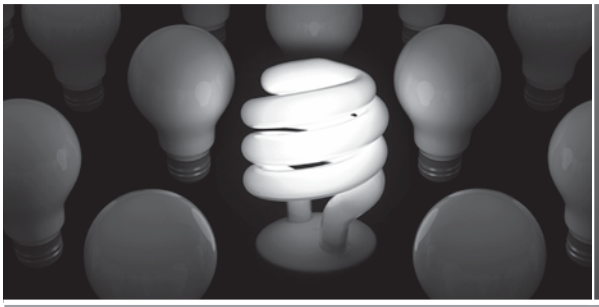
Energy Efficiency and Environmental Protection



AB 1109:
Lighting Task Force Report

September 1, 2008

Recommendations for Collection and Recycling of Spent Fluorescent Bulbs in California

AB 1109 – Lighting Efficiency and Toxics Reduction Act Task Force Report

Department of Toxic Substances Control

California Environmental Protection Agency
Integrated Waste Management Board

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Executive Summary

California is at the forefront of addressing an important environmental issue: how can we promote the use of energy-saving fluorescent lamps[A] while ensuring that they, and the toxic mercury they contain, are safely recycled when their useful life is through? Using fluorescent lamps is good for the environment; they save energy, last much longer than incandescent lamps, reduce dependency on fossil fuels, and decrease production of green house gases. However, all fluorescent lamps contain a small amount of mercury, a potent neurotoxin. Consistent with California's long history of environmental protection, fluorescent lamps and other mercury-containing devices are banned from landfills. Since 2006, California households have not been able to legally dispose of fluorescent lamps in the trash. The California Department of Toxic Substances Control (DTSC) has adopted regulations that require safe management and recycling of fluorescent lamps, but a convenient and cost effective infrastructure for California residents to recycle their lamps does not exist in most areas of California. To address this issue, the California Legislature passed the Lighting Efficiency and Toxics Reduction Act (AB 1109, Huffman).

As directed by the Legislature, DTSC convened the AB 1109 Lighting Task Force in March 2008 to consider and make recommendations on methods of collection, recycling, education, outreach, labeling, and designations for end of life (EOL) residential fluorescent lamps, which are considered hazardous waste upon disposal. The Task Force is composed of representatives from the lighting industry, retailers, utilities, local and state government, environmental organizations, and rural counties. While Task Force members were invited by DTSC, the task force meetings were well publicized and many members of the public and private sector actively participated.

Several proposals for collection and recycling systems were put forth by Task Force members and participants. Each participant brought a different perspective to this process and, not surprisingly, the group did not agree on every detail of how a lamp collection

[A] *We use "lights" and "lamps" to refer to both fluorescent tubes and fluorescent bulbs, unless otherwise noted.*

and recycling system should be implemented. However, after extensive discussions and deliberations, areas of consensus emerged to provide a framework for a statewide program for collecting and recycling lighting waste from consumers. These areas of consensus form the Lighting Task Force's recommendations:

- The program should focus on residential fluorescent lights – both Compact Fluorescent Lights (CFLs) and tubes;
- The program should be administered by an independent third party organization (TPO);
- Program implementation should be a shared responsibility among all parties benefiting from the sale or use of fluorescent lights;
- The use of Public Goods Charge[1] energy efficiency monies should be explored as a funding source.
- Retailers, manufacturers, utilities, and recyclers should provide data to a TPO; the TPO should compile data and report to the state;
- Meaningful metrics, clear goals, and data collection are critical to the program's success;
- State enforcement authority should be clearly spelled out;
- Only fluorescent lamps from manufacturers who participate in the TPO should be allowed to be sold in California;
- The collection system must be convenient;
- The collection and recycling program should emphasize compliance and safety;
- The education and outreach program should combine messages of energy efficiency and proper management of end-of-life fluorescent lamps;
- The education and outreach program should include a wide range of methods and media; and
- Labels and designations on packaging should be consistent with other states' existing standards; stickers with California-specific information should be used, where feasible, on packages of lamps subsidized by energy utilities.

DTSC has estimated the cost of a statewide program for collecting and recycling fluorescent lamps from consumers. Based on California's Beverage Container Recycling Program, (an established statewide collection and recycling program that includes strong outreach and education programs) DTSC estimates total program costs to be approximately:

- $11 million the first year;
- $7.9 million the second year; and
- $12.3 million the third year.

While members of the Lighting Task Force did not agree on every detail of what a collection and recycling system for fluorescent lamps generated by California residential consumers would look like, the group did reach broad consensus on a model that would share responsibility among all participants. This report's recommendations provide a workable framework for a system that would meet the mandates of AB 1109 for cost efficiency and convenience, while maximizing the number of consumer lamps diverted from the trash to proper collection and recycling.

Furthermore, the recommendations of this report meet many elements of the California Integrated Waste Management Board's (CIWMB) Strategic Directive 5 for Producer Responsibility and Extended Producer Responsibility (EPR) Framework. CIWMB's EPR Framework calls for shared responsibility for management of end-of-life products with the primary responsibility on the producer or brand owner.

1.0 Introduction

1.1 Lighting Task Force

In AB 1109, the Lighting Efficiency and Toxics Reduction Act (Stats. 2007, ch. 534), the California Legislature expressed its intent that a system be established "for the recycling of hazardous lighting products that is free and convenient for end users".[2]

One requirement of the bill is that the Department of Toxic Substances Control (DTSC) convene a task force to consider and make recommendations on three topics:

- The most effective, cost-efficient, and convenient method for the consumer to provide for the proper collection and recycling of any end-of-life general purpose lights generated in this state;
- Methods to educate consumers about the proper management and collection opportunities for end-of-life general purpose lights; and
- Designations on the general purpose light and light packaging regarding the proper recycling of the light and compliance of the light with the Act.

In March 2008, DTSC formed the Lighting Task Force. As directed by the California Legislature, the Task Force is composed of representatives of the "lighting industry, environmental organizations, the recycling industry, individuals and private sector entities, local governments, energy utilities, and retailers." All of these sectors have interest in the sale, use, and proper disposition of electric lighting. The Task Force's members and their affiliations are listed in Appendix 1.

1.2 The Scope of this Report

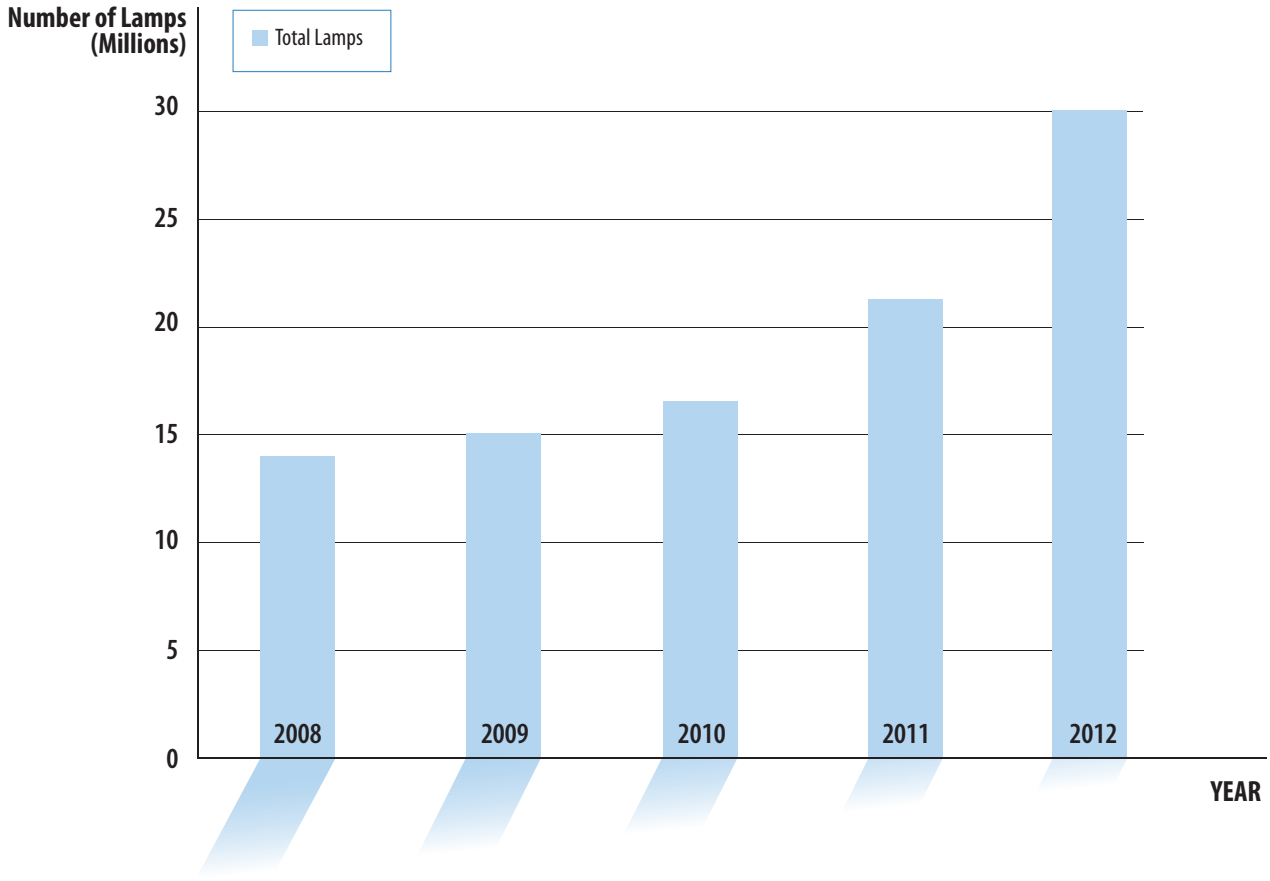
While AB 1109 refers to the broader category of "general purpose lights," the Lighting Task Force has focused its analysis and recommendations on fluorescent lamps – both compact and tubular styles. According to the U.S. Environmental Protection Agency (EPA), the number of Energy Star-qualified compact fluorescent lamps (CFLs) sold nearly doubled from 2006 to 2007, and CFLs now account for approximately 20 percent of the U.S. light bulb market.

A number of factors have led to a dramatic increase in the residential use of fluorescent lighting, both in California and nationally:

- Building codes have been updated to require the use of fluorescent lighting in new constructions and remodels;
- The public is increasingly aware of the threat of global climate change and the role that electricity generation plays in emission of greenhouse gases;
- The rising cost of electricity has created an incentive to replace incandescent light bulbs with more energy efficient alternatives;
- The retail price of compact fluorescent bulbs has fallen dramatically, in part due to subsidies from electric utilities; and
- Public education and advertising campaigns have aggressively promoted the use of compact fluorescent lamps, touting their environmental benefits. [3,4,5]

The National Electrical Manufacturers Association (NEMA), whose member companies produce the majority of fluorescent lights sold in the U.S., recently estimated the number of fluorescent lights (both bulbs and tubes) that will become available for recycling in California over the next four years (Figure 1).[6] [See Appendix 2.]

Figure 1: Estimated Numbers of Fluorescent Lamps Available for Recycling 2008 - 2012



While sales data show that the public has received the message about the benefits of fluorescent lighting, it is evident from the current 10 percent recycling rate[B] that most Californians are still in the dark about how to properly recycle fluorescent lamps.

With the passage of AB 1109 in 2007, the Legislature and the Governor recognized the need to establish a statewide infrastructure for consumers to conveniently and appropriately dispose of their spent fluorescent lights and an outreach campaign to educate the public of how to do so properly. The Lighting Task Force's recommendations are intended to marry the messages of energy efficiency and environmental protection, by encouraging the use of fluorescent lamps and their proper disposal.

Although this report's recommendations are specific to fluorescent lamps, they may serve as a useful model for future efforts to collect other types of products with toxic constituents, including lamps other than fluorescent-type.

[B] *NEMA has estimated that 13,569,000 fluorescent lamps will become available for recycling in 2008 (see Appendix 2). Household hazardous waste (HHW) collection data for fiscal year 2006-2007 shows that 675,795 pounds of lamps were collected at the State's HHW collection facilities. Assuming that nearly all household generated fluorescent lamps that were collected were taken to an HHW facility, that each lamp weighs approximately 0.5 pound (likely an overestimate), and that the number of lamps available for recycling between July 1, 2006 and June 30, 2007 is approximately the same as NEMA's estimate for calendar year 2008, approximately 1.35 million lamps were collected from California households in 2006/2007, representing approximately 10 percent of all lamps that became waste.*

2.0 Background

2.1 Mercury's Health Effects

Fluorescent lighting, the most widely available type of energy-efficient lighting, requires a small amount of mercury in order to function. Mercury is a natural element that has many useful properties, but is also a powerful neurotoxin that causes a variety of adverse health effects.

Once it is released (when a fluorescent bulb breaks), mercury is very mobile in the environment. It can enter the atmosphere and be transported great distances. Mercury in the atmosphere is eventually deposited on land or in water bodies, where certain microorganisms can convert it to methylmercury, a highly toxic form that accumulates in the fatty tissue of fish (and also in humans who eat these fish). Fish and shellfish consumption is the main source of methylmercury exposure to humans. Those most at risk from mercury exposure are pregnant women and developing children.[7] For this reason, California's Office of Environmental Health Hazard Assessment (OEHHA) generally recommends that pregnant women and nursing mothers limit their consumption of mercury-contaminated sport fish more than the public at large.[8]

2.2 Balancing the Risks and Benefits of Mercury-Containing Lighting

According to the Department of Energy (DOE), compact fluorescent lights (CFLs) use approximately 75 percent less energy than standard incandescent bulbs to produce the same light output, and last up to 15 times as long.[9] Although each fluorescent tube or bulb contains only a small amount of mercury (typically between 2 and 10 milligrams[10]), the cumulative amount of mercury in the millions of spent fluorescent lights generated each year is significant. Nevertheless, the net environmental benefits of replacing incandescent bulbs with fluorescent lighting are widely recognized, especially when spent fluorescent lights are properly recycled.

Coal-fired plants supply more than half of the nation's electricity[11] and are the largest source of mercury emissions into the air[12], accounting for approximately 50 tons annually.[13] This is because coal contains a small amount of naturally-occurring mercury which is emitted to the air when it is burned. Reducing energy consumption by replacing incandescent bulbs with fluorescent lighting reduces the amount of mercury released to the environment. However, some of this decrease in mercury emissions at power plants is offset by increased releases in dumpsters, garbage trucks, and landfills when spent fluorescent lamps are disposed of improperly.

2.3 Fluorescent Lamps Banned from Disposal in California's Landfills

When DTSC adopted its first Universal Waste Rule (UWR) in 2000, most fluorescent lamps were classified as hazardous wastes when discarded because they exhibited the characteristic of toxicity.[C] When the hazardous waste designation took effect the following year, it effectively banned the disposal of all spent fluorescent lighting in the trash, regardless of the amount of mercury in them.

In recognition of the need for a better collection infrastructure, the UWR exempted mercury-added lamp waste generated by households from the disposal ban until February 9, 2006.[14] Very small non-residential generators were also permitted to continue disposing of limited quantities of mercury-added lamps as solid waste until the same date.[15]

[C] *Many or most fluorescent tubes marketed in 2000 were not classified as hazardous waste under the federal toxicity characteristic, which is based on the leaching of hazardous substances from a sample of waste subjected to the Toxicity Characteristic Leaching Procedure (TCLP) (SW-846 Method 1311 "Toxicity Characteristic Leaching Procedure" www.epa.gov/epaoswer/hazwaste/test/pdfs/1311.pdf). In California, a waste with a total concentration of a hazardous constituent above a regulatory threshold established for that substance is classified as a hazardous waste, even though the waste may not be hazardous under the TCLP. Even in 2000, all three major fluorescent lighting manufacturers – Philips, GE, and Osram-Sylvania, sold fluorescent lamps that were not hazardous based on the TCLP, but only Philips' Alto lamps were the only ones that did not exceed California's Total Threshold Limit Concentration (TTLC) for lead.*

The time between the adoption of California's first UWR in 2000 and the expiration of the temporary disposal exemptions for households and small non-residential generators six years later was intended to allow time for manufacturers, retailers, environmental advocacy groups, and state and local government to devise systems for:

- Collecting and recycling spent fluorescent lamps;
- Educating the public about managing them properly; and
- Funding these activities.

When California's temporary disposal exemptions finally expired on February 9, 2006, however, "few convenient collection mechanisms were put in place to ensure [their] proper End-Of-Life (EOL) management."[16] When the disposal ban for household generated lamps and batteries took effect, many local jurisdictions reported collecting higher volumes of universal waste (including lamps) and as a result, increased costs. More recently, retailer programs have started to appear, including free consumer lamp recycling programs at IKEA and Home Depot.

2.4 California's Current Lamp Recycling Rate and Capacity

The recycling rate for household generated lamps in California is approximately 10 percent.[17] According to a report by the Association of Lighting and Mercury Recyclers (ALMR), the national recycling rate for mercury lamps was 23.3 percent in 2003.[18]

In California, two facilities have permits to recycle fluorescent lamps: AERC, in Hayward; and Lighting Resources Inc., in Ontario. Lamp recyclers in other states also process lamps generated in California. While California's current infrastructure for collecting and transporting fluorescent lighting waste to recycling facilities is inadequate and lacks a statewide funding mechanism, the lamp recycling industry has stated that it has the physical capacity to recycle all of the waste fluorescent lamps generated in the State, including CFLs from households.[19]

3.0 Collection and Recycling Considerations

In February 2007, the California Integrated Waste Management Board (CIWMB) adopted Strategic Directive 5: Producer Responsibility. Strategic Directive 5 states that it is a core value of the CIWMB that producers should assume responsibility for the safe stewardship of their materials, in order to promote environmental sustainability. To implement Strategic Directive 5, in September 2007 the CIWMB adopted a Framework for an Extended Producer Responsibility (EPR) System in California and refined the Framework in September 2008. CIWMB defines EPR as a shared responsibility approach to reduce the lifecycle impacts of a product and its packaging that recognizes the primary responsibility lies with the producer of that product. According to the CIWMB, a key element of this framework is to "reduce the burden on taxpayers and ratepayers by transferring waste-related costs to producers and consumers of products."[20]

The EPR Framework is meant to guide the development of product stewardship programs in California by presenting a list of elements CIWMB suggests be considered in product stewardship programs. It should be recognized that not all elements will apply to a particular product. Some of the product-specific considerations the Lighting Task Force identified with regard to fluorescent lighting include:

- Fluorescent lights have no value at the end of life;
- Due to their high energy efficiency, all parties want to encourage, not discourage, the use of fluorescents and therefore want to avoid increasing the costs of the product to consumers; and
- Currently, there is no substitute for the mercury in fluorescent lamps and, consequently, product substitution is not a viable option.

In developing the recommendations in this report, the Lighting Task Force reviewed a number of existing programs for collecting and recycling lamps and other wastes that, for one reason or another, must be diverted from the solid waste stream. These programs have addressed many of the logistical and funding issues that apply to lamps. Following is a summary of existing approaches that have been used in collection and recycling programs.

3.1 Extended Producer Responsibility

Extended Producer Responsibility (EPR) is "a policy approach in which producers accept significant responsibility (financial and/or physical) for the treatment or disposal of post-consumer products."[21] Under EPR, responsibility for managing an end-of-life product is shared among the manufacturer and the other entities involved in the product chain, rather than placing the entire burden on consumers and local government. The EPR model encourages "product design changes that minimize a negative impact on human health and the environment at every stage of the product's lifecycle."[22] One premise of EPR is that holding manufacturers financially responsible for the end of life management of the products they produce provides an incentive for them to reformulate their products to eliminate or reduce the toxic substances in them.

EPR does not prescribe how end-of-life products must be managed or how collection and recycling programs should be financed. Within a general framework, EPR provides manufacturers with the flexibility to create a system that meets their needs. A manufacturer may opt to take back its EOL products for reuse, remanufacturing, or recycling, or may choose to contract with a third party organization (TPO) to do this. The TPO, which may

be a non-profit organization, a retailer, or even local government, is paid by the manufacturer for managing end-of-life products on its behalf.

3.2 Retail Take-Back

Various jurisdictions in the U.S. and overseas have developed retail-based collection programs for spent fluorescent lamps. In some of these programs, retailer participation has been voluntary; in others, retailers who sell fluorescent lamps have been required to accept spent lamps from the public. Various funding mechanisms have been employed in these retail take-back programs, including manufacturer funding, retailer funding, utility funding (including use of coupons or vouchers provided by energy utilities), government funding, and charging a disposal fee to consumers at the time of discard. The later option would be in direct conflict with the intent of AB 1109 to create a system that is free and convenient for end users and may prove to be a disincentive for recycling. See Appendix 6 for information on some of the existing retail take-back programs for lamps.

3.3 Collection and Shipment by Mail or Package Service

Many of the country's lighting recyclers sell containers for collecting and shipping spent fluorescent lamps—both tubes and CFLs—to their facilities. The price of a container for 8-15 CFLs ranges from $15-$22 and includes the box, shipping both ways by a package service (e.g., FedEx ground) or the U.S. Postal Service, and recycling. The U.S. Postal Service is also exploring the idea of a mail-in recycling box for one or two CFLs, which would sell for $1 - $2, including postage.

Prepaid shipping containers may make it relatively easy for rural counties and collection centers to accumulate and transport used fluorescents from consumers. A variety of convenient locations that may use these containers are retail stores, fire and police stations, city halls, libraries, and other public buildings. While these lamp boxes are generally compliant with the container requirements of California's Universal Waste Rule, collection sites that use them must also comply with the regulations' requirements for managing the lamps, labeling the container, training staff, cleaning up spills and releases, and keeping records.

4.0 Education and Outreach Considerations

The Task Force acknowledges the fact that even if a convenient and cost effective collection system is put into place, public participation may largely depend on awareness and education. In developing recommendations for the report, the Task Force looked at various factors that could affect an education and outreach program in California.

4.1 Elements of a Successful Education and Outreach Program

Effective outreach and education are critical to a successful collection and recycling program for spent fluorescent lamps. In a study of the California used oil recycling program, P. Wesley Schultz cites research showing that increasing the public's knowledge and awareness, by itself, is not necessarily enough to change people's behavior.[23] Other factors that play a role in changing consumer behavior include:

- The perceived benefits of making the change (positive).
- Personal inconvenience (negative).
- External pressure (positive).
- Financial incentives (positive).

Lane County, Oregon's lamp recycling pilot program demonstrates that effective public education, combined with free, convenient collection opportunities, can induce changes in behavior. In a survey, 77 percent of participants in Lane County's pilot collection program said they previously disposed of spent fluorescent bulbs in the garbage.

Santa Clara County has also reported a significant increase in the number of fluorescent lamps received for recycling. A survey by Godbe Research sheds light on the reasons for this change. During the survey, local households cited several reasons for changing their behavior:

- They had an increased awareness of what, how, and where to recycle;
- They felt that recycling had become more important; and
- More recycling options were available.[24]

As part of the Godbe survey, Santa Clara County residents were asked which source of recycling information they preferred.[25] Respondents preferred brochures, mailers, and flyers, followed by television advertising, and newspapers. The majority of respondents had never visited Santa Clara County's recycling Website (www.reducewaste.org), but 86 percent of those who did found it useful.

4.2 Metrics and Evaluation

A number of methods are available for informing the public about lamp recycling. An effective education and outreach strategy will make use of a variety of these options to convey a message that clearly and effectively communicates where, how, and why to recycle. The ultimate measure of success of the program will be the change in consumer behavior from disposing of lamps in the trash to recycling them as instructed. To measure the effectiveness of just the education and outreach portion of the program, a survey of the public along the same lines as those used in Santa Clara and Lane County may be the best tool. Surveys can be developed

independently or in conjunction with pilot programs such as PG&E's (see Appendix 3 for information on PG&E's program).

4.3 Timing of Education and Outreach

The Task Force discussed the need for an ambitious public education campaign during the program's first year. Repeated, consistent messaging about lamp recycling and energy efficiency will raise public awareness that fluorescent lighting waste needs to be managed differently from household garbage and traditional recyclable materials such as bottles and cans. After the first year, the use of certain media (e.g., television), could be scaled back, but certain outreach methods would continue to be used in subsequent years, including:

- Point of sale information (e.g., signage, flyers, displays, brochures, shelf talkers, shelf labels);
- Newspaper and magazine advertisements;
- Web sites, primarily California Recycles (discussed below) as well as the Web sites of manufacturers, government, retailers, environmental organizations, and utilities; and
- Stickers for dumpsters and trash bins.

4.4 Education and Outreach Costs

The cost of an effective education and outreach program depends on a number of factors, including the outreach methods selected and the number of times each person is to be reached with the recycling and energy efficiency message. The Task Force has cost data for education and outreach for a number of (relatively small scale) pilot projects, which vary widely. Extrapolating these costs to estimate what might need to be spent in California is problematic for a number of reasons, including:

- California covers a much larger area than any of the jurisdictions where the pilots were conducted;
- California's population is orders of magnitude larger than many of the jurisdictions where pilots were conducted. Economies of scale may be realized if a statewide outreach program is developed in California;
- California's population is more diverse than most of the jurisdictions where pilots were conducted; more multilingual materials would likely need to be developed here; and
- Many of the pilots were for a limited duration, whereas California seeks to establish an ongoing, sustainable program.

Table 1, below, summarizes the costs of various pilot projects. The cost estimate for this program is discussed later in this report. More information on these costs is provided in Appendix 3. For the purpose of estimating the cost of implementing the task force's recommendations, other statewide education and outreach programs (e.g., those for the used oil and bottle and can recycling programs) may be a better model than these pilots.

Table 1 Education and Outreach Costs for Various Pilot Lamp Collection Projects

Pilot Project	Cost/Duration	Population[26]
Lane County, Oregon	$32,516.54/one year	337,870
Vermont	$40,000/three years	623,908
Santa Clara County, California	$20,000/one year	1,731,281
PG&E for Santa Clara County, California	$15,000/6 weeks	1,731,281
PG&E for Tehama County, California	$18,900/8 weeks	61,686
City and County of San Francisco	$45,000/first year $10,000/year for subsequent years $200,000/current year	744,041

4.5 Recycling Web Portal

Currently under development by the Department of Conservation, California Integrated Management Board and the Department of Toxic Substances Control, the California Recycling Web Portal will provide a "one stop shop" for Californians wishing to recycle a wide range of products, including fluorescent lamps. The Web Portal will provide:

- The ability for consumers to locate the nearest recycling facility based on City, address, zip code, and/or type of waste;
- The ability for local governments and participating locations to update and maintain accurate information about their collection and recycling activities; and
- The ability for consumers to find additional information about their wastes such as the hazards associated with improper disposal.

5.0 Labeling and Designation Considerations

5.1 Existing Requirements for Labeling and Designations in the U.S.

Vermont was the first state in the nation to require labeling of mercury containing lamps and their packages. Ultimately, NEMA adopted national standards for labels and designations on fluorescent lighting and its packaging that met the requirements of Vermont's law, as well as those of several other states that had adopted Vermont's labeling requirements (Figure 2). NEMA's standards include:

- The use of mercury's periodic table symbol (Hg) on the light and the package;
- The phrase or variation of "Contains Mercury;"
- A website address for more information www.lamprecycle.org; and
- The use of a minimum 10 point font for all above information.

Figure 2 Label requirements:

6.0 Options for Collection and Recycling Submitted to the Task Force

The Lighting Task Force has considered a number of options for collecting and recycling spent lamps from consumers. These options were developed and submitted by DTSC staff, Task Force members, and public participants as a result of discussion items at Task Force meetings. Many of the considerations discussed above contributed to various elements of the options submitted. While the Task Force's members do not agree on every aspect of what an ideal collection and recycling system for consumer lamps would look like, the group has reached a broad consensus on many issues. These consensus items are the recommendations of the Task Force. The detailed options can be found, as submitted, in Appendix 7. Each option lays out the roles and responsibilities of each party (retailers, manufacturers, utilities, consumers, etc.). Table 2 (below) summarizes the following information for the options submitted:

- Funding source,
- Whether collection at retail and other sites is voluntary or mandatory
- Whether a TPO would administer the program,
- Reporting requirements, and
- Type(s) of metrics used to evaluate the program's success.

Originally, the options were labeled A-E. In table 2, the options have been renumbered 1-4. Below are the original names and their corresponding numbers in the table below.

- Option A was revised and renamed Option E; it is labeled #4.
- Option B, also referred to as A-2 in some comments, is labeled #1
- Option C is labeled #2
- Option D was renamed M and is labeled #3

Table 2 Comparison of Collection and Recycling Options Submitted to the AB 1109 Task Force

Option	Funding Mandatory/Voluntary	Collection Mandatory/Voluntary	Creation of TPO	Reporting Requirements	Metrics
1	A minimum contribution would be mandated for those who benefit from the sales or use of these lights. The details have not yet been developed. There may be additional requirements for the funding of transportation and recycling until goals are met. Use of Public Goods Charge[1] if available for other costs.	Voluntary participation of retail and other collection sites. May become mandatory for retailers if convenience goals not met.	Yes. Unclear who would create or select the TPO.	1. TPO 2. Manufacturers 3. Retailers 4. Utilities 5. Recyclers	Manufacturers and retailers would be responsible for meeting convenience goals.
2	Mandatory for manufacturers and/or retailers. Mechanism not specified.	Mandatory take back by manufacturers and at retail locations	Not addressed.	1. Sellers/Retailers 2. Local Government 3. Recyclers	Retailers to meet established take back goals.
3	Voluntary contributions from manufacturers for education and outreach. Use of utility rate payer money[2] for collection and recycling.	Voluntary.	Yes, created by manufacturers.	1.TPO 2. Retailers 3. Utilities 4. Local Government, Recyclers	State government to work with stakeholders to develop future metrics.
4	Mandatory. Manufacturers and Utilities (Investor owned utilities and publicly owned utilities). Can be adjusted if goals are met.	Voluntary but becomes mandatory if goals are not met.	Yes, created by manufacturers.	1. TPO 2. Manufacturers 3. Retailers 4. Utilities 5. Recyclers	Convenience goals and recycling rates set by Legislature to be met by manufactures and retailers.

[1] The Public Goods Charge is an established surcharge applied by independently owned utilities for public purpose programs.

[2] Utility rate payer monies could could be in the form of a surcharge added to utility bills or could be a portion of the Public Goods Charge.

7.0 Task Force Recommendations

As noted above, several options for collection and recycling systems were proposed by Task Force by members and participants. Each participant brought a different perspective to the table, so it is not surprising that all members of the Task Force could not agree on any one option. Nevertheless, review of the various options, comments, and discussions reveals consensus on many elements of a convenient, cost efficient program. Taken together, these elements provide a framework for a statewide program for collecting and recycling lighting waste from consumers. The areas of consensus, summarized below, comprise the Lighting Task Force's recommendations. Each recommendation is followed by short discussion. Where there are areas of significant disagreement or discussion, they are summarized after the discussion of the areas of consensus.

The first set of recommendations, below, address the program overall: the types of lights that should be included in its scope; who should administer the program; how the program should be funded; what data should be collected; metrics and goals; and enforcement. Following this are recommendations for collection and recycling, outreach and education, and labeling and designations.

7.1 Recommendations

7.1.1 Recommendation: the Program Should Focus on Residential Fluorescent Lights – Both CFLs and Tubes

7.1.1.1 Areas of Consensus

The Lighting Task Force agrees that the program should focus on collecting fluorescent lamps from households instead of from non-residential generators. The State's infrastructure for collecting and recycling fluorescent lamps from business, government, and institutional generators is already well established.

The Task Force also agrees that the collection program needs to include linear fluorescent lamps as well as CFLs, because linear lamps continue to be the most common type generated by households.[D]

7.1.1.2 Areas of Discussion

None.

7.1.2 Recommendation: the Program Should Be Administered by an Independent Third Party Organization

7.1.2.1 Areas of Consensus

There was broad agreement among members of the Task Force that the collection, recycling, and public education elements should be administered by an independent third-party organization (TPO), unless the local utility opted to administer the program. The TPO would be responsible for education and outreach programs, as well as collection, transportation, and recycling of lamps. The TPO would also collect data from retailers and/or manufacturers on lamp sales in California and from retailers and recyclers on the quantity of lamps collected for recycling in the State. This data would be compiled and reported to the State.

7.1.2.2 Areas of Discussion

While the consensus of the members of the Lighting Task Force is that the program should be administered by an independent TPO, it should be noted that others who were not actual members of the Task Force but were active participants in the dialog expressed some concerns. Specifically, the Association of Lighting and

[D] *Task Force member Rob D'Arcy, who oversees the household hazardous waste collection program in Santa Clara County, reports that the large majority of fluorescent lights his program collects from households continues to be linear tubes.*

Mercury Recyclers expressed reservations about the idea of a TPO, particularly if part of its role were to negotiate statewide recycling contracts. Santa Cruz County's representatives support a collection and recycling model that is operated and funded entirely by retailers and manufacturers, which might or might not have a role for a TPO.

7.1.3 Recommendation: Program Should be a Shared Responsibility

7.1.3.1 Areas of Consensus

The Lighting Task Force recommends that the costs for a statewide program to collect fluorescent lamps from consumers for recycling, and to educate consumers about how and why to manage spent fluorescent lamps safely, should be shared among manufacturers and electric utilities (ratepayers) – both publicly-owned and investor-owned. While these entities should provide funding for the program, the Task Force agreed that responsibility for other components of a collection and recycling program should be shared. For example, government could contribute in-kind services, including consumer outreach, inspections, program monitoring, data collection, management, and analysis. Participating retailers would incur costs, such as for staff training, handling, transport, compliance, audits, reports, clean-up, and liability insurance. Retailers would also be an important part of the program's consumer education component. These functions are all part of the "shared responsibility" approach.

7.1.3.2 Areas of Discussion

While there was broad agreement on shared funding for the program, the Task Force did not reach consensus on a number of issues.

- The minimum contributions of various parties and the purposes for which various funding sources should be used. Some of the options discussed by the Task Force called for manufacturers and electric utilities to fund a third party organization which would administer collection, recycling, education, and outreach elements of the program. There was no consensus as to how the funding should be allocated between manufacturers and electric utilities. The manufacturers expressed willingness to fund education and outreach and administrative costs, but not lamp collection and recycling costs. In their proposal, the latter would be borne entirely by utility ratepayers.
- Whether the funding allocation should be adjusted based on the attainment or nonattainment of recycling and/or convenience goals. Specifically, some options proposed that manufacturers fund the program in its entirety unless and until an agreed goal for convenience of collection was met. This proposal was unacceptable to the manufacturers represented on the task force.
- Continuation of funding once electric utilities cease providing subsidies for CFLs. The electric utility representatives on the task force pointed out that the subsidies they provide for the purchase of mercury-containing lamps will not continue indefinitely. They would be less inclined to fund collection and recycling of lamps when subsidies for purchasing them are eventually phased out. All parties acknowledged that fluorescent lighting waste will continue to be generated for many years after the sale of the bulbs. The Task Force did not agree on an alternate funding source for collection and recycling if utility ratepayer funding is discontinued. A number of Task Force members felt it would be the responsibility of the manufactures to ensure continued funding of the program.

7.1.4 Recommendation: Retailers, Manufacturers, Utilities, and Recyclers should Provide Data to a TPO; the TPO should Compile Data and Report to the State

7.1.4.1 Areas of Consensus

The independent TPO selected to implement the collection, recycling, and outreach elements of the program should also be responsible for collecting and compiling data from the various participants in the system and reporting it to the state. Specifically, the TPO would compile data submitted by:

- Manufacturers on the estimated sales of their lamps in California;

- Retailers on their sales of fluorescent lamps to consumers in the state;
- Electric utilities on their promotional distribution of fluorescent lamps to consumers in the state; and
- Recyclers on the estimated quantity of consumer lamps received and processed at their facilities.

7.1.4.2 Areas of Discussion

Manufacturer representatives participating in the task force's discussions have emphasized that the nature of their distribution systems makes precise reporting on lamp sales in California nearly impossible. Lamps generally pass through a wholesaler or a centralized distribution center serving several states, and manufacturers do not know in which state or states the lamps they supply may ultimately be sold. Manufacturer representatives did express willingness to provide estimated sales data to the TPO, which most likely would be calculated by multiplying national sales data by California's share of the U.S. population (unless another formula can be developed). Retailers indicated that their company-specific sales information is proprietary but, understanding that the sales data is necessary, could be provided through a third party or trade association so that company-specific sales data remains private, but aggregate sales data is available for purposes of evaluating the success of the program.

7.1.5 Recommendation: Meaningful Metrics, Clear Goals, and Data Collection are Critical to the Program's Success

7.1.5.1 Areas of Consensus:

The Lighting Task Force has broad agreement about the importance of metrics and goals for successful collection, recycling, and education and outreach programs. In their proposals and comments, the retailers' and manufacturers' representatives expressed their willingness to provide estimated data on lamp sales in California and to work with other stakeholders to develop meaningful goals and metrics.

7.1.5.2 Areas of Discussion:

Participants in the Task Force's meetings and discussions had different perspectives on many of the details as to which goals and metrics should be used to assess the program's success and by whom they should be set. One metric under discussion used the quantity or percentage of the waste diverted from solid waste disposal. This would require in-depth understanding of sales and collection data. Another proposed metric was based on a measure of convenience, based on factors such as the number of collection locations, hours of operation, population density, etc. This convenience metric would be in addition to, or in lieu of, traditional metrics like recycling or diversion rates.
Other areas of discussion included:

- Who should establish the program's metrics and goals? The group did not reach consensus on whether this should be the responsibility of the Legislature, a state agency like DTSC (through regulations), or the independent TPO.
- To whom should the goals apply? Task Force members have varying perspectives about who should be responsible for meeting the program's performance goals – manufacturers, retailers, the TPO, or some combination of the three. Depending on who is accountable for achieving the program's goals, the State may have limited authority to promote recycling through enforcement or the threat of enforcement.
- Use of penalties. Task force members differed widely in their view of the importance of penalties, should goals or metrics not be achieved. Local government and environmental group representatives felt strongly that without such penalties the likelihood of successful implementation of the intent of AB 1109 would be greatly reduced. Manufacturers did not support any such penalties. Retailers opposed a suggestion that mandatory retail take-back be implemented if a manufacturer's collection and recycling program was not initially successful.

7.1.6 Recommendation: State Enforcement Authority Should Be Clearly Spelled out

7.1.6.1 Areas of Consensus

The Task force agrees that state and/or local government needs to have clearly defined enforcement authority to promote compliance and ensure a level playing field for all utilities, manufacturers, and retailers, statewide.

7.1.6.2 Areas of Discussion

None.

7.1.7 Recommendation: Only Fluorescent Lamps from Manufacturers Who Participate in the TPO Should Be Allowed to Be Sold in California.

7.1.7.1 Areas of Consensus

In the interest of creating a level playing field, the task force agreed that the sale of fluorescent lighting in California should be restricted to lamps made by manufacturers who participate in the TPO, and that electric utilities should only distribute lamps manufactured by TPO participants. The Task Force recognized that the State would likely have to provide information to retailers identifying which brands are "compliant" and thus able to be sold.

7.1.7.2 Areas of Discussion

None.

7.2 Collection and Recycling Recommendations

These recommendations are the areas of consensus gleaned from the various collection and recycling options submitted to the task force, as well as discussions at meetings and written comments. All of the options and comments are compiled in Appendix 7.

7.2.1 Recommendation: the Collection System Should Focus on Convenience

7.2.1.1 Areas of Consensus

The task force agreed that to meet AB 1109's mandate, collection should occur at the most convenient locations possible. All agreed that collection at retail locations, recycling centers, and in some cases household hazardous waste facilities, are very convenient options. The task force also agreed that prepaid mailing or shipping boxes may be the most convenient collection mechanism for rural parts of the State.

7.2.1.2 Areas of Discussion

Some options that the task force discussed would require retailers to collect spent fluorescent lighting from their customers for recycling. Others would initially encourage retail take-back, but not require it unless the program failed to meet a predetermined convenience goal or recycling rate. Retailers were concerned the latter approach could create an incentive for manufacturers to create an ineffective program.

7.2.2 Recommendation: the Collection and Recycling Program Should Emphasize Compliance and Safety

7.2.2.1 Areas of Consensus

The task force agreed that as the number of convenient collection sites for lamps increases as the program is implemented, steps will need to be taken to ensure that lamps are collected safely and in compliance with DTSC's regulations. The safety of consumers, employees, customers, transporters and recyclers will need to be considered as new collection sites are established. The task force envisions the TPO and state and local

government playing an active role in helping collection centers operate safely and in compliance with regulatory requirements.

7.3 Education and Outreach Recommendations

The subgroup on education and outreach met and discussed the elements of an effective program. By contrast to the collection and recycling discussions, competing options on education and outreach were not submitted to the Task Force. Essentially, there were no major areas of disagreement on this topic.

7.3.1 Recommendation: an Education and Outreach Program that Combines Messages of Energy Efficiency and Proper Management of End-of-Life Fluorescent Lamps

7.3.1.1 Areas of Consensus

The Task Force's Education and Outreach Subgroup agreed that the program's public education campaign should inform consumers about how and why to manage fluorescent lighting waste safely and properly, in a way that does not dissuade the public from using energy efficient lighting. Fluorescent lighting is more energy efficient than any other commercially available electric lamp, and that will likely continue to be the case for the next several years. The Subgroup agreed that a carefully crafted message will encourage the use of energy efficient lamps, consistent with existing advertising messages, and that linking the two messages justifies the use of the Public Goods Charge monies from utilities to cover recycling costs.

- **Distinguish proper end-of life management from existing curbside "recycling."** The program's messaging should make clear that placing spent lamps in a curbside recycling bin with bottles and cans is not a safe or proper way to manage them;
- **Include specific information about nearby take-back options whenever possible.** The Subgroup was concerned that promoting proper lamp management without mentioning where lamps can be taken will cause confusion;
- **Be multilingual.** The population of California includes a significant number of non-English speaking individuals who are potential users of lamps;
- **Be consistent and readily recognizable.** The Subgroup agreed that repeatedly exposing the public to standard, recognizable imagery and wording will have the best chance of changing their lamp disposal behavior; a recognizable symbol should be part of this consistent message to overcome language barriers with non-English speakers;
- **Include information on what to do when a fluorescent light breaks;**
- **Be delivered by local, state, and federal government, utilities, manufacturers, retailers, and recyclers, in addition to the TPO.** This will ensure that the recycling and energy efficiency messages reach the greatest number of people; and
- **Be funded, at least in part, by "public goods charge."** This funding mechanism is already used to promote the use of energy efficient lighting; and, therefore, is an appropriate resource for promoting proper management of energy efficient lamps when they burn out.

7.3.2 Recommendation: an Education and Outreach Program that Includes a Wide Range of Methods and Media

7.3.2.1 Areas of Consensus

To reach the greatest number of Californians with its messages, the Subgroup agreed that a variety of media and methods should be used, including:

- Stickers for dumpsters and garbage bins with a message (including an image) not to dispose of fluorescent lighting
- Package marking

- Newspaper ads
- Radio public service announcements
- The internet
- Bill inserts
- Point of sale signage
- Interactive materials

7.4 Labeling and Designations Recommendations

The subgroup on labeling and designations had broad agreement on a strategy for labeling lamps and their packaging.

7.4.1 Recommendation: Labels and Designations on Packaging should be Consistent with Existing Standards; Package Stickers with California-specific Information Should Be Used Where Possible

7.4.1.1 Areas of Consensus

Task Force members agreed that labeling lights and light packages with a message about proper end-of-life management is very important in promoting recycling and discouraging improper disposal. Manufacturers distribute their lights nationally and already label all of their mercury-containing lights and packaging sold in North America with an Hg mark in a circle, and a website for more information. The task force felt the existing standards are acceptable, but should be augmented when possible by applying stickers to light packages with California-specific information and a crossed-out garbage can graphic.

7.4.1.2 Areas of Discussion

Some task force members felt that manufacturers should be required to label all fluorescent lamps and packages sold in California with the crossed out garbage can graphic and State-specific information on proper disposal. The manufacturers emphasized that they use the same packaging and product markings nationally, so a requirement to label lamps with California-specific information would, in effect, require them to change the labels on all of the products they sell in North America, including those sold where it is currently legal to dispose of CFLs In the trash, thereby providing inconsistent information.

8.0 Estimated Program Costs

8.1 Collection and Recycling Costs

There are many variables for calculating the costs for funding the infrastructure of fluorescent lamp collection and recycling. DTSC staff developed cost estimates based on the following assumptions:

- In rural areas, residential customers will be more likely to recycle spent lamps by using prepaid mailing/shipping boxes. Per-lamp collection and recycling costs are calculated based on this mechanism;
- In urban areas, larger quantities of lamps will be collected and transported to a recycler in dedicated vehicles (e.g., trucks). The estimated per-lamp cost for these jurisdictions is based on this mechanism;
- The rural population of California is approximately 8 percent of the general population;[27]
- Residential customers will use the smaller, less expensive prepaid mail-back containers; and
- Residential customers will use and recycle primarily compact fluorescent lights and 4-foot tubes.

Other considerations that, although not used to estimate collection and recycling costs now, may affect costs in the future are:

- Residential customers in California will be recycling more CFLs and fewer fluorescent tubes over time. CFLs are currently more expensive to recycle than tubes;
- With a program the size of California, recycling costs will benefit from economies of scale; and
- Improved fluorescent lamp processing technology may tend to lower costs.

For urban (direct collection and recycling) rates, DTSC surveyed several programs in other states (see Appendix 4), AERC Recycling Solutions, and the Association of Lighting and Mercury Recyclers. Prices ranged from $0.23 to $1.00 per lamp, with a fairly even distribution. In the cost calculations, below, DTSC assumed the cost would be $0.60 per lamp. For prepaid mail-back recycling costs, staff surveyed other states, several prepaid fluorescent lamp recyclers[28] and a manufacturer recycling program that uses the U.S. Postal Service.[29] Prices ranged from $0.55 to $3.80 per lamp, with more options being in the lower range; staff assumed the per-lamp cost would be in the middle of this range - $1.70 per lamp. The costs used in the estimates, below, assume that most of the collected lamps would be compact fluorescent lights and 4-foot fluorescent tubes.

The following tables show the basis for this report's estimated collection and recycling costs. Estimated costs have been calculated for 10, 25, and 50 percent recovery rates. (California households currently recycle approximately 10 percent of their spent fluorescent lamps.[30]) Each table includes the number of lamps projected to be generated in the years 2009 to 2012, the number of lamps that would be recovered based on the assumed recovery rate, and the associated costs. A collection and recycling program put in place to implement this report's recommendations would likely get underway in 2010. This report's cost estimates are based on the assumption that the collection rate in 2009 will be similar to the current 10 percent rate and that the rate would increase to 25 percent in 2010 and 50 percent in 2011.

Table 3 Estimated Collection and Recycling Costs at 10 Percent Recovery							
Year	Projected # of units	10% Recovery	Urban Share 92%	Urban Cost ($0.60/lamp)	Rural Share (8%)	Rural Cost ($1.70/lamp)	Total Rural + Urban Cost
2009	15,136,000	1,513,600	1,392,512	$835,507	121,088	$205,850	$1,041,357
2010	16,891,000	1,689,100	1,553,972	$932,383	135,128	$229,718	$1,162,101
2011	21,348,000	2,134,800	1,964,016	$1,178,410	170,784	$290,333	$1,468,742
2012	29,896,000	2,989,600	2,750,432	$1,650,259	239,168	$406,586	$2,056,845

Table 4 Estimated Collection and Recycling Costs at 25 Percent Recovery							
Year	Projected # of units	25% Recovery	Urban Share 92%	Urban Cost ($0.60/lamp)	Rural Share (8%)	Rural Cost ($1.70/lamp)	Total Rural + Urban Cost
2009	15,136,000	3,784,000	3,481,280	$2,088,768	302,720	$514,624	$2,603,392
2010	16,891,000	4,222,750	3,884,930	$2,330,958	337,820	$574,294	$2,905,252
2011	21,348,000	5,337,000	4,910,040	$2,946,024	426,960	$725,832	$3,671,856
2012	29,896,000	7,474,000	6,876,080	$4,125,648	597,920	$1,016,464	$5,142,112

Table 5 Estimated Collection and Recycling Costs at 50 Percent Recovery							
Year	Projected # of units	50% Recovery	Urban Share 92%	Urban Cost ($0.60/lamp)	Rural Share (8%)	Rural Cost ($1.70/lamp)	Total Rural + Urban Cost
2009	15,136,000	7,568,000	6,962,560	$4,177,536	605,440	$1,029,248	$5,206,784
2010	16,891,000	8,445,500	7,769,860	$4,661,916	675,640	$1,148,588	$5,810,504
2011	21,348,000	10,674,000	9,820,080	$5,892,048	853,920	$1,451,664	$7,343,712
2012	29,896,000	14,948,000	13,752,160	$8,251,296	1,195,840	$2,032,928	$10,284,224

8.2 Education and Outreach Costs

Education and outreach costs are difficult to estimate as they can vary greatly, depending on how extensive the effort is. Outreach materials and efforts can include: brochures (which can be utility bill inserts or point-of-purchase materials), print, radio, television and internet advertising, website development and maintenance, direct mailings, billboards, public appearances, and presentations.

In order to estimate what public education for a residential fluorescent lamp recycling program might cost, DTSC looked at local pilot programs in California and programs in other states (see Appendix 3 for a discussion of these programs). In addition, we looked at public education costs in two California statewide recycling programs: used oil (California Integrated Waste Management Board) and beverage containers (Department of Conservation).

California's beverage recycling program is allotted $5,000,000 per year for a multi-media, multilingual public education and outreach program.[31] In 2007, the legislature doubled the program's public outreach allowance for one year so that the Department of Conservation could conduct expanded outreach and promotion about changes in the program.[32]

Used oil recycling grant recipients spent approximately $254,500 on mass media and $75,628 on "person-to-person" outreach, for a total of $330,182, in fiscal year 2004/2005, to target used oil "do-it-yourselfers."[33] Mass media included radio, television, newspapers, newsletters, buses and other transit, billboards, bill inserts, the Penny Saver, and direct mail, while "person-to-person" outreach included neighborhood canvas, ESL (English-as-a-second-language) classes, cultural events, car club/auto events, boat shows and meetings, driver training, small agricultural growers, environmental events and the county fair. Outreach targeted specific groups, such as auto enthusiasts, boaters, ethnic groups and small businesses. Both mass media and person-to-person strategies used nine different languages to carry their message.

A detailed proposal submitted by the California Take-it-Back Partnership for a projected statewide fluorescent lamp recycling program allocates $15,279,500 (88 percent of its first year $17,291,994 budget) to education and outreach, but reduces that to $2,063,500 (14 percent of the total budget of $14,818,518) by the fifth year. The details include website development and maintenance, direct home mailings, television, print, outdoor, and internet ads, point-of-sale/collection location signage, public relations, and collection training per site.

In determining a public education and outreach cost estimate, DTSC narrowed our focus to the two existing California statewide outreach and education programs, those for used oil and beverage container recycling. Subsequently, staff judged the beverage container recycling program to be closer to a lamp recycling program (every household uses and discards both beverage containers and lamps) than a used oil recycling program (which mainly involves "do-it-yourselfers"). Therefore, staff estimates that a statewide spent fluorescent lamp recycling campaign would need $10,000,000 in the first year, for an initial statewide inundation of the energy efficiency/recycling message, and $5,000,000 in subsequent years to maintain public awareness. In adopting this estimate, staff also took into consideration the projected outreach and education costs provided by California's Take-it-Back partnership.

8.3 Retailer Costs

DTSC could not quantify projected costs to retailers to collect spent fluorescent lamps, but these costs could include[34]:

- Staff time to manage contracts with universal waste haulers, tabulate data for universal waste collection, and manage collection areas as per State and federal requirements;
- Staff training on state and federal laws regarding fluorescent lamp management, including recurring costs due to high retail turn-over rate;
- Liability insurance;
- Space loss (collection bins, especially store-front, would take up space otherwise used for revenue-generating merchandise or advertising);
- Materials and personnel to clean up broken lamps;
- Storage of boxes, empty or full;
- Legal costs to defend against claims, and damage to retailer reputation;
- Costs for auditing and reporting requirements; and
- If required to ship lamps to a recycler, costs to package and ship lamps

One retailer operating in California offers its customers take-back of non-Energy Star compact fluorescent bulbs (not tubes), arguing that its collection and storage costs are balanced by the earnings in recycling other materials which have a positive value.[35]

Appendix 1:

AB 1109 Task Force Members and Affiliations

Table A1-1: AB 1109
Lighting Task Force Members

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Appendix 2:

Residential Lamps Available For Recycling In California

NEMA ESTIMATE OF RESIDENTIAL LAMPS AVAILABLE FOR RECYCLING IN CALIFORNIA[36]

Lamp Type

Residential CFL and Linear Fluorescent

Years	Units
2008	13,569,000
2009	15,136,000
2010	16,891,000
2011	21,348,000
2012	29,896,000

Assumptions:

CFL

We assumed lamp life of 6 years (1,000 hours per year for six years as used by Energy Star) for residential screw in CFL.
We used estimated sales of residential CFLs (1/3 for sales from each of 5, 6 and seven years ago.
We took 90 percent of weighted average of sales as amount used in residential housing with other 10 percent used in businesses.

Linear Fluorescent

Residential market for linear fluorescent lamps is mature and relatively flat.
Four foot lamps last 20,000 hours. At 1,000 hours of use per year lamps last 20 years.
We conservatively assumed life of these lamps at 15 years.
We used fluorescent lamps sales through the retail chain since consumers do not buy lamps through the wholesaler chain.
We used sales through the retail chain, averaging sales from 16, 15 and 14 years ago.
To arrive at sales data for some categories we used last available data and then a reverse growth rate to estimate sales for that year.
We took 85 percent of the estimate of lamps sold through retail outlets as the number of lamps used in residential housing with the other 15 percent as used in businesses.

California Estimates

To arrive at the estimate for California we used the California percentage of the national population for each year for which we used sales data.

Appendix 3:

Pilot Programs for Collection and Recycling Household Lamps

Table A3-1: Existing Collection and Recycling Programs for Fluorescent Lighting Waste: Summary of Funding Mechanisms

Party	Location/State	Program Costs	Sustainability of Funding/Funding Mechanism
Utility	Maine	Unspecified.	Not sustainable. Efficiency Maine plans to withdraw funding once its subsidies for CFLs are discontinued.
	Minnesota	Unspecified.	Sustainable. Minnesota's utilities provide coupons to consumers to cover part of the costs of recycling. Consumer fees are the primary source of funding.
Manufacturer	Massachusetts	Not known - funds have not been spent yet.	Not sustainable. If recycling rates are not met, the manufacturers must pay a fine of $1 million to fund the program.
	Europe	Varies and unspecified.	Sustainable. In some European countries manufacturers are responsible for setting up collection systems that are funded by an advance recycling fee. In others, manufacturers bear the cost.
	United Kingdom	Varies and unspecified.	Sustainable. Manufacturers pay a registration fee to a TPO and are responsible for showing proof of proper management and recycling.
Retailer	IKEA stores across the nation	Unspecified.	Sustainable as long as IKEA continues to participate. IKEA stores bear the cost of collection, transportation, and recycling voluntarily.

Party	Location/State	Program Costs	Sustainability of Funding/Funding Mechanism
	City of Madison, Wisconsin	Unspecified.	Sustainable. The city of Madison requires retailers to bear the costs for collection, transportation, and recycling.
Government	Vermont	$22,500/ 2 years.	Initial funding source not sustainable; secondary funding source sustainable. Initial funding from a Supplemental Environmental Project (SEP) from settlement of an enforcement case. Subsequent funding from a consumer fee.
	Lane County, Oregon	$26,711/1 year plus $41,650 for admin costs.	Not sustainable. This was a pilot project, funded by a one-time grant.
	Santa Clara County, California	$227,000/year.	Sustainable. Funded from solid waste tipping fees.
	City and County of San Francisco, California	$18,000/year for recycling; $100,000 for staff and transportation; $10,000 - $200,000 per yr. for education and outreach	Sustainable. Funded through residential and commercial garbage rates.

A3 Education and Outreach Pilot Programs

A3.1 Lane County, Oregon – Shared Cost

Lane County, Oregon's pilot project for retail collection of spent fluorescent lamps was primarily funded, by electric utilities and through an intergovernmental agreement. The small retailers that participated in the project were provided with posters and "aisle wobblers," which they used in their stores. In addition to their financial contributions, the participating electric utilities used established methods, including their customer newsletters, to inform the public about the pilot based on sample materials developed and provided to them by the county. The project ran from October 2004-October 2005 and spent $32,517 on marketing and advertising.[37]

A3.2 Vermont – Manufacturer Participation

As part of the labeling negotiations with Vermont, NEMA agreed to contribute $40,000 in order to educate consumers as to what the symbol Hg meant as well as the need to recycle fluorescent lamps. The money was given to a TPO which worked with the State to do outreach and develop educational materials.[38]

A3.3 Local Government Participation

Santa Clara County has developed a pilot program to collect fluorescent lights from consumers at local retail stores and has sponsored an event with PG&E. In addition to funding the collection and recycling costs, the county spent $20,000 on public outreach for the 2007/08 fiscal year.[39]

San Francisco began its retail fluorescent light collection program 5 years ago through a grant from the California Integrated Waste Management Board. It started with 8 sites under the grant, and has expanded to more than 30 sites. In its first year of the program, San Francisco spent $45,000 on outreach, and has since spent approximately $10,000 per year. In response to the increased promotion of CFL use over the last couple of years, San Francisco is doing its largest outreach campaign this year, spending upwards of $200,000. The current campaign includes direct mail to all San Francisco resident, television and radio spots, newspaper ads and on-line promotion, with most outreach being trilingual in English, Chinese and Spanish.

A3.4 Santa Clara and Tehama Counties – California Utility Partnerships

During 2007-2008, PG&E established pilot programs in Santa Clara and Tehama counties to collect CFLs at retail stores. In the Santa Clara County pilot, PG&E provided:

- CFL bags for customers of participating hardware stores to take home, in which they could return spent CFLs to the store; and

- Prepaid buckets to participating retail stores for collecting CFLs and shipping them to a recycler.

PG&E Spent $10,000 on the bags and buckets, and participating retailers collected 6,500 CFLs during the pilot. To publicize the pilot, PG&E ran advertisements in local newspapers in several different languages, to target non-English speakers; this campaign cost an additional $15,000.

In Tehama County, PG&E spent $18,900 for mainly print ads in numerous newspapers over the course of 8 weeks. Tehama County collected 2,400 lbs of fluorescent tubes in 2007, nearly 14 times the amount collected in 2006 (176 lbs). Likewise, the number of CFLs collected in the county rose from 1 bulb in 2006, to 76 bulbs in 2007.

Appendix 4:

Lamp Recycling Cost Data and Estimates

Appendix 4: Lamp recycling cost data and estimates

The recycling costs of lamp recycling programs in other states have varied significantly, but are very relevant in estimating the costs for a statewide program in California.

Table A4-1: Per-Lamp Recycling Costs in Other States' Programs

State	Cost per CFL	Cost per 4ft Linear	Note
Maine	$.69	N/A	Price was for CFLs and tubes. Retailers kept a portion of the $.69 as reimbursement and then paid the rest to the recycler.
Massachusetts	$.36	$.24	
Vermont	$.35	$.25	Based on information provided by Karen Knaebel, Vermont Department of Environment Conservation.

North Carolina has projected the total cost of recovering 100 percent of its CFLs to be $3.44 million for 8.6 million lamps. North Carolina also estimated the cost for recycling 4ft tubes and CFLs using mail-in kits; the latter estimates include collection, transportation, and recycling as follows.[E]

Table A4-2: North Carolina's Estimated Per-Lamp Recycling Cost using Prepaid Kits[F]

Projected costs/unit	Low	Median	High
CFL	$0.75	$1.13	$2.80
4 Ft Linear	$0.55	$1.77	$3.27

Based on estimates of the number of lamps available for recycling provided by NEMA and estimated per-lamp costs of $.30 (low estimate) and a $1.50 (high estimate), DTSC has estimated the total statewide recycling costs for various recycling rates, ranging from 10 percent to 100 percent. These estimates are conservative: one manufacturer representative on the task force estimated the per-lamp recycling cost would likely be in the range of 30 to 50 cents.[G]

The $1.50 per lamp high estimate is the average of North Carolina's median recycling cost estimates for CFLs and 4ft fluorescent tubes. The 30 cents per lamp low estimate is based on data from other states and ALMR.

[E] Phone conversation with Ronald Still, Library Technical Assistant for NC Div. of Pollution Prevention and Environmental Assistance/US EPA Waste Reduction Resource Center

[F] Draft Report on the Generation and Potential Recycling of Fluorescent Lights. NC DENR: Division of Pollution Prevention and Environmental Assistance. Division of Waste Management.

[G] Joe Howley, Manager, Industry Relations & Environmental Marketing for GE, at the Collection and Recycling sub group meeting on 5-15-2008

Table A4-3: Range of Statewide Lamp Recycling Costs – Assumption 100 Percent Recovery

Year	Number of units	$.30/light	$1.5/light
2008	13,569,000	4,070,700	20,353,500
2009	15,136,000	4,540,800	22,704,000
2010	16,891,000	5,067,300	25,336,5000
2011	21,348,000	6,404,400	32,022,000
2012	29,896,000	8,968,000	44,844,000

Table A4-4: Range of Statewide Lamp Recycling Costs – Assumption: 50 Percent Recovery

Year	Number of units	$.30/light	$1.5/light
2008	13,569,000	2,035,350	10,176,750
2009	15,136,000	2,270,400	11,352,000
2010	16,891,000	2,533,650	12,668,250
2011	21,348,000	3,202,200	16,011,000
2012	29,896,000	4,484,400	22,422,000

Table A4-5: Range of Statewide Lamp Recycling Costs – Assumption: 25 Percent Recovery

Year	Number of units	$.30/light	$1.5/light
2008	13,569,000	1,017,675	5,088,375
2009	15,136,000	1,135,200	5,676,000
2010	16,891,000	1,266,825	6,334,125
2011	21,348,000	1,601,100	8,005,500
2012	29,896,000	2,242,200	11,211,000

Table A4-6: Range of Statewide Lamp Recycling Costs – Assumption: 10 Percent Recovery

Year	Number of units	$.30/light	$1.5/light
2008	13,569,000	407,070	2,035,350
2009	15,136,000	454080	2,270,400
2010	16,891,000	506,730	2,533,650
2011	21,348,000	640,440	3,202,200
2012	29,896,000	8,96,800	4,484,400

The California Take it Back Partnership 501 (c)(3) nonprofit organization has put forth a detailed collection and recycling proposal and has projected the costs of collection, transportation and recycling if the California Take it Back Partnership were the organization responsible for implementation of the statewide program. The California Take it Back Partnership developed estimated costs and projected diversion rates outside of any Task Force meetings and submitted their findings to DTSC.[H]

[H] See Appendix 7, PP. A-90 – A-94

Table A4-7: California Take it Back Partnership Estimated Costs for Collection and Recycling

Year	1	2	3	4	5
% Diversion Rate	10%	34%	37%	41%	50%
Total Cost - Collection, Shipping, Recycling	$1,052,494	$4,042,710	$4,969,755	$6,925,905	$11,795,018

Appendix 5:

Existing EPR Programs for Lamps

A5.1 Existing EPR Programs

The European Union (EU) has implemented an EPR framework for electrical and electronic products, including fluorescent lights, under the Waste Electrical and Electronic Equipment (WEEE) directive. The WEEE Directive has specific requirements for collection, labeling, packaging, and reporting, but each EU member state has implemented the WEEE Directive somewhat differently. There are differences in scope of equipment covered, in the type of producer responsibility (individual or collective), and in the funding mechanisms. The WEEE Directive's flexibility has allowed EU member states to take into account differences in the proximity of recycling facilities, population demographics (e.g., rural vs. urban areas), and cultural differences in implementing their respective programs. From the manufacturers' perspective, the flexibility of the WEEE Directive has a downside: because the member states' programs are not consistent, manufacturers face the challenge of tracking and complying with many sets of requirements.

A5.1.1 EPR in the United Kingdom's WEEE Program

In the UK, manufacturers pay a registration fee to a TPO based on their market share. This fee is used by the TPO for administration purposes and to cover the cost of recycling fluorescent lights. Manufacturers are responsible for providing evidence to the government of proper transportation and recycling of the lights they have produced, so they must work with the TPO to acquire proper documentation. The TPO works with distributors and retailers, who participate in one of two ways: 1) they can provide funding for the transportation of fluorescent lights from municipal sites to a recycler, or 2) they can collect lights from consumers at their sites for transportation to a recycler. Collection at municipal sites (city halls, etc.) may be a more viable option in the UK than in California because of that country's higher density of municipal sites per square mile.[40]

A5.1.2 EPR in Switzerland

Switzerland has instituted an EPR system for electronic waste and fluorescent lamps under its Ordinance on the Return, Taking Back and the Disposal of Electrical and Electronic Equipment (ORDEE). Prior to the adoption of ORDEE, voluntary Producer Responsibility Organizations (PROs) had set up systems for collecting and managing electronic waste. These organizations' responsibilities under the EPR framework include properly managing electronic wastes and financing their collection and transportation. There are four PROs in Switzerland, one of which specifically handles lighting and lighting devices, including fluorescents. While Swiss law requires manufacturers and retailers to meet certain requirements, the PROs responsible for the collection and recycling of these wastes are voluntary organizations.[41]

The Swiss ORDEE is based on an EPR model, but also has elements of a retail take back system as well, as discussed below. It is important to note that, although consumers may dispose of their lights free of charge, the purchase price of all electric lamps sold in Switzerland includes a prepaid disposal component.[42]

A5.1.3 EPR in Massachusetts

Massachusetts's Mercury Management Act, which passed in 2006, requires the manufacturers of mercury-containing lights to submit a plan to the State laying out how they will educate the public about the need to properly recycle these lights. Manufacturers are required to implement their plans and to meet target recycling rates. If they fail to meet the law's targets, the manufacturers are required to pay $1 million, collectively, to a state-managed fund to be used by the Department of Environmental Protection to make "grants to municipalities or regional authorities to facilitate meeting recycling rates."[43]

While it contains aggressive recycling targets, the Massachusetts Mercury Management Act lacks an enforcement component as a system is not in place to penalize businesses that intentionally dispose fluorescent lights. This may be a barrier to the implementation of the plan submitted by the manufacturers since the lack of enforcement may discourage compliance with the law and result in a low recycling rate.[44]

Appendix 6:

Existing Retail Take-Back Programs for Lamps and Batteries

A6 Retail Take Back Programs

A6.1 Mandatory Take-Back

A6.1.1 ORDEE in Switzerland

The Swiss Ordinance on the Return, Taking Back and the Disposal of Electrical and Electronic Equipment (ORDEE) requires retailers to inform consumers of the proper management of obsolete products and to take back any type of product that they have sold to consumers (e.g., electronic products or fluorescent lighting). Because this system is funded with an Advanced Recycling Fee (ARF), consumers are able to take their products back to retailers and other collection points at no additional charge.

A6.1.2 Mandatory Retail Take-Back in California

Two California laws currently require retailers to collect certain universal wastes from consumers at their stores. The Cell Phone Recycling Act of 2004 and the Rechargeable Battery Recycling Act of 2005 require retailers to provide a mechanism for accepting these products from consumers for recycling. Preliminary data suggests that these laws have been effective at diverting batteries and cell phones from the solid waste stream. DTSC has estimated that California's cell phone recycling rate in 2006 was 17 percent, nearly double the national rate of 10 percent.[45] Furthermore, DTSC has estimated that more than 1.1 million pounds of rechargeable batteries were collected at retail sites in 2006.[46] These two programs are still relatively new and accurate data is not available due to the absence of state reporting requirements for retailers and recycling facilities that handle cell phones and batteries.

A6.1.3 Mandatory Retail Take-Back in Madison, Wisconsin

In 2003, the City of Madison Wisconsin passed an ordinance requiring retailers that sell fluorescent lights to comply with a number of requirements:

- The retailer must notify customers that these items may not be accepted at Dane County-owned landfills;
- The retailer must accept these items, once they have been used, from the customer. The retailer may require the customer to pay a reasonable fee for this service at the point of collection;
- The retailer must recycle these lights with a licensed recycler; and
- The retailer must submit a plan to Madison's Recycling Coordinator within 90 days of the ordinance's adoption, illustrating how they will comply.

Madison's ordinance also provides for the issuance of citations and fines for noncompliance.[47] Since the Ordinance was adopted in 2003, over 60 retailers have been collecting fluorescent lamps for recycling. Stores are not required to report the quantity of lamps collected, but the city

has estimated that 4,200 lamps were collected in 2005 and 18,000 in 2006. Retail stores are responsible for the costs of collection and recycling and while some offer the service free of charge, others charge up to $2.00 per 4ft tube collected. It is unclear from DTSC's conversations with the City of Madison whether any retailers have been fined for non-compliance with this Ordinance.

A6.2 Voluntary Take-Back

A6.2.1 Santa Clara County, California

In anticipation of California's ban on the disposal of fluorescent lighting and other universal wastes in landfills, Santa Clara County launched the Recycling Partners Program to provide free retail collection to consumers. The county received a grant from the CIWMB to implement the program, in which they were able to recruit 17 retail locations for participation. During the 18 month term of the grant, the county collected 37,774 pounds of fluorescent lamps at retail locations, including some big box stores such as Orchard Supply Hardware. County staff and administrators have been actively involved in the Recycling Partners Program, providing all supplies for the collection, record keeping, and transportation of these wastes.

After the grant monies expired, the county decided to continue the program using a part of their AB 939 solid waste tipping fees to fund retail collection of lamps.[48] Santa Clara County has found retail collection to be the most cost efficient method for lighting waste and they have been able to avoid the high costs of managing lamps at their household hazardous waste facility. Although Santa Clara County spent $227,000 to fund this program during the 2007/08 fiscal year, the county has saved hundreds of thousands of taxpayer dollars by working with retailers as collection points compared with collecting the lamps through its household hazardous waste collection program.[49]

A6.2.2 City and County of San Francisco, California

In response to the growing use of CFLs, San Francisco piloted a retail take-back program in 2003 with the help of a $70,000 grant form the California Integrated Waste Management Board. The retail partnership program began with 8 sites under the grant, and has since expanded to more than 30 sites. The program is currently funded by residential and commercial garbage rates.

Retail participant are primarily hardware stores, as well as a few lighting stores, community centers and grocery stores. San Francisco's solid waste transfer station also serves as a collection site, where small businesses can bring up to 30 lights for free per month (garbage rate funded). All sites accept tubes up to 8 feet, CFLs and other odd shaped fluorescent lights. The program also accepts high intensity discharge (HID) lights, though outreach has not been done for this.

San Francisco's program collected 3373 CFLs and 52,364 fluorescent tubes (equaling 238,447 linear feet) from July 2007-June 2008. Approximately 40 percent of the lights came directly to

the solid waste transfer station. Despite varying levels of outreach (see Appendix 3), the volume of fluorescent lights recycled has increased steadily each month since the program began.

A6.2.3 Tehama County and PG&E

In 2006 DTSC met with representatives from Pacific Gas and Electric (PG&E) to discuss extending PG&E's energy efficiency message to include that of environmental protection. Soon after, PG&E launched several pilot projects such as the one with Tehama County to collect end-of-life fluorescent bulbs and tubes from residential consumers.

A6.2.4 State of Vermont

The State of Vermont has worked with local hardware stores such as ACE to provide consumers the option to return their end-of-life fluorescents since 2005. To date, Vermont has collected approximately 6,000 CFLs, 170,000 linear feet for tubes and has 71 participating hardware stores. The program has been funded with $22,500 in Supplemental Enforcement Program (SEP) funds, which has covered administrative costs, transportation, and recycling. Since the SEP is a one-time source of funding, Vermont is looking for more sustainable funding sources for the program.

According to the Vermont Agency of Natural Resources, safety and regulatory compliance have not been issues in the collection of fluorescent lights at retail locations. Some lamp breakage has occurred, but it has not posed a significant problem.[50]

A6.2.5 State of Maine

Maine implemented its "Replace Reduce Recycle" program to provide easy, no-cost CFL collection options for consumers, statewide. Under the program, consumers can bring spent CFLs to any of more than 214 participating retail stores. According to Maine's report, participating retailers have been generally been satisfied with the program and retailers from across the state, including Wal-Mart, have joined.[51] The program is administered and funded by Efficiency Maine, a program of the State Public Utilities Commission. Like utility companies in California, Maine's PUC has subsidized CFLs for households and therefore is funding the program until the subsidies are phased out. Maine's report recommends that the Legislature shift the financial responsibility from Efficiency Maine to manufacturers and establish a deposit/refund system for consumer lamps in order to increase the recycling rate.[52]

A6.2.6 Lane County, Oregon

In 2004, Lane County, Oregon launched a pilot project for retail-based collection of fluorescent lights. With support from retailers and electric utilities, this one-year pilot increased the CFL recycling rate from 1 percent to nearly 6.7 percent, and that for linear fluorescent tubes from 4.3 percent to 16.3 percent.[53] Most of the funding for collection and recycling was provided by the Lane County Department of Public Works and retailers, but electric utilities provided significant assistance with outreach and education materials.

A customer survey taken during the course of the project found that participants wanted the retail take-back program to continue. More than 75 percent of respondents said they had previously disposed of spent fluorescent lighting in the trash.[54] The final report on the Lane County pilot program identified a number of challenges that the organizers encountered: [55]

- Getting retailers to properly sort, box and label the spent lamps;
- Commercial customers disposing of lamps at the participating retail locations; and
- Getting completed surveys turned in to help evaluate the community response.

A6.2.7 State of Massachusetts

Currently there are a variety of locations where Massachusetts consumers may take spent fluorescent lights for recycling. The majority of these are run by local government, but several big box retailers also collect fluorescent lighting, including IKEA and Whole Foods Market.[56] Currently Massachusetts is not focusing on residential fluorescent lighting as it is not specified in the Mercury Management Act to do so.

A6.2.8 Nationwide Programs

IKEA accepts compact fluorescent lights (but not tubes) from consumers at each of their locations for free. Each store individually negotiates contracts with lighting recyclers to transport and recycle the lamps it collects. In June 2008, The Home Depot announced that they will begin collecting used CFLs from their customers. Home Depot will use their current licensed hazardous waste hauler to properly manage the CFLs through various recyclers. All costs of collection, transportation, and recycling of these CFLs will be covered by The Home Depot.

Appendix 7:

Options and Comments Presented to the Task Force

Option A for the Collection and Recycling System.

This option was removed by the authors in favor of option E.

Manufacturers

- Primary responsibility for implementing convenient collection system:
  - Mechanisms not specified: Options include retail take-back, mail back, Household Hazardous Waste (HHW) facilities, curbside, other.
- Shared responsibility for publicity and outreach
- Responsible for achieving specified "convenience goals".
- Pays for transportation and recycling of lamps until convenience goals are met (potentially through a third party organization). Access to funds from Public Goods Charge after goals are met.
- Must provide data on sales and collection opportunities to State.

Retailers

- Responsible for providing point of sale information on energy efficiency benefits and recycling opportunities.
- May only sell lamps for which the manufacturer is in compliance.
- Responsible for reporting annual lamp sales in California.
- All stores invited to participate as collection centers
- Responsible for appropriate on site management of returned lamps
- If after 2 years, manufacturers can demonstrate inability to meet convenience requirements due to lack of retailer participation, then all retailers >X sq. ft. and >Y annual sales are required to participate until convenience measures achieved.

Utilities

- Facilitate flow of public goods charge funds for recycling and transportation
- Only distribute lamp brands that are fully in compliance with the program.
- Outreach and education on disposal closely coupled with all outreach on energy efficiency
- Report data on lamp distribution outside retail environment (*give-aways*)

State Government

- Provide oversight for measurement of convenience goal
- Provide certification/enforcement of recycling operations

- Provide compliance assistance to collectors and handlers
- Collect sales and recycling data. Review performance and consider enacting diversion-based performance standards

Local Government

- Provide outreach and education in partnership with State, utilities, retailers, and producers
- Participate with producers to create drop-off centers for lamps.
- Outreach and education on disposal closely coupled with all outreach on energy efficiency
- Coordinate with Local Enforcement Agencies (LEAs) and solid waste management companies

Collectors/Recyclers

- Must follow universal waste management requirements.
- May enter into contracts with Manufacturer and Retailers to meet convenience goals.
- Recyclers must provide reporting on recycling of California lamps to State (via contract provisions from manufacturers).

Funding options for A

1. Use of the CPUC funds
2. All California utilities could add a minimal fee in the ratepayer bill.
3. Manufacturers incur the cost
4. Anyone who benefits from the sale of these bulbs, i.e. manufactures, retailers, importers, would be responsible for the costs of collection, transportation, and recycling of the lights.
5. Fee or increased cost on non efficient bulbs such as incandescent lights.
6. Hybrid funding of some or all of the above but relying on the manufacturers and retailers to develop a free market approach, lowering costs to meet the goal of cost efficiency.

Option B for the Collection and Recycling system

This option can be applied to any collection and recycling infrastructure as a cost efficient, transparent, and consistent method of implementation. Specifically, this option outlines how the TPO must be representative of all stakeholders, transparent in operation to the public, and accountable to all stakeholders.

Membership

- Independent and non-profit stewardship organization to implement and maintain recommendations with a board of directors drawn from a range of stakeholders including:
  - lighting manufacturers;
  - retail stores (both large and small);
  - energy utilities (municipal and investor owned);
  - state government (energy & environmental);
  - local government (urban and rural);
  - federal government;
  - environmental organizations; and
  - consumer advocates;
- The basis of this group could be the existing AB 1109 Task Force.

Non-Profit TPO

The Non-Profit TPO will develop, coordinate and manage a voluntary system for statewide CFL/FL collection, free and convenient to California householders. The system has the following attributes:

- Works within the framework and requirements of AB1109;
- Develops universal standards and code for operating procedures to maximize cost efficiency and public safety;
- Establishes metrics and reporting requirements;
- Develops fair and equitable agreements on key stakeholder responsibility for providing resources to support the program including direct funding and 'services in kind' participation;
- Oversees and directs public education and outreach to support the collection system;
- Creates a level economic playing field for collectors and recyclers;
- Develops an "incentivized" system of collection to include incentive payments per lamp to all collectors, mailing options for collectors and underserved areas, and payment to recyclers in accordance with prevailing market rates;

- Works closely with all agencies of government to discourage "free riders" or fraud within the system; and
- Provides a system that can expand to include other participating states.

Manufacturers

- Primary responsibility for implementing convenient collection system;
- Can contribute funding to a nonprofit TPO (formula to be determined);
- Primary responsibility for implementing convenient collection system:
    - Mechanisms specified: Options include retail take-back, CRV centers (convenience zones), voluntary third party collectors, mail back, and HHW facilities.
- Shared responsibility for publicity and outreach, but can direct the nonprofit TPO to conduct the universal public education statewide campaign;
- Responsible for achieving specified "convenience goals";
- Pays for transportation and recycling of lamps until convenience goals are met (potentially through a third party organization). Access to funds from Public Goods Charge after goals are met or before as an incentive; and
- Must provide data on sales and collection opportunities to State or nonprofit TPO.

Retailers

- Can contribute funding to the nonprofit TPO (formula to be determined);
- Responsible for providing point of sale information on energy efficiency benefits and recycling opportunities as assisted by the nonprofit TPO;
- May only sell lamps for which the manufacturer is in compliance;
- Responsible for reporting annual lamp sales in California to the nonprofit TPO which "sanitizes" the data for submission to regulatory agencies;
- All stores invited to participate as collection centers; and
- Responsible for appropriate on site management of returned lamps

If after 2 years, manufacturers can demonstrate inability to meet convenience requirements due to lack of retailer participation, then all retailers >X sq. ft. and >Y annual sales are required to participate until convenience measures achieved

Utilities

- Can contribute to the Nonprofit TPO (formula to be determined) using rate payer funding;
- Facilitate flow of rate payer funds from the CPUC for use in Take It Back program for energy efficiency and environmental protection;
- Only distribute lamp brands fully compliant with the program;
- Outreach and education on disposal closely coupled with all outreach on energy efficiency, although utilities can direct and pay the Nonprofit TPO to conduct a universal statewide public education campaign; and
- Report data on lamp distribution outside retail environment (*give-aways*).

State Government

- Provide oversight of performance of Nonprofit TPO to ensure cost effective use of funds and progress towards recycling goals;
- Provide certification/enforcement of recycling operations;
- Provide compliance assistance to collectors and handlers;
- Collect sales and recycling data; and
- Review performance and consider enacting diversion-based performance standards.

Local Government

- Provide outreach and education in partnership with State, utilities, retailers, and producers and/or their Nonprofit TPO;
- Cooperate with nonprofit TPO to create drop-off centers for lamps;
- Outreach and education on disposal closely coupled with all outreach on energy efficiency in concert with the Nonprofit TPO;
- Coordinate with LEAs and solid waste management companies to assure that lamps are not disposed in the trash; and
- HHW facilities would be eligible for a spent lamp incentive payment.

Collectors/Recyclers

- Must follow universal waste management requirements;
- May enter into "contracts" or another simpler instrument (e.g., a standard agreement) with Nonprofit TPO, whereupon they will be eligible for incentive payments of up to 10 cents per lamp;
- Recyclers must provide reporting on recycling of California lamps to the Nonprofit TPO which aggregates and verifies data for submission to the State;

- Collectors may contribute financially to Nonprofit TPO if they so desire for purposes of outreach and education, but any spent lamps collected will be paid for by the nonprofit or by stakeholders as directed by the Nonprofit TPO; and
- Recyclers may contribute financially to the Nonprofit TPO if they so desire for purposes of outreach and education, but any spent lamps recycled will cost something to process, so there will be a need for the Nonprofit TPO, or by stakeholders as directed by the Nonprofit TPO, to pay for all lamps recycled.

Funding options for B

1. Whatever funding mechanism is selected by group can be the source of funding for the Nonprofit TPO
2. CPUC funds can be spent by the utilities as directed by a Nonprofit TPO
3. Nonprofit TPO can raise funding in a to-be-determined formula from the stakeholders to pay for the program, if the legislature directs responsible parties to participate in an approved Nonprofit TPO

Option C for the Collection and Recycling system

This option relies on the manufacturers and retailers to develop and fund the collection and recycling structure for fluorescent lights. It does not require, nor exclude a TPO from managing the system, but it does require that the system is fully funded by manufacturers and retailers. It also requires all retailers to collect the lights from consumers for free.

Manufacturers

- Develop appropriate labels
- Accept used bulbs back at end of life.
- Direct bulbs to approved recycling facilities for safe processing.
- Work with retailers and distributors to develop most efficient takeback system.
- Invest in development of alternatives containing fewer toxic materials.

Sellers/Retailers

- Accept used bulbs back at end of life
- Publicize take back program
- Responsible for safe handling
- Work with manufacturers to develop efficient take back system
- Work to meet established take back goals
- Provide data on sales and take backs

Utilities

- Encourage use of energy efficient bulbs
- Provide statewide publicity about proper recycling of spent bulbs
- With approval of Public Utilities commission, provide grants from public goods funds for:
    1. grants to local governments and non-profits for local outreach and education programs
    2. grants to local governments for improvements to local Household Hazardous Waste collection programs for proper collection and processing of fluorescent bulbs.

State Government

- Develops and monitors takeback program
- Collects data from manufacturers, sellers, recyclers and local governments

- Provides incentives for compliance and to encourage improvements
- Sets standards for safe handling of used bulbs

Local Government

- Accept used bulbs at Household Hazardous Waste facilities
- Provide data on numbers and types of bulbs recycled.
- Inform local sellers about takeback program
- Inform consumers about proper handling of used bulbs
- Monitor compliance with program

Collectors/Recyclers

- Process used bulbs in compliance with safety standards
- Provide data on numbers and types of bulbs recycled.
- Work with retailers and distributors to develop most efficient takeback system.

Funding options for C

1. Manufacturers and Retailers fund the entire system.

Option M for the Collection and Recycling system

Legislature

- Establish time line for implementation

Manufacturers

- Continue to reduce mercury and other hazardous constituents in lighting products.
- Invest in development of alternative light sources containing fewer toxic materials and greater efficiency
- Create Third Party Organization (TPO)
  - Manufacturers join TPO
  - Manufacturers are principal members of TPO
- Manufacturers to fund TPO general administrative operations, and TPO outreach, education and publicity.
- Coordinate with TPO for publicity and outreach
  - As individual manufacturers
  - Collectively as an industry through NEMA including www.lamprecycle.org and NEMA packaging specification
- Coordinate packaging/education options with utility-funded rebate programs in state
- Provide appropriate data to TPO and/or state
- Coordinate with TPO in developing point of sale information about energy efficiency and recycling
- Coordinate with TPO to develop most efficient and convenient consumer lamp collection/transportation/recycling options

Third Party Organization (TPO)

- Board of Directors will include manufacturers and a range of stakeholders
- Coordinate efforts to establish effective collection infrastructure.
  - Coordinate recycling options at retailers and other collection points as necessary.
  - Promote mail back options where cost effective or otherwise necessary to assure collection in rural areas
- Set interim goals and milestones
- Work with government to set and adjust metrics
- Oversee outreach and education in close collaboration with the state and local governments, retailers, manufacturers, Flex Your Power, utilities and recyclers

- Manage funds from utility rate payers collected by participating
- Submit annual report to State detailing expenditure of collected funds.
- Monitor and report performance of system including outreach, education, available collection points, participating manufacturers and recycling
- Coordinate with local governments and LEAs to provide training to staff at collection centers
- Establish mechanism for consumer feedback about recycling programs

Retailers

- Serve as primary collection centers
  - Voluntary participation
  - Responsible for appropriate on site management of returned lamps
  - Other "retail" locations such as USPS, HHW, other community locations as options
- Retailer programs subsidized by utility funding.
- Contract for recycling services and recycling products with lamp recycling companies
- Provide point of sale information on energy efficiency benefits and recycling availability
- Report annual lamp sales in California.
- Sell mercury-containing lamps to consumers only from manufacturers that are members of the TPO.

Utilities (Investor and Publicly Owned)

- Provide funding (either public goods charge or rate payer funds) for transportation and recycling of lamps. Utilities set fixed incentive that can vary by Utility program.
- Utilities can manage their own recycling incentive program using their own funds, or facilitate flow of funds to TPO to manage program.
- Outreach and education about disposal closely coupled with outreach about energy efficiency
  - Coordinate messaging with manufacturers and retailers during CFL rebate programs
  - Coordinate messaging on energy efficiency with Flex Your Power
- Report data about lamp distribution outside retail environment (*give-aways*)

State Government

- Provide oversight of TPO
- Provide certification/enforcement of recycling operations

- Provide compliance assistance to collectors and handlers
- Collect sales and recycling data.
- Assist with education and outreach via TPO and existing mechanisms
- Work with TPO and stakeholders to develop future metrics
- Maintain state lamp recycling website containing current list of participating lamp collection sites and a list of recyclers offering retail collection programs in the State.
    - Website to contain list of manufacturers that are members of the TPO

Local Government

- Provide outreach and education to consumers/households in partnership with TPO, State, utilities, retailers, recyclers and manufacturers
- Outreach and education on disposal closely coupled with outreach on energy efficiency
- Actively solicit and encourage local retailers to become collection points
- Collaborate with TPO to maximize number of drop-off locations
    - Continue to offer HHW as an option
    - Local government is eligible for reimbursement
- Provide data to state/TPO on numbers and types of lamps recycled
- Coordinate with LEAs and solid waste management companies
- Work with TPO to develop local incentive programs to encourage consumers to be engaged in the recycling process.
- Develop and distribute educational materials for schools

Collectors/Recyclers

- Follow universal waste management requirements.
- Enter into contracts with individual retailers and/or collection locations
- Promote integrated programs (i.e. both commercial and household lamps) with existing and prospective retail clients
- Report recycling of California lamps to TPO
- Assist with education and outreach

Consumers

- Provide feedback to TPO/state about recycling programs
- Bring lamps to recycling collection points for proper disposal

Funding mechanism

1. **Collection of fees from rate payers (IOUs and POUs)**
    - Funding to cover collection, transportation and recycling costs of residential mercury-containing lamps through various programs (retailer collection, local HHW, mail-back…)
    - Utilities set retailer incentives that can vary by utility program or region
    - Funding to be used for outreach and education
    - Portion of currently-collected Public Goods Charge revenue dedicated to CFL promotions can also be used
2. **Education and Outreach**
    - Funding from stakeholders including TPO, utilities, retailers, recyclers, state and local governments and others

Option E for the Collection and Recycling system

Legislature

- Establish time line for implementation
- Set recycling and convenience goals
- Establish TPO allocation between manufacturers and rate payers (IOUs and POUs) for initial setup and adjusted if goals are not met.
- Set mandatory retailer participation requirements if goals are not met.

Third Party Organization (TPO)

- Independent, non-profit organization
- Board of Directors will include range of stakeholders
- Collects funds from manufacturers and utility rate payers (Publicly Owned and Investor Owned)
- Coordinates and funds outreach and education in close collaboration with the state and local governments
- Negotiates fees and funds consolidation and recycling
- Submits annual plans to State for expenditure of collected funds and collection plans. Elements TBD including convenience metrics
- Monitors and reports performance of system including outreach, education, convenience of collection, processing, and recycling
- Coordinates with local governments and LEAs to provide training to staff at collection centers

Manufacturers

- Creates TPO and provides funding to the TPO
- Shared responsibility for publicity and outreach especially on packaging and websites
- Must provide data on sales to TPO or State.
- If after X years TPO data show failure to meet legislatively established recycling rate and/or convenience goals the percent of contribution by the manufacturers to fund TPO activities shall be increased.

Retailers

- Responsible for providing point of sale information on energy efficiency benefits and recycling opportunities.
- May only sell lamps for which the manufacturer is in compliance.

- Responsible for reporting annual lamp sales in California.
- All stores encouraged to participate as collection centers
- Responsible for appropriate on site management of returned lamps
- If after X years TPO data show an unacceptably low recycling rate and convenience goals based on data collected, mandatory retailer participation, based on size/sales will become effective.

Utilities (Investor and Publicly Owned)

- Facilitate flow of rate payer funds to TPO
- Only distribute lamp brands that are fully in compliance with the program.
- Outreach and education on disposal closely coupled with all outreach on energy efficiency
- Report data on lamp distribution outside retail environment (*give-aways*)

State Government

- Provide oversight of TPO practices
- Provide certification/enforcement of recycling operations
- Provide compliance assistance to collectors and handlers
- Collect sales and recycling data.
- Review legislatively established performance and convenience goals. If goals are not met the state will determine if failure to meet established goals, triggers;
    1. Mandatory retailer participation
    2. Reallocation of costs to manufacturers until such time that these goals are met.

Local Government

- Provide outreach and education in partnership with TPO, State, utilities, retailers, and manufacturers
- Collaborate with TPO to maximize number of drop-off locations
- Outreach and education on disposal closely coupled with all outreach on energy efficiency
- Coordinate with LEAs and solid waste management companies

Collectors/Recyclers

- Must follow universal waste management requirements.
- May enter into contracts with TPO
- Recyclers must provide reporting on recycling of California lamps to TPO or to State (via contract provisions from manufacturers).

Funding options for E

1. Collection of "fees" from all stakeholders by a third party organization.

Non-specific Comments

#1

After a quick review of the options listed on the web site - please consider way to maximize convenience for the consumer - as this will have a huge impact on recycling rates - We are a rural community with a HHW facility that is only open Friday and Saturday and most folks do not go there - take backs at the point of purchase are very important for participation -

Another incentive to recycle can also be a CRV type deposit for the consumer that is only provided when lights are returned unbroken - unclaimed funds could be used to help fund point of purchase take back programs

Thanks,
Julie Neander
City of Arcata Environmental Services Department

#2

The following comments are a staff assessment of the options and do not represent an official position of the actual Board.

There are a few concerns that are related to all of the options as they are currently presented:

* It is important to have legislative authority granted to whichever state agency that is given the responsibility of enforcing legislated provisions such as performance goals and timelines. Without statutory authority, it will be difficult to enforce any such provisions in a timely and effective manner.

* Given the experience with SB20, creating a "certification" process for recyclers would be a lengthy process that would require a great deal of manpower and time. Regulations regarding the proper handling of universal waste already exist; is an entire new certification structure truly necessary?

* There is inconsistency as to what entity would consolidate and analyze the lamp sales and collection data. Even within the same option, sometimes data is given to the state, other times to a TPO. We would prefer that the consolidation and analysis occur at the level of a TPO, and then given to the state for review. Having the state go out to gather the data from all the various

stakeholders is inefficient if a TPO is already in contact with and dealing with these same people.

-Emily Wang
CIWMB

#3

Subject: AB 1109 Task Force Recommendations

Dear Mr. Robinson:

The San Luis Obispo Integrated Waste Management Authority (IWMA) would like to offer its perspective on the recommendations being developed by the AB 1109 Task Force. AB 1109 requires the Task Force to make recommendations to the Legislature on, among other things, the most effective, cost-efficient, and convenient method for the consumer to provide for the proper collection and recycling of any end-of-life general purpose lights generated in this state.

All of the options being considered by the Task Force recognize the obvious fact that retail take back best meets these criteria. These options essentially differ only on whether such retail take back should be strictly voluntary or voluntary with the prospect of mandatory if yet to be specified levels of convenience and recycling are not achieved. Thus, the key issue is whether retail take back should be voluntary or mandatory.

The IWMA respectfully submits that the answer to the voluntary versus mandatory issue is equally obvious: the voluntary approach has been tried and failed. Despite DTSC's best efforts during the last 2 years, the voluntary Take-It-Back-Partnership appears to have resulted in less than 1 percent of potential retailers participating in the program. Without universal participation, true convenience cannot be achieved and without such convenience recycling is simply not going to happen.

The IWMA also tried the voluntary take back approach. In our case, we provided the collection containers and paid the post collection costs of managing the materials. With a free program to retailers, many of the locally owned stores participated in the program; however, many of the big box retailers declined to participate. For example, Wal-Mart and Home Depot, who account for 50 percent of the retail sales of CFLs refused to participate. In our many attempts to get them to participate in our fully funded voluntary program, we were told time and again, that they would not participate until the program was mandatory.

As a result of the major retailers' refusal to participate in a voluntary program, the IWMA eventually adopted a mandatory take back ordinance and now all retailers are participating in the program. As far as we know, in California only the 2 Wal-Marts and 2 Home

Depots in San Luis Obispo County take back fluorescent tubes and bulbs each and every day.

Recognizing the inevitable need for a mandatory take back provision from the outset offers significant overall program efficiencies because it:

- Eliminates the need for a potentially costly and inefficient Third Party Organization
- Greatly simplifies the task of public education
- Expedites Implementation of a State-Wide Program

Under a mandatory take back scenario, the normal business relationships between retailers and manufacturers can and will most efficiently and appropriately handle the necessary cost sharing for meeting this responsibility. There is no need to create a new third party organization to "manage" the program. In addition, there is no need to create a third party funding sources such as utilities.

Similarly, with all retailers participating, the task of public education is greatly simplified because you have a very clear, unequivocal message: "Take-It-Back!" This message could be required on the labeling of all fluorescent tubes and bulbs and as part of any promotional advertising by the utilities for purchasing of CFLs.

Since February 2006, DTSC regulations have made it illegal for people to dispose of fluorescent tubes and bulbs in their waste. Unfortunately during the last two years, effective, cost-efficient, and convenient programs have not been implemented throughout California. To recommend a voluntary program, managed by a third party organization that would need to be created and funded by the electric utilities will further delay the implementation of an effective program.

A simple and effective model has already been used in California, the Rechargeable Battery Recycling Act of 2006" (A.B. 1125). This legislation requires any retailer who sells rechargeable batteries to take them back from the public. Similar legislation for fluorescent tubes and bulbs would result in the expedient implementation of an effective, cost-efficient, and convenient state-wide program.

The IWMA greatly appreciates your careful consideration of our perspective.

Sincerely,
William Worrell
Manager

Option A

This option was removed from consideration by the authors in favor of a revised version, option E.

Supporting Comments with Amendment

#1

Manufacturers should have primary responsibility for implementing a collection infrastructure. Manufacturers profit from the sale of lamps and hold the business expertise necessary for reverse distribution. In addition, manufacturers hold the skills to implement efficient and cost effective business models for collection.

Support with Amendments

Manufacturers are not allowed to add any visible charge to a consumer at the point of purchase or point of recycling. Any cost for the implementation of collection must be internalized in to the cost of the product. The sale of lamps is prohibited if the manufacturer of the lamps is not participating in a collection scheme that satisfies convenience and recycling goals. Local governments choosing to collect materials would be entitled to cost reimbursements from the manufacturers.

Rob D'Arcy
County of Santa Clara

Opposing Comments

#1

There are some features we like. For example it includes shared responsibility- clearly a win-win for all parties. Also it allows for the gathering of data, and would impose some accountability for tracking and measuring successes. We also like the optional, rather than required TPO.

More opposition than support

Manufacturers do not need to be involved in a collection system- regardless of what responsibilities or financial role they have, handling is not needed. There is no way to establish or enforce convenience goals until participation and recycling rates are determined, which may take some time after the public has access. This option appears to impose restrictions on retail activities and requires policing. It also creates lots of new bureaucracy to deal with the small minority of lamps from the sector that is most difficult to control. California cannot impose or

enforce requirements on out of state recyclers- at least half of all lamps that get recycled leave this state for recycling. Combined, these factors could disrupt the commerce of lamp recycling.

Paul Abernathy
Association of Lighting and Mercury Recyclers

#2

Manufacturers – Option A places "primary responsibility for implementing a convenient collection system on manufacturers." The concept of "primary responsibility" is inconsistent with one of the agreed upon elements which is shared responsibility. The task force recommendation should include specific roles and responsibilities, and option M presented by the manufacturers would place the manufacturers in a primary role by establishing a TPO to administer a collection and recycling program.

Option A would also mandate specified "convenience goals" to be met by manufacturers. The cost of initially establishing an infrastructure to meet such convenience goals is unknown and the need has not been established. The most efficient and convenient method for collection is not through separate or independent manufacturer programs, but rather through existing retail locations that are already accessible to consumers. Rather than convenience goals, specific interim recycling targets should be set and accomplished over time, while assessing the cost of meeting each interim milestone.

Option A would also mandate that manufacturers pay for the cost of the transportation and recycling of lamps. Were manufacturers required to pay for the establishment of a system to satisfy AB 1109 type convenience goals and the cost of the transportation and recycling of lamps, this option could result in hugely increased prices for the energy efficient lighting source that the State wants consumers to choose over cheaper inefficient products.

Option A would support the use of PGC funds as a fund source after convenience goals are met. In the alternative, Option M would promote the use of PGC funds together with other ratepayer charges to fund the collection and recycling program. The use of these broad based funding sources would result in the lowest possible cost to consumers, would not increase collection costs, would incentivize the use of energy efficient products and would not be passed on to the lowest income consumers.

We agree that publicity and outreach should be a shared responsibility.

We also agree that manufacturers can provide data on sales to the state, based on a percentage formula from national sales data. Manufacturers do not sell products directly to California retailers, but we typically sell to them on a national and/or regional level. For example, manufacturers selling to large retailers deliver lamps to large distribution centers which may or may not be located in California. The retailers are then responsible for distributing lamps into

retail locations in the state. Only a TPO can effectively collect and report in state sales and collection data.

Retailers – We agree with all points noted except the last point of requiring mandatory participation.

Utilities – we agree with these points

State government – we have no major opposition to these points, but we are not in full agreement with the convenience goal and subsequent standards concepts.

Local government – we agree that local governments should participate in education and outreach.

We oppose the concept of requiring producers to create drop-off centers, even with assistance from local governments, for the reasons outlined above. This is extremely inefficient and costly which would lead to an increase in the cost of the lamps we are trying to promote for their environmental benefits. This would result in a drop in their usage and overall energy efficiency.

We agree with all other points for local governments.

Collectors/recyclers – we agree that these groups should follow universal waste management requirements and could provide reporting to the state.

However, we oppose the idea that they can enter into contracts with manufacturers. Recyclers must contract with the entities that will act as collection sites for liability reasons, and for those reasons listed above we oppose the concept of manufacturers as collectors.

Funding – as noted manufacturers oppose direct manufacturer funding because it would unduly and unnecessarily increase the cost of energy efficient lighting and discourage their usage, thereby limiting energy savings, and hindering the reduction of pollution emissions, including both carbon dioxide and mercury, from power plants.

#3

We oppose this option because a voluntary takeback program has never worked. Sellers have the option of taking back the lamps now, and very few do so. In states where sellers are given the option, the large retailers inevitably fail to participate. A voluntary program just adds unnecessary delays to resolving an urgent problem.

Convenience goals are important, but they are insufficient for measuring the success of a program. We could open a vast network of recycling centers and declare victory, without ever recycling a single lamp. We need real measurements of effectiveness.

Tim Goncharoff , Commercial Waste Reduction Coordinator
County of Santa Cruz, CA

Option B

This option is #1 in the summary table in the report and was also referred to as A-2.

Supporting Comments with Amendments

#1

Manufacturers should have primary responsibility for implementing a collection infrastructure. Manufacturers profit from the sale of lamps and hold the business expertise necessary for reverse distribution. In addition, manufacturers hold the skills to implement efficient and cost effective business models for collection.

Support with Amendments

Manufacturers are not allowed to add any visible charge to a consumer at the point of purchase or point of recycling. Any cost for the implementation of collection must be internalized in to the cost of the product. Manufacturers should be given the flexibility to participate in a TPO with other manufacturers or create their own collection program as long as convenience and recycling goals are met and are commensurate with their market share. Local governments choosing to collect materials would be entitled to cost reimbursements from the manufacturers.

Rob D'Arcy
County of Santa Clara

#2

Support if amended

On behalf of the California Grocers Association (CGA), I submit the following comments on Option A-2. Conceptually, the comments provided on Option A-2 are somewhat repetitive of comment submitted on Option E. New comments, specific to Option 2-A, are included at the end of these comments.

CGA concurs with the overarching provisions specified in the Key Elements Section.

CGA submits the following general comments on the Retailer responsibility section:

- "Responsible for providing POS materials" - Agree.
- "May only sell lamps for which the manufacturer is compliant" - Agree, although a means for retailers to know which manufacturers are compliant must be determined.
- "Responsible for reporting annual lamp sales in California"- Do not disagree, but a methodology must be determined for reporting which protects proprietary information, such a reporting to a third party or through a trade association.

CGA strongly disagrees with the last bullet point in the Voluntary/Mandatory Collection section:

- "If after 2 years, manufacturers can demonstrate inability to meet convenience requirements due to lack of retailer participation, then all retailers over X square feet and Y annual sales are required to participate until convenience measures are achieved." The problem with this provision is that it acts as an incentive for manufacturers NOT to actively promote a successful program. Under this scenario, the less effort a manufacturer puts into the program, the more they are rewarded---if the program is unsuccessful, the burden is then removed from manufacturers and placed on retailers. This is an incentive for failure. If they do a poor enough job, they will be removed of all responsibility within a mere 24 months.

New Comments Specific to Option 2-A:

Under "Retailers" section, re statement "Lack of retail participation and inability to meet convenience goals might require future legislation". This sentence should be amended to read: "Inability to meet convenience goals might require future legislation". Manufacturers should be tasked with the responsibility to design the collection and recycling program, via a product stewardship organization. IF the program is not successful, the resulting lack of success---all reasons for it---should be analyzed and future legislation based on that analysis. Lack of participation may indeed be a cause for poor performance, but it may be one of many causes, and should be assumed to be the only cause that might require addressing in future legislation.

Under "How the Funding Would Work" section, we disagree with the recommendation that participating retailers would have to pay to participate in the program. Under an EPR system, the manufacturers are responsible for funding the collection and recycling program; this is their primary role and responsibility. In the current environment, utility funding may be available for funding. But if the goal of the program is to assure numerous and convenient collection sites, charging retailers for participation will result in fewer agreeing to participate. Retailer that agree to participate will already assume the financial responsibility for: liability insurance; required waste handling or generator filings; administration of the voluntary program; staff time for training, collection, handling, transport, emergency plans, release reporting, manifests, and/or audits.

Kristin Power
California Grocers Association

Comment #3

General Position: Support if amended

Conceptually, the comments we provide here on Option A-2 are somewhat repetitive of comment submitted on Option E. Additional new comments, specific to Option 2-A, follow at the end.

We **concur** with the overarching provisions specified in the **Key Elements** Section.

We submit the following **general comments** on the Retailer responsibility section:

- "Responsible for providing POS materials": Agree.
- "May only sell lamps for which the manufacturer is compliant": Agree, although **a means for retailers to know which manufacturers are compliant must be determined**.
- "Responsible for reporting annual lamp sales in California": Do not disagree, but **a methodology must be determined for reporting which protects proprietary information, such a reporting to a third party or through a trade association**.

We **strongly disagree** with the last bullet point in the Voluntary/Mandatory Collection section:

- "If after 2 years, manufacturers can demonstrate inability to meet convenience requirements due to lack of retailer participation, then all retailers over X square feet and Y annual sales are required to participate until convenience measures are achieved." The problem with this provision is that it acts as an incentive for manufacturers NOT to actively promote a successful program. Under this scenario, the less effort a manufacturer puts into the program, the more they are rewarded---if the program is unsuccessful, the burden is then removed from manufacturers and placed on retailers. This is an incentive for failure. If they do a poor enough job, they will be removed of all responsibility within a mere 24 months.

New Comments Specific to Option 2-A:

Under "Retailers" section, re statement "Lack of retail participation and inability to meet convenience goals might require future legislation". This **sentence should be amended** to read: "Inability to meet convenience goals might require future legislation". Manufacturers should be tasked with the responsibility to design the collection and recycling program, via a product stewardship organization. IF the program is not successful, the resulting lack of success---all reasons for it---should be analyzed and future legislation based on that analysis. Lack of participation may indeed be a cause for poor performance, but it may be *one* of many causes, and should be assumed to be the *only* cause that might require addressing in future legislation.

Under "How the Funding Would Work" section, we disagree with the recommendation that participating retailers would have to pay to participate in the program. Under an EPR system, the manufacturers are responsible for funding the collection and recycling program; this is their

primary role and responsibility. In the current environment, utility funding may be available for funding. But if the goal of the program is to assure numerous and convenient collection sites, **charging retailers for participation will result in fewer agreeing to participate**. Retailer that agree to participate will already assume the financial responsibility for: liability insurance; required waste handling or generator filings; administration of the voluntary program; staff time for training, collection, handling, transport, emergency plans, release reporting, manifests, and/or audits.

Pamela Williams
California Retailers Association

Comment #4

This option in its current form is consistent with much of the Board's EPR Framework, but there are a few concerns with the option in its current state:

- There should be clarification of which elements will be actually legislated and which elements would be set by the TPO (the timeline? goals?).
- There is currently no mechanism for state approval of TPO plans.
- We would like to see further clarification of the TPO oversight mechanism to ensure transparency and accountability.

Emily Wang
CIWMB

Opposing Comments

Comment #1

There are some features we like. For example it includes shared responsibility- clearly a win-win for all parties. Also it allows for the gathering of data, and would impose some accountability for tracking and measuring successes. We also like the optional, rather than required TPO.

We think this is the worst of all the options. It will be the most costly and bureaucratic. The requirement for the TPO is overkill for magnitude of problem. This will be good for the TPO, but bad for others, and could double the cost (or more) of recycling. The TPO would overlap with HW laws, CERCLA laws, DTSC regulations, policing/enforcement, and contract law, a very untenable and implausible situation. It would require Manufacturer involvement in the collection system, which we have stated is not necessary, and it would require Retailers to pay into a system, highly unlikely. As with our comments on Option A, California cannot impose or

enforce requirements on out of state recyclers- at least half of all lamps that get recycled leave this state for recycling. Combined, these factors could disrupt the commerce of lamp recycling.

Paul Abernathy
Association of Lighting and Mercury Recyclers

#2

E is a better option, with better features where it differs from B. In addition, please note: 1. Staffed collection centers relying primarily on mail-back for transport is inefficient and expensive. Depots and mail back should be last resort logistics for areas without other convenient choices. 2. Assumes a TPO will be created; but this may not be the best mechanism. Should only be created for roles that can't be done more efficiently by existing players in the system. 3. Suggests larger mandatory role by local governments than some can assume, and doesn't offer suggestion for how that role would be funded. 4. Incentive fee is an unnecessary administrative hassle. Sufficient to require retailer participation after a year or two, if performance and convenience goals are not met

Mary Bell Austin
Pollution Prevention Specialist, San Mateo County

#3

Third Party Organization. We agree with the concept of a TPO, as we've outlined in Option M. We recommend that recyclers be added to the list of stakeholders. The concept of the TPO in option B goes beyond the TPO responsibilities in Option M that we don't feel should be this organization's goals including reporting requirements, standards and codes. We also oppose the idea of the TPO entering into contracts or coordinating recycling services or agreements for collectors. This has significant liability implications that should be avoided.

Manufacturers – Option B places "primary responsibility for implementing a convenient collection system on manufacturers." The concept of "primary responsibility" is inconsistent with one of the agreed upon elements which is shared responsibility. The task force recommendation should include specific roles and responsibilities, and Option M presented by the manufacturers would place the manufacturers in a primary role by establishing a TPO to administer a collection and recycling program.

Option B would also mandate specified "convenience goals" to be met by manufacturers. The cost of initially establishing an infrastructure to meet such convenience goals is unknown and the need has not been established. The most efficient and convenient method for collection is not through separate or independent manufacturer programs, but rather through existing retail locations that are already accessible to consumers. Rather than convenience goals, specific interim recycling targets should be set and accomplished over time, while assessing the cost of meeting each interim milestone.

Option B would also mandate that manufacturers pay for the cost of the transportation and recycling of lamps. Were manufacturers required to pay for the establishment of a system to satisfy AB 1109 type convenience goals and the cost of the transportation and recycling of lamps, this option could result in hugely increased prices for the energy efficient lighting source that the State wants consumers to choose over cheaper inefficient products.

Option B would support the use of PGC funds as a fund source after convenience goals are met. In the alternative, Option M would promote the use of PGC funds together with other ratepayer charges to fund the collection and recycling program. The use of these broad based funding sources would result in the lowest possible cost to consumers, would not increase collection costs, would incentivize the use of energy efficient products and would not be passed on to the lowest income consumers.

We agree that publicity and outreach should be a shared responsibility.

We also agree that manufacturers can provide data on sales to the state, based on a percentage formula from national sales data. Manufacturers do not sell products directly to California retailers, but we typically sell to them on a national and/or regional level. For example, manufacturers selling to large retailers deliver lamps to large distribution centers which may or may not be located in California. The retailers are then responsible for distributing lamps into retail locations in the state. Only a TPO can effectively collect and report in state sales and collection data.

Retailers – again, TPO should not be assisting the retailers with recycling opportunities to the extent that these opportunities address contracts and/or consolidation of recycling services. We agree with the concept of voluntary participation as collection centers, but we disagree with the participation requirement imposed

Utilities – we agree with all these points although we're unclear about the role of the Take it Back program in this option.

State government – we agree with all these points but are unclear what diversion-based performance standards would include.

Local government – We agree with these points

Collectors/recyclers – we agree that these groups should follow universal waste management requirements and could provide reporting to the state.

However, we oppose the option of allowing recyclers to enter into contracts with the TPO, for the liability reasons outlined above.

Jennifer Dolin
For Osram/Sylvania, Phillips, and GE

#4

We oppose this option because it would be enormously expensive. A network of thousands of freestanding recycling centers, open sufficient hours to be convenient, with sufficient trained staff, along with payments for every lamp handled would make this option the least cost effective of all those presented. If the cost were built into the price of the lamps it would make them so expensive as to discourage their use. If it were built into utility rates as suggested, the rate payers would revolt. This is not a practical option. In addition, the program would be voluntary. Sellers have the option of taking back the lamps now, and very few do so. In states where sellers are given the option, the large retailers inevitably fail to participate. A voluntary program just adds unnecessary delays to resolving an urgent problem.

Tim Goncharoff
Commercial Waste Reduction Coordinator
County of Santa Cruz, CA

Option C

This is option #2 in the summary table of the report.

Supporting Comments

Comment #1

Dear Folks,

I am pleased to have the opportunity to comment on the charge of the AB1109 Task Force: to propose a system which is Effective, Cost-efficient, and Convenient for the Consumer. I have decades of experience in managing local government recycling programs, and we strive to achieve those same goals. I have reviewed the 3 options for lamp recycling posted on your website.

By far my strongest preference is option C, as it lays out the clearest convenience for the public - retail take back - and lays the responsibility for the whole recycling operation squarely on the manufacturer, who is the one behind the distribution of all that encapsulated mercury around the country in the first place.

The shared responsibility of local government in Option C is primarily in public education, which is appropriate. However, C does obligate locally operated HHW collection centers to participate in lamp collection. If this is going to be mandated, the money trail needs to be more explicit. HHW facilities would receive state funding to cover lamp collection, and the state would levy the manufacturers to pay that cost.

Option C needs a little more flexibility in collection options. As long as it is possible to purchase a lamp by mail order, that retailer must also supply a free and convenient take-back option, which could be a mail-back carton.

Option A has a lot of good points, but it is too loose in the possible collection schemes. Curbside collection, generally operated or franchised by local government, needs to be off the table. Commingling with other recycling would run a high risk of bulb breakage and contamination. Separate collection of bulbs would be prohibitively expensive.

While Option A-2 attempts to benefit from market mechanisms by allowing the responsible party - the manufacturer - more leeway in selecting the most cost effective way to operate the recycling system, the AB2020 system of CRV centers is a poor model. Stand-alone centers have no chance of competing with retail outlets for convenience.

I receive a lot of calls from the public about recycling. Lately I have been asking the many people who call to find out what to do with their fluorescents what would be the most convenient option for them. Retail take-back tops the list of responses.

Thanks for your attention.

Jeffrey Smedberg, Recycling Programs Coordinator
County of Santa Cruz Public Works Department

Comment #2

Task Force Members:

After reviewing the fluorescent lighting collection and recycling options that the Task Force is currently reviewing I would recommend Option C.

Thank you for your efforts.

Best regards,

Nancy Treffry
Recycling & Resource Recovery Services
County of Monterey

Comment #3

To Whom it may concern:

I am writing to comment on the options being discussed by the AB1109 Task force.

Having reviewed the three options proposed for collection of compact fluorescent lamps from consumers, Option C seems the best to me in terms of public convenience, effectiveness and thoroughness of collection. It seems most obvious and direct that if it is essential to collect an item from the public, they be able to return it to the same place where they will purchase more of that item.

I do not believe the beverage collection model copied in options A and A-2 would work as well. Frankly, that model has not worked all that well for beverage containers in some parts of the state. Further, copying it create a "cumbersome to the public" new collection system where already busy people will have to save spent lamps and take them somewhere else. This is not a system that will result in high recovery rates.

I am basing my recommendation on almost 20 years of experience in implementing and operating recycling programs. The opinion I have expressed here is my personal opinion, and not that of my employer.

Thank you,
Dave Wade, Recycling Coordinator
UC Santa Cruz

Comment #4

Hello -- I'd like to chime in for option C. I believe consumers will be far more likely to use the retailer of new lights to properly dispose of the old. As a longtime promoter of waste reduction, pollution prevention, and resource conservation (19 years with Ecology Action of Santa Cruz), my position is based on a good deal of experience with the motivations of commercial and individual interests. Thanks

Victor R. Aguiar, Information Technology Coordinator
Ecology Action

Comment #5

Hello-

I'm writing first to thank your task force for your efforts to promote the use of energy-saving light bulbs and also to ensure that there is proper collection and recover of the spent bulbs. Thank you very much for addressing these needs. I'm also writing to suggest to your task force that you consider Option C as the best option. We can no longer place the burden of waste on the consumers and the general public. We must ensure extended product responsibility. By doing this, we will be encouraging zero-waste engineering during product design, because manufacturers will be encouraged to reduce the costs of recycling/recovery/and disposal.

Every decision that should be made regarding a waste-stream should be made before a product hits the market. The only way to do this is to put the burden on the producer, not the consumer.

Thanks very much for your hard work and consideration.
Josephine Fleming
Environmental Innovations

Comment #6

Our preferred option is Option C.

Since last year we have been working with local retailers to implement a take back program for household batteries and fluorescent tubes. Most retailers agreed to participate with the exception of several of the large national retailers. In March we passed an ordinance making it mandatory for all local retailers to take back batteries and tubes. This program has been very successful and all retailers are now participating. We have over 400 local retailers participating at this time resulting in a program that is very convenient for the public.

Bill Worrell
SLO County IWMA

Comment #7

I have read all of the options for recycling systems proposed at http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/Lighting.cfm and I very strongly prefer Option C. It's simple, it's straightforward, and -- most importantly -- it's something I would actually do.

We moved to California from Iowa during the mid-1990s. In Iowa, the CRV on bottles and cans is five cents, and you take the recyclables back to the same place you bought them. Every grocery store has a counter or other designated space. Even small wine shops and little corner stores take them back over the counter. They are clean and staffed at any time the store is open. A typical grocery store transaction takes less than two minutes: you hand a cardboard flat of two dozen aluminum cans to the employee; the employee hands you $1.20 and stacks the cans in a bin. When the bin is full (or at the end of the day), it's moved to a shed outside for the recyclers.

Then we moved to California. To get a refund on the CRV for the dozen bottles or cans that our family might use in a month, I am expected to figure out the strictly limited hours that the collection center keeps; stand in a long line of inconvenienced (and therefore grumpy) people in the blazing sun or pouring rain -- and just when I get to the front of the line, be told that the bin is full, so they aren't accepting the kinds of bottles I'm carrying. Or it's the employee's break time, so I need to wait ten minutes while he goes to smoke something. Or it's closing time now, despite all the people who have stood in line for half an hour.

Oh -- and if they take the bottles, then I don't get cash; I get a voucher and have to go inside another store, and stand in an entirely different line, to get it turned into cash.

For thirty cents.

As far as I can tell, the system was deliberately designed to discourage bottle returns. I have responded to the clear incentive structure by letting them keep my thirty cents. My bottles get dumped in the recycling bin -- or even the trash, if I can't find a recycling bin.

Please do not make the same mistakes with the light bulb collection program. Please, just let me take it back to the same store that I bought it from. I want to hand the dead light bulb to a cashier. The cashier can put it in a box. When the box is full, they can send it back to their distributor. Even a large store isn't going to see thousands of light bulbs returned in a day, and they're small, so it isn't likely to take up that much space in the store. It's simple, it's straightforward, and I will actually do this.

All of the other options look like ways of having unenforceable rules on the books, and fluorescent light bulbs hidden in the garbage because no one wants to bother jumping through all the hoops. Please -- let's have this system actually work for the consumer.

Sherrie McMahon
Scotts Valley, CA

Comment #8

Dear task force: I'm writing to commend you for your efforts to promote the proper collection and recycling for fluorescent lights. I'm also writing to let you know that I think Option C is by far the best option. The consumer has enough burdens as it is and it's up to the manufacturer/retailer to extend product responsibility. Other industries do it (cell phone manufacturers) why can't the lighting industry? In addition, they should be responsible for educating consumers and making sure every one understands the importance of recycling fluorescent lamps.

Thanks very much for your hard work and consideration.

Ana Maria Rebelo, Public Education Program Coordinator
County of Santa Cruz

Comment #9

Hello:

I am writing in support of option C, the take back program for fluorescent bulbs.

Thank you,

Jenny Shelton
Co-Chair, USGBC-NCC, Monterey Bay Branch
Certified Green Building Professional

Comment #10

We support this option because it is the only one that meets the requirements of the legislation. It is convenient, effective and cost-efficient. It is also the only option presented that meets the requirements of the EPR checklist. It is the only option that provides real measurable targets. It is the only option that will result in real, immediate reduction in mercury pollution. It is the only option that provides incentives to sellers and manufacturers to develop improved products.

Tim Goncharoff
Commercial Waste Reduction Coordinator
County of Santa Cruz, CA

Comment #11

Manufacturers should have primary responsibility for implementing a collection infrastructure. Manufacturers and retailers profit from the sale of lamps and hold the business expertise necessary for reverse distribution. In addition, manufacturers and retailers hold the skills to implement efficient and cost effective business models for collection.

Support with Amendments

Manufacturers or retailers are not allowed to add any visible charge to a consumer at the point of purchase or point of recycling. Any cost for the implementation of collection must be internalized in to the cost of the product. Manufacturers should be given the flexibility to participate in a TPO with other manufacturers or create their own collection program as long as convenience and recycling goals are met and are commensurate with their market share. Retailers would be exempt from funding the collection if they have an adequately advertised collection effort in their store. Local governments choosing to collect materials would be entitled to cost reimbursements from the manufacturers in addition to grants.

Rob D'Arcy
County of Santa Clara

Comment #12

Option C received the widest support from comments submitted. The clarifications which follow are aimed at addressing a few legitimate objections which have been submitted. Sellers Option C originally proposed mandatory takeback at retail stores. I would like to describe the voluntary aspect of this option. Retailer participation in takeback is actually voluntary in that it is only required if store sells bulbs. A store may voluntarily choose to not sell a certain product. However, if they do sell fluorescents, then they may sell only bulbs from manufacturers participating in the payment scheme, and they may only sell bulbs meeting energy efficiency, mercury minimization, and quality standards. To address all types of retailers, mail order sales must include mailback return. Manufacturers Option C improperly required manufacturers to take back bulbs. Producers would not need to physically take possession of their products. The intent is that manufacturers must accept financial responsibility for takeback of used bulbs back at end of life. Additionally, manufacturers must accept long term financial responsibility for public education which would be necessary in addition to the limited and short-term promotion provided by utilities. Option C did not call for a TPO. However, the industry may establish a TPO to carry out duties and responsibilities of individual manufacturers. State Agency The role of a designated state agency should be limited to monitoring the takeback program with respect to compliance with targets and goals. In this capacity, the agency would receive data from manufacturers, sellers, recyclers and local governments. The agency would not take on the role of developing the takeback program or collecting the data; these tasks would fall to the

manufacturers or their appointed agents. Legislature Option C did not specify a role for the state legislature. Appropriate responsibilities include:

- Establish timeline for implementation
- Define convenience
- Mandate takeback by bulb retailers
- Set broad collection targets and goals
- Designate a state agency to oversee the program and set specific retailer and manufacturer targets and goals Local Government Option C was actually unreasonably generous with the resources of local governments, considering there is no corresponding funding for their efforts.

The imperatives concerning local governments' role in HHW collection, retailer outreach, public education, and program monitoring now become suggested activities. Thank you for your attention.

Jeffrey Smedberg, Recycling Programs Coordinator
County of Santa Cruz

Opposing Comments

Comment #1

There are some features we like. We like the optional, rather than required TPO. We like Retail take back, this is the best way to serve consumers. We also like that it should provide more funding for local government activities. However the source of this funding is not clear.

Oppose in present form

It would require Manufacturer involvement in the collection system, which we have stated is not necessary. We think this option has an altruistic view of toxic materials reduction- already addressed in 1109. and not part of the collection and recycling aspect. It allows for the inefficient use of funding for myriad of county, regional (JPA) and local government activities, which could be inconsistent and disparate. There are conflicting statements about financing: on the one hand it requires manufacturers and retailers to fund the entire system, but at same time local governments would still seek grants from utilities. This appears to be a disconnect, unless the funding is for completely different activities. This is not explained. No information on scope of what funding local government would require and how it would be connected to the actual collection and recycling

Paul Abernathy
Association of Lighting and Mercury Recyclers

Comment #2

General Position: Oppose

General Comments:

This policy relies not on the nationwide, growing trend of manufacturer responsibility, but on the old idea of mandatory retail in-store take-back. It states that all manufacturers, distributors, commercial transporters, wholesalers and retailers of fluorescent light bulbs shall be required to accept used bulbs back at the end of life. However, in practicality, manufacturers and distributors do not have sites in California that can serve as take-back locations—the burden will fall disproportionately, almost exclusively (except for few wholesalers) on retail.

We disagree with this recommendation because:

- Manufacturers MAKE these products that contain toxic materials; the burden for the end of life management is appropriately theirs.
- Manufacturers may be incentivized to reformulate/redesign their products if required to fund and implement collection and recycling programs. If all you do is mandate retailers to take the product back in-store, manufacturers have absolutely no incentive or reason to reformulate/redesign/reengineer.
- This approach is inconsistent with the adopted State policy of the California Integrated Waste Management Board that manufacturers should be responsible for the end of life of their products (known as EPR, Extended Producer Responsibility).
- This approach is inconsistent with "Green Chemistry"---accomplishing the reformulation or redesign of toxic chemicals to remove their toxicity.
- This approach is contrary to the policy of the California Product Stewardship Council, whose membership is comprised primarily of local governments.
- Interestingly, since a local government proposed this option, the proposal calls for "grants to local governments for local outreach and education programs", and "grants to local governments for improvements to local Household Hazardous Waste collection programs for proper collection and processing of fluorescent bulbs". If private industry—retailers-- are going to be the mandated collection sites, thus assuming the major financial burden of the program, how can government justify carving itself out to receive utility funding for its rather minor share of the program (outreach) and yet still seriously call this approach "shared responsibility"?

Additional Comments on Statements from Option C:

- "Provides maximum convenience to consumer"

  Not really, *curbside* for every household in the State would provide the optimum convenience to consumers. It's more convenient to put something in your recycling bin at your home than have to drive it to a store.

- "Minimizes cost to consumer"

  Costs are passed on to consumers in any program, whether by manufacturers in the cost of their product, retailers in the cost of their markup, or though use of utility revenue to subsidize a fluorescent bulb recycling program.

- "Allows for development of the most efficient collection system"

  This assumes retail is the most efficient, but there have been no efficiency studies on this to our knowledge, so it appears to be a non-validated assumption. If by "efficient" one actually means "convenient", post offices are convenient, kiosks are convenient, mail back is convenient, curbside is convenient---a system which combines *all* these possibilities for collection is probably the best model, rather than retail exclusively.

- "Allows flexibility"

  More flexibility would be allowed if there were different types of collection sites provided, including retail but not exclusively retail.

- "Encourages innovation"

  On the contrary, retail take-back encourages absolutely not one whit of innovation. Manufacturers have NO incentive to make their product "greener". If you require manufacturers to be responsible for the end of life of their products, you're encouraging innovation because they are the ones that can reformulate or reengineer to remove toxic substances from their products.

- "Provides a useful framework for handling of other hazardous products in the present or future"

  Yes, it would, but, as state previously, it would be contrary to the precedent set by the Integrated Waste Management Board, which spent months of public hearings considering policy options and decided upon producer responsibility as the preferred model, contrary to the Sierra Club's adopted policy of extended producer responsibility and contrary to the policy of the California Product Stewardship Council.

Pamela Williams
California Retailers Association

Comment #3

E is a better option, with better features where it differs from C • Manufacturers should not have to physically accept or collect bulbs themselves – their responsibilities should be financial and for implementing a system that meet goals set by the State. • Utilities may not be the appropriate funding source for local government participation. • Does not specify which, if any, of local roles would be voluntary (all should be, with reimbursement provided).

Mary Bell Austin
Pollution Prevention Specialist, San Mateo County

Comment #4

This policy relies not on the nationwide, growing trend of manufacturer responsibility, but on the old idea of mandatory retail in-store take-back. It states that all manufacturers, distributors, commercial transporters, wholesalers and retailers of fluorescent light bulbs shall be required to accept used bulbs back at the end of life. However, in practicality, manufacturers and distributors do not have sites in California that can serve as take-back locations-the burden will fall disproportionately, almost exclusively (except for few wholesalers) on retail.

CGA disagrees with this recommendation because:

- Manufacturers MAKE these products that contain toxic materials; the burden for the end of life management is appropriately theirs.
- Manufacturers may be incentivized to reformulate/redesign their products if required to fund and implement collection and recycling programs. If all you do is mandate retailers to take the product back in-store, manufacturers have absolutely no incentive or reason to reformulate/redesign/reengineer.
- This approach is inconsistent with the adopted State policy of the California Integrated Waste Management Board that manufacturers should be responsible for the end of life of their products (known as EPR, Extended Producer Responsibility).
- This approach is inconsistent with "Green Chemistry"---accomplishing the reformulation or redesign of toxic chemicals to remove their toxicity.
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- Since a local government proposed this option, the proposal calls for "grants to local governments for local outreach and education programs", and "grants to local governments for improvements to local Household Hazardous Waste collection programs for proper collection and processing of fluorescent bulbs". If private industry-retailers--are going to be the mandated collection sites, thus assuming the major financial burden

of the program, how can government justify carving itself out to receive utility funding for its rather minor share of the program (outreach) and yet still seriously call this approach "shared responsibility"?

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- This assumes retail is the most efficient, but there have been no efficiency studies on this to our knowledge, so it appears to be a non-validated assumption. If by "efficient" one actually means "convenient", post offices are convenient, kiosks are convenient, mail back is convenient, curbside is convenient---a system which combines all these possibilities for collection is probably the best model, rather than retail exclusively.

"Allows flexibility"

- More flexibility would be allowed if there were different types of collection sites provided, including retail but not exclusively retail.

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"Provides a useful framework for handling of other hazardous products in the present or future"

- Yes, it would, but, as state previously, it would be contrary to the precedent set by the Integrated Waste Management Board, which spent months of public hearings considering policy options and decided upon producer responsibility as the preferred

model, contrary to the Sierra Club's adopted policy of extended producer responsibility and contrary to the policy of the California Product Stewardship Council.

Kristin Power
California Grocers Association

Comment #5

A mandatory retail collection system is inconsistent with the EPR framework, which advocates voluntary retail participation. The proposed option is very prescriptive and lacks the kind of system flexibility required to develop a comprehensive, convenient, and effective collection and recycling program. The system also lacks transparency and accountability for the funding mechanism.

Emily Wang
CIWMB

Comment #6

Manufacturers – While we have control over the labeling and can work with retailers and distributor, as well as invest in the development of alternative light sources containing fewer toxic materials, this option requires manufacturers to accept bulbs at end of life even though manufacturers do not have a system to collect such bulbs. Therefore, we oppose this part of the option.

Furthermore, this option requires both manufacturers and sellers to accept bulbs back at the end of life. Sellers typically have locations to which bulbs can be taken, but manufacturers don't.

Requiring this of manufacturers could significantly increase the cost of the lamps, decrease the use of energy-efficient lamps, and would not be a cost-efficient option.

We agree with the other points for all stakeholders.

We strongly oppose the funding proposal because it represents the least cost-effective method for lamp recycling that would result in not achieving the desired goals of AB1109. Making use of existing infrastructures would require significantly less overhead than creating a completely new infrastructure.

Jennifer Dolin
For Osram/Sylvania, Phillips, and GE

Option E

This option was #4 in the summary table of the report.

Supporting Comments

#1

The California Product Stewardship Council has adopted Framework Principles for Product Stewardship Policy jointly with the Northwest Product Stewardship Council and these principles http://www.caproductstewardship.org/assets/pdf/NWPSC-CPSC_Joint_PS_Framework_Principles%20FINAL%206_4_08.pdf guide our review of local and state policy and programs. After comparing all the options developed by the lighting task force, none of the options fully align with the Product Stewardship Principles but Option E most closely aligns. Option E includes most of the CPSC key principals such as "stewardship programs must finance the collection, transportation, and responsible reuse or disposition of covered products". However, Option E does not meet Principle 1.4 – "Costs for product waste management are shifted from taxpayers and ratepayers to producers and users." Option E still puts costs on the ratepayers via the utilities which CPSC believes is not appropriate. CPSC prefers that costs for implementation and collection be internalized in to the cost of the product and urges the state to mandate that happen if costs are not fully covered by the Public Goods Charge. However, we realize that California is in a transition period for Producer Responsibility policy and that fluorescent lighting has several unique features that make it difficult to internalize the cost of end-of-life management into the price – it has no value at end of life and most importantly, we all want to encourage the use of energy efficient lighting and by increasing the product cost, we do the opposite. CPSC urges the state to move forward quickly in implementing Option E knowing it is not perfect, but it is the best option available and we must prevent further mercury pollution and costs to local government by establishing a statewide convenient collection system as soon as possible. We also urge the state to ensure that the agency responsible for enforcing this program has adequate authority to do so to ensure collection and convenience goals are met and that there are strong enforcement tools in place should non-compliance be an issue. CPSC understands and appreciates all the work that has gone into developing these options by all the stakeholders and congratulates everyone involved for truly making an effort.

Heidi Sanborn
Executive Director California Product Stewardship Council
www.caproductstewardship.org

#2

Sierra Club supports Option E, a thoughtful approach to shared responsibility. We encourage the use of energy-efficient lighting, and we have also been trying for years to make recycling free and convenient for consumers, to prevent releases of toxic mercury.

Bill Magavern
Sierra Club

Support with Amendments

#1

Manufacturers should have primary responsibility for implementing a collection infrastructure. Manufacturers and retailers profit from the sale of lamps and hold the business expertise necessary for reverse distribution. In addition, manufacturers and retailers hold the skills to implement efficient and cost effective business models for collection.

Support with Amendments
Manufacturers or retailers are not allowed to add any visible charge to a consumer at the point of purchase or point of recycling. Any cost for implementation and collection must be internalized in to the cost of the product if not fully covered by the Public Goods Charge. Manufacturers should be given the flexibility to participate in a TPO with other manufacturers or create their own collection program as long as convenience and recycling goals are met and are commensurate with their market share.
Under "Funding options for E," stakeholders must be defined. Local and state government would not be considered stakeholders for the purpose of collecting "fees." Local governments choosing to collect materials would be entitled to cost reimbursements from the manufacturers.

Rob D'Arcy
County of Santa Clara

#2

We second Rob D'Arcy's comments on this option, plus note that: 1. Too prescriptive about what a TPO would do, if manufacturers opt to use one instead of implementing their roles more directly. 2. Time limit to trigger mandatory retailer participation needs to be short, no more than 2 years if possible (first year's data must be digested, and if too low for goals, remainder of year gives retailers time to gear up to participate under mandatory rules). 3. Local government roles should be voluntary, and reimbursable. 4. Utility role re: TPO assumes a TPO will be used, and that utility funds will flow to it.

Mary Bell Austin
Pollution Prevention Specialist, San Mateo County

#3

General Position: Support if amended

We generally support this option, but disagree with two sections, one relating to the Legislature's responsibilities and one relating to retailer responsibilities.

- Legislature's responsibilities as outlined in Option E

The Legislature will be asked to adopt a collection and recycling model from among the options it will be presented in the Task Force Report. Option E lists only 4 areas for legislative action, and it seems somewhat silly and certainly incomplete to just list 4 responsibilities—a timeline, recycling and convenience goals, allocation of funding, and what to do if goals are not met. Since the Legislature will have to consider numerous *other* policy decisions as it relates to this program, **we recommend this section be deleted from the report,** as it is arbitrary in its inclusion of only four elements.

Retailer responsibility section in Option E:

We concur with the provisions of this section with the following clarifications:

"Retailers may only sell lamps for which the manufacturer is compliant": We agree, although **a means for retailers to know which manufacturers are compliant must be determined**.

"Retailers are responsible for reporting annual lamp sales in California":
We do not disagree, but **a methodology must be determined for reporting that protects proprietary information, such a reporting to a third party or through a trade association**.

We **strongly disagree** with the last point in the Retailer Responsibility section:

"If after X years, TPO data show an unacceptable low recycling rate and convenience goals based on data collected, mandatory retailer participation, based on size/sales, will become effective".

The problem with this provision is that it acts as an incentive for manufacturers NOT to actively promote a successful program. Under this scenario, the less effort a manufacturer puts into the program, the more they are rewarded---if the program is unsuccessful, the burden is then removed from manufacturers and placed on retailers. This is an incentive for failure. If they do a poor enough job, they will be removed of all responsibility. If the program was not successful in meeting the convenience and recycling goals established, then obviously the Legislature would undoubtedly consider what other means could improve the program. To state now that the solution to a failed program is retailer take-back is unnecessary, untimely, and will

act as a disincentive for success from “Day One” of program implementation.

Pamela Williams
California Retailers Association

#5

Support if amended
CGA generally supports this option, but disagrees with two sections.

Legislature's responsibilities as outlined in Option E
First, an EPR model collection and recycling program could be established at any time without a legislative mandate if the manufacturers decided to fund the program themselves. However, it appears likely that the Legislature will be asked to adopt a collection and recycling model from among the options it will be presented in the Task Force Report. Option E lists only 4 areas for legislative action, and it seems somewhat silly and certainly incomplete to just list 4 responsibilities-a timeline, recycling and convenience goals, allocation of funding, and what to do if goals are not met. Since the Legislature will have to consider numerous other policy decisions as it relates to this program, we recommend this section be deleted from the report, as it is arbitrary in its inclusion of only four elements.

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"Retailers are responsible for reporting annual lamp sales in California":
We do not disagree, but a methodology must be determined for reporting that protects proprietary information, such a reporting to a third party or through a trade association.

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"If after X years, TPO data show an unacceptable low recycling rate and convenience goals based on data collected, mandatory retailer participation, based on size/sales, will become effective".

The problem with this provision is that it acts as an incentive for manufacturers NOT to actively promote a successful program. Under this scenario, the less effort a manufacturer puts into the program, the more they are rewarded---if the program is unsuccessful, the burden is then removed from manufacturers and placed on retailers. This is an incentive for failure. If they do a poor enough job, they will be removed of all responsibility. If the program was not successful in meeting the convenience and recycling goals established, then obviously the Legislature would undoubtedly consider what other means could improve the program. To state

now that the solution to a failed program is retailer take-back is unnecessary, untimely, and will act as a disincentive for success from "Day One" of program implementation.
Kristin Power
California Grocers Association

#6

This option in its current form is consistent with much of the Board's EPR Framework, but we would like to see further clarification of the TPO oversight mechanism to ensure transparency and accountability.
Emily Wang
CIWMB

Oppose

Comment #1

Oppose for generally same reasons as we oppose Option B. Very bureaucratic and broad scope relative to the magnitude of the problem, and in view of the much simpler low cost solutions being proposed. The TPO could disrupt commerce, overlap with HW laws, CERCLA laws, regulations, policing, and contract law. No information on scope or costs or direct relationship to lamps collected for recycling
Paul Abernathy
Association of Lighting and Mercury Recyclers

Comment #2

Legislature – the legislature should not be responsible for setting goals that the state government agencies would be required to oversee and manage. This places undue burden on stakeholders to work with a set of goals that they have no involvement in establishing. The legislature can be influenced by a set of stakeholders with no involvement in meeting the goals, and the goals could be set at unrealistic levels for the responsible stakeholders.

The legislature should not be involved in establishing allocation rates for the TPO.
We don't support mandatory retailer participation.

Third Party Organization – The TPO should be set up by manufacturers, with manufacturer funds and utility rate payer funds as the primary funding sources.

The TPO should in no way negotiate fees and funds consolidation and recycling. For liability reasons, recyclers must contract directly with retailers and other collection centers. The TPO would open itself to significant liability risk were it to enter into this area. Furthermore, participating retailers and others can best use the free market system with recyclers to obtain lowest prices for transportation and recycling costs.

The TPO should be involved in setting metrics, but this may not include convenience metrics. Rather than convenience goals, specific interim recycling targets should be set and accomplished over time, while assessing the cost of meeting each interim milestone. The TPO is best able to collect the required data to determine recycling rates.
We agree with all other points for the TPO.

Manufacturers -- We agree that manufacturers should create the TPO, but the TPO should operate using membership fees for operations, education, outreach and publicity, and rate payer fees to cover the costs of transportation and recycling of lamps.

We agree that manufacturers should share responsibility for publicity and outreach, and that we can provide data to the TPO or the state, but sales data would be generated from a percentage formula of national sales data. State-specific sales data is unrealistic because manufacturers sell to national and regional companies, deliver to regional distribution centers, and rely upon the retailers to deliver product to individual stores within California. Manufacturers have California-specific sales data only for the very few retailers to whom we sell directly into California. Retailers would have more accurate state-specific sales data.

We also disagree with the way this option establishes a recycling rate. Manufacturers do not have control over recycling data – this information comes from recyclers who recycle lamps either in the state or coming from the state. Furthermore, determining which lamps come from households and which come from the commercial sector is virtually impossible. In addition, manufacturers cannot be responsible for meeting convenience goals which, presumably, would be retailer collection locations. The relationship between retailers and manufacturers is one in which retailers dictate requirements to manufacturers, not the other way around. Manufacturers cannot require or even demand that retailers collect lamps, they can only encourage. The concept of placing responsibility for convenience goals solely on the manufacturers improperly assigns manufacturers with something over which they have no control, and they should not be held financially responsible for this.

Retailers – we agree with all points in this section except mandatory participation.

Utilities – we agree with all points in this section but want to clarify that "facilitate flow of rate payer funds to TPO" means that these funds would go to the TPO to be used to cover transportation and recycling costs borne by collectors.

State government – we agree that the state government plays a role in the oversight of the TPO, but a board of directors should be the governing body with the state government as a member of the board.
We believe the TPO should collect data and present it to the state
We don't agree with legislatively-established performance and convenience goals.

Local government – we agree with these points

Collectors/Recyclers – we believe the recyclers should report data to the TPO, not to the state so the TPO can act as one clearinghouse for data. Furthermore, for liability reasons listed above, recyclers should NOT enter into contracts with the TPO but with the collectors directly.

Funding options – We agree that the TPO should collect fees, but that funding of transportation and recycling costs should come from the utility rate payer funds.

Jennifer Dolin
For Osram/Sylvania, Phillips, and GE

Option M

This option was #3 in the summary table of the report.

Qualified, need more explanation

Maximum use of existing infrastructure and systems, at possibly lowest cost to increase consumer compliance. Closest to incorporating the features of "option R" and the financial flow analysis provided by ALMR. Preserves and enhances existing infrastructure for collection and recycling. Should not impact business relationships or contract law. Allows collection location to become collector and "generator" for compliance and contract purposes with no impact on RCRA responsibility or CERCLA liability.

The TPO should be optional, not mandatory. For example, the utility may wish to reimburse retailers directly for their participation; simpler than adding the overhead of a TPO. In general, the flow of money in this option needs clarity. Do manufacturers actually put up any money or just get it from utility and pass it through to the things they are controlling? It is not clear whether utility funds go direct to retailer or through the TPO. A funding estimate is needed.

Other General comments:
Keep things in perspective. The scope is for 15 percent of the lamps- it will take some time to get recycling rate from almost 0 percent to some arbitrary convenience goal. This ramp up will occur naturally by letting the existing commerce of recycling incorporate any new collection locations (retail or HHW). For collection and recycling, the lowest cost and easiest to understand flow of money occurs when: the Recycler issues proof of recycling to

Customer/collector, contract and fees are negotiated between parties, the Collector submits voucher to utility or other funding source for reimbursement. Source pays voucher. This can be done without a TPO. The reimbursement becomes incentive for retailers and HHWs to drive the market and cover costs. One use for a TPO would be to produce education and outreach materials for uniform distribution to collectors and local agencies, steering clear of engaging in the commerce of recycling. Not clear how much more infrastructure should be funded.

Paul Abernathy
Association of Lighting and Mercury Recyclers

Supporting Comments

#1

I have now had a chance to discuss our questions and concerns about option M with Jennifer Dolin and Ric Erdheim and I feel that this option will provide the best and most cost effective solution to getting consumer lamps recycled. It provides incentives to retailers and HHWs to participate, it uses manufacturers' money to pay overhead, provide outreach, education, and collateral, and it uses public goods money to pay for the direct costs of transportation and recycling. It preserves the commerce of recycling, does not interfere with RCRA, CERCLA or contract law. It also creates uniformity in the messages, and pays for any of these materials if used by local governments. If local governments want to do something additional, or develop another approach, they would have to find other sources of money. We are available to do more of a financial analysis later, but our initial estimate is that option M could be done for about $1/ lamp (about half from manufacturers and half from utilities) Retailers and HHWs can make money, break even, or spend money depending on how efficient their programs are. More efficiency = lower costs and more incentive. We like this approach.

Paul Abernathy
Association of Lighting and Mercury Recyclers

Supporting Commends with Amendments or Clarifications

#1

General Position: Support, with suggested clarifications

The California Retailers Association supports the concepts delineated in Option M, presented by the manufacturing community. This option provides an excellent framework for shared responsibility.

CRA proposed two additions be considered to Option M:

1. **Augment the Option with a provision for a "Good Samaritan" clause,** extending liability protection to collection sites who follow all prescribed and required procedures for collection, handling and transport. This should increase the willingness of businesses and nonprofits to serve as collection sites. Negligence or willful misconduct would of course not be protected.
2. **Augment the Option with preemption on local government enactment of differing ordinances once a statewide solution is enacted**. A patchwork of local retail take-back ordinances harms the Extended Producer Responsibility framework. It does not offer a shared responsibility solution and offers no incentive for manufacturers to develop fewer new products with toxic materials, nor reformulate or redesign toxic substances out of existing products.

We also suggest two clarifications be made to Option M:

1. Under "Retailers" section, following the sentence "Contract for recycling services and recycling products with lamp recycling companies", add the sentence "Retailer contract administration would be reimbursable for those retailers agreeing to serve as collection locations."
2. Under "Retailers" section, it states "Retailer programs will be subsidized by utility funding." It should be clarified here that the Legislature or the Public Utilities Commission should mandate funding for the program. Otherwise, funding will be discretionary and may cease.

Pamela Williams
California Retailers Association

#2

Support with suggested clarifications

On behalf of the California Grocers Association (CGA), I submit the following comments on Option M.

CGA supports the concepts delineated in Option M, presented by the manufacturing community. This option provides an excellent framework for shared responsibility.

CGA proposed two additions be considered to Option M:

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2. Augment the Option with preemption on local government enactment of differing ordinances once a statewide solution is enacted. A patchwork of local retail take-back ordinances harms the Extended Producer Responsibility framework. It does not offer a shared responsibility solution and offers no incentive for manufacturers to develop fewer new products with toxic materials, nor reformulate or redesign toxic substances out of existing products.

We also suggest two clarifications be made to Option M:

1. Under "Retailers" section, following the sentence "Contract for recycling services and recycling products with lamp recycling companies", add the sentence "Retailer contract administration would be reimbursable for those retailers agreeing to serve as collection locations."
2. Under "Retailers" section, it states "Retailer programs will be subsidized by utility funding." It should be clarified here that the Legislature or the Public Utilities Commission should mandate funding for the program. Otherwise, funding will be discretionary and may cease.

Kristin Power
California Grocers Association

Support with amendments

Staff believes that the current option is largely consistent with the board-adopted EPR Framework.

We are also in support of the plan to set metrics, goals and milestones, but would like further clarification of the timeline for these metrics and goals to be set.

Staff is concerned about the lack of manufacturer funding of collection and recycling activities. One of the policy goals of the board-adopted EPR Framework is to "reduce the burden on taxpayers and ratepayers by transferring waste-related costs to producers and consumers of products." In its current form, this option places the cost of collection and recycling upon ratepayers, through the utility-based funding structure.

Emily Wang
CIWMB

Opposing Comments

#1

This option places no responsibility on the manufacturers to recycle their products or meet any convenience or recycling goals. It is an option that achieves the status quo - no shift of collection responsibility from local governments to industry. Coordinating with a TPO to develop recycling options is too weak - they must IMPLEMENT with the TPO, recycling options. The manufacturers completely dodge all financial responsibility by relying on utility funding. Manufacturers must be financially responsible and if utility funding becomes available then that will help. Local governments choosing to collect materials would be entitled to cost reimbursements from the manufacturers. Recycling and convenience goals must be included.

Rob D'Arcy
County of Santa Clara

#2

Legislative role too narrow. Roles in option E more appropriate. 1. Manufacturer fiscal and implementation responsibilities too low, do not reflect their share of the benefits of problem lighting sales. 2. Burdens on utilities too high, do not reflect their share of the benefits from consumer use of more efficient but mercury-containing lighting. 3. Assumes use of a TPO, but only for the least expensive roles. Great responsibility for design and financing of recovery systems would prompt manufacturers to consider more closely which roles a TPO would be best suited for, if one should be used at all. 4. Puts no cap on how long retailers may participate voluntarily, if performance and convenience goals are not met within a short but reasonable time period. 5. State govt roles too broad. Also, state websites are not where consumers go first to get take-back location information. Nor are they typically maintained as well, with timely updates. Recommend using existing sites such as earth911.org, which consumers use now for one-stop information source on recycling and problem waste disposal options

Mary Bell Austin
Pollution Prevention Specialist, San Mateo County

#3

We must oppose Option M for a number of reasons.

1. The charge of the Task Force is to offer convenient lamp collection options for California consumers. Option M provides no accountability or guarantee that any level of convenience will be achieved. The legislature is merely asked to provide a timeline with no mandate or enforcement for results. Manufacturers, retailers and the TPO are fully funded to "coordinate," "monitor" and "oversee" voluntary activities with no performance standards.
2. The tasks assigned by Option M to local government (LEA is also a local government function) are far-reaching and onerous with no revenue source identified. The tasks include soliciting retailers to participate, training collection center staff, tracking lamp recycling data, and developing and distributing outreach materials for schools, and providing the only mandated collection of lamps through their HHW programs. Local government is thus an unacknowledged funding source for Option M.
3. For costs not relegated to local government, Option M proposes a completely inappropriate funding source, relying on utility ratepayers. Utilities must not be held hostage to a particular consumer product or product technology over which they exert no control. Utilities' involvement in lamp technology must be limited to their decision - on behalf of ratepayers - that subsidy of lamp purchases is fiscally prudent in relation to the marginal cost of investment in energy production compared to investment in energy efficiency.

Jeffrey Smedberg, Recycling Programs Coordinator
County of Santa Cruz

#4

The option posed by the Manufacturers (Option M) attempts to place the funding responsibility for transportation and recycling directly on the utility ratepayers. I strongly disagree with this option on the grounds that the responsibility for those two functions belongs with those corporate entities who receive the direct financial benefit of the product; namely, the retailers and the manufacturers. Holding the utilities of this state hostage to a particular consumer product or technology, over which they exert no control, sets a dangerous precedent. As this option is now written, the utilities would subsidize the cost of the manufacturer's product, then use further ratepayer funds to handle the outreach, education, transportation, and recycling costs of the product. I fail to see how this is a fair & equitable division of responsibility among the parties involved in this issue.

David Asti
Southern California Edison Co.

Option R

Position: None.

General Comments:

Option R is not a stand-alone option; it states " This information is for use with any of the options; it is a critical component in any of them, but not intended to be a stand-alone option.

We would recommend deleting Option R as an option and incorporating the points in general comments within the Task Force Report.

Pamela Williams
California Retailers Association

Option R

We agree that the program should be market based that allows for competition. However, we believe that a 3rd party organization is the most effective mechanism for data collection, coordination of messaging and assisting with recycling options for collectors.

We also agree that appropriate performance measures will assure success, but that they should be determined and measured by the TPO and stakeholders on the board.
Jennifer Dolin
For Osram/Sylvania, Phillips, and GE

POSITION STATEMENT ON COLLECTION AND RECYCLING OF FLUORESCENTS

The California Retailers Association supports the Extended Producer Responsibility framework model (EPR) where manufacturers of fluorescent lights are responsible for the impacts of their products through end of life, which includes paying for the cost of collection and recycling of their products. Without an EPR model, there exists no incentive for manufacturers to innovate and produce products with less toxic substances.

We also support the concept of "shared responsibility". However, supporters of a mandatory retail take-back model imply that retailers will have no responsibility in the absence of in-store take-back. However, this is incorrect. Whether or not a retailer chooses to participate in in-store take-back there are still numerous functions—with their attendant costs—that retailers are agreeing to provide as responsible environmental partners.

• Retailers can provide **information to customers on recycling opportunities**, in any number of ways that retailers can choose from: signage at point of selection, signage at point of sale, information on customer receipts, shelf labels, shelf talkers, kiosks, customer service desks, advertising, end-cap displays, etc. A retailer's core business model is not as a waste collector—rather, a retailer excels at interacting with the public and provides a valuable outlet for education and outreach on the importance of proper management of fluorescents.
The provision of this consumer information would apply to all retailers that sell more than a *deminimus* threshold of fluorescent bulbs. The costs attendant with these responsibilities include staffing and graphic design services for materials development, design and production, and staffing for display and shelving maintenance.

• Many retailers will participate through **in-store collection** of bulbs as part of a manufacturer-sponsored collection and recycling program, as long as the collection and management of fluorescents by retailers is **voluntary**; retailers have the option to contract with waste collectors directly if they choose but also have the option of having a Third Party Organization (TPO) funded by manufacturers contract with the waste collectors; a Good Samaritan liability clause exists for protection (but not for negligence); and conflicting local ordinances at the city and/or county level are preempted. Retailers who do agree to serve as collection points will assume costs for the following elements of any collection and recycling program (including but not limited to):

- Project managers to manage any contracts with universal waste haulers, separate from their pre-existing universal waste programs

- Project managers to tabulate data from universal waste collection, separate from their pre-existing universal waste program
- Floor space dedicated to a collection bin(s); note that retail space, particularly in the front of the store, is revenue-generating real estate that would become non-revenue-generating
- Staff management of collection area(s) per State and federal regulatory requirements
- Cost to train staff re state and federal laws re bulb management/handling/storage/transport; this will be a recurring cost due to high turnover in retail environments
- Cost of materials and personnel to manage spills/broken fluorescents
- Liability costs (additional insurance coverage needed to cover potential tort claims)
- Legal costs to defend against claims
- Damage to reputation and thus sales if a claim was filed and paid
- Storage of boxes, whether empty or full
- If required to ship boxes back to manufacturer, the cost to package and ship collection boxes

Reporting responsibilities: Whether or not retailers participate in in-store take-back programs, they will have reporting and audit burdens. Some programs envision requiring retailers to sell bulbs only from compliant manufacturers. If so, retailers would have to have a mechanism to determine which manufacturers are compliant. Reporting of sales data would also likely be required, which will require staff time—and perhaps accountants and consultants-- to develop tracking systems, prepare the required reports and respond to audit requests.

Following is the association's perspective on what a desirable fluorescent bulb collection and recycling program in California would look like.

PROPOSED RESPONSIBILITIES OF PARTIES IN STATEWIDE COLLECTION AND RECYCLING PROGRAM FOR FLUORESCENT BULBS

There are many that benefit from the energy savings and/or sales of fluorescent lights: consumers, manufacturers, utilities, retailers, and government. And there are others that benefit from the collection of fluorescent lights: recyclers, haulers and shippers. All of these stakeholders have a role to play in the lifecycle of a fluorescent light.

Legislature

- Enact enabling legislation.
- Ensure Good Samaritan clause for all collection facilities, and preemption of local ordinances on same/similar subject.

Manufacturers

- Continue to reduce mercury and other hazardous constituents in lighting products.
- Invest in development of alternative light sources containing fewer toxic materials and greater efficiency.
- Create TPO.
- Manufacturers are principal members of TPO.
- Manufacturers to fully fund TPO operations, and TPO outreach, education, publicity, and collection/management.

- Individually or collectively, manufacturers coordinate with TPO, retailers and/or other stakeholders for publicity and outreach.
- Coordinate packaging/education options with utility-funded rebate programs.
- Provide appropriate data to TPO and/or state.
- Coordinate with TPO and retailers to develop point of sale information about energy efficiency and recycling.
- Coordinate with TPO to develop most efficient and convenient consumer lamp collection/transportation/recycling options.

Third Party Organization (TPO)

- Board of Directors will include predominately manufacturers but also a range of stakeholders e.g. participating retailers, state government, local governments and environmental organizations.
- Coordinate efforts to establish effective collection infrastructure.
    - Coordinate recycling options at retailers and other collection points as necessary.
    - Promote mail back options where cost effective or otherwise necessary to assure collection in rural areas.
- Set goals and milestones.
- Work with government to set and adjust metrics.
- Oversee outreach and education in close collaboration with the state and local governments, retailers, manufacturers, Flex Your Power, utilities and recyclers
- Manage funds collected from utility ratepayers, if this is the chosen funding source.
- Submit annual report to State detailing expenditure of collected funds.
- Monitor and report performance of system including outreach, education, available collection points, participating manufacturers.
- Coordinate with local governments and collection facilities to provide training to staff.
- Establish mechanism for consumer feedback about recycling programs.
- Mange contracts with recyclers for collection locations who so desire.

Collection Locations

- Retailers, USPS, Household Hazardous Waste facilities, other community locations
    - Voluntary participation
    - Responsible for appropriate on-site management of returned lamps, consistent with state and federal laws
    - Manage contracts directly with recyclers if desired
- All collection locations provide consumer information on energy efficiency benefits and recycling availability in visible and appropriate locations.
- Retailers report annual lamp sales in California.
    - A retailers association, or other independent third party, can report as a whole on behalf of its members to protect proprietary sales information.

Utilities (Investor and Publicly Owned)

- Provide supplemental funding (public goods charge and/or rate payer funds) to TPO for management of fluorescent collection.
- Outreach and education about disposal closely coupled with outreach about energy efficiency.
- Coordinate messaging with manufacturers and retailers during CFL rebate programs.
- Coordinate messaging on energy efficiency with "Flex Your Power".
- Report data about lamp distribution outside retail sales environment (e.g. giveaways).

State Government

- Enforcement of applicable statutes and regulations.
- Provide certification for recyclers.
- Provide compliance assistance to TPO, collectors and handlers.
- Collect sales and recycling data.
- Assist with education and outreach via TPO and existing mechanisms.
- Work with TPO and stakeholders to develop future metrics.
- Maintain state lamp recycling website containing current list of participating lamp collection sites
- Website to contain list of manufacturers and collection facilities that are members of the TPO.

Local Government

- Provide outreach and education to consumers/households in partnership with TPO, State, utilities, retailers, recyclers and manufacturers.
- Outreach and education on disposal closely coupled with outreach on energy efficiency.
    - Actively solicit and encourage local facilities to become collection points.
    - Actively support curbside collection programs.
    - Collaborate with TPO to maximize number of collection mechanisms.
    - Continue to offer HHW as an option.
    - Local government collection locations eligible for reimbursement from TPO like all other collection locations.
- Provide data to state/TPO on numbers and types of lamps recycled.
- Work with TPO to develop local incentive programs to encourage consumers to be engaged in the recycling process.
- Develop and distribute educational materials for schools, places of worship, etc.

Recyclers

- Follow universal waste management requirements.
- Enter into contracts with TPO and/or collection locations.
- Promote integrated programs (i.e. both commercial and household lamps) with existing and prospective collectors and generators.
- Report recycling of California lamps to TPO.
- Assist with education and outreach

Consumers

- Provide feedback to TPO/state about recycling programs.
- Bring lamps to recycling collection points for proper disposal

Funding mechanism

- Utility collection of fees from ratepayers, mandated via statute so funding does not disappear.
    - Funding to cover collection, transportation and recycling costs of residential mercury-containing lamps through various programs (retailer collection, local HHW, mail-back, etc.).
- Utilities set incentives that can vary by utility program or region.
- Ultimate and ongoing funding responsibility of TPO rests with the manufacturers.

Submitted to AB 1109 Lighting Task Force, through Department of Toxic Substances Control, July 8, 2008

TOPIC:
AB 1109 Public Education and Outreach Statewide Campaign

RECOMMENDATION:
Education and Outreach developed around a Single Brand -***Take It Back!*** (e.g. Flex Your Power)
CFL ***Promotion AND Take-it-Back*** – Multi-media statewide public outreach campaign
Directed and managed by a dedicated 501(c)(3) entity
A Voluntary Program – overseen and supported by stakeholder partners

DESCRIPTION:
Campaign theme……..*CFLs, A Brighter Idea!*
Key Campaign message……*Energy Efficiency AND Environmental Protection*
Major Campaign focus……*FLs Co-Branded as "Take-it-Back" Items*
Key Spokes-Muppet & Icon……*Oscar the Grouch*
Lead presenter…….. *Dedicated 501(c)(3)*
Co-sponsor credits. ……*Contributing Stakeholder Partners*

A Brighter Idea!: Campaign to be managed and branded by the dedicated 501(c)(3). This entity will provide a credible independent third party, to comprehensively and accurately educate and inform the public of the numerous benefits of CFL usage. Further, the Campaign will educate Californians in detail about the proper care and safe handling of all FL products from point of sale through safe return. All information will be presented strictly in a positive tone.

Energy Efficiency AND Environmental Protection: This is the key Campaign message -- to inform, educate and promote to the public the numerous **benefits that CFLs deliver;** the energy efficiencies and cost savings. The Campaign will present the many practical uses, sizes and selection of CFLs and will enlighten the public to the **positive environmental impact of FL usage** both locally and globally.

FLs Co-Branded as "Take-it-Back" Items - a major Campaign focus: The Campaign will educate, and inform the FL user of their essential **individual responsibility** for the proper care and safe handling of a new, a broken or a spent FL. The words -- dispose, trash, or recycle -- will not be associated with an FL; the Campaign will vigorously promote this message:
"FLs - Not in the Trash Can - Not in the Recycle Bin - Take-it-Back to a FL Take-it-Back Collection Center!"

Oscar the Grouch: This popular Sesame Street Muppet is known and recognized worldwide. The DTSC has license for Oscar the Grouch as 'Spokes-Muppet' for CFL Take-it-Back public education and outreach.

Dedicated 501(c)(3): The California Take-it-Back Partnership, (CTIBP), a 501(c)(3) was specifically established in 2007 to create a plan in compliance with Cal EPA guidelines, and within the CIWMB EPR framework . The organization is in place to manage this Campaign.

Contributing Stakeholder Partners: The 501(c)(3) will recruit from multi-sector stakeholders, those identified as benefiting from the production, sale, handling or usage of FL products, including NGOs and the general public. This Campaign will require committed volunteer stakeholder participation. Stakeholders will be invited to form a representative Board of Directors and Advisory Board to oversee, advise and approve the 501(c)(3) management actions.

Stakeholder Partners will provide much of the Campaign information from their existing content concerning FL efficiency benefits and safe handling procedures. Partners will work to establish mutual agreement and consensus on Campaign goals, themes, and delivery methodology. Stakeholder Partners will participate fairly in funding key elements of the Campaign, whether by donation or services in kind. In return, the 501(c)(3) will provide stakeholders significant recognition and promotion for their participation within the Campaign.

Description of Implementation Elements:

All media and communication will promote and feature the TIB web address and phone number informing individuals where free, local and convenient *FL Take-it-Back Collection Centers* are located. The Campaign will be created in English and translated and presented into multiple languages whenever possible and practicable.

A Dedicated Destination Website: This website will be the foundation of the Education and Outreach program. The web site will be the interactive communications hub for the public, the organization, its partners, associates, consultants and vendors. The website will be built then managed daily, to support, enhance, promote and communicate the comprehensive, multi-lingual, multi-media campaign and its operations 24/7.

The Statewide Residential Direct Mail Promotion: The US Postal Service physically delivers to the estimated 14 million California homes a 4 to 6 page Brochure that presents the basic Campaign message in print. The Brochure contains an iMagazine on disk and a CFL Take-it-Back pouch. The iMagazine links to the Internet and features the interactive, comprehensive multi-media, multi-lingual Campaign. This direct mail promotion guarantees every California residence will receive the information. Direct mail promotion is the most efficient and effective means to reach every home in California.

Note Current CD Rom technology provides some disk platforms with proprietary applications that can report real-time online detailed disk viewer usage, without use of Spyware or cookies. This reports general viewing within an Internet Service Provider area; not by viewer identification or by address. It guarantees no intrusion on individual privacy.*

Continuous Internet Promotion: The Campaign includes building and managing an aggressive FaceBook, MySpace and YouTube presence to generate perpetual public interest and recruitment for weblink partners and website promotions.

Permanent Promotion at Point of Sale and Take It Back Collection Centers: Install permanent signage, provide campaign information and inducements, such as coupon incentives, and free CFL Take-it-Back pouches at CFLs point of sale and Take-it-Back Collection Centers.

Packaging Label Promotion: *Each* California FL will be labeled with a branded ***"Take-it-Back" item*** sticker.

Traditional Media Promotion: The Campaign will use select television, radio, newspapers, magazines, outdoor signage, bill stuffers and more throughout the year.

The Core Outdoor Promotion: Every Take-it-Back Collection Center will display a permanent high impact **Take-it-Back** sign.

Take-it-Back Collection Center Promotional Events: Fun and appealing events, headlined by Oscar the Grouch, will be ongoing at Take-it-Back Collection Centers across the state. Openings can be announced by mailings, PR, RSS feeds and other media contact.

Statewide Residential Trashcans & Recycle bins Labeling: Take-it-Back sticker for every trash can and recycle bin in CA

Public Relations: Continuous aggressive multi-media presence

The Campaign Key Events Timeline

Q1	*Q2*	*Q3*	*Q4*
Creative	Statewide mailing	Bill inserts	Bill inserts
Website build	Website live	Website live	Website live
MySpace, FaceBook build	MySpace, FaceBook	MySpace, FaceBook	MySpace, FaceBook
Support media buildup	Support media	Support media	Support media
PR buildup	PR	PR	PR
Point of Sale message	POS message	POS message	POS message
Collection center signs	Collection center signs	Collection center signs	Collection site signs
Collection center events	Collection center events	Collection center events	Collection site events
Trash & Recycle Stickers	Trash & Recycle Stickers	Trash & Recycle Stickers	Trash & Recycle Stickers
Reporting & Metrics	Reporting & Metrics	Reporting & Metrics	Reporting & Metrics

Audience: The audience for this Campaign is every California resident, with emphasis on the "Internet generation", those born between 1982 and 2000. Key fact: By the year 2010, The Internet generation, born between 1982 and 2000, will outnumber both Baby Boomers and

Gen-Xer. Estimated at over eighty million, they will be the most significant consumer sector in the United States.

ADVANTAGES;

- Promotes energy efficiency through effective statewide education to inspire public action
- Helps to eliminate mercury pollution through effective education to inspire public action to protect the environment for human and ecosystem health
- 501(c)(3) single source responsibility guarantees maximum effectiveness and efficiencies
- Guarantees delivery of the Campaign and CFL Take-it-Back pouch to every California home
- Establishes a universal statewide campaign promoting CFL benefits and FL Take-it-Back education and information
- Assumes responsibility to comply with AB1109 intent for FL education & outreach
- Delivers comprehensive multi-lingual campaign
- Aggregates, produces and presents the best and most accurate information from all stakeholders and their sources
- Significant use of 21st century communication technology
- Guarantees information available 365/ 24/7
- Continually updated news, promotions, events and milestones on website and links
- Effectively reaches the California population
- Provides real-time online daily, weekly, monthly and quarterly measurement and metrics
- Incorporates successes of previous 'Take-it-Back' campaigns (e.g. Santa Clara County)
- Increased foot traffic and sales for participating retail stakeholders
- Provides a multiple, shared, equitable and efficient funding mechanism among stakeholder partners
- Contributing stakeholder partners will receive comparable value in public recognition and promotion
- 501(c)(3) partners and co-sponsors credited, promoted and featured throughout the Campaign
- 501(c)(3) provides transparency and stakeholder board approval of Campaign
- California Take-it-Back Partnership 501(c)(3) (CTIBP a dedicated Stewardship Organization) was specifically established to manage this program and is formally in place to invite multi-sector stakeholders to form a representative board of directors and advisory board to direct, approve and advise management.

DISADVANTAGES;

- Program requires consensus of multiple stakeholders with multiple interests
- Requires volunteer leadership and committed participation from stakeholders
- 501(c)(3) requires recruitment of credible board from multiple stakeholder sectors
- Dedicated full time management, production and operations staff is required
- Unified brand must be established
- Interactive communication is less effective to offline population
- Requires considerable sustained funding

Please consider, comment and add

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[2] Assembly Bill 1109 (stats. 2007, ch. 534), § 2 (i)).

[3] PG&E - "Same brightness, less wattage" http://www.pge-cfl.com/, accessed October 22, 2008.

[4] Campaigns such as "One Billion Bulbs" and Energy Star's "Change a Light, Change the World" have touted the environmental benefits of switching from incandescent bulbs to CFLs.

[5] In 2007 Wal-Mart met its goal of selling one million bulbs several months ahead of schedule; Home Depot gave away one million bulbs on Earth Day, 2007.

[6] NEMA's estimates are based on assumptions about lamp life, national sales data for linear fluorescents and CFLs, and California's percentage of the national population. The assumptions and calculations upon which these estimates are based can be found in Appendix 2.

[7] U.S. Environmental Protection Agency Web site, http://www.epa.gov/mercury/about.htm. Last updated on November 6th, 2007.

[8] For example, see the Fact Sheet titled "Health Advisory for Fish and Shellfish from Clear Lake, Cache Creek, and Bear Creek (Lake, Yolo, and Colusa Counties)" on OEHHA's website: http://www.oehha.ca.gov/fish/so_cal/pdf_zip/ClearLakefacts.pdf.

[9] U.S. Department of Energy Web site, http://www.eere.energy.gov/consumer/your_home/lighting_daylighting/index.cfm/mytopic=12050, accessed April 10, 2008.

[10] http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf.

[11] U.S. Department of Energy, Energy Efficiency Administration Web site, http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html, accessed July 14, 2008.

[12] U.S. Environmental Protection Agency Web site, April 2006. *2004 TRI Public Data Release eReport,* http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf: page 12.

[12] U.S. Environmental Protection Agency Web site, http://www.epa.gov/mercuryrule/basic.htm.

[13] U.S. Environmental Protection Agency Web site. http://www.epa.gov/mercury/control_emissions/index.htm, accessed April 3, 2008.

[14] California Code of Regulations, title 22, section 66273.8 (a) (1).

[15] California Code of Regulations, title 22, section 66273.8 (a) (2) and (a) (3).

[16] California Integrated Waste Management Board. "Framework for Evaluating End-of-Life Product Management Systems in California." (June 2007). http://www.caproductstewardship.org/assets/pdf/Framework_for_EOL_Products_CIWMB_June2007.pdf

[17] Additional information supporting this point can be found in footnote B, page 4.

[18] http://www.nema.org/lamprecycle/docs/ALMR_capacity_statement.pdf

[19] Paul Abernathy, Executive Director Association of Lighting and Mercury Recyclers. Pers Com with Andre Algazi - - 2008

[20] Comment submitted to the Task Force by Emily Wang, found in Appendix 7.

[21] Organisation for Economic Co-operation and Development: *Extended Producer Responsibility: A Guidance Manual for Governments*. Paris, 2001. Page 9.

[22] CIWMB Web site: http://ciwmb.ca.gov/EPR/, accessed June 23, 2008.

[23]Schultz, P. Wesley, Ph.D. "Using Community-Based Social Marketing to Promote Oil Recycling Among DIYers." Powerpoint presentation dated April 28, 2005, citing. Oskamp et al., 1998; Vining & Ebreo, 1990; Werner & Makela, 1999.

[24] For example, collection of lamps at hardware stores.

[25] Godbe Research: Gain Insight*. Santa Clara County: Waste Reduction and Recycling Baseline Survey. March 2008.*

[26] Population in 2006 from the US Census Bureau. http://quickfacts.census.gov/qfd/

[27] Rural Health Policy Council, California's Focal Point for Rural Health - Home (http://www.oshpd.ca.gov/rhpc/) , June 19, 2008

[28] Veolia Environmental Services, Fluorecycle, Onyx Environmental Services, Bethlehem Apparatus, AERC Recycling Solutions, and Budget Lighting.

[29] Osram/Sylvania

[30] See footnote B, page 4.

[31] Department of Conservation, Division of Recycling. "California Beverage Container Recycling Program History and Fund Management Options," February 28, 2007, p. 6

[32] Ibid, p. 15

[33] Institute for Social Research, *Contractor's Report to the Board, CSUS USED OIL RECYCLING PUBLIC EDUCATION PROJECT,* California State University at Sacramento(under contract to CIWMB), November 2007 –, pp 15-20

[34] Pamela Williams, California Retailers Association, email, July 1, 2008.

[35] Karen Farfan, IKEA, telephone communication, June 26, 2008.

[36] Provided to DTSC from Ric Erdheim, Senior Counsel for Philips Electronics

[37] Lane County Lamp Recycling Coalition Retail-based Pilot Program Final Report, March 10, 2006. http://www.zerowaste.org/cfl/images/Lane_Co_CFL__Pilot_Report.pdf

[38] Phone conversation with Karen Knaebel, Mercury Education & Reduction Coordinator for Vermont's Department of Environmental Conservation

[39] Email from Rob D'Arcy, Hazardous Materials Program Manager for Santa Clara County's Department of Environmental Health, (date).

[40] Personal communication with Chris Smith and Steve Andrews, UK Technical Enforcement Manager for RoHS, (date).

[41] Deepali Sinha Khetriwal, Kraechi, P., Widmer, R., "Producer responsibility for e-waste management: Key issues for consideration-Learning from the Swiss experience," *Journal of Environmental Management* (2007).

[42] Federal Office for the Environment Web site. http://www.bafu.admin.ch/abfall/01472/01484/index.html?lang=en

[43] Section 6J (e) of Chapter 190 of the Acts of 2006. *An Act Relative to Mercury Management*, http://www.mass.gov/legis/laws/seslaw06/sl060190.htm.

[44] Discussion at AB 1109 collection and recycling sub committee meeting on May 20, 2008.

[45] Department of Toxic Substances Control Web site. Cell Phone Recycling Rate page: http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/CellPhoneRecycle.cfm

[46] Department of Toxic Substances Control Web site. How is California Doing: http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/Battery_Recycling_Rate.cfm

[47] Phone and email conversations with George Dreckmann, Recycling Coordinator for the City of Madison, Wisconsin, April 2008.

[48] Section 41901 of AB 939 authorizes local governments to raise fees specifically for the costs of implementing their waste diversion programs to comply with this law:

> *"A city, county[,] or city and county may impose fees in amounts sufficient to pay the costs of preparing, adopting, and implementing a countywide integrated waste management plan prepared pursuant to this chapter. The fees shall be based on the types or amounts of the solid waste, and shall be used to pay the actual costs incurred by the city or county in preparing, adopting, and implementing the plan, as well as in setting and collecting the local fees. In determining the amounts of the fees, a city or county shall include only those costs directly related to the preparation, adoption, and implementation of the plan and the setting and collection of the local fees. A city, county, or city and county shall impose the fees pursuant to Section 66016 of the Government Code."*

Section 41902 clarifies that:

> *"A local agency may directly collect the fees authorized by this chapter or may, by agreement, arrange for the fees to be collected by a solid waste hauler providing solid waste collection for the city or county."*

CIWMB Web site, http://www.ciwmb.ca.gov/LGlibrary/Innovations/Incentives/OtherHauler.htm

[49] Rob D'Arcy, Hazardous Materials Program Manager for Santa Clara County's Department of Environmental Health, phone conversation with author, June 3, 2008.

[50] Information provided by Karen Knaebel, Vermont Agency of Natural Resources, April 7, 2008.

[51] Maine Department of Environmental Protection and Maine Public Utilities Commission. "Report Regarding the Recycling of Fluorescent Lamps and Consumer Education Efforts," January 2008.

[52] Ibid

[53] Lane County Lamp Recycling Coalition Retail-based Pilot Program Final Report, March 10, 2006. http://www.zerowaste.org/cfl/images/Lane_Co_CFL__Pilot_Report.pdf , pp. 51 – 52.

[54] Ibid, pp. 58, 60.

[55] Ibid, p. 17

[56] Massachusetts Department of Environmental Protection. http://www.mass.gov/dep/toxics/stypes/cflrlocs.xls.