
 - [ALMR Handlers \(Collect/Transport Lamps to Recycling Facilities\)](#)
 - [Other Handlers \(Collect/Transport Lamps to Recycling Facilities\)](#)
 - [Fluorescent Bulb Recyclers in Canada](#)
-

ALMR Lamp Recyclers

ALMR map of country with locations and contact information see <http://www.almr.org/map2.html>

AERC Recycling Solutions

2591 Mitchell Avenue
Allentown, PA 18103
1-610 797-7608

www.aercrecycling.com

Lamp recycling facilities in Allentown, PA, Ashland, VA., Hayward, CA, West Melbourne, FL, with customer service in Bollingbrook, GA and Flanders NJ.

CRT Processing Inc. (Uni Waste Services)

125 Aviation Ave.
Portsmouth, NH 03801
603-422-7711

www.uniwaste.com

Lamp and electronic waste recyclers serving the Northeast

Earth Protection Services, Inc.

10 South 48th Avenue, Suite 4
PO Box 23820
Phoenix AZ 85063-3820
800-414-0443

www.earthpro.com

Lamp recycling in Phoenix, AZ and Williamston, SC, with sales and storage locations in Lancaster, PA, Mira Loma and San Pedro, CA, Round Rock, TX, Tigard and Troutdale, OR, Sheridan, WY, Tampa, FL and Branford, CT.

Ecolights

1915 S. Corgiat Dr.
Seattle, WA 98108
(888) 214-2327

www.ecolights.com

Lamp recycling in Seattle, WA, with sales and collections facilities in Seattle, WA, Portland, OR and Anchorage, AK.

Environmental Light Recyclers

2737 Bryan Avenue
Fort Worth, TX 76104-6716
817-924-9381

Email: steve.remley@lightrecyclers.com

Lamp recycling facility in Fort Worth, TX

Fluorecycle, Inc.

27780 W. Concrete Drive, Unit A

Ingleside, IL 60041
815-363-4411

www.fluorecycle.com

Lamp recycling in Chicagoland, IL

HTR-GROUP

P.O. Box 185
Lake Ozark, MO 65049
888-537-4874

www.htr-group.com

Lamp recycling in Lake Ozark, MO, with customer service in St. Louis, MO, Dallas, TX, Atlanta, GA, Troy, IL

Lighting Resources Inc.

805 East Francis St.
Ontario, CA 91761
800-572-9253

www.lightingresourcesinc.com

Lamp recycling in Greenwood, IN. (317-888-3889), and Ontario, CA. Sales/warehousing in Phoenix, AZ and Tampa, FL (866-961-9100).

Luminaire Recyclers

2161 University Avenue
St. Paul, MN 55114
1-800-553-8429

www.luminairerecyclers.com

Ballast recycling in MN and handling service for lamps and universal wastes in FL.

Mercury Waste Solutions

302 N Riverfront Drive, Suite 100A
Mankato, Minnesota 56001
800-699-2895

www.mwsi.com

Lamp recycling and Retort Facility in Union Grove, WI, with sales/Warehousing in Columbia, SC, Minneapolis/ST. Paul MN, Chicago, IL.

MRT System AB

Lumavagen,
S- 371 47 Karlskrona
Sweden
+46 455 30 28 70

Manufacturer of recycling systems and technology for mercury recovery with distribution in Sweden, Bahrain, Brazil, China, France, Italy, Japan, Poland, Russia, South Korea, Spain, Taiwan, Thailand, USA, and Canada.

www.mrtsystem.com

info@mrtsystem.com

NLR, Inc: Next Level for Recycling (Formally Northeast Lamp

Recycling, Inc.)

250 Main Street
PO Box 680
E. Windsor, Ct 06088
www.nlr-green.com

888-657-5267

Lamp recycling in E. Windsor, CT with service center in Bronx, New York.
Nationwide lamp recycling also available.

Recycle Technologies, Inc.

1480 N. Springdale Road
Waukesha, WI 53186
www.recycletechnologies.com

763-559-5130

Lamp recycler in Waukesha, WI, Customer service in Plymouth, MN

Southeast Recycling, Inc.

906 Chase Drive
Johnson City, TN 37604
800-592-3970
www.recyclebulbs.com

Lamp destination facility, Sales and General Office in Johnson City, with
service centers/ warehouses in Memphis, TN, Nashville, TN, Burlington, NC
and Atlanta GA

Veolia Environmental Services 218 Canton Street

Stoughton, MA 02072
800-478-6055
www.veoliaes.com

Lamp recycler in Tallahassee, FL, Tampa, FL, Port Washington, WI,
Stoughton, MA, Phoenix, AZ., with worldwide services.

WM Lamp Tracker

2007 W. County Road C-2
Minneapolis/St. Paul MN 55113
1-800-664-1434
www.wmlamptracker.com

Lamp recycling facility in Minneapolis/St.Paul, MN, national collection and
recycling services offered for most wastes.

Other Lamp Recyclers

A-Tec Recycling, Inc.

PO Box 7391
Des Moines, IA 50309
800-551-4912

www.a-tec-recycling.com

American Lamp Recycling

22 Stage Door Road
Fishkill, NY 12524
800-315-6262

Bethlehem Apparatus Co. Inc.

890 Front Street
PO Box Y
Hellertown, PA 18055
610-838-7034

www.bethlehemapparatus.com

Cleanlights Recycling, Inc.

665 Hull Road
PO Box 212
Mason, MI 48854-0212
517-676-0044

Complete Recycling Solutions, LLC

1075 Airport Road
Fall River, MA 02720
866-277-9797

www.crsrecycle.com

DAN-X INCORPORATED

48 Trider Crescent, unit 1A5
Dartmouth, Nova Scotia, Canada
B3B-1R6
Tel: 902-446-3950
Fax: 902-468-2813
Mobile: 902-456-3262

www.danxonline.com

www.bulbeater.com

Service providers for fluorescent lamps disposal in Atlantic Canada. DAN-X offers the service to pick up and package all fluorescent lamps to be sent for recycling. Also provides a fluorescent lamp crushing technology known as the MARK 2000.

Environmental Preservation Associates, dba USA Lights

3408 52nd Avenue
Hyattsville, MD 20781
301-699-6244

Environmental Recycling

PO Box 167
527 East Woodland Circle
Bowling Green, OH 43402
800-284-9107

www.envrecycle.com

Green Lights Recycling Inc.

10040 Davenport St. NE
Blaine, MN, 55449-4423
800-208-8340

www.greenlightsrecycling.com

Lamp recycling in Blaine, MN and Charleston, WV, with customer service in Loris, SC

Lamp Recyclers, Inc.

712 Packerland Drive
Green Bay, WI
920-592-1166

Lamp Recyclers of Louisiana, Inc.

46257 Morris Road
PO Box 2962
Hammond, LA 70404-2962
800-309-9908

www.lei-inc.net

Lamp recycler serving Gulf Coast area

Mercury Technologies of Minnesota

Pine City Industrial Park
1360 Holstein Drive
Pine City, MN 55063-0013
800-864-3821

www.mercurytechnologies-mn.com

USA Lamp & Ballast

7806 Anthony Wayne Ave
Cincinnati, OH 45216
(513) 641-4155

ALMR Handlers (Collect/transport lamps to recycling facilities)

ALMR map of country with locations and contact information see <http://www.almr.org/map2.html>

Air Cycle Corporation

2000 S. 25th Avenue
Broadview, IL 60155
800-909-9709

www.aircycle.com

Universal waste handler and equipment manufacturer of drum top crushing

devices.

Everlights

8500 W. 191st Street, Suite 1
Mokena, IL 60448
815-469-0631

www.everlights.com

Regional service provider for lamp and ballast recycling

Mercury Safe Solutions LLC

6772 Concord Road
Delaware, Ohio 43015
614-537-2781

mercurysafesolutions@yahoo.com

Resource Technology, Inc.

Janesville , WI
608-314-3999

www.lampequipment.com

Universal waste handler and recycling equipment manufacturer with worldwide distribution.

Other Handlers (Collect/transport lamps to recycling facilities)

Atlantic-Inland

Wayne, PA 19087
Phone: 610-995-2791 Ext. 18
Fax: 610-995-2792

www.atlanticinlandenvironmental.com

American Recyclight Inc.

PO Box 345
Lemont, IL 60439
866-841-9139 Ext 3564

www.americanrecyclight.com

Bellefontaine Recycling

117 Buckingham Ave. W.
Bellefontaine, OH 43311
513-592-2514

Corporate Lamp and Electronic Recycling, LLC

503 N. Walnut Road, Suite 316
Kennett Square, PA 19348

610-444-0688
www.gocler.com

Eastern Environmental

47 Purdy Avenue
Port Chester, NY
914-934-2100

Envirolight and Disposal, Inc.

2840 Scherer Drive N., Suite 480
St. Petersburg, FL
727-556-2770

Lamp and Ballast Services

5172 E. 65th Street
Indianapolis, IN 46220
800-466-9106

Lamp Recycling Co.

PO Box 279
San Juan, Puerto Rico 00919-0279
878-792-4190

Light Cycle, Inc.

1222 University Ave.
St. Paul, MN 55114
651-649-0079

Maintenance Solutions

198 Donald Lane
Campbellsville, KY 42718
270-403-2888

National Environmental Services LLC

PO Box 390407
Minneapolis, MN 55439-0407
800-872-2226
www.nesllc.com

Re-Light Recycling

PO Box 673
Parkersburg, WV 26102
304-422-1380

Retrofit Recycling

3855 Highway 14 West
Owatonna, MN 55060
800-795-1230

Safety Kleen (Ind.)

2112 Production Road
Ft. Wayne, IN 46808
260-484-8034

Springfield Electric

11 Locations throughout Illinois
Corporate Headquarters
700 North Ninth Street
Springfield, IL 62702
1-800-747-2101
www.springfieldelectric.com

Transformer Service

74 Regional Drive
Concord, NH 03301
603-224-4006

We Recycle, Inc.

500 South Broad Street
Meriden, CT 06450
877-937-3292
www.we-recycle.net

WESCO Distribution, Inc.

80 Farm Road
Bangor, ME 04401
Phone: 207-942-6713
Fax: 207-942-2583
www.wescodist.com
Facilities in Bangor, Portland and Rockland, ME

Wisconsin Ballasts Inc.

West 193 South 6817 Hillendale Drive
Muskego, WI 53150
414-679-2080

Fluorescent Bulb Recyclers in Canada

Environmental Lamp Disposal-- Not operating yet 2/22/08

15003 - 54A Street
Edmonton, Alberta T5A 2M8
Phone: 780-884-6518
Fax: 780-456-1467
Email: envirolamp@yahoo.ca

Contact: Kellan Scheiris
www.environmentallamp.com

Fluorescent Lamp Recyclers Technologies (FLR) Inc.

75 Wanless Court
Ayr, Ontario N0B 1E0
Phone: 800-324-9018 or 519-740-3334
Fax: 519-740-2320
Email: flr2@contech.ca

Contact: Tom Maxwell
www.contech.ca

Nu Life Industries Inc.

#1, 3347 - 262nd Street
Aldergrove, British Columbia V4W 3V9
Phone: 800-247-6724 or 604-857-5588
Fax: 604-857-5775
Email: info@nulife-ind.com

Contact: Tom Harris
www.nulife-ind.com

Proeco Corporation-- Not operating yet 2/22/08

7722 - 9th Street
Edmonton, Alberta T6P 1L6
Phone: 800-661-5792 or 780-440-1825
Fax: (780) 440-2428
www.proeco.com

Recyclers of fluorescent tubes and able to recycle PCB and non-PCB contaminated electrical equipment including ballasts, transformers and capacitors and other mercury contaminated waste material.

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© 2000-2008 [National Electrical Manufacturers Association](#). Questions or comments? Please email lamprecycle@nema.org.



Frequently Asked Questions Information on Compact Fluorescent Light Bulbs (CFLs) and Mercury July 2008

Why should people use CFLs?

Switching from traditional light bulbs (called incandescent) to CFLs is an effective, simple change everyone in America can make right now. Making this change will help to use less electricity at home and prevent greenhouse gas emissions that lead to global climate change. Lighting accounts for close to 20 percent of the average home's electric bill. ENERGY STAR qualified CFLs use up to 75 percent less energy (electricity) than incandescent light bulbs, last up to 10 times longer, cost little up front, and provide a quick return on investment.

If every home in America replaced just one incandescent light bulb with an ENERGY STAR qualified CFL, in one year it would save enough energy to light more than 3 million homes. That would prevent the release of greenhouse gas emissions equal to that of about 800,000 cars.

Do CFLs contain mercury?

CFLs contain a very small amount of mercury sealed within the glass tubing – an average of 4 milligrams. By comparison, older thermometers contain about 500 milligrams of mercury – an amount equal to the mercury in 125 CFLs. Mercury is an essential part of CFLs; it allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact (not broken) or in use.

Most makers of light bulbs have reduced mercury in their fluorescent lighting products. Thanks to technology advances and a commitment from members of the National Electrical Manufacturers Association, the average mercury content in CFLs has dropped at least 20 percent in the past year. Some manufacturers have even made further reductions, dropping mercury content to 1.4 – 2.5 milligrams per light bulb.

What are mercury emissions caused by humans?

EPA estimates the U.S. is responsible for the release of 104 metric tons of mercury emissions each year. Most of these emissions come from coal-fired electrical power. Mercury released into the air is the main way that mercury gets into water and bio-accumulates in fish. (Eating fish contaminated with mercury is the main way for humans to be exposed.)

Most mercury vapor inside fluorescent light bulbs becomes bound to the inside of the light bulb as it is used. EPA estimates that the rest of the mercury within a CFL – about 14 percent – is released into air or water when it is sent to a landfill, assuming the light bulb is broken. Therefore, if all 290 million CFLs sold in 2007 were sent to a landfill (versus recycled, as a worst case) – they would add 0.16 metric tons, or 0.16 percent, to U.S. mercury emissions caused by humans.

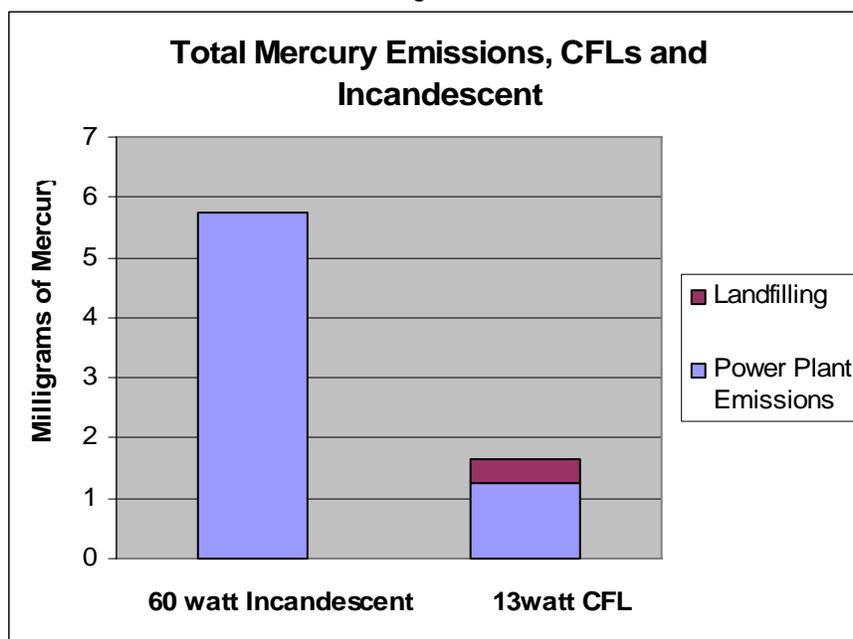
How do CFLs result in less mercury in the environment compared to traditional light bulbs?

Electricity use is the main source of mercury emissions in the U.S. CFLs use less electricity than incandescent lights, meaning CFLs reduce the amount of mercury into the environment. As shown in the table below, a 13-watt, 8,000-rated-hour-life CFL (60-watt equivalent; a common light bulb type) will save 376 kWh over its lifetime, thus avoiding 4.5 mg of mercury. If the bulb goes to a landfill, overall emissions savings would drop a little, to 4.0 mg. EPA recommends that CFLs are recycled where possible, to maximize mercury savings.

Table 1

Light Bulb Type	Watts	Hours of Use	kWh Use	National Average Mercury Emissions (mg/kWh)	Mercury from Electricity Use (mg)	Mercury From Landfilling (mg)	Total Mercury (mg)
CFL	13	8,000	104	0.012	1.2	0.6	1.8
Incandescent	60	8,000	480	0.012	5.8	0	5.8

Figure 1



Because CFLs also help to reduce greenhouse gasses, other pollutants associated with electricity production, and landfill waste (because the bulbs last longer), they are clearly the environmental winner when compared to traditional incandescent light bulbs.

What precautions should I take when using CFLs in my home?

CFLs are made of glass and can break if dropped or roughly handled. Be careful when removing the bulb from its packaging, installing it, or replacing it. Always screw and unscrew the light bulb by its base (not the glass), and never forcefully twist the CFL into a light socket. If a CFL breaks in your home, follow the clean-up recommendations below. Used CFLs should be disposed of properly (see below).

What should I do with a CFL when it burns out?

EPA recommends that consumers take advantage of available local recycling options for compact fluorescent light bulbs. EPA is working with CFL manufacturers and major U.S. retailers to expand recycling and disposal options. Consumers can contact their local municipal solid waste agency directly, or go to www.epa.gov/bulbrecycling or www.earth911.org to identify local recycling options.

If your state or local environmental regulatory agency permits you to put used or broken CFLs in the garbage, seal the bulb in two plastic bags and put it into the outside trash, or other protected outside location, for the next normal trash collection. Never send a fluorescent light bulb or any other mercury-containing product to an incinerator.

If your ENERGY STAR qualified CFL product burns out before it should, look at the CFL base to find the manufacturer's name. Visit the manufacturer's web site to find the customer service contact information to inquire about a refund or replacement. Manufacturers producing ENERGY STAR qualified CFLs are required to offer at least a two-year limited warranty (covering manufacturer defects) for CFLs used at home. In the future, save your receipts to document the date of purchase.

How should I clean up a broken fluorescent bulb?

Because CFLs contain a small amount of mercury, EPA recommends the following clean-up and disposal guidelines:

1. Before Clean-up: Air Out the Room

- Have people and pets leave the room, and don't let anyone walk through the breakage area on their way out.
- Open a window and leave the room for 15 minutes or more.
- Shut off the central forced-air heating/air conditioning system, if you have one.

2. Clean-Up Steps for Hard Surfaces

- Carefully scoop up glass fragments and powder using stiff paper or cardboard and place them in a glass jar with metal lid (such as a canning jar) or in a sealed plastic bag.
- Use sticky tape, such as duct tape, to pick up any remaining small glass pieces and powder.
- Wipe the area clean with damp paper towels or disposable wet wipes. Place towels in the glass jar or plastic bag.
- Do not use a vacuum or broom to clean up the broken bulb on hard surfaces.

3. Clean-up Steps for Carpeting or Rug:

- Carefully pick up glass fragments and place them in a glass jar with metal lid (such as a canning jar) or in a sealed plastic bag.
- Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder.
- If vacuuming is needed after all visible materials are removed, vacuum the area where the bulb was broken.
- Remove the vacuum bag (or empty and wipe the canister), and put the bag or vacuum debris in a sealed plastic bag.

4. Clean-up Steps for Clothing, Bedding, etc.:

- If clothing or bedding materials come in direct contact with broken glass or mercury-containing powder from inside the bulb that may stick to the fabric, the clothing or bedding should be thrown away. Do not wash such clothing or bedding because mercury fragments in the clothing may contaminate the machine and/or pollute sewage.
- You can, however, wash clothing or other materials that have been exposed to the mercury vapor from a broken CFL, such as the clothing you are wearing when you cleaned up the broken CFL, as long as that clothing has not come into direct contact with the materials from the broken bulb.
- If shoes come into direct contact with broken glass or mercury-containing powder from the bulb, wipe them off with damp paper towels or disposable wet wipes. Place the towels or wipes in a glass jar or plastic bag for disposal.

5. Disposal of Clean-up Materials

- Immediately place all clean-up materials outdoors in a trash container or protected area for the next normal trash pickup.
- Wash your hands after disposing of the jars or plastic bags containing clean-up materials.
- Check with your local or state government about disposal requirements in your specific area. Some states do not allow such trash disposal. Instead, they require that broken and unbroken mercury-containing bulbs be taken to a local recycling center.

6. Future Cleaning of Carpeting or Rug: Air Out the Room During and After Vacuuming

- The next several times you vacuum, shut off the central forced-air heating/air conditioning system and open a window before vacuuming.
- Keep the central heating/air conditioning system shut off and the window open for at least 15 minutes after vacuuming is completed.

What is mercury?

Mercury is an element (Hg on the periodic table) found naturally in the environment. Mercury emissions in the air can come from both natural and man-made sources. Coal-fired power plants are the largest man-made source because mercury that naturally exists in coal is released into the air when coal is burned to make electricity. Coal-fired power generation accounts for roughly 40 percent of the mercury emissions in the U.S.

The use of CFLs reduces power demand, which helps reduce mercury emissions from power plants.

For more information on all sources of mercury, visit <http://www.epa.gov/mercury>

For more information about compact fluorescent bulbs, visit <http://www.energystar.gov/cfls>

EPA is continually reviewing its clean-up and disposal recommendations for CFLs to ensure that the Agency presents the most up-to-date information for consumers and businesses.
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