
EXTENDED PRODUCER RESPONSIBILITY WORKSHOP: EXPLORING SOLUTIONS FOR MERCURY LAMPS

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US EPA REGION 9 SOUTHERN CA FIELD OFFICE, 600 WILSHIRE BLVD, LOS ANGELES, CA

FINAL NUMBER OF TOTAL REGISTRANTS: 106
IN-ROOM PARTICIPANTS 22 / WEBINAR PARTICIPANTS 84

This document is intended as a brief overview of the EPR workshop on mercury lamps. For further details, please refer to [presentation links](#).

Welcome

Steven John, US EPA Region 9 Director of the Southern CA Field Office welcomed the audience in attendance and listeners on the webinar. He described the scope of the issue - nearly 110 million American households use mercury lamps. The purpose of this workshop is for non-government organizations, government, retailers, manufacturers, recyclers and materials management companies to come together to discuss the sustainable management of mercury lamps using a product stewardship model.

Why We Are Here

Kevin Hendrick, Del Norte Solid Waste Management Authority (DNSWMA) Executive Director provided a brief overview of Del Norte County, the first U.S. municipality to adopt a zero waste plan. He reiterated the problem that there are many waste products which lack markets for collection and recycling. Currently, the disposal cost for a compact fluorescent lamp (CFL) is greater than its purchase price. Clearly, consumers have a role in the end of life disposal and management of CFLs but we must make recycling as easy as it was to buy them.

National Overview of EPR for Mercury Lighting

Sierra Fletcher from the Product Stewardship Institute provided an overview of EPR for mercury lighting from the national perspective. There are three existing state programs that contain many of the same elements. Producers are required to: implement and finance collection and recycling for residential and small business lamps, submit an annual report, facilitate public education and outreach, pay an annual fee to the state, comply with California's mercury content standards and they may not sell lamps if they are non-compliant

- Maine has the only EPR program for mercury lamps that is currently up and running. The National Electrical Manufacturers Association (NEMA) is contracting Veolia Environmental Services to provide pre-paid boxes for CFL recycling around the state of Maine.
- The Washington State CFL recycling program offers producers two options to participate. They may develop an independent plan, or adopt a State-contracted plan which is producer funded.

The Washington Program covers residential lights. Other elements to the program include a disposal ban of mercury lamps, and a focus on mail-back and curbside collection.

- Vermont just passed EPR legislation for mercury lamps and is working toward implementation in 2012. Like Maine, Vermont already had very strong infrastructure in place, but lacked sustainable funding. Vermont's program requires a minimum of 2 collection facilities per county.
- Massachusetts EPR for mercury lamps is in progress. The Mercury Management Act of 2006 addressed a number of mercury products. It set recycling targets for all sources of mercury lighting, and manufacturers can be penalized up to \$1 million if recycling rates do not achieve targets. Their EPR program is now in the regulatory process.

Washington State Lamp Program and Cost Model

Sego Jackson, Principal Planner for Snohomish County, Washington, and Policy Chair of the Northwest Product Stewardship Council, gave a summary and overview of Washington's mercury lights producer responsibility legislation and how we need to regard costs in considering collection systems.

Washington will implement an EPR system for mercury lamps in 2013 which includes a disposal ban and requires all mercury lighting to be recycled. Any person can drop off 15 lights in a 90 day period, and there is a convenience requirement for collection services across the state of 1 per county and 1 per each city with a population of 10,000 or more.

Sego used Washington electronics EPR program as an example of a successful collection and recycling program. Out of 260 plus ongoing collection sites, only 12 are from the public sector. 92% of WA residents have an E-cycle collection site within 10 miles from home. How is Washington's E-cycle collection program relevant to EPR for mercury lamps? It would cost a projected minimum of \$14 million for the state or local governments to fund e-waste collection systems. In reality, it costs manufacturers about \$10 million to manage the collection system—producer responsibility provides a \$4 million savings statewide for Washington. In building a cost model for mercury lamps collection, it is important to consider the dynamics of EPR systems which are unique to each product, and the implications of covering all costs. These dynamics impact the robustness and convenience of collection systems.

The Northwest Product Stewardship Council engaged the Cascadia Consulting Group to design a methodology to measure direct and indirect costs associated with the collection of paint and mercury lamps. The resulting [Excel-based financial model](#) (Excel, 132KB) is intended to help existing and potential MRW (moderate risk waste) collection sites isolate and estimate the cost to collect paint and mercury lamps at their facilities. This information is important for understanding the costs for handling a specific material at an MRW facility and for negotiating potential payments if providing collection services for a stewardship program that covers the costs of collection. The cost model and how-to-use-it instructions are located at <http://www.productstewardship.net/productsPaintActivities.html>

Closing the loop: EPR for Lamps in Canada

Lyn Smirl, Environmental Management Analyst with British Columbia Ministry of the Environment led the discussion on [EPR and the Lighting Program in British Columbia](#), and offered an overview of BC recycling legislation from a government perspective. She reviewed the roles and responsibilities of provincial government, producers, local government, and consumers in EPR of mercury lamps. Most of

the collection sites for fluorescent lighting in BC are retailers. The program is meeting its first year targets of 10-12% capture rate, and in July 2012, the light program will expand to include all lighting equipment parts and bulbs. EPR in BC is clearly much more advanced than in the U.S., and EPR for lighting is one of many successful programs in BC ranging from pesticides to paint and electronics.

Mark Kurshner from Product Care provided a program overview of [Light Recycle: Product Care's BC Fluorescent Lights Recycling Program](#). The Light Recycle collection system is primarily based on return-to-retail locations. Some commercial CFLs are leaking into the residential collection sites, but the Light Recycle program is tolerating this for now because the program is expected to expand to cover commercial lamps. Consumer awareness is raised at point of sale or point of return, through educational tools like handouts and calendars. The program is paid for through eco fees. Collection targets are based on a "capture rate," calculated based upon the volume of mercury lamps available for collection each year. This number is challenging to calculate because the quality of lamps is improving and lamps are lasting longer. The Light Recycle Program captured 10% of what was available for collection in 2010, and 32% of what was available in 2011. By 2012, producer responsibility programs are required for all lamp technologies- incandescent, halogen, LED, etc. for residential and commercial sector use. Collection sites will expand beyond retail. Light Recycle will be the first EPR program for commercial lamp fixtures in North America. Expanded program budget, eco fee rates and collection systems are under development.

[Results from Lamp Collection Pilots](#)

Heidi Sanborn, Executive Director of the California Product Stewardship Council shared the findings of consumer and business [focus groups](#) and a statistically valid [phone survey](#) done in the San Gabriel Valley in 2010:

- About 50% of consumers and retailers are unaware of the disposal ban
- Most consumers dispose illegally because they are unaware item is hazardous, unaware of where to dispose of properly and throwing in trash is convenient (45% of consumers admit they throw in trash) as outlined in the [Fact Sheet on Consumer Awareness of Disposal Bans](#).
- Consumers suggested financial incentives for recycling
- Most people purchase lamps from retailers with no take-back program
- Benefits to Businesses being a collection location is outlined in the [Fact Sheet](#) of same name.
- Consumers and retailers say producers should fund take-back systems (retailers should pay because there is already competition to drive the costs down)
- Consumers want producers to make less toxic products
- Consumers know they will pay either way either up front or at the back end with disposal fees or taxes and they said they would rather pay up front and keep the government out of operating the take-back program as outline in this [Fact Sheet on Who Should Pay?](#)

[CFL Recycling Campaign and Upstream Lighting Program](#)

Eugene Ayuyao, Southern California Edison (SCE) provided an overview of Southern California Edison's Upstream Lighting Program:

- The program will support a statewide approach for continued customer education and public awareness for proper CFL disposal

- SCE has provided customer incentives only to products that meet stringent mercury limit requirements.
- Upstream Lighting Program team is currently working to engage big box stores and manufacturers to work together in promoting CFL recycling efforts
- Among future plans, SCE will add shatter-proof requirement to product offerings and tap new lighting technologies such as Light Emitting Diodes (LEDs).

Current Situation in California on Mercury Lamps Management: Panel Discussion

Stephen MacIntosh, General Manager, Republic Services Inc. – Why Republic Services Inc. supports EPR for mercury lamps ([presentation](#)):

- Republic recognizes that mercury lamp disposal bans are an unfunded mandate placed on the backs of local jurisdictions
- As the second largest waste management hauling company in the United States with 76 recycling facilities, Republic supports EPR as the future of waste management especially for hazardous and hard to manage products
- EPR would ensure adequate public education on mercury lamps management and provide adequate collection opportunities which would protect employees from possible mercury exposure due to millions of lamps ending up in the trash.

Jennifer Ewert, Home Depot – Presented overview of the [Home Depot CFL Recycling Program](#) and product stewardship challenges from a national retailer's perspective:

- Provides household consumers with a free and convenient way to recycle CFLs
- Since the launch of the program in June 2008, over 4 million CFLs have been recycled
- Bulbs collected are managed by an environmental management company, ensuring compliant recycling
- Program challenges—The program is for CFLs only, no tubes, and does not provide take-back services for businesses, agencies, or organizations with other mercury lamps
- The Home Depot in San Luis Obispo County accepts all types of CFLs due to a local ordinance requiring retailers who sell lamps to take them back. Often times, customers dump their end-of-life bulbs in the Home Depot parking lot and the store is responsible for recycling them anyway.

Q. Can local governments promote The Home Depot CFL Recycling Program?

A. Yes, it is okay for local governments to promote The Home Depot CFL Recycling Program, as long as it is communicated that this program is for household consumers only. The Home Depot still wants to be able to provide customers with the appropriate information for alternative take back and recycling facilities.

Dan Gillespie, Lighting Resources – Offered the recycler's perspective of mercury lamps EPR ([presentation](#)).

- Lighting resources is located in Ontario and is one of only 2 permanent lamps recyclers in CA, the other is in Hayward (San Francisco Bay Area).
- More end-of-life mercury lamps which are generated in California are recycled in Phoenix, Arizona than in California.
- Waste Management and Veolia Environmental Services recycling facilities are both based in Phoenix.

- No one knows for sure the annual number of mercury lamps available for recycling, and estimates are sketchy
- Costs of recycling are continuing to increase, but competition between recyclers drives the price down
- Mercury lighting contains rare earth metals which must be recovered if we are to have them available to make new products in the future.
- Lighting Resources views producer responsibility as a great idea, but is wary of implications for recyclers if producers put out one contract and if one recycler wins the bid, it could put other companies out of business thereby causing a loss of competition amongst recyclers.

Lindsay Hassett, Illumalighting – [Discovering LED's](#)

- LED technology is rapidly changing
- Top 10 benefits of LEDs:
 - Energy Efficient
 - Long lasting
 - Low to no maintenance
 - Low heat emitting
 - Mercury Free
 - No UV radiation
 - Workplace & food safety
 - 5 year warranty
 - Employee satisfaction of LED lighting in the workplace
 - Recyclable which promotes green collar jobs with standards
 - LED lighting is made with better quality than mercury lamps, is more efficient, safer, and recyclable with end-of-life management in mind

Lindsay concluded that fluorescents are a quickly fading transition technology and there should also be EPR for LEDs to ensure they too have an end of life management system even though they do not contain mercury.

Victoria Rome, Natural Resources Defense Council – Spoke about mercury reduction from the NRDC perspective ([presentation](#)).

- Provided a comparison of the overall mercury impacts of 100w incandescent lights, 72w halogen incandescent lights, 27w CFLs, and 15w LEDs, lamps with equivalent lighting.
- To reach minimal mercury and power plant emissions, we need to progress toward LED technology
- Even if no mercury lamps were recycled, by using them we would still see a reduction in overall mercury emissions especially airborne emissions which are the most dangerous.

Q. Does the study assume all the electricity to power the lamps is from coal fired power plants?

A. The study assumes the same percentage of coal fired power plants that are currently in operation.

[Maximizing Mercury Lamp Recycling in the United States](#)

Jennifer Dolin, Manager of Sustainability & Environmental Affairs at Osram Sylvania provides a national producer perspective:

- Increasing lamp recycling and the elimination of mercury are obvious environmental goals

- Osram Sylvania has reduced mercury in lighting products, but is has reached a limit. The fact is, fluorescent lights need mercury to work—it's physics.
- In order for any take-back program to work, consumers must change their behavior. If consumers don't recycle lamps, then the best take back program in place is ineffective.

Provided overview of NEMA's National Model for Lamp Recycling:

- Lamp manufacturing industry establishes a non-profit third party organization
- Environmental Handling Charge (EHC) added visibly to the price of household mercury-containing lamps provides a chance for retailer to educate the consumer –they've already paid, so they might as well recycle
- The cost of the EHC takes a lot of factors into effect. Essentially, it would cover recycling costs for the projected volume of lamps available for recycling each year. The EHC will be the same at every retailer
- Voluntary collection by retail, municipal, and community sites
- Education and outreach shared by all stakeholders
- Areas of Concern:
 - Sustainable funding mechanism
 - Convenient collection infrastructure
 - Consumer behavior
 - Shared responsibility (no single stakeholder should be held responsible for solving the entire problem)

Q. Is there any study that actually documents the public wants and needs a visible fee for education? Government officials in British Columbia state that they have not seen anything that indicates the public cares one way or the other and we know it adds costs and tracking for the retailers.

A. Some retailers want a visible fee but there are no studies that document the consumers benefit or want the fee to be visible.

Q. Is there another way to educate the consumer about take back programs without printing on the receipt?

A. Yes, Osram Sylvania does work with retailers on point of sale marketing and messaging to educate the consumer.

Q. In Canada there are a number of take-back programs working smoothly and with full cooperation from consumers. In the U.S. it is a much harder road with the same producers. Why the discrepancy?

A. Politics, which affect the way laws are implemented.

Q. Would NEMA and the manufacturers of lamps be open to a paint type model for the visible fee?

A. we really want it to be a visible fee, because we want the fee to be transparent to consumers. The national model is actually quite close to the paint model.

Comment: Disposal bans without management plans are irrelevant. They only frustrate the public. The public is banned from throwing bulbs into the trash, but they have no options for recycling. Focus groups from San Gabriel Valley show that consumers want to do the right thing, they just don't know what to do. They are uninformed and lack options which make them angry at government and the producers.

Comment: When consumers purchase lamps and pay the EHC, they need convenient access to a take-back service. What convenience level would the producers support – one per every 5,000 people or some other measure?

Response: Convenience is the crux. If take back is inconvenient, consumers will not cooperate. If you make it convenient for the collector (free), then take back rate should increase. Producers will negotiate a convenience level.

New Possibilities for Lamp Source Reduction and Recycling

Josh Tooker, Legislative Director, for the Office of Senator Alan Lowenthal, provided a legislative update and overview of SB 589 on recycling of household mercury-containing lamps (a two year bill in the legislature).

Q. Why not mandate retail take back at the state level? It has resulted in higher collection and recycling rates than voluntary take-back programs.

A. Mandated retail take-back has political complications. We want to avoid targeting a single stakeholder which in this example would be the retailers.

Comment: The majority of responsibility should be on producers, the only stakeholder with the ability to change the design.

How to Support Lamp Take-Back Through Purchasing Policy and Practices

JoAnna Abrams, MindClick – [Supporting EPR Through Purchasing Policy and Practices](#) (also see [Lamps Purchasing Guide](#))

What can be done at the purchasing level to control mercury lamp waste?

- Incorporate take-back language for fluorescent lamps in purchasing requirements
- Consider buying from manufacturers and/or suppliers who provide take back as part of their service, and include this in the proposal to ensure full cost accounting of the lifecycle costs of this purchase to your jurisdiction, while encouraging innovation and responsibility
- Integrate standards and requirements
- Specify maximums for mercury content
- By putting language directly into procurement policy, it changes the outcome of collection and recycling and starts to establish norms and standards.
- Sustainability scorecards drive adoption, streamline information gathering and ensure compliance (provides ways to align interests of all involved, ensures transparency, and helps to develop purchasing behavior that is ultimately better for the environment)

Facilitated Discussion on Removing Barriers, Pilots/Partnerships, Next Steps

Heidi Sanborn, CPSC – Facilitator

Andre Algazi, Department of Toxic Substances Control – DTSC’s perspective

- The “Ban without a plan” didn’t solve problem of mercury lamps management, but did initiate discussion of mercury lamps EPR

- The [AB 1109 Lamp Task Force report](#) provided a roadmap as to what the stakeholders could agree too
- Elements identified for a workable program:
 - Funding
 - Set meaningful collection and recycling rates and goals

COMMENTS:

Coment by Jennifer Dolin: Manufacturers can't assess additional costs for a product that people expect to become cheaper and cheaper. When manufacturers can't recover costs, they don't have the resources or incentives to increase recycling

Comment by Dan Gillespie: NEMA has a huge hole in solving this problem but they must bring in lamp recyclers and handlers to agree on a solution so that recyclers thrive and they do not put us out of business.

Comment by Kevin Hendrick: Local governments collect mercury lamps for the benefit of the general public. There is no law that requires local governments to collect these waste products and pay for it. Local governments could easily just stop caring, and things would be disastrous. We need action! If NEMA supports a visible fee only model, a 2/3 vote is required in California and that is really hard, but not impossible. If legislation comes forward that includes the perfect EPR model and we got NEMA and the Manufacturers Association behind it and the Retailer's Association behind it with full support, why couldn't we believe that we can get a 2/3 vote?

Workshop Wrap-up and Conclusion

Lindsay Hassett with Illumalighting suggested that it might be possible to try and get some of the carbon cap and trade money to subsidize the collection of the fluorescent lamps as they are directly linked to CO2 reduction. This was the only new idea generated from the group.

There will be discussions in the next few months on whether the lamp legislation language can be agreed on by all the stakeholders. Heidi ended by stating we need a solution in California this year one way or another with as broad a coalition of stakeholder support as is possible.

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