



# CFLs and Mercury: Overview of EPA Efforts

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ENERGY STAR Lighting Partner Meeting

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# Efforts Under Investigation



- EPA exploring several options
  - Source reduction in lamps
  - Recycling
  - Other proper disposal options

# Source Reduction



- Reducing the total amount of mercury used in lamps without sacrificing lamp performance or quality
  - Increases net emissions benefits
  - Requires exact dosing
  - Limits occupational exposure
  - Reduces emissions if landfilled or incinerated

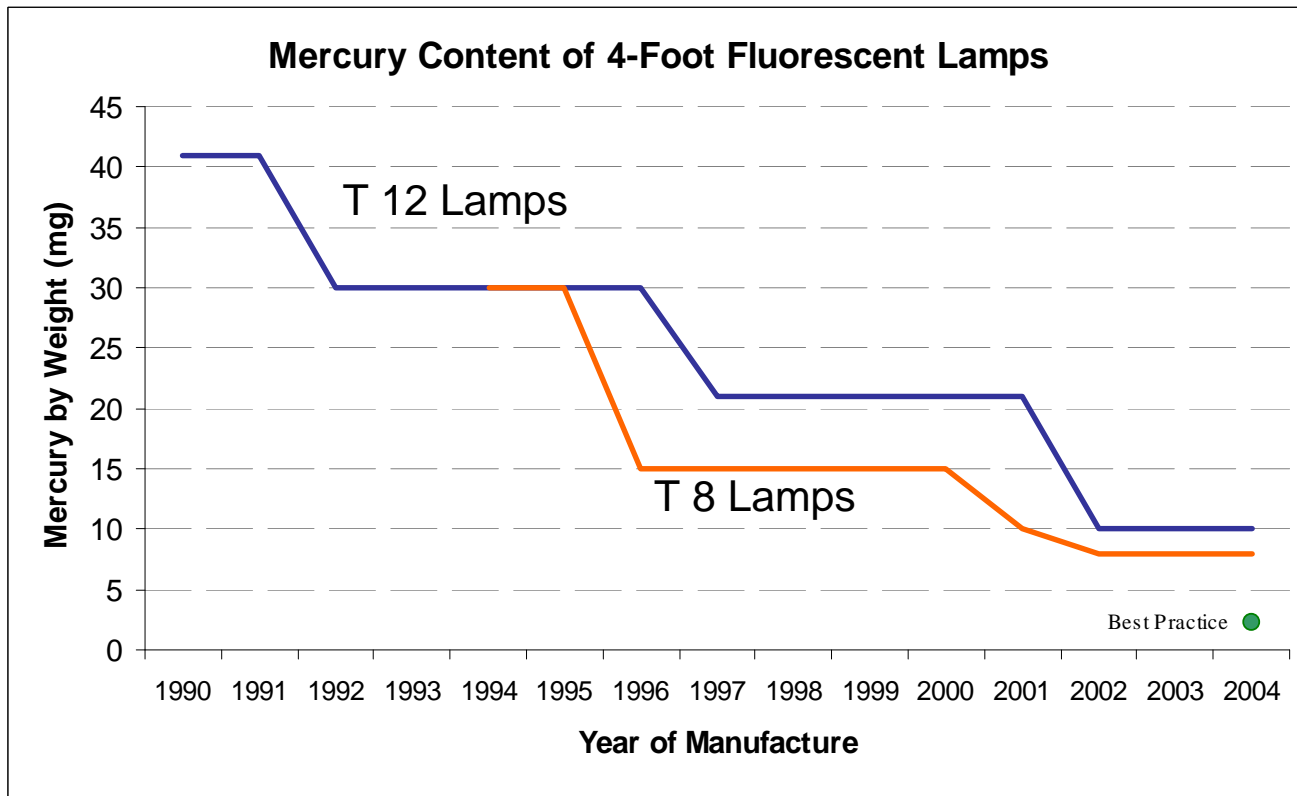


***Estimated CFL content average:  
5 milligrams***

# Source Reduction



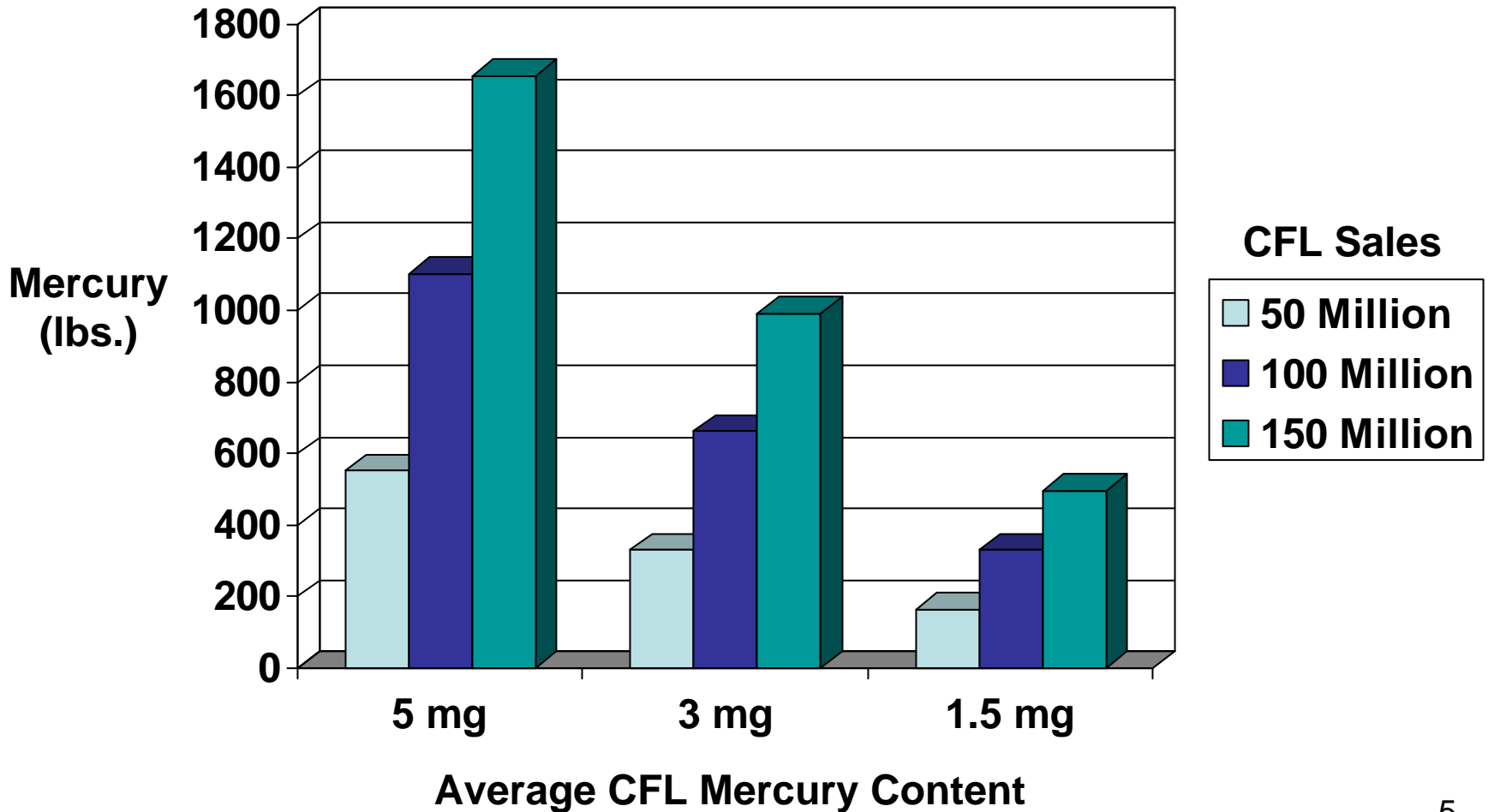
Major advances over the last 15 years



# Source Reduction



## Source Reduction Impacts



# Source Reduction



- Average likely decreasing already:
  - EU's Restrictions on Hazardous Waste Substances (ROHS) 5 milligram limit
  - NEMA voluntary adoption of mercury content limits (5 milligram, with 6 milligrams for higher wattages); will become a NEMA standard in 2007
  - Japan, South Korea and China passed ROHS-like laws
- Increasing lamp life and efficiency is also a form of source reduction

# Source Reduction



Mercury content is becoming a market differentiator



**Feit's Ecobulb  
2.5 – 3.5  
milligrams**



**LITETRONICS™**



**1 milligram**

**Alto technology between  
1.4 and 2.3 milligrams**

# Recycling



- Disposal in household trash is legal at the federal level and in most states, but EPA is actively encouraging proper disposal
- The challenge: disposal and recycling options vary by location
  - Check with local waste management agency or visit [www.lamprecycle.org](http://www.lamprecycle.org) for state contacts
  - [www.earth911.org](http://www.earth911.org) provides zip code-based recycling options
  - OSW launching mercury recycling web site in ~3 months
  - Check with local retailers (IKEA, ACE, TrueValue, etc.)



# Recycling



- EPA has formed a voluntary working group to educate retailers and stakeholders on this complex issue
  - Working meeting with retailers planned in May
- Manufacturers, retailers and utility programs all need to educate consumers on proper disposal
  - Also encouraging development of alliances with municipalities and state agencies

# Recycling



OSRAM SYLVANIA RecyclePak - Windows Internet Explorer

http://www.sylvania.com/Recycle/RecyclePak/

OSRAM SYLVANIA - RecyclePak

ABOUT US | CONTACT US | SALES | WHERE TO BUY | STORES | #SYLVANIA | SEARCH

CONSUMER PRODUCTS BUSINESS PRODUCTS LEARN LIGHTING LIGHTING IDEAS PRODUCT CATALOGS

FAQs  
How RecyclePAK Works  
Packing Instructions  
Partnership  
Why Recycle

Our commitment goes beyond the lightbulb

Home > Lamp & Ballast Recycling > RecyclePak

## RecyclePak

### Recycling Lamps and Ballasts

SYLVANIA is proud to announce its association with Veolia Environmental Services (formerly QWIS Environmental Services), the largest lamp and ballast recycler in the United States, to provide a more environmentally responsible recycling alternative. RECYCLEPAK lamp and ballast recycling kits are now available to our customers through the SYLVANIA website.

Proper recycling is easy with RECYCLEPAK.

- Recycle large or small quantities
- Comply with changing regulations
- RECYCLEPAK prepaid packaging allows you to conveniently manage lighting waste
- One price includes everything you need - packaging, freight, insurance, liability protection and certificate of recycling.

Simply fill, seal and return via the prepaid shipping label. Your boxes, drums or pails will be delivered to one of four fully permitted Veolia recycling facilities, where your waste will be recycled to the highest standards in the industry. That's compliance with confidence!

The recycling services and supplies are administered by Veolia ES Technical Solutions, L.L.C. All orders will be processed and filled by Veolia ES Technical Solutions, L.L.C.

RECYCLEPAK Ballast Pails (30 Gallon)

Request a SYLVANIA brochure

Request a lamp return kit

Order RECYCLEPAK kits...

Recycling Service and Supplies administered by Veolia ES Technical Solutions, L.L.C. All orders will be processed and filled by Veolia ES Technical Solutions, L.L.C.

www.sylvania.com/recycle

**40L Lamp Recycling Box (SUPPLY043)**  
Holds 20 T12 or 20 T8 straight fluorescent lamps, 10 T10 or 20 T8 U-bolts, one 250 compact\* and 5 to 10 CFLs.\* Price includes a poly liner, instructions, terms and conditions, a prepaid return shipping label, processing and a certificate of recycling.  
**\$10.00 ea.**

**40L Lamp Recycling Box (SUPPLY069)**  
Holds 20 T12 or 140 W's high bay fluorescent lamps, 22 T10 or 40 T8 U-bolts, one 250 compact\* and 10 to 20 CFLs.\* Price includes a poly liner, instructions, terms and conditions, a prepaid return shipping label, processing and a certificate of recycling.  
**\$10.00 ea.**

**80L Lamp Recycling Box (SUPPLY044)**  
Each 80L box can accept up to 40 T8, 15 T10 or 20 T10 straight fluorescent lamps. Price includes a poly liner, instructions, terms and conditions, a prepaid return shipping label, processing and a certificate of recycling.  
**\$10.00 ea.**

**Ballast Recycling Pail (SUPPLY040)**  
Each 80L approved 5-gallon pail with 16L attach-tilt lid of holding up to 50 lbs. of CFLs, compact and non-PCB lamp ballasts. Price includes a poly liner, instructions, terms and conditions, a prepaid return shipping label, processing and a certificate of recycling.  
**\$125.00 ea.**

**CFL & Mixed Lamps Recycling Pail (SUPPLY068)**  
Each 80L approved 5-gallon pail with 16L attach-tilt lid can hold up to 50 lbs. of mixed lamps. Price includes a poly liner, instructions, terms and conditions, a prepaid return shipping label, processing and a certificate of recycling.  
**\$100.00 ea.**

**Consumer CFL Recycling Kit (SUPPLY123)**  
Each 5.7" x 9.1" kit can hold up to 12 small compact fluorescent lamps and 6-8 medium to large compact fluorescent lamps. Kit includes a container, liner, label, instructions, terms and conditions, postage and return shipping and processing.  
**\$10.00 ea.**

**CRT & Home Electronics Recycling Kit (SUPPLY061)**  
Each 22.5" x 10.25" kit holds a CRT and other computer and electronic equipment. Boxes can hold a maximum of 30 lbs. Price includes instructions, terms and conditions and a prepaid return shipping label.  
**\$125.00 ea.**

\* Depends on size of lamp

**RECYCLEPAK** OSRAM SYLVANIA

**Order today!**

**It's never been easier.**

VEOLIA offers a variety of United Nations tested and Department of Transportation approved recycling pails and boxes to fit your needs. The containers are designed to last, and the boxes, made from durable 35% recycled fiber, come shrink-wrapped delivered to your door. Please visit [www.sylvania.com/recycle](http://www.sylvania.com/recycle) for more information or to order your RECYCLEPAK™ and arrange pickup and delivery of used lamps.

**Recycling in 5 simple steps.**

- 1. ORDER**  
Visit [www.sylvania.com/recycle](http://www.sylvania.com/recycle) to order your RECYCLEPAK container.
- 2. FILL**  
Fill the RECYCLEPAK with the items to be recycled following the instructions.
- 3. SEAL**  
Properly seal the RECYCLEPAK following enclosed instructions to prepare shipment.
- 4. SHIP**  
Complete and attach the return shipping label and call to request a RECYCLEPAK pickup.
- 5. RECORD**  
Upon pickup, you'll receive a certificate of recycling for your records.

SEE THE WORLD IN A NEW LIGHT **SYLVANIA**

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# Recycling



Take It Back Network: Recycling for products that shouldn't be thrown in the trash. - Windows Int...

http://www.takeitbacknetwork.org/

### What is the Take It Back Network?

It's a group of retailers, repair shops, non-profit organizations, waste haulers and recyclers that offer convenient options for recycling certain products that should not be disposed of in the trash.

The Network was developed to provide consumers with safe and convenient reuse and recycling options for products that contain toxic or hazardous materials. By reusing and recycling these products properly, we can save resources and reduce the amount of harmful contaminants that enter the environment.

### What will Take It Back Network locations recycle?

Various electronic products such as TVs, computers and cell phones. Some also recycle fluorescent light bulbs and tubes that contain mercury.

Select your area for more information & recycling locations:

- King County
- Snohomish County
- Everett
- Pierce County
- Yakima

**Easy recycling for products that shouldn't be thrown in the trash.**

**What's New?**

Fluorescent light bulbs and tubes contain mercury and should be recycled. Select your area for more information about how to recycle your old bulbs and tubes.

Recyclers - Fluorescent Bulb & Tubes - Take It Back Network - King County Solid Waste Division - Windows Internet Explorer

http://www.netbk.org/Browse/FluorescentBulbAndTubeRecyclingIndex.asp

King County

Solid Waste Division  
reference, reuse, recycle

Programs & Services Directory

Take It Back Network

### Fluorescent Bulb & Tube Recyclers

As of October 1, 2005, fluorescent light bulbs and tubes are no longer accepted in the garbage or at King County Transfer Stations. King County recommends that these products be recycled at one of the [Take It Back Network recyclers](#).

Take It Back Network recyclers accept fluorescent bulbs and tubes and recycle them domestically in an environmentally sound manner. Take It Back Network members charge a fee for their recycling services. Learn more in the [fluorescent bulb and tube recycling brochure \(PDF\)](#) 118 kb.

#### Take It Back Network Members

Name	Location	Hours	Take It Back Materials Handled
<a href="#">Greenwood Fine Value Hardware</a>	7201 Greenwood Ave N Seattle, WA	Mon - Fri 9am-7pm Sat 9am - 5pm Sun 9am - 5pm	Light Bulbs and Tubes
<a href="#">Hobby Center, LLC</a>	Seattle, WA	Mon - Fri 10am-5pm on call days	Light Bulbs and Tubes
<a href="#">Nelson Distributors, Inc.</a>	1330 2nd Blvd SE, #200 Bellevue, WA	Mon - Fri 9:30am - 5pm	Light Bulbs and Tubes
<a href="#">Maple Leaf Ace Hardware</a>	9000 Roosevelt Way NE Seattle, WA	Mon - Sat 8am - 7pm Sun 9am - 6pm	Light Bulbs and Tubes
<a href="#">PC Express</a>	3127 C 64th St Tacoma, WA	Mon-Fri 9am - 6:30pm, Closed Sat and Sun	Light Bulbs and Tubes
<a href="#">Photo Services Corp. - Lake Stevens Site</a>	5400 Denner Ave Seattle, WA	2nd Thurs, Last Tues each month 9am - 2pm. By appointment	Light Bulbs and Tubes
<a href="#">Photo Services Corp. - Kent Site</a>	2245 77th Ave, S	Disc-off 2nd Tuesdays each month 9am - 2:30pm, closed for lunch 12am - 1pm	Light Bulbs and Tubes

# Other Proper Disposal Options



- Important to be clear that CFLs are still environmentally preferable even if recycling isn't available!
  - *"We have children in our home, so we've removed all the CFLs."* **CFLs do not contain methyl mercury**
  - CFLs are not a significant source of human-caused mercury emissions (actually a net emissions benefit); estimated at less than 0.01% of total U.S. emissions
  - Coal-fired power plants represent single-largest contributor: 40%
  - Consumers can make the biggest difference in mercury emissions by using less energy
- CFLs should be diverted from municipal waste incinerators

# EPA Communication Tools



CHANGE FOR THE  
BETTER WITH  
ENERGY STAR

Products that earn the ENERGY STAR® prevent greenhouse gas emissions by meeting strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and the U.S. Department of Energy. [www.energystar.gov](http://www.energystar.gov)

## Frequently Asked Questions

### Information on Proper Disposal of Compact Fluorescent Light Bulbs (CFLs)

#### Does EPA recommend the use of CFLs?

Yes. CFLs, when compared with standard incandescent bulbs, offer many benefits. First, they help save energy and money. They use 2/3 less energy than standard incandescent light bulbs, and last up to 10 times longer. Replacing a 60-watt incandescent with a 13-watt CFL can save you at least \$30 in energy costs over the life of the bulb. Second, CFLs offer convenience because they last longer, and come in different sizes and shapes to fit almost any fixture. In addition, CFLs produce about 70% less heat than standard incandescent bulbs, so they're safer to operate and can help cut energy costs associated with home cooling. When shopping, always look for ENERGY STAR qualified CFLs.

#### Is it true that CFLs contain mercury? Why and how much?

CFLs contain a very small amount of mercury sealed within the glass tubing – an average of 5 milligrams (roughly equivalent to the tip of a ball-point pen). Mercury is an essential, irreplaceable element in CFLs and is what allows the bulb to be an efficient light source. By comparison, older home thermometers contain 500 milligrams of mercury and many manual thermostats contain up to 3000 milligrams. It would take between 100 and 500 CFLs to equal those amounts.

There is currently no substitute for mercury in CFLs; however, manufacturers have taken significant steps to reduce mercury used in their fluorescent lighting products over the past decade.

#### Should I be concerned about using CFLs in my home, or should I take any special precautions?

CFLs are safe to use in your home. No mercury is released when the bulbs are in use and they pose no danger to you or your family when used properly. However, CFLs are made of glass tubing and can break if dropped or roughly handled. Be careful when removing the lamp from its packaging, installing it, or replacing it. Always screw and unscrew the lamp by its base, and never forcefully twist the CFL into a light socket by its tubes. Used CFLs should be disposed of properly using the guidance below.

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

Because ENERGY STAR qualified CFLs last up to 10 times longer than incandescent bulbs, you should not have to deal with burned out CFLs very frequently. When you do have a CFL burn out, follow these guidelines to dispose of it properly:

- Like paint, batteries, thermostats, and other hazardous household items, CFLs should be disposed of properly. Do not throw CFLs away in your household garbage if better disposal options exist. To find out what to do first check the following

EARTH911 for local disposal options. Another option is to check directly with your local waste management agency for recycling options and disposal guidelines in your community. Additional information is available at [www.hmrrecycle.org](http://www.hmrrecycle.org). Finally, IKEA stores take back used CFLs, and other retailers are currently exploring take-back programs.

- If your local waste management agency offers no other disposal options except your household garbage, place the CFL in a plastic bag and seal it before putting it in the trash. If your waste agency incinerates its garbage, you should search a wider geographic area for proper disposal options. Never send a CFL or other mercury-containing product to an incinerator.
- ENERGY STAR qualified CFLs have a two-year warranty. If the bulb fails within the warranty period, return it to your retailer.

#### What should I do if a CFL breaks?

Because there is such a small amount of mercury in CFLs, your greatest risk if a bulb breaks is getting out from glass shards. Research indicates that there is no immediate health risk to you or your family should a bulb break and it's cleaned up properly. You can minimize any risks by following these proper clean-up and disposal guidelines:

- Sweep up—don't vacuum—all of the glass fragments and fine particles.
- Place broken pieces in a sealed plastic bag and wipe the area with a damp paper towel to pick up any stray shards of glass or fine particles. Put the used towel in the plastic bag as well.
- If weather permits, open windows to allow the room to ventilate.

#### What is mercury, what are the sources of mercury emissions, and what are the risks?

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. Utility power plants (mainly coal-fired) are the primary man-made source, as 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% of the mercury emissions in the U.S. EPA is implementing policies to reduce airborne mercury emissions. Under regulations issued in 2005, coal-fired power plants will need to reduce their emissions by 70 percent by 2018.

CFLs present an opportunity to prevent mercury emissions from entering the environment because they help to reduce emissions from coal-fired power plants. A coal-fired power plant will emit 13.6 milligrams of mercury to produce electricity required to use an incandescent light bulb, compared to 3.3 milligrams for a CFL.

Even in areas without significant coal-fired power generation as part of the electricity mix (e.g., Alaska and the Pacific Northwest), there are other, equally positive environmental

# Next Steps



- Consumer FAQ currently being updated
- Developing a stakeholder FAQ
  - Broader context with focus on the big picture
  - Why it's important to continue CFL promotion
- Setting agenda for May working session with retailers
- Proper disposal information will be better integrated into Change a Light materials this fall
- Utilities and retailers can help by providing clear, specific information for community residents



Questions?