HT 11: CONVENE TASK FORCE ON RECYCLING FLUORESCENT LIGHT BULBS

Study
Proposal developed by the Lighting & Daylighting Committee

Summary

Issue:
Despite increased use of fluorescent lamps and ballasts, there is a lack of public information about these lights and limited options for their safe disposal.

Recommendation:
The Department of Sanitation should convene a task force to study and determine the best bulb recycling program for NYC.

Proposed Legislation, Rule or Study

The Department of Sanitation should convene a task force to study the most effective options for recycling ballasts and mercury-added light bulbs from users not already required to do so under federal, state or local law. The goals of the task would be to determine:

A. For linear lamps (fluorescent tubes) and ballasts, the best recycling program to implement in New York City.
   The majority of spent linear lamps and ballasts is generated by commercial and large residential building users, many of whom are already required to collect and handle them as hazardous waste or Universal Waste under state and federal law.

B. For compact fluorescent lamps (CFLs), evaluate the advantages and disadvantages of requiring the recycling of CFLs in New York City. This portion of the study should result in a recommendation of whether NYC should require CFL recycling at this time and, if so, recommend the appropriate program.

In order to make its determinations, the task force should undertake the following tasks:

1. Estimate the volume and diversion potential of fluorescent light bulbs and ballasts in 2009 and future years.
2. Identify a range of possible methods for collection and recycling of spent light bulbs and ballasts (each a “recycling method”), including the responsibilities of various entities (consumer/building manager, retailer, manufacturer, government) under each scenario. For CFLs, the considered recycling methods shall include, but not be limited to, the following: (i) a refundable deposit system; (ii) requiring take-back from retailers; (iii) expansion of the current city collection program; and (iv) providing significant assistance to existing, voluntary programs.
3. Evaluate each potential recycling method, including factors such as convenience, likely compliance rate, potential citywide impact, estimate of costs, burden and monitoring requirements; such evaluation shall also consider safe handling methods, potential for breakage and liability issues.
4. Consider implications for special groups, such as small retailers and mail-order purchasers, especially for CFL recycling.
5. Recommend an education program on the importance of recycling light bulbs and ballasts, proper management and opportunities for recycling; this program should address building managers, consumers and retailers, and should consider product labeling and information at collection locations.
6. Identify the steps required to implement the recommended recycling method, including action required by city government and target dates for implementation.

Supporting Information

Issue – Expanded
Mercury exists in several forms, including elemental and metallic mercury, which are the types used in fluorescent light bulbs. At room temperature, elemental mercury can evaporate and become an invisible, odorless toxic vapor. When fluorescent bulbs are broken in landfills, the evaporated mercury eventually settles into water or land, where it can be washed into water streams. Once deposited, microorganisms can convert it to methylmercury, a highly toxic form of mercury that builds up in fish, shellfish, and animals that eat fish.

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All fluorescent bulbs contain mercury, which is necessary for their operation. The amount varies, depending on the type, manufacturer and when the bulb was manufactured. The amount in linear fluorescent lamps ranges from 3.5-15 milligrams, with the older linear tubes (T-12s) at the higher end. Lighting manufacturers have reduced the amount of mercury over the years, although this also varies by manufacturer and type. Overall, CFLs and linear fluorescent lamps are responsible for a very small portion of national mercury emissions and pose a limited health risk if handled properly. However, the potential for direct human exposure from improper handling and breakage means these lamps warrant greater attention than might otherwise be apparent.

Disposal of spent fluorescent bulbs is regulated under federal and NYS laws and these regulations require that all bulbs be handled as hazardous waste or “universal waste.” Certain small businesses and residences are exempt. Despite the regulations in place, EPA estimates that approximately 76% of bulbs are improperly discarded.

Environmental & Health Benefits
New York State Department of Environmental Conservation (NYS DEC) and the U.S. Environmental Protection Agency (EPA) have identified mercury as a persistent and toxic pollutant that accumulates in the environment. According to NYS DEC, “the removal of mercury-containing products from the waste stream prior to incineration is a cost-effective means of reducing the generation of mercury from solid waste management facilities.”

This proposal was found to have a positive, indirect environmental impact.

This proposal was found to have no significant positive health impact.

Cost & Savings
This proposal is for a study, which will have no direct impact on construction costs.

Precedents
Several states including California, Maine and Massachusetts have mandated recycling of CFLs. These and other states require used CFLs be brought to special recycling facilities or dropped off at various municipal and retail outlets, such as Home Depot stores, that offer collection of CFLs for recycling.

The EPA recommends recycling CFLs since all parts of the bulbs can be recycled and used for new CFLs. Because mercury is a hazardous material, the EPA warns against disposing of CFLs in regular trash that might be incinerated or sent to landfills where the mercury can seep into the environment. NYS DEC strongly recommends the recycling of all mercury-containing lamps by both businesses and households.

LEED
This proposal will not directly assist in meeting LEED requirements. However, LEED does address mercury levels in light bulbs.

LEED EB-MR Prerequisite 2 Toxic Material Source Reduction addresses reducing the amount of mercury brought into buildings through purchases of light bulbs. LEED EB-MR Cr.6 Additional Toxic Material Reduction can be achieved by establishing and maintaining a toxic material source reduction program.

Should the recommendations in this proposal be implemented, projects could subsequently collect the recyclable light bulbs, and/or divert the material as part of construction waste management. This would help make these projects eligible for additional Materials and Resources credits across most rating systems.

Implementation & Market Availability
This proposal requires additional consumer education on the proper use and disposal of CFLs, in addition to recycling information in order to heighten consumer awareness and participation in the recycling effort.

There is an established network of mercury lamp recyclers for both linear tubes and compact fluorescent bulbs.
ENDNOTES:


3 ENERGYSTAR, FREQUENTLY ASKED QUESTIONS: INFORMATION ON COMPACT FLUORESCENT LIGHT BULBS (CFLS) AND MERCURY (2008), http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf. (If all CFLs sold in 2007 (290 million) were sent to landfills, rather than recycled, it would result in 0.13 metric tons of mercury emissions. This would represent just 0.1% of all mercury emissions caused by humans in the US.).

4 Ibid.


7 Massachusetts Department of Environmental Protection, Consumer Information: Compact Fluorescent Lamps (CFLs), http://mass.gov/dep/toxics/stypes/cflinfo.htm (last visited Jan. 25, 2010).

