National Association of Electrical Distributors

Smart Tools for Smart Distribution®

Sustainability Best Practices:

A Case Study Series

Overview

More than 670 million mercury-containing lamps are discarded in the United States each year.

The two most common types are fluorescents (including compact fluorescents) and high-intensity discharge (HID).[1] Many lamps are handled and disposed of improperly, which can lead to a release of elemental mercury into the environment.[2] Mercury is a hazardous substance; human exposure to it can negatively affect the neurological system and kidneys.[3]

A standard fluorescent bulb contains from 8 to 14 milligrams of mercury. By comparison, the average mercury thermometer contains about 100 times more mercury than a fluorescent lamp.[4] The amount of mercury in a low-mercury bulb ranges from 3.5 to 4 milligrams.

In the past 20 years, lighting manufacturers have greatly reduced the amount of mercury used in lamps. However, mercury remains an essential component of fluorescent lamps.[5] Electrical distributors and manufacturers are an essential link for proper disposal of mercury-containing lamps.[6]

Lamp Recycling Services in Electrical Distribution

Case Analysis

What's the business case for distribution to offer recycling services to customers? Should a distributor offer prepaid recycling containers or in-house lamp recycling? The industry is rapidly discovering answers to these questions. As a result, many electrical distributors and manufacturers are implementing lamp recycling programs.

These programs are part of a larger effort to reduce hazardous substances and become more sustainable. More than half of the NAED members who recently responded to a sustainability survey offer lamp-recycling services.[7] The industry is finding that recycling services can be a powerful competitive advantage, since many customers are also making sustainability a priority.

Virtually every part of a fluorescent lamp can be recycled; the metal end caps, glass tubing, mercury, and phosphor can all be separated and reused. Recyclers sell the metallic portions as scrap metal. The glass can be remanufactured into other glass products. The mercury can be recycled into new fluorescent light bulbs and other mercury-containing devices, such as thermostats and temperature gauges.

This brief covers the business case for distributors offering recycling services to customers as well as exploring the types of services typically offered. Distributors can help ensure proper disposal of lamps by providing bulk lamp recycling services in-house or offering prepaid containers for sale.

> *"Lamps are one of the most common mercury-containing products found in buildings."*

The Business Case for Lamp Recycling Services

Lamp recycling is becoming an increasingly important issue for end users. Electrical distributors and manufacturers can differentiate themselves by these services.

An electrical distribution customer, Charlie Bennett who works for a major food processor explained, "As the environmental manager, I became concerned about the chemicals in transformers, mercury in bulbs, and chemicals in computer components. We signed onto the **Hagemeyer N.A.** program to comply with Pennsylvania residual waste regulations, so we could have a receipt as proof of recycling our bulbs. I suspect some older fluorescent bulbs still exist in some locations of our facilities, but we hope we will soon get to a point where all of our bulbs will have a green tip indicating reduced mercury content."[8]

Finding reliable recyclers to take the lamps is relatively easy—some are marketing group service providers. For example, **Earth Protection Services** is an IMARK service provider.[9]

Electrical Distributors, Inc. in Charlotte, NC, has made recycling services a part of its value proposition. Chris Studney, a LEED AP with Electrical Distributors, said, "We don't want to be in a position of having to sell on price alone. Lamp recycling is a big way to differentiate ourselves.[10] We want to help our customers with as many environmentally-conscious services as possible."

> *"We sell prepaid shipping boxes that easily allow customers to recycle lamps and ballasts. This piece of business is growing at a quick pace.[11]"*
>
> *—Chris Studney, a LEED AP with Electrical Distributors, Inc. in Charlotte, N.C.*

Q&A

WHAT IS YOUR COMPANY'S APPROACH TO LAMP RECYCLING SERVICES?

"Lamp recycling will play a part in our overall green plan. There's big business in recycling fluorescent bulbs, and I believe this is an opportunity for us. We want to be known as the company that 'understands the whole picture.'

"We have customers that don't want to have to deal with disposal. Building owners want to be relieved of potential hazardous waste issues. We offer our customers a prepaid recycling kit that fits 24 lamps.

"Smaller government agencies are required to recycle mercury-containing lamps; they are some of our customers for the kits. We also package the kits for large building renovations.[12]"

—Steve Bellwoar, President & CEO, Colonial Electric Supply Co., Inc., King of Prussia, PA

EPA Regulations

The Environmental Protection Agency (EPA) designates and regulates hazardous waste like batteries, pesticides, mercury-containing equipment, and fluorescent lamps as universal waste.

Federal universal waste regulations streamline collection requirements and specify proper handling and recycling/disposal.[13]

The EPA encourages recycling and proper disposal of all mercury-containing lamps, even low-mercury lamps.

A Sales Tool for Differentiation

Offering lamp recycling services can also sweeten the deal for potential customers, helping to bring in new customers.

Brad Jenkins, a national sales manager for ESCOs at **OSRAM SYLVANIA**, explained, "SYLVANIA strongly encourages our distributors to offer lamp recycling services for a wide variety of reasons. Things may have changed, but back when I was in the lamp recycling business, it was a differentiator that could make a difference in closing a sale, rather than being a core profit producer for distributors."

However, Jenkins cautioned, "Since this is an environmental service, I strongly suggest distributors perform a thorough review of the rules and regulations in their state and gain a firm understanding of how to evaluate recycling vendors. It should be their priority to ensure their vendor is properly managing the waste stream and protecting the risk of both the distributor and its customers."[14]

Jenkins also recommends **Lamprecycle.org** as a resource for companies offering these services. The website directs companies to State Environmental Agencies for specific laws in their area, as well as providing them with information on the overall subject.

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> *—Brad Jenkins, OSRAM SYLVANIA*

To establish a reputation as a sustainability solutions provider, it's important that a distributor can provide a range of lamp recycling options, from prepaid kits to complete in-house recycling services.

SALES TIP:
FACILITY SURVEY OF MERCURY CONTENT

>> The LEED for Existing Buildings Operations and Maintenance rating system establishes an upper limit of 90 picograms per lumen-hour for average mercury content of a facility's fluorescent lamps, with a recommended level of 70 picograms per lumen-hour.[15]

>> Distributors should think about using these numbers as a way to survey a facility's entire stock of fluorescent lamps. These numbers can then convince the manager to replace enough lamps to bring overall mercury levels below this limit.[16]

In-house vs. Prepaid Services

For bulk lamp recycling, electrical distributors can offer in-house or prepaid recycling services.

With in-house recycling services, distributors serve as a collection center for customers' spent lamps. For example, when a distributor delivers new lamps to a customer, the distributor picks up the customer's spent lamps and transports them back to its warehouse.

Prepaid Recycling Services

Offering prepaid recycling is a somewhat different approach; in many ways, it is more ideal because it fits better into distributors' business model. Prepaid lamp recycling containers enable users to place their spent lamps in a postage-paid container for proper recycling. Distributors maintain inventory of containers and send them out to customers; in doing so, they never have to take anything back in their trucks.

However, some large job sites can generate so many spent lamps that it renders the container program either logistically or financially prohibitive. As a result, bulk programs are a better fit in some cases.[17]

Did you know?

EasyPak™ containers are a well-known brand of postage-paid lamp recycling containers. The purchase price includes the following:

- **A UN-Certified container**
- **Prepaid shipping to a certified recycling center**
- **Applicable recycling fees**
- **Certificates of recycling**

For More Information

Federal Universal Waste Regulation

- Several states' regulations are more stringent than the federal universal waste rules. The National Electrical Manufacturers Association (NEMA) provides a **state-by-state regulatory comparison** to the federal universal waste rule.
- More detailed information on the federal regulations can be found on the **EPA's universal waste website**.

State Lamp Recycling Regulations

- **Lamprecycle.org** also provides a detailed list of state lamp recycling regulations and contacts. For more information on your state's universal waste regulations, contact your **state environmental regulatory agency**.

Federal Lamp Recycling Guidelines

- Federal guidelines for businesses that want to know the proper steps for handling and recycling lamps can be found on the **EPA's universal waste handlers website**.

Endnotes

1 http://www.epa.gov/epawaste/hazard/wastetypes/universal/lamps/basic.htm accessed 2/26/2009
2 Ibid.
3 http://www.epa.gov/mercury/effects.htm#elem accessed 2/26/2009
4 http://www.epa.gov/epawaste/hazard/wastetypes/universal/lamps/faqs.htm#3 accessed 2/26/2009
5 http://www.epa.gov/epawaste/hazard/wastetypes/universal/lamps/basic.htm accessed 2/26/2009
6 NAED Western Region Conference energy management and sustainability focus group, personal interview, 1/22/2009.
7 Yudelson Associates. Corporate Sustainability Survey of National Association of Electrical Distributors Members. December 2008.
8 Charlie Bennet, personal interview, 2/9/2009.
9 Ibid.
10 Chris Studney, Op. Cit.
11 Chris Studney, personal interview, 2/4/2009.
12 Steve Bellwoar, personal interview, 1/26/2009.
13 http://www.epa.gov/epawaste/hazard/wastetypes/universal/index.htm accessed 2/26/2009
14 Brad Jenkins, personal interview, 1/28/2009.
15 http://www.usgbc.org/DisplayPage.aspx?CMSPageID=221 accessed 3/2/2009
16 A picogram is one millionth of a microgram, or 10-12 for those who are mathematically inclined. You can develop a spreadsheet program to audit all mercury containing lamps, tally their mercury content (in micrograms or milligrams), their rated output (lumens) and expected life (hours), and then develop an average for the entire facility. You can then calculate how many lamps need to be replaced to bring mercury levels to within the LEED-specified limits.
17 Ibid.

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