



**Fluorescent Lighting Product Stewardship
National Dialogue Meeting #3
Meeting Summary
Seattle, WA
November 6-7, 2008**

ATTENDEES AND MEETING MATERIALS

The meeting was attended by 29 participants, with another 16 participants using a conference call dial-in number over the course of the two-day meeting. The final participant list, agenda and other meeting materials are on the PSI website at

<http://www.productstewardship.us/FluorescentLightMeetingSeattleWA2>.

WELCOME AND INTRODUCTIONS

Scott Cassel (PSI) opened the meeting by welcoming the group and thanking the Washington Department of Ecology for hosting the meeting. Sponsorships were provided by Snohomish County, the Local Hazardous Waste Management Program of King County, and Waste Management/LampTracker. Ken Zarker of the WA Department of Ecology and Dave Galvin of King County, WA (and President of PSI's Board of Directors) also welcomed the group.

RECAP AND STATUS OF NATIONAL DIALOGUE

The goal of this dialogue is to promote the use of energy efficient lighting while eliminating or reducing the amount of mercury and other toxins entering the environment during the lifecycle of fluorescent lamps. Specific goals include reducing the environmental impact of the manufacture of fluorescent lighting, increasing the manufacture and procurement of environmentally preferable lighting, and maximizing the safe collection and recycling of spent lamps from households and businesses through the development of a nationally-coordinated system that is financially sustainable. Workgroups on Bans & Enforcement, Infrastructure (for consumer sector recycling), and Financing were created at Meeting #1 in Salt Lake City, UT in April 2008, and have continued to meet following Meeting #2, which was convened in July 2008 in Seattle, WA.

ENFORCEMENT & PROMOTION OF DISPOSAL BANS

The Bans & Enforcement Workgroup has the dual purpose of promoting compliance with, and enforcement of, disposal bans and encouraging the adoption of new bans on the disposal of fluorescent lamps. The group refined and developed next steps for the two corresponding strategies that have been the focus of the Workgroup:

1) **Promoting Compliance and Enforcement of Existing Bans.**

- PSI will distribute a press release to raise awareness of existing regulations, commend enforcement of those regulations, and promote the passage of disposal bans. The press release will be distributed to retail associations, Building Owners and Managers Association, International Council of Shopping Centers, Chambers of Commerce, utility companies, the American Hospital Association, and university associations. When sending the press release, PSI will prepare target audiences to disseminate the information in early 2009.
- PSI will inquire about the availability of artwork (dumpster stickers, etc.) used in educating the public on disposal bans from the VT Department of Environmental Conservation and King County WA.
- Develop guidance on cleaning up broken bulbs in dumpsters.

2) **Promoting the Adoption of New Disposal Bans.** PSI will finalize a document with model disposal ban language and other information useful to those considering bans at the state or local level, including artwork, mechanisms used to create disposal bans, and examples of existing disposal bans. Several additions and revisions to the draft ban language were discussed and will be added:

- Recycle mercury-containing lamps so that the mercury is recovered. Some stakeholders would like to see mercury retired when possible, while others prefer that it be available for re-use in domestically manufactured products as long as it is needed.
- Optional component requiring registration (at minimum) or oversight of drum top crushers.
- Optional component specifying penalties and how they are assessed and enforced.
- Additional information on local disposal bans to the Disposal Bans Document.

PSI will also develop and distribute a Memorandum of Understanding promoting the draft language once finalized. Maria Victoria Peeler and Becky Jayne will share the language with the Quicksilver Caucus. PSI will identify an appropriate member of ASTSWMO to bring the language and MOU to that organization.

MODEL PROGRAM CRITERIA AND ELEMENTS

The following are recommended criteria for establishing an effective statewide, comprehensive program on fluorescent lighting:

1. Promotes the use of energy efficient lighting
2. Maximizes **safe** collection and recycling
3. Offers free and convenient recycling for the consumer
4. Levels the playing field for manufacturers, retailers, and others
5. Shares responsibility (even if direct financial responsibility is not equally shared)
6. Provides the ability to measure progress toward increased recycling
7. Is effective, in that it captures and recovers a substantial number of lamps (recognizing that this requires consumers to take action in response to a strong public awareness effort)
8. Uses funds wisely (e.g., cost effective)

An effective statewide, comprehensive program on fluorescent lighting would include the following elements:

1. Procurement
2. Collection infrastructure for consumers
 - Voluntary retail collection
 - Convenient and comprehensive coverage (including rural)
3. Disposal ban (commercial and consumer sectors)
4. Performance metrics and goals

5. Public education
6. Sustainable financing system

Participants decided to keep the Public Education element in the “parking lot” of issues to address later. All other elements were addressed during the meeting.

PROCUREMENT

For lighting procurement, there is an interest in promoting products that are long-lasting, efficient, and low toxicity. These qualities may be contradictory at times, as the manufacturers explained. Simply seeking the “lowest mercury” option may result in the use of less efficient or shorter life-span products, which may ultimately result in higher mercury releases. It is also difficult for customers to obtain accurate data on lamp mercury content, and while a manufacturer may have the lowest mercury version of one product, it may not have this across all product lines.

Procurement guidelines should encourage a transition away from fluorescent lamps as soon as less toxic (or non-toxic) alternatives are available. Manufacturers have accurate information about their products. Their lifecycle analyses of product impacts conclude that the greatest environmental benefit is gained by using the most energy efficient product.

OPTIONS FOR SUSTAINABLE FINANCING (for Consumer Sector)

Theresa Stiner of IA Department of Natural Resources presented four general models for the sustainable financing of consumer fluorescent lamp recycling that will be included in a draft report to the Iowa legislature. The four options are:

- 1) Extended producer responsibility (EPR) with costs internalized (Manufacturer Cost Internalization)
- 2) Manufacturer-run program based on a consumer fee (Consumer Fee)
- 3) Combined utility/ratepayer financing (Utility/Manufacturer Financing)
- 4) Retailers provide program and internalize costs (Retailer Cost Internalization)

Cap-and-trade Concept

Joe Howley of GE shared the concept of incorporating financing for fluorescent lamp recycling into potential federal cap-and-trade legislation on greenhouse gas emissions. This is not a formal proposal being put forward by industry at this time, but a concept that would allow for the creation of a national, industry-run system to promote and fund (in full or part) the collection of consumer fluorescent lamps at retail locations. The exact type of system, including cost flows, costs covered, and what type of lamps would be collected (CFLs vs. LFLs) remains to be discussed. The manufacturers would most likely be required to pay into the system (as industrial GHG emitters) anyway. There was interest in learning more about how this might work, but concerns about competing priorities for the cap-and-trade funding.

Areas of Agreement and Disagreement

The following represents areas of general agreement across stakeholder groups:

- 1) A financing system is needed to create a sustainable collection and recycling infrastructure for the consumer sector.
- 2) Such a system should ideally not include an end-of-life fee.
- 3) Retailers are a critical piece of the needed collection infrastructure for the consumer sector. *Voluntary* collection should be encouraged.
- 4) While local and state government play an important role in oversight, and possibly education, they should not pay for collection and recycling.

- 5) The goal of a financed collection program is to capture as many lamps as possible to prevent them going to solid waste disposal.
- 6) *Most* stakeholders agree that manufacturers should manage a product stewardship organization to oversee the program, although they do not agree on the source of the funds to pay for collection and recycling. (There is not consensus on this component from the recycling industry.)

Key areas of disagreement include:

- 1) Whether a visible fee at point of sale or cost internalization will reduce demand for the product. Manufacturers believe that either system will increase the price of the product and result in lower sales of an energy efficient product. Government officials and environmental representatives believe that cost internalization will allow a company to find creative ways to recover costs from other company product lines.
- 2) Whether extended producer responsibility is an effective design driver on lamps. Manufacturers describe the “race to the bottom” that characterizes their industry’s efforts to reduce the amount of mercury in their products, though it cannot be removed completely. Others believe that manufacturer responsibility for mercury-containing lamps at end-of-life will encourage the development and promotion of less toxic alternative products.
- 3) Whether utility financing is a viable financing mechanism.
- 4) Whether retailer cost internalization is viable and likely to spread nationally beyond The Home Depot.
- 5) Whether legislation is needed. State-by-state legislation presents implementation challenges for the manufacturers (if they are involved), but others see it as the only way to ensure a sustainable solution with a level playing field. Manufacturers expressed their interest in monitoring the development of voluntary initiatives in the near-term, as well as their preference for federal legislation to multiple state solutions. Others asserted that legislative solutions are needed in the states as soon as possible.

Key Points on Basic Models

The extended producer responsibility with cost internalization/“manufacturer cost internalization” model is of interest to many state and local government and non-profit stakeholders as providing a simple means of assigning responsibility and providing ease of use to the consumer (with no end-of-life fee). While the manufacturers expressed their concern that an increase in the cost of the product (in particular consumer CFLs) would reduce demand, questions were raised as to whether costs could be spread across product lines. The manufacturers indicated that this would be counter to their business models.

They also added that with cost internalization, the amount of money it cost to fund the collection and recycling system would be added to each product with a profit percentage added on (thereby increasing the cost of the product more than if the per-product cost of collection and recycling was added as a visible fee at point of purchase). This was described as the standard business model.

OSRAM-SYLVANIA has outlined a proposal for a national, manufacturer-financed program based on the Waste Electrical and Electronic Equipment (WEEE) Directive in Europe, which is an example of a manufacturer-run program with a visible fee. Jennifer Dolin specified that the company is interested in this only if it is a national program with a fee visible to the consumer at the point of sale. Such a system could be tested in California to assess costs prior to being rolled out nationally. Other companies have not endorsed this option.

Utility/ratepayer funding has been increasing around the country voluntarily, except in the case of Minnesota, where utilities with more than 200,000 customers have been required to pay for collection of CFLs for 15 years. However, the utilities and energy efficiency advocates described this as a short-term fix, which the utilities will only fund as long as they are promoting the sale of CFLs. In most cases, voluntary, utility-financed collection and recycling efforts collect only CFLs. The regulatory regimes governing utilities and energy efficiency program administrators vary state-to-state, and both setting rates and expenditure on programs tends to be very tightly controlled. Utility business models also vary considerably. Once the market is saturated and CFLs are no longer being promoted for their added energy efficiency benefits, it is unlikely that utilities in most places would be given the permission to continue funding fluorescent lamp collection and recycling. However, some see this as a way to spread the costs across the widest possible number of people (all ratepayers, not just those purchasing CFLs), with the idea that all are benefiting in some way from the use of more energy efficient products.

Retailer cost internalization is underway across the country at The Home Depot, and has started recently at Bartell's Drug in the Seattle area. Most stakeholders were not in favor of this model as a widespread solution, however.

Potential Canadian-U.S. Solution

There is some interest in the possibility of a combined solution for the U.S. and Canada. The same products are sold in both places by the same companies, and the mercury collected in Canada is sent to Bethlehem, PA. Currently, the recycling infrastructure in Canada is less well developed than in the U.S. for both the commercial and consumer sectors. Environment Canada, the Canadian federal government, is implementing a multi-stakeholder process to address fluorescent lamp disposal there. PSI has presented to Environment Canada's group about the U.S. lamp dialogue, and is working closely with Environment Canada.

PERFORMANCE METRICS AND GOALS

Measuring the effectiveness of fluorescent lamp collection and recycling efforts is critical, and performance standards should be high. Although the group decided that estimating a recycling rate was the best measure of performance, it recognized the challenge in obtaining accurate recycling data and the assumptions necessary to estimate how many lamps will be available for disposal or recycling in a given place at a given time. Therefore, the group recommended that performance metrics based on "program robustness" also be used to complement recovery rate measurements, including the number and distribution of collection sites relative to population, awareness of the program, and customer satisfaction with the services provided. In Washington's electronics law, for example, producers are required to establish a collection location in every city and county with a population of 10,000 or greater. The group decided on the following strategy to establish baseline state lamp recycling rates, while acknowledging that totally accurate data are impossible to obtain.

- 1) **Develop common methodology for calculating recycling rate.** As funding allows, PSI will work with participants to compile and assess existing methodologies and develop a common methodology for use nationwide. This could include a recycler reporting protocol developed with the Association for Lighting and Mercury Recyclers.

LAMP BREAKAGE

Becky Jayne of the IL Environmental Protection Agency described the state of knowledge on fluorescent lamp breakage issues. The California Department of Toxic Substances Control estimated that 23% of the mercury in solid waste is from fluorescent lamps, but there are also concerns about the

potential impacts of mercury vapor release when bulbs break while being shipped from a collection point to the recycling facility. Becky has been told by one lamp recycler in Illinois that he stopped offering a ship-back service because every box received had at least one broken bulb. She suggested surveying recyclers about the incidence of breakage.

There are fluorescent lamps with plastic coating to prevent shattering, but they are expensive and it is difficult to remove the shields for recycling. Retailers are also concerned about the impacts, or perceived impacts, of broken bulbs on site for reasons of both customer and employee safety and liability.

Terry Grover of the U.S. Postal Service presented this quasi-government agency's research on the impacts of broken CFLs and 4-ft. LFLs on workplace safety. These studies concluded that the mercury vapor levels would not surpass OSHA levels for an 8-hour occupational setting, and described clean-up methods. While the U.S. Postal Service is comfortable that they are not compromising worker safety by shipping lamps for recycling, others were concerned that the OSHA standards were outdated and insufficient.

The Association of Lighting and Mercury Recyclers (ALMR) has procedures for all aspects of handling lamps, including compliance with U.S. Department of Transportation (DOT) regulations. All recyclers offer packaging that meets DOT requirements, although some stakeholders raised questions about whether these were adequate given the results of a study in Maine that showed that cardboard and plastic bags were insufficient to contain the mercury vapor from a single, broken CFL. Handling can also present a problem, as lamps are more likely to break if boxes are thrown or damaged. Many recyclers are trying to develop systems that provide for safe transport while considering costs and packaging. There are patents on some packaging, including one developed by Waste Management/LampTracker.

The group decided on the following next step:

- 1) Review existing studies to discern their implications for lamp breakage and personal safety in the solid waste stream, retail collection, and shipping for recycling contexts. This is a preferred first step to implementing a new study, although new studies may be required.

ENCOURAGING VOLUNTARY RETAIL COLLECTION

The Infrastructure Workgroup developed and implemented a survey to gather information from retailers about the benefits of their lamp collection programs and how they have overcome challenges with implementing such programs in their stores. Seventeen respondents from California, Colorado, Maine, Vermont, and Washington provided information on collection programs being implemented in hardware, "big box," grocery, and drug stores that sell fluorescent lamps. PSI has also been implementing a retail collection pilot project in four Western states since May 2008; this pilot will end in three of the states by December 31, 2008, and in the other state in 2010. PSI developed two fact sheets based on the survey and the experience implementing the pilot with Ace Hardware and Women's Voices for the Earth. These fact sheets were reviewed at the meeting. Both fact sheets will be revised based on the comments provided by the group, distributed for final review, and then finalized for dissemination via the retail associations and PSI's retailer contacts.

- "How to Collect Fluorescent Lamps: Recommendations and Considerations when Designing a Retail Collection Project" – Information on the types of costs incurred by retailers implementing a collection project will be added to this document based on information provided by the California Retailers Association. A section on liability will also be added, although this concern varies from state to state. In California, liability is a significant concern for collection programs,

even though retailers sell the same lighting products that are being collected. Pamela Williams will provide input for this section as well. PSI will add the option of contracting for recycler pick up directly at the store location.

- “Collecting Fluorescent Lamps at Retail Locations: Benefits and Recommendations for In-store Operations”

The Home Depot’s collection program begun last summer creates a widespread collection opportunity for consumer CFLs (not LFLs), but there is no guarantee that it will be sustained. Local and state government officials expressed their appreciation for this initiative, but indicated that they need additional information about the company’s procedures before promoting it to their constituents.

Recommended next steps:

- 1) PSI will invite The Home Depot again to present their program to interested stakeholders.
- 2) PSI will revise and disseminate the two fact sheets described above to the following entities: Council of State Retail Associations, Independent Business Association, WA Food Industry, NW Grocers’ Association, National Retail Federation, and Retail Industry Leaders Association. The California Retailers Association and the Washington Retailers Association can assist with dissemination of the fact sheets.
- 3) Consider opportunities to recognize retailers taking a leadership role. (EPA has the National Partners in Environmental Priorities program; PSI can offer recognition at its Annual Forum; and WA Department of Ecology has offered such recognition in the past.)

MEETING #4

Meeting #4 will be scheduled following the conclusion of upcoming legislative sessions. The target date is for late June or early July. PSI will set the next meeting date following a check-in with the group, which will allow for time to implement the many next steps resulting from Meeting #3 and learn more about the potential for a recycling system tied to cap-and-trade legislation.