

**TESTIMONY OF ROBERT ORLIN, DEPUTY COMMISSIONER FOR LEGAL AFFAIRS
NEW YORK CITY DEPARTMENT OF SANITATION**

**INTRO NO. 922: IN RELATION TO THE COLLECTION FOR SAFE HANDLING OF
FLUORESCENT LIGHT BULBS**

**HEARING BEFORE THE NEW YORK CITY COUNCIL
COMMITTEE ON SANITATION & SOLID WASTE MANAGEMENT
MONDAY, MAY 4, 2009 – 10:00 A.M.
COUNCIL CHAMBERS**

Good morning Chairman Felder and members of the Committee on Sanitation and Solid Waste Management. I am Robert Orlin, Deputy Commissioner for Legal Affairs of the New York City Department of Sanitation. I welcome the opportunity to appear before you on behalf of Sanitation Commissioner John Doherty to testify on Intro No. 922 under consideration today. With me this morning from the Department is Steven Brautigam, Assistant Commissioner for Environmental Affairs. Also joining us is Rohit T. Aggarwala, Director of the Mayor's Office of Long Term Planning and Sustainability, who will deliver a separate statement.

As proposed, Intro No. 922 places the responsibility on manufacturers and retailers of mercury-containing light bulbs to develop a program for safely managing discarded mercury-containing light bulbs. The bill requires every manufacturer of mercury-containing light bulbs that are sold, offered for sale, or distributed in New York City to develop a plan for the proper end-of-life management for collecting and recycling these bulbs. Such a plan must identify (a) the method the manufacturer will utilize for free and convenient collection of mercury-containing light bulbs from all persons in the City and (b) the method the manufacturer will utilize to properly manage the bulbs collected.

Additionally, this bill requires the City's retail stores which sell mercury-containing light bulbs to accept, at no charge, up to ten intact, mercury-containing light bulbs per day from any individual. Manufacturers and retailers are also required to educate consumers about collection opportunities for mercury containing light bulbs.

I wish to note at the outset that the Department currently collects discarded fluorescent light bulbs from all residential households in the City on its regular refuse collection routes. It does not collect discarded bulbs from any New York City agency or department. The Department of Citywide Administrative Services (DCAS) has in place a contract with vendors to collect and properly dispose of discarded bulbs from DCAS managed buildings throughout the City. Additionally, the Department does not collect discarded bulbs from any commercial buildings in the City.

While the Department believes that it is important to safely manage mercury-containing light bulbs at the end of their useful life, the Department also believes that retailers should not be unduly burdened in regard to the collection and handling of these discarded bulbs. Consumer is a broadly defined term under this bill referring to anyone who purchases mercury-containing light bulbs. Accordingly, returned mercury-containing light bulbs may range in size from compact fluorescent light bulbs primarily marketed for home use to large, industrial sized fluorescent light bulbs that are more common in commercial and manufacturing spaces. Given that the bill covers any retailer selling mercury-containing light bulbs that is part of a chain of stores or is over 5,000 square feet in size,

some retail locations covered by the bill may lack the storage space necessary to accommodate the number of mercury containing light bulbs that could be returned.

For example, a smaller retail store covered by this bill that sells only compact fluorescent light bulbs would be required to accept large fluorescent bulbs. A retailer that only sells compact fluorescent bulbs, in particular, may not have the storage capacity to accept larger mercury-containing bulbs. The Department believes that a store should not be required to accept larger fluorescent bulbs if it only sells compact bulbs. One potential solution that could alleviate the burden placed on some retailers by this bill would be to have manufacturers utilize a mail-back program and provide consumers strong, secure boxes in which to place and return their bulbs.

Another concern stemming from the required collection of bulbs by retailers is that these bulbs are handled safely and remain intact. Breakage of these bulbs must be kept to a minimum in order to protect the safety of store employees and to avoid potential environmental problems. Because many of these bulbs will be returned without packaging, the potential for accidental breakage exists. Consequently, any store employee who may be handling returned mercury-containing light bulbs should receive training in the proper methods for handling these light bulbs.

Additionally, the use of compact fluorescent bulbs is beneficial to the environment. A compact fluorescent bulb is three to four times more energy efficient and lasts up to ten times longer than a standard incandescent bulb. Further, many of the compact fluorescent light bulbs do not contain hazardous levels of mercury and green lighting technology is significantly reducing the amount of mercury used in compact fluorescent light bulbs. Therefore, in passing any bill that we hope would have a positive environmental impact, we should be careful not to discourage the use of this environmentally beneficial product. Rohit Aggarwala will be addressing this issue in greater detail in his testimony.

Thank you for the opportunity to testify this morning. We look forward to listening to the testimony of other interested parties. Rohit Aggarwala will now speak on the bill after which we will be happy to answer any questions you have.

**TESTIMONY OF ROHIT T. AGGARWALA
DIRECTOR—LONG TERM PLANNING & SUSTAINABILITY
MAYOR'S OFFICE OF OPERATIONS**

**INT. NO. 922: IN RELATION TO THE COLLECTION FOR SAFE HANDLING OF
FLUORESCENT LIGHT BULBS**

**HEARING BEFORE THE CITY COUNCIL
COMMITTEE ON SANITATION AND SOLID WASTE MANAGEMENT
PROPOSED INT. NO. 922
May 4, 2009 – 10:00 A.M.
COUNCIL CHAMBERS**

Good morning Chairman Felder and members of the City Council Committee on Sanitation and Solid Waste Management. My name is Rohit T. Aggarwala and I am the director of the Office of Long-Term Planning and Sustainability. I am grateful for the opportunity to speak to you today about Intro No. 922.

As my colleague from the Department of Sanitation stated, the City agrees with the overall goal of this bill – to encourage recycling and to prevent dangerous materials from entering our waste stream – but we have very serious reservations about the approach that this bill would use to get there. Overall, we are concerned that the bill will 1) wind up having the greatest impact on those bulbs that have the lowest mercury content and 2) reduce the availability of compact fluorescent bulbs at retailers around the city, which would have a far greater negative consequence on the environment.

Energy is one of the most critical issues facing the county as its impact on the economy, environment and national security become more and more apparent. PlaNYC, the City's comprehensive sustainability plan, includes a number of initiatives aimed at reducing our energy consumption. Many of these initiatives target energy use in buildings, which is the single largest contributor to greenhouse gas emissions in the City and represents 80 percent of our emissions. In addition, New Yorkers spend over \$15 billion in energy costs each year. Making our buildings more energy efficient is the single biggest step we can take towards a greener, greater New York. It will also provide real savings to New Yorkers. Through our various efforts – many as joint efforts

with members of this committee and others here today – we are addressing the energy consumption of City buildings through our 30 by 17 plan; existing private sector buildings through the Greener, Greater Buildings Plan which Mayor Bloomberg, Speaker Quinn, and several Council Members announced last week; and GreenNYC, our effort to educate New Yorkers, using private-sector funding and partnerships, on how to live green.

One of the most cost-effective investments available to New Yorkers to save money and reduce their environmental impact is to use compact fluorescent lightbulbs (CFLs) rather than incandescent lightbulbs. A compact fluorescent lightbulb can light a room with approximately a quarter of the energy needed to light an incandescent bulb; and, because it lasts twelve times longer, will save a New Yorker an average of \$107 in energy costs over its lifetime. In PlaNYC, we estimated that, if New Yorkers replaced all their incandescent bulbs with CFLs, the electricity savings could run the entire subway system.

This bill does not distinguish among “mercury-containing bulbs”; whether a bulb has a trace or a great deal, this bill treats them equally. This presents a major problem. While mercury in CFLs is a valid concern, the amount of mercury found in CFLs has dramatically decreased in recent years. While the old pre-1988 T-12 fluorescent lamps contained 45-48 mg of mercury, today’s compact fluorescent lightbulbs contain an average of 4 mg of mercury. The Department of Energy reports that the average amount of mercury in CFLs decreased by 20 percent between 2007 and 2008, with some manufacturers now getting down to 1.4 – 2.5 mg of mercury per bulb. To the extent that there is a mercury problem related to our solid waste, it would be in the disposal of older, fluorescent tubes rather than in that of CFLs.

However, this bill would have a much greater impact on CFLs than on fluorescent tubes. Large fluorescent tubes are mainly used in commercial and industrial settings, not by individuals; generally, these bulbs are not purchased from retail stores, and their waste is handled by private carters whose activities are covered by existing laws regarding the disposal of commercial waste. Therefore, we must expect this bill’s main impact to be

on the sale and disposal of CFLs, which are mainly purchased at retailers, by individuals, and are thus likely to be disposed of in household trash.

The bill's requirements – on manufacturers, retailers, and individuals – are likely to make the sale and purchase of CFLs less likely. One of the main challenges we face in terms of promoting energy efficiency is that CFLs cost more; although they last longer and use less electricity, paying for themselves in months, many consumers are dissuaded from buying them due to their initial cost. Any bill that leads manufacturers or retailers to mark up CFLs, therefore, is likely to reduce their sale. Further, because CFLs are still a fraction of the market, many stores may well choose simply not to carry them; a look at the selection of bulbs in any of the kinds of chain stores likely to carry these will make it clear that CFLs are not currently an important product line in most retailers' inventories. Finally, a law that makes it illegal to dispose of a product will necessarily increase public suspicion and concern about purchasing such a bulb in the first place; simply the hassle factor of having to remember to return the bulb, or be legally liable, might be enough to convince a busy New Yorker not to bother.

And that would be a terrible injustice to the environment and to the economy of New York City. Even in terms of mercury emitted, CFLs are a net positive for the environment. The average CFL has 4 milligrams of mercury; yet, over the lifetime of one CFL, the equivalent light from incandescent bulbs will result in the emission of more than 5 milligrams of mercury from power plants because of the additional electricity the incandescent bulb requires. Thus, even if our main concern is about mercury in landfills, this bill proposes a dangerous unintended consequence.

There is no question that this bill seeks to address an important issue, and the Council and the bill's sponsors should be commended for raising the issue. Nonetheless, we believe that this bill will have serious consequences that would cancel out its benefits. As a result, we oppose this bill's passage.

Thank you for the opportunity to testify today. I would be happy to answer any questions.

**TESTIMONY OF LAWRENCE A. MANDELKER on behalf of
THE NEW YORK METROPOLITAN RETAIL ASSOCIATION (NYMRA) before the
COMMITTEE ON SANITATION AND SOLID WASTE MANAGEMENT
INFRASTRUCTURE DIVISION
Chair: Hon. Simcha Felder
Monday, May 4, 2009, 10:00 a.m.
City Hall – City Council Chambers**

**NYC COUNCIL INT. NO. 922
COLLECTION FOR SAFE HANDLING OF FLUORESCENT LIGHT BULBS**

Chairman Felder and Members of the Committee, I am testifying on behalf of the New York Metropolitan Retail Association known as NYMRA. Our members are national chain retailers operating in the City of New York. It is my pleasure to be among you.

Because compact fluorescent light bulbs (“CFLs”) contain mercury, beginning on July 1, 2010, this bill would prohibit the disposal of intact CFLs within the City as solid waste. Although not before us today, one cannot miss the irony of having a policy that seeks to reduce carbon emissions by encouraging the use of a product that is too dangerous to be included in the City’s solid waste stream.

The bill requires manufacturers to submit end of life management plans for CFLs, including methods for collection and recycling. Beginning on January 1, 2010, stores would be required to accept at no charge, up to 10 intact CFLs per day from any individual who presents them. Stores are required to provide information about the collection at the retail location and on their websites, and they are required to post a sign in public view “clearly indicating that mercury-containing bulbs are accepted for recycling during normal business hours”, which hours are to be specified. A number of NYMRA’s members sell CFLs and therefore would be considered “stores” under the bill. Our workers and our customers live in the City. We therefore support the goals of this bill. We have the following suggestion to improve it.

A manufacturer is required to submit its plan to the Department of Consumer Affairs for approval. We recommend that prior to approval, Consumer Affairs should be required to consult with retailers on the issue of the cost(s) they will incur and burden on their resources and facilities under the proposed plan. Once Consumer Affairs approves a plan, it should communicate the approved plan to the “stores” that will be accepting the CFLs and “ensur[ing] that each mercury-containing bulb accepted is returned to the manufacturer in accordance with the end of life plan of that manufacturer.”

I thank the Committee for this opportunity to testify, and hope that my comments will be taken into consideration as you move forward in considering this bill. Should you need any assistance that NYMRA is able to provide, we will be more than happy to do so.

Lawrence A. Mandelker, Esq.
Kantor, Davidoff, Wolfe, Mandelker Twomey & Gallanty, P.C.
51 East 42nd Street, Floor 17, New York, NY 10017
Ph: 212-682-8383; Fx: 212-949-5206; Email: mandelker@kantorlawonline.com



Philips Electronics North America Corporation

TESTIMONY OF PHILIPS ELECTRONICS ON INT. 922
REGARDING THE SAFE COLLECTION AND RECYCLING OF MERCURY-
CONTAINING LAMPS
COMMITTEE ON SANITATION AND SOLID WASTE MANAGEMENT
May 4, 2009

Madame Chair and Committee Members, I am Ric Erdheim, Senior Counsel with Philips Electronics. Philips Lighting, one of our three businesses, is the world's largest lighting manufacturer. Philips Electronics is a member of National Electrical Manufacturers Association (NEMA) and joins the National Electrical Manufacturers Association (NEMA) and our industry competitors in opposition to Int. 922.

Int. 922 addresses lamp recycling but does so in an unnecessary, inefficient and ultimately counter productive approach to the problem of managing the disposal of mercury-containing lamps.

The major environmental problem we face as a nation and on this earth is global climate change. We will have to make many changes in our lives to respond to this issue. The simplest and one of the most effective actions that citizens can take is to use energy efficient mercury containing lamps. For residences this means using compact fluorescent bulbs because they use about 75 percent less energy than standard incandescent bulbs. The New York City government's website promotes the use of such lighting. As you consider spent mercury-containing lamp management, you need to be cognizant of the joint goal of promoting energy efficient lighting and responsible end of life management.

Int. 922 fails in achieving these joint goals because it would increase the cost of energy efficient lighting and thereby, discourage the use of these important products. It ignores the existence of a recycling infrastructure that exists for non residential lamps. It also would put New York City lamp wholesalers and retailers at a disadvantage with their competitors in other jurisdictions. In addition, Int. 922 would result in the most costly spent lamp management approach to consumers by adding the cost of recycling into the product price and then having that cost increase multiply as it goes through the distribution system.

I want to focus my remaining remarks on existing data that shows the lighting industry has an exceptional record in making more environmentally responsible products. I also will address the existing infrastructure for recycling and how Int. 922 will interfere with this infrastructure and make lamp recycling by business more costly and less efficient.

Lamp Manufacturers Have Significantly Reduced the Use of Mercury in Lamps

In terms of total mercury used in lamps, NEMA members also made significant reductions. In 1990 NEMA members used 23.6 tons of mercury in 1990 to make 500 million lamps and by 2003, had reduced this use to 7 tons of mercury to make 650 million lamps. By any definition, this is a significant achievement.

As is graphically shown on Attachment I, NEMA manufacturers had significantly reduced the average amount of mercury used in four foot lamps by 80% between 1990 and 2001. There have been additional significant reductions in use per four foot lamp since then. Philips first implemented its ALTO technology that allowed us to use less mercury in our lamps including only 3.5 milligrams of mercury in our T8 lamps. We can document a reduction in mercury use of over 16 tons by using this technology. In 2007 we implemented ALTO II technology further reducing our mercury levels to 1.75 mg, a 50% reduction. In addition, Philips has implemented a reduction of 90-95% in high pressure sodium outdoor lights.

NEMA companies also implemented a voluntary 5 mg limit on the use of mercury in compact fluorescent lamps but most manufacturers have reduced mercury levels far below even that level. Philips and other companies have CFLs with as little as slightly more than 1 mg of mercury in certain CFL types.

Lamp Manufacturers Have Increased Product Life

Manufacturers have significantly increased the product life of mercury containing lamps. For example CFLs traditionally have had a life of 6,000 hours. The new Energy Star standard for CFLs, based on the best products, is now 10,000 hours for bare CFLs. There also has been an increase in the life of the most common linear fluorescent lamps from 20,000 hours to 24,000 hours with many premium lamp types now exceeding 30,000 hours. This is graphically demonstrated on Attachment II that shows lamp life of Philips T8 lamps before and after 2006. Other companies have made similar improvements.

The longer lamps last, the fewer lamps are necessary, the less mercury is used in lamps and the less mercury can escape to the environment through improper disposal.

Lamp Manufacturers Have Improved Lighting Efficiency

Through the use of more efficient lamps and more efficient ballasts, the efficiency of lighting systems has increased by 40-50%. This efficiency results in reduced emissions of greenhouse gasses and other air pollutants including mercury from fossil fuel power plants.

The Lamp Industry Product Stewardship Efforts Has Resulted in a Significant Environmental Accomplishment

The sum of these efforts through 2004 is found in Attachment III, "Lamp Industry Product Stewardship: A Record of Environmental Accomplishment." Using just the shift from T12 to more efficient T8 linear fluorescent lamps and a shift from incandescent to compact

fluorescent bulbs through 2004, we can document a reduction in use of mercury of 24 tons, and a reduction of billions of pounds of CO₂, millions of pounds of traditional air pollutants like sulfur dioxide and carbon monoxide and nearly 1,500 pounds of mercury emissions from fossil fuel power plants.

The record of achievement since 2004, which we are now in the process of computing, will show a continued significant reduced environment footprint from the use of mercury containing lamps.

The Elimination of the Traditional Incandescent Bulb Will Result in Huge Environmental Benefits

In December 2006, the then head of Philips Lighting worldwide issued a call for the end of the use of the traditional incandescent bulb. As a result of this call, we have seen legislation enacted across the globe including the US to end the sale of such products. According to the Alliance to Save Energy, the US law will result in energy savings that are the equivalent of the energy produced by 75 coal fired power plants.

The US lamp industry has responded to this new requirement by developing more efficient and less toxic lighting products. One of the first products was introduced by Philips in 2007 – the Halogen Energy Saver. This new halogen bulb is a minimum of 30% more efficient than traditional incandescent bulbs, is mercury free, has 20-100% longer life than traditional incandescent bulbs, is fully dimmable and has no warm up time. Other companies will be producing similar products.

Manufacturers also have significantly improved the features of compact fluorescent bulbs. In addition to the mercury reductions discussed above, manufacturers have developed 3 way, dimmable, and shatter resistant CFLs.

Lamp Manufacturers Have Made Huge Financial Investments in the Development of Energy Efficient and Mercury Free Light Emitting Diodes (LEDs)

The next generation of lighting will use light emitting diodes or LEDs. LEDs use electricity sent through a semiconductor chip to generate light. An example of an LED is the New Year's Ball in Time Square New York that contained Philips LEDs (see Attachment IV). LED lamps will last 50,000 hour or more, improve on the energy efficiency of CFLs, and contain no hazardous materials like mercury. This year Philips will bring to market three LED products that can be used in the home. The US Department of Energy has honored Philips for the development on its LED PAR lamp. (See Attachment V): Other lamp companies also will start bringing LED products to market this year.

LED products currently are much more expensive than other lamp types and there are still technological developments being made to be able to replace all existing lamp types. It is clear, however, that the industry is spending a great deal of resources in the development of LEDs. Philips alone can document spending over \$5 billion over the last two years to purchase companies that are involved in the manufacture of LEDs.

The US Department of Energy also is encouraging the development of LEDs. The 2007 Federal energy law contained a provision authorizing the Department to establish an "L Prize" competition. Under this program, the DOE has established rigorous performance standards for certain lamp types including a standard 60 watt incandescent replacement for companies to achieve. The standards include efficacy, life, quality, performance, the ability to mass market and US-based LED chip production. The first company to meet these criteria for each category will win a financial reward but much more importantly, will through many utilities across the US be eligible for a significant price reduction to encourage public usage of such lamps.

In sum, the documented record of the lamp industry is one of making significant investments in more efficient, longer life and less toxic products. There simply is no basis for the statement that making manufacturers pay the cost of recycling will encourage them to make better, less toxic products when we have done that without any such so called incentive.

Int. 922 ignores the existence of a lamp recycling infrastructure for non residential lamps.

Int. 922 calls for manufacturers to submit a plan for the recycling of all mercury containing lamps. This presumably includes lamps used in office buildings, institutions and other non residential settings. There already exists an extensive private sector infrastructure for recycling such lamps. On a national level, we estimate that recycling of such lamps probably is in the 30-40% range and we believe in urban jurisdictions such as New York City recycling rates are higher. So by calling for manufacturers to set up and pay for a lamp recycling infrastructure for such lamps, Int. 922 appears to be a solution in search of a problem.

NEMA and its members have worked with the lamp recyclers and their trade association, the Association of Lighting and Mercury Recyclers (ALMR), to promote lamp recycling. NEMA members have established a national product and package label program to advise consumers of the need to recycle lamps. We have established a one-stop lamp recycling website, with the assistance of ALMR, to promote lamp recycling. And we have partnered with ALMR and the Solid Waste Association of North America (SWANA) to develop lamp recycling information.

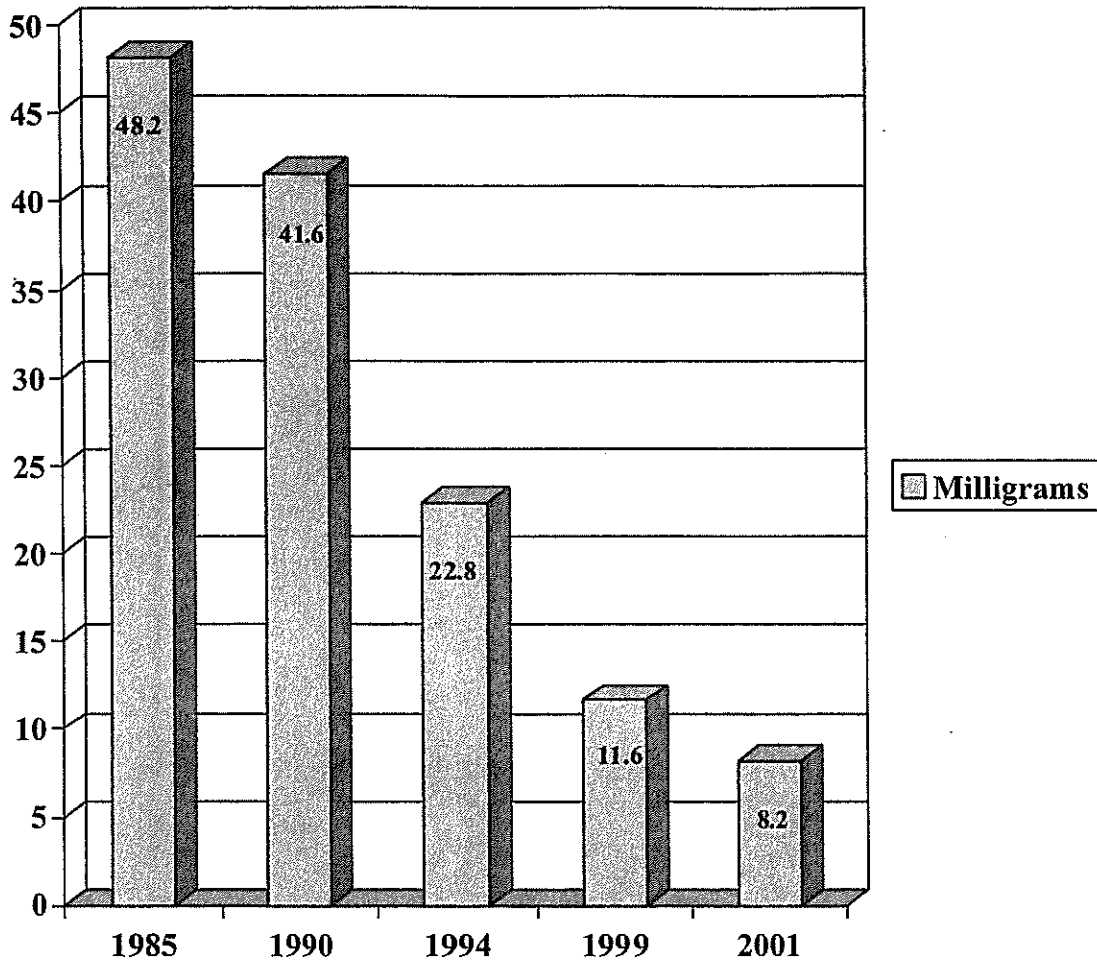
It would appear that these and other efforts have significantly increased lamp recycling levels from 70 million lamps in 1997 to 156 million lamps in 2005 to over 200 million lamps in 2008.

As the attached paper "Manufacturer Take-Back of Lamps" discusses (Attachment VI), manufacturer responsibility for these lamps is not necessary to ensure high recycling rates, will interfere with the current efficient and economical lamp recycling infrastructure and would increase costs to lamp users. As a result, the ALMR opposes this legislation. Both NEMA and ALMR believe that what we need to increase lamp recycling is effective enforcement of laws banning disposal of such lamps by non residential users.

I would be happy to answer any questions.

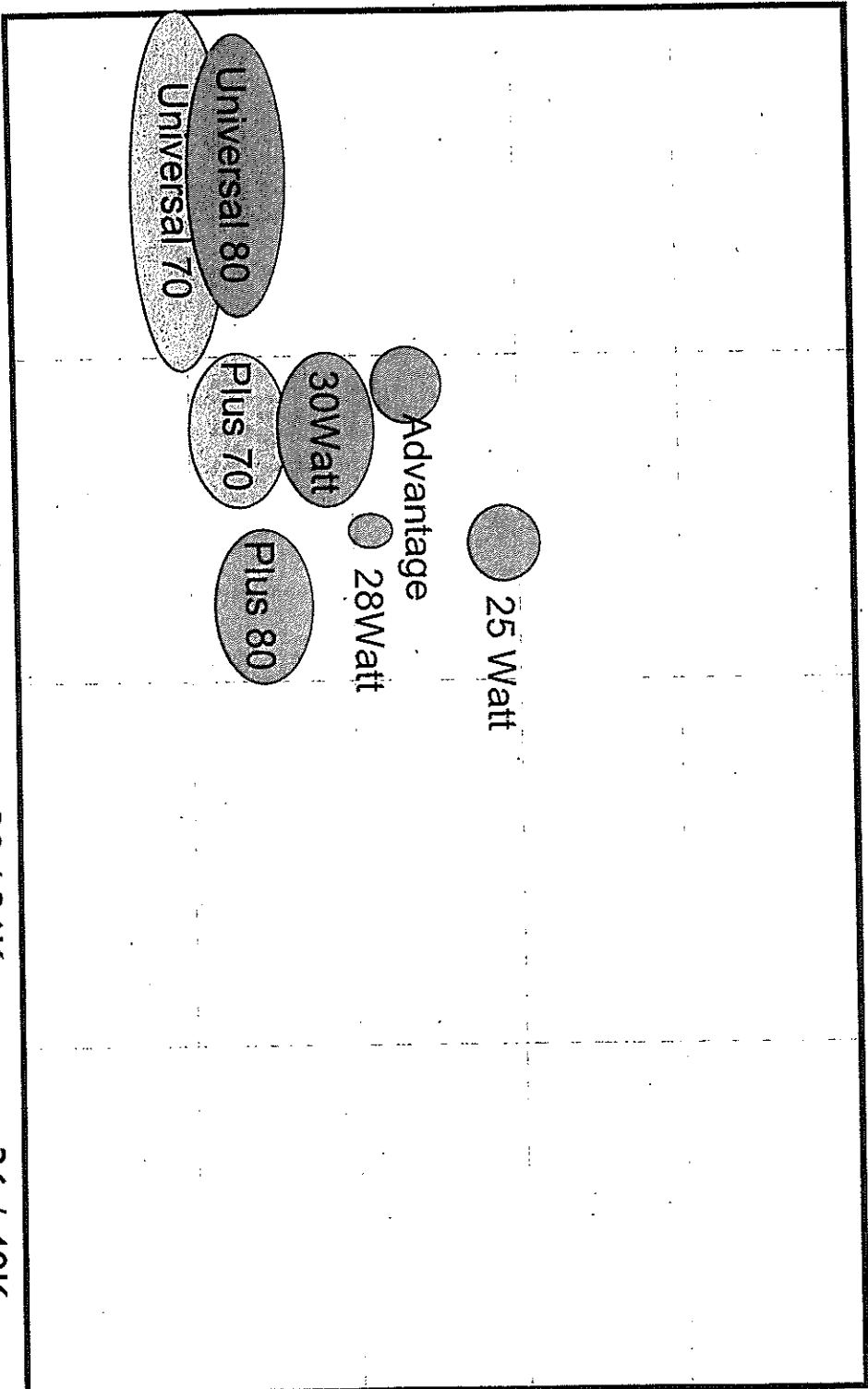
ATTACHMENT 1

Mercury Contained in Four-Foot Fluorescent Lamp – Industry Average



T8 longer life positioning – Prior to 2006

Retail Price



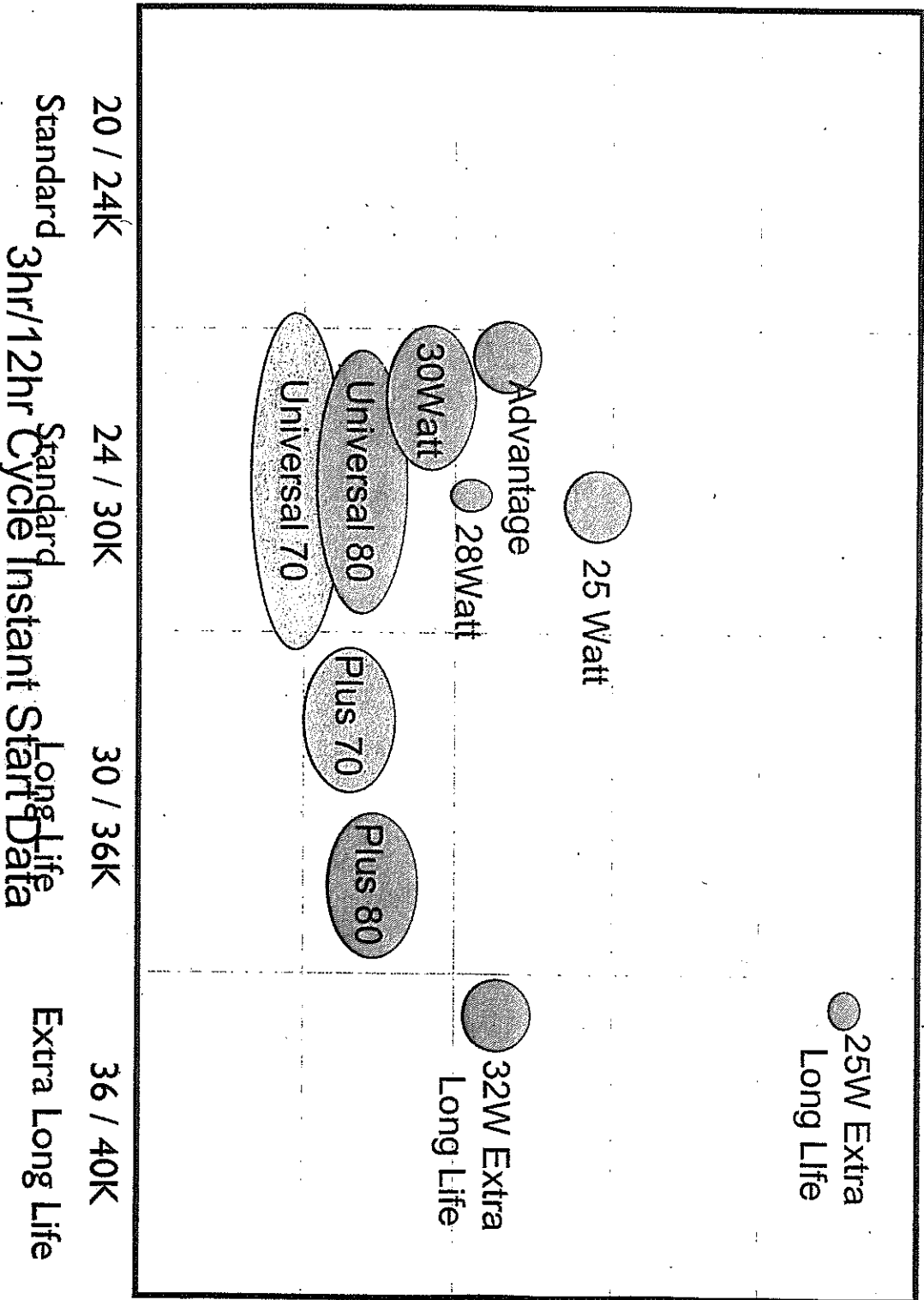
20 / 24K 24 / 30K 30 / 36K 36 / 40K

Standard Long Life Extra Long Life

3hr/12hr Cycle Instant Start Data

T8 longer life positioning - 2006

Retail Price



ATTACHMENT 2



National Electrical Manufacturers Association
1300 North 17th Street, Suite 1847
Rosslyn, VA 22209
703-841-3200
Fax: 703-841-3300

LAMP INDUSTRY PRODUCT STEWARDSHIP
A RECORD OF ENVIRONMENTAL ACCOMPLISHMENT
October 2004

The vast majority of fluorescent and high intensity discharge (HID) lamps (light bulbs) contain mercury, a naturally occurring element that is pervasive in the environment. This mercury is an important component of the lamp, and enables the lamp to operate much more efficiently than incandescent and halogen lamps. Government agencies actively promote the use of energy-efficient mercury-containing lamps to reduce greenhouse gas emissions. Ironically, this higher efficiency, due in part to the use of mercury, prevents the release of much higher amounts of mercury (and many other undesirable emissions) from power plants. The use of these mercury-containing lamps, instead of less efficient incandescent lamps, results in less mercury being released into the environment. At the same time, proper disposal of spent lamps can further reduce releases of mercury to the environment.

The members of the NEMA Lamp Section have a comprehensive product stewardship effort designed to produce better lighting products and systems, in a five-part program.

1. Minimize Mercury Content of Lamps
2. Increase Product Life
3. Improve Lighting Efficiency
4. Label Products, and
5. Encourage Recycling

1. Minimize Mercury Content

NEMA Lamp Section members have significantly reduced their use of mercury in lamps while increasing their production of lamps. In 1990, NEMA estimates that light section members used 23.6 tons of mercury in slightly less than 500 million mercury-containing lamps. This mercury usage declined to 17 tons in 1994, 13 tons in 1999, 9 tons in 2001 and 7 tons in 2003. In the same time frame sales by NEMA lamp section members have increased to 650 million mercury-containing lamps.

2. Increase Product Life

Manufacturers have significantly increased the product life of mercury-containing lamps. There has been a 20% increase in the life of some of the most common fluorescent lamps since the 1980s from 20,000 to 24,000 hours, with some premium types at 30,000 hours. There also has been increased life of lower wattage HID lamp types. This increase in life means fewer lamps and less mercury.

3. Improve Lighting Efficiency

The lighting industry has improved lighting efficiency. Manufacturers' use of rare-earth phosphors instead of halophosphates, and development of smaller bulb diameters (T8 and T5) together with the shift to electronic from magnetic ballasts have led to a 40-50% improvement in lighting system efficiency. This efficiency results in reduced emissions of greenhouse gases and air pollutants including mercury. The introduction of pulse-start technology and ceramic arc tubes has significantly increased efficiency of metal halide lamps. Manufacturers have also developed and promoted the use of compact fluorescent lamps to replace incandescent lamps.

4. Label Products

Lamp manufacturers have adopted a nationwide labeling program. A standardized label on lamp packaging informs the user if the product contains mercury, and encourages the user to visit the lamprecycle.org website for lamp recycling information that applies to their jurisdiction. Since the mercury label is also present whenever someone purchases a replacement lamp, users are constantly reminded of their disposal obligations, without the necessity of retaining the existing packaging.

5. Encourage Recycling

NEMA lamp section members have undertaken a number of efforts to encourage lamp recycling, particularly among businesses, which use 85+% of all mercury-containing lamps. In 2000, NEMA established a website, www.lamprecycle.org, that provides a one-stop source for lamp recycling information nationwide. The website contains a list of recyclers as well as links to all state websites with information about spent lamp management. Lamp recyclers and lamp manufacturers actively promote the use of this website. NEMA also partnered with the Association of Lighting and Mercury Recyclers (ALMR) and the Solid Waste Association of North America (SWANA) to undertake lamp-recycling promotion for businesses on a nationwide scale funded by an EPA grant. The three groups have established a management committee and are beginning to implement the program.

NEMA and ALMR also developed a lamp recycling training module for the Department of Energy's Rebuild America program. This free module is available from the Department and material from the module will be incorporated into the EPA funded lamp recycling promotion effort.

Individual companies also have their own lamp disposal promotion efforts. As a result of these and efforts by all levels of government, lamp recyclers and lamp users, lamp recycling has increased from less than 10 million in 1990, to 70 million lamps in 1997, to 156 million lamps in 2003.

Analysis of Lamp Industry Product Stewardship Efforts

If NEMA lamp section members had made no changes in lamps from 1990, members would be using significantly more mercury than is used today and power plants would need to generate a great deal more electricity to meet demand, resulting in increasing level of emissions from these facilities.

The average mercury-containing lamp manufactured in 1990 contained 43 mg of mercury. In 2003 that level was 11.4 mg. of mercury. If manufacturers had used 43 milligrams of mercury in each of the 650 million lamps manufactured in 2003, those lamps would have contained 31 tons of mercury rather than 7 tons.

Increased lamp life also leads to mercury reduction. Lamps are now available with a 20 to 50% increase in lamp life compared with products available in 1990. Increasing use of longer life lamps has also helped to decrease total mercury use by lamp manufacturers.

Increases in lighting efficiency result in lower emissions of greenhouse gases and air pollutants. For example:

The 150 million T8 lamps and electronic ballasts that have now replaced the older style T12 lamps save *annually* 48 billion kilowatt hours electricity, 66.8 billion pounds of CO2 emissions from the fossil fuel portion of the electrical generation, millions of pounds of each of the major air pollutants such as nitrogen-oxides, sulfur oxides, particulate matter, carbon monoxide, and volatile organic compounds and 1,262 pounds of mercury from the combustion of coal and oil.

The compact fluorescent lamps now being used to fill 150 million "incandescent sockets" save *annually* 6.750 billion kilowatt hours of electricity, 9.4 billion pounds of CO2 emissions from the fossil fuel portion of the electrical generation, millions of additional pounds of sulfur oxides, nitrogen oxides, particulates and carbon monoxide and 178 pounds of mercury from combustion of coal and oil.

The lighting industry has also achieved additional power savings and emission reductions by increasing the efficiency of other lighting products such as metal halide lamps. . In summary, the lighting industry has contributed to significant reductions in the emissions of greenhouse gases, ozone and acid rain precursors, particulate matter, carbon monoxide and mercury (see attached chart).

Finally, lamp recycling in 2003 recovered approximately 5,720 pounds of mercury (22% recycling rate multiplied by 13 tons of mercury used in lamps manufactured in 1999, and lamps used for an average five-year period.).

ATTACHMENT IV

Earth Day 2009 NYC: Iconic Times Square New Years Eve Ball Now Lit by LEDs

by Matthew McDermott, New York, NY on 04 22 09



Though frankly I try to stay as far away from Times Square as I can on New Years Eve, and have always found the tradition of watching the ball drop to be singularly anti-climatic, this Earth Day I got to climb to the top of One Times Square to view "The Ball." Why? Because it's now be killed out with brand new LED lights that make it about 20% more energy efficient than before.

32,000 LEDs Use Same Amount of Power as Two Home Ovens

Though it looks small on television The Ball is really a 12' diameter geodesic Waterford crystal sphere. And now it's power by 32,256 LEDs from Philips which can create a palette of more than 16 million colors—blue and green in honor of Earth Day—consuming a similar amount of energy every hour as about two home ovens. A big improvement over halogen lighting used in years past.

As you can see in the photo credit (below), it was a bit of green celebrity event:

The Green Generation

The talk of the day from Denis Hayes and the Earth Day Network wasn't actually so much about this year's happenings, but looking forward to next years—which will be the 40th Earth Day.

Though Hayes was a bit thin on details of what will be on tap for Earth Day 40 other than plugging The Green Generation campaign, he said that more info will be available in about two months.

Earth Day is Only Global Secular Holiday

On the notion of how "every day really should be Earth day," Hayes pointed out that there are numerous global problems which need attention and have days or months to raise awareness. The environment is no different. It doesn't mean that they aren't important other days of the year, or you don't think about them throughout the year, but it's still important and relevant to

take a day out to do so.

Earth Day, Hayes said, is essentially the only global secular holiday—except if you consider Christmas to have become entirely secular—it remains a wonderful opportunity to highlight environmental issues and build networks around them for the rest of the year.

More: [Earth Day Network](#)

Earth Day founder Denis Hayes, Kaj dan Daas Chairman of Philips Lighting North America, Earth Day Network president Kathleen Rogers, and Bicycle For a Day founder (& actor) Matthew Modine in front to the Times Square Ball, lit up green and blue for Earth Day Photo: Matthew McDermott

Earth Day

Introducing *Discovery Green* for Earth Day
[Greenwash Watch: Dell Hijacks Earth Day Bandwagon](#)
[Is Earth Day the New Christmas?](#)

LED Lights

[Luxim Plasma Light Bulb Kicks Some Serious LED Butt](#)
[A Red LED Light to Turn Greenhouses Greener...And More Efficient](#)
[Big LED Breakthrough at Purdue University Could Change the World](#)

Levi's® Eco Jeans

See Levi's® New Spring Fashions. \$7 Shipping. Hassle-Free Returns.

Earth Day

Today is the Earth Day: Take a Minute to think about Environment!

[Ads by Google](#)

Comments (1)

While I respect Phillips' desire for good public relations and high visibility, I suspect this was a poor choice for highlighting the energy savings of their LED lighting.

First, best estimates I could obtain for home oven energy consumption place it at 3-5kW. Two ovens would then be 6-10kW. Using the more liberal 10kW, and calculating the energy savings to be 20%, we find that this retrofit saves 2kW.

The ball is used once annually. Assuming 12 hours of use on New Years Eve, and quadrupling that for installation, maintenance, programming, and testing, we get an average annual use of 48 hours.

ATTACHMENT V



U.S. Department of Energy honors Philips for significant advancement in LED lighting

WEBWIRE – Thursday, March 19, 2009

Award recognizes highly-anticipated LED replacement lamp to be launched in late 2009

Burlington, MA, United States – Philips Color Kinetics has been honored by the U.S. Department of Energy (DOE), receiving an award for "Significant Achievement in Solid-State Lighting Research & Development." The award recognizes Philips' exceptional progress in the development of a highly efficient LED PAR lamp, or replacement "bulb," which is on target for commercial availability later this year.

According to test results, Philips' lamp in development is already significantly more efficient than comparable LED PAR 38 lamps on the market, and almost five times more efficient than most incandescent lamps. With an ultimate performance target of approximately 70 lumens of light per watt of energy, the fully realized lamp will meet or exceed the efficacy (or lumens per watt) of nearly all existing conventional light sources. By comparison, incandescent PAR lamps typically generate between 12 – 15 lumens of light per watt of energy.

The project is being funded by a \$1.7 million grant from the DOE. It incorporates advanced LED package and system integration technology plus novel, highly efficient driver technology and a unique optical arrangement – accounting for all the layers required to make LEDs truly useful for general illumination.

The role of lighting as a major factor in energy consumption has most recently been reflected in the new U.S. Administration's own goal to update public buildings with sources that are more efficient. Lighting accounts for 22% of America's total electricity use, yet most of today's buildings are lit by dated systems that lack the efficiencies of newer technologies such as LEDs. A 2006 DOE report estimated that the use of solid-state lighting could yield \$228 billion in energy savings over 20 years.

"More than purely a research project, this program has clear-cut performance and commercialization goals that will drive LED sources further into mainstream lighting," said Jeff Cassis, CEO of Philips Color Kinetics. "The call for energy-efficient lighting choices has never been greater, and we're on track to deliver a fully integrated lamp with widespread market potential."

While LEDs have become viable for a fast-growing number of applications – from architectural flood lighting to retail display lighting – there is tremendous demand for replacement lamps or bulbs that match the look, feel and simple socket-base of traditional sources. To achieve this in a high-quality, cost-effective fashion is an engineering feat, in part because of optical and thermal issues that are unique to LEDs, and is widely considered one of the most important advancements on the path to mainstream lighting. Philips' lamp, an LED-based PAR 38, is intended to make it very simple to replace existing sources without sacrificing quality of light and ease of use.

PAR 38 lamps are round spotlight bulbs that typically utilizes incandescent, halogen or High Intensity Discharge (HID) technologies – none of which can match the energy efficiency and long source life of LEDs. Philips' lamp is being developed for use in commercial interiors such as retail shops, offices, hotels and other spaces where recessed can lights or track lighting systems commonly use PAR 38 bulbs.

Philips views LED technology as integral to the future of energy-efficient lighting, first for commercial spaces and eventually for residential applications as well. Performance trends suggest that LEDs have tremendous

potential given their long source life, durability, use of non-toxic materials, lack of radiated heat and UV, higher quality of light output and flexibility to accommodate wide-ranging fixtures and form factors. Moreover, as inherently digital devices, LEDs produce light that can be intelligently controlled to dynamically customize environments, from restaurants and retail shops to homes and even automobiles.

Philips participates in numerous government and industry initiatives related to energy conservation. As a founding member of the Next Generation Lighting Industry Alliance, the company has helped to develop a technology roadmap for the DOE as well as Energy Star criteria for LED lighting. Philips also played an instrumental role in the formation and leadership of the Lighting Efficiency Coalition, and last year received a Champion of Energy Efficiency Award from the American Council for an Energy Efficient Economy – largely for leading the charge to phase out inefficient incandescent lamps in the U.S. market.

About Philips Color Kinetics

Philips Color Kinetics transforms environments through dynamic and more efficient uses of light. Its award-winning lighting systems and technologies apply the benefits of LEDs as a highly efficient, long lasting, environmentally friendly, and inherently digital source of illumination - reinventing light itself as a highly controllable medium. Headquartered in Burlington, MA, USA, Philips Color Kinetics is the leading center of innovation and product development for Philips' global LED lighting systems business. The organization also enables widespread adoption of LED lighting through OEM partnerships in diverse markets. More information is available at <http://www.colorkinetics.com>.

About Royal Philips Electronics

Royal Philips Electronics of the Netherlands (NYSE: PHG, AEX: PHI) is a diversified Health and Well-being company, focused on improving people's lives through timely innovations. As a world leader in healthcare, lifestyle and lighting, Philips integrates technologies and design into people-centric solutions, based on fundamental customer insights and the brand promise of "sense and simplicity". Headquartered in the Netherlands, Philips employs approximately 121,000 employees in more than 60 countries worldwide. With sales of EUR 26 billion in 2008, the company is a market leader in cardiac care, acute care and home healthcare, energy efficient lighting solutions and new lighting applications, as well as lifestyle products for personal well-being and pleasure with strong leadership positions in flat TV, male shaving and grooming, portable entertainment and oral healthcare. News from Philips is located at www.philips.com/newscenter.

WebWireID90288

RELATED LINKS

- [Source](#)

This news content was configured by WebWire® editorial staff. Linking is permitted.

WebWire® 1995 - 2009



National Electrical Manufacturers Association
1300 North 17th Street, Suite 1752
Rosslyn, VA 22209
703-841-3200
Fax: 703-841-3300

Manufacturer Take-Back of Lamps

September 2007

Increased emphasis on the need for energy-efficient lighting has generated increased concern over its disposal. Fluorescent and HID (high intensity discharge) lamps contain small amounts of mercury that can pose health risks under certain conditions. Lamp manufacturers support efforts to recycle lamps as a way to keep mercury vapor out of the environment. In the past 20 years, manufacturers have also reduced the amount of mercury in their fluorescent lamps by over 90 percent. Furthermore, the robust lamp recycling industry has grown significantly in that time and has the capacity to recycle all the mercury-containing lamps in the U.S. With the existing recycling infrastructure in place, policies that require manufacturers to take back lamps are not necessary and would be counterproductive. Both the manufacturing industry and the lamp recycling industry oppose these policies.

LAMP RECYCLING WORKS

The current lamp recycling system in the U.S. involves customers (mostly businesses that generate large numbers of end-of-life lamps) contracting directly with independent, third-party recycling companies. These third-party recyclers compete against each other to offer the best price for recycling all lamps, regardless of the manufacturer. The current system of direct contracting provides the most efficient and lowest cost approach.

Manufacturer collection intrudes on the existing efficient lamp recycling system by requiring that each manufacturer identify and directly fund a collection system for its own mercury-containing lamps. By injecting an unnecessary third party (the manufacturer) into the recycling process, manufacturer collection will dramatically increase transaction costs, which will be born directly by businesses, schools, state or local government operated facilities, and other consumers.

NEMA SUPPORTS LAMP RECYCLING

Since 2003, NEMA has maintained www.lamprecycle.org, which provides a one-stop source for lamp recycling information nationwide. The website contains a list of recyclers as well as links to all state websites with information about spent-lamp management. Lamp recyclers and others actively promote the use of this website. Manufacturers are also labeling lamp packages with information about lamp recycling and a toll-free number, along with the industry website. Finally, individual companies also have their own lamp-recycling promotion efforts.

In addition, NEMA partnered for several years with the Association of Lighting and Mercury Recyclers (ALMR) and the Solid Waste Association of North America (SWANA) to conduct lamp-recycling promotion and education activities under an \$800,000 Environmental Protection Agency

grant. Among the measures implemented through this effort were a lamp recycling training module for the U.S. Department of Energy's Rebuild America program and an educational CD (available by request from NEMA, ALMR, or SWANA) that promotes recycling and provides information on federal and state guidelines for proper disposal.

LAMP RECYCLING IS GROWING

As a result of these and other efforts, and adoption of the universal waste rule across the country, lamp recycling increased from 70 million lamps in 1997 to 156 million lamps in 2005. There is a nationwide lamp-recycling infrastructure currently in place with unused capacity. With continued focus on energy-efficient lighting, growing concern over mercury in the environment, and diligently enforced recycling laws, recycling rates are expected to increase.

MANUFACTURER COLLECTION IS UNNECESSARY BECAUSE:

- **It is not needed to ensure high rates of recycling.** The growth in recycling and the high rates of recycling in some states, such as Minnesota, demonstrates this.
- **The current recycling system is very efficient and economical.** When businesses and governments contract directly with third party recyclers for lamp recycling needs, they can get bids from more than one recycler and receive lamp-recycling services at the most competitive rate. This system also takes immediate advantage of any efficiency improvements in the recycling process because competition rewards efficiency improvements and continually lowers recycling costs.
- **Lamp manufacturer take-back systems would be inefficient and duplicative.** Manufacturer collection replaces the current system with a manufacturer-funded system, which will result in significantly higher recycling costs, as many duplicative and non-competitive systems will appear. There are currently more than 100 manufacturers or importers selling mercury-containing lamps in the U.S., each of which would be required to fund a collection program of some type under a manufacturer take back system. There are even a greater number of companies that sell products that contain lamps.

A MANUFACTURER TAKE-BACK SYSTEM WOULD BE COSTLY AND INEFFICIENT

- Under a manufacturer take-back system, the manufacturer would have to include administrative overhead to the process, adding significantly to the purchase price.
- Under a manufacturer take-back system, recycling costs would be charged at the time of lamp purchase, four or five years before the lamps were actually recycled. This would produce a very expensive recycling system to both businesses and governments because:
 - 1) Recycling costs essentially would be paid five years in advance, eliminating use of this money for other investments.
 - 2) Companies and Governments that "pre-paid" for recycling services in the cost of the lamp would not be able to take advantage of any recycling efficiency improvements or pricing reductions during those five years.
 - 3) There would be no ability to bid for recycling services between different lamp recyclers.
 - 4) Manufacturers would have to maintain a significant overhead structure to manage recycling issues and would build-in a significant additional overhead charge to the cost of recycling.
 - 5) U.S. antitrust laws would prevent manufactures from developing a common collection system, with a common disposal fee.

- **Government and private sector facilities will incur additional costs.** Over the years, businesses buy lamps from several different lamp manufacturers. Today, all of their lamps are recycled with one pick-up, regardless of the original manufacturer. Under a manufacturer take-back system, in addition to having to pay a high up-front fee at the time of lamp purchase, facilities will incur increased costs related to segregating and storing each manufacturer's lamps for each unique recycling system. Consequently, the new cost of an energy-efficient fluorescent lamp would be much higher than the combined cost of a fluorescent lamp and the cost of recycling under the current system.
- **It will increase the cost of energy-efficient lighting.** Lamps are a commodity, and as such are very price-sensitive. The cost of recycling large quantities of lamps is approximately 33% of the cost of a commodity four-foot lamp. Recycling costs for small quantities of lamps is typically much higher per lamp. Adding recycling costs to the selling price could increase the purchase price by a third. Since current building codes cannot be met without energy-efficient, fluorescent lighting, this will significantly increase costs for property owners.
- **State-specific regulations would result in market behavior quickly escalating recycling costs, leading to increased lamp prices in that particular state.** With significantly increased initial lamp cost in one state (see side bar), there will be enormous pressure for businesses to purchase lamps from out-of-state. As lamps from out-of-state are disposed in a state with a manufacturer collection system, manufacturers will have to significantly raise the price of remaining lamps sold in the state to pay for these free riders. These greatly increased costs will have an adverse impact on in-state businesses and on state and local government agencies that maintain building lighting systems and provide roadway and security lighting. Furthermore, out-of-state lamp purchasing could mean financial difficulty for in-state electrical distributors and retailers.

Proponents of manufacturer take-back sometimes advocate the European approach to lamp recycling. Lamp recycling in the E.U. (under the framework of the WEEE Directive) is expensive and imposes a substantial administrative burden on European markets. As a result, European consumers pay significantly more for energy-efficient lighting. Furthermore, the E.U. companies are not saddled with the same degree of anti-trust restrictions in effect in the U.S. regarding collaborative collection arrangements.

LAMP RECYCLERS OPPOSE A MANUFACTURER TAKE-BACK SYSTEM

"It is counterproductive to transfer responsibility for recycling to hundreds of lamp manufacturers, who are not in any way involved with collecting lamps or in the competitive market of lamp recycling" – Paul Abernathy, executive director, Association of Lighting and Mercury Recyclers; testimony before the California Senate Committee on Environment, April 28, 2003, in opposition to a proposed manufacturer take back requirement.

CONCLUSION

The current system, where the beneficial user is responsible for lamp disposal is the most cost-effective. For these users, the cost of recycling represents only one percent of the total cost of ownership of a fluorescent lamp. As the overwhelming financial beneficiary, there is a strong

case for lamp users to continue to fund their own recycling and negotiate their own contracts with the existing infrastructure of lamp recyclers.

A manufacturer take-back system would be the most costly of all alternatives and create enormous inefficiencies and unintended consequences. NEMA recommends using the existing infrastructure to recycle lamps and is undertaking a number of programs to encourage recycling. States will need to assist in educating users about disposal requirements and enforce existing laws.



TESTIMONY OF OSRAM SYLVANIA ON INT. 922
REGARDING THE SAFE COLLECTION AND RECYCLING OF MERCURY-
CONTAINING LAMPS
COMMITTEE ON SANITATION AND SOLID WASTE MANAGEMENT
May 4, 2009

~~Good~~ Chair and Committee Members, thank you for this opportunity to provide testimony for Int. 922. My name is Jennifer Dolin, and I am the manager of sustainability and environmental affairs for OSRAM SYLVANIA. OSRAM SYLVANIA is a member of National Electrical Manufacturers Association (NEMA) and joins the National Electrical Manufacturers Association (NEMA) and our competitors in opposition to Int. 922. OSRAM SYLVANIA is a leading lighting manufacturer with 19 manufacturing facilities throughout North America in which 75% of our products are made.

OSRAM SYLVANIA and the lighting industry support lamp recycling as the proper method for lamp disposal. To that end, we support the overall goals of Int. 922. However, we do not support the proposed means to achieve these goals.

My colleague from Philips Lighting has discussed the bill from the commercial perspective, and I will provide insight into how the bill would play out on the residential side.

Energy efficiency and climate change

Climate change and reduction of greenhouse gas emissions has become the most vital environmental issue of the 21st century. President Obama has stated his goal of reducing greenhouse gas emissions by 80%; New York State set goals to reduce energy consumption 15% by 2015; Mayor Bloomberg just announced on Earth Day that as part of his six-point plan to reduce the City's carbon footprint, he will craft legislation that requires commercial buildings of 50,000 square feet or more to upgrade their lighting to more energy-efficient systems that pay for themselves through energy savings.

Residents are being encouraged to reduce their own carbon footprints by undertaking energy-efficiency efforts. Using compact fluorescent lamps (CFLs) rather than inefficient incandescent light bulbs is one of the easiest actions consumers can take to reduce energy consumption and subsequent greenhouse gas emissions from power plants. CFLs use about 75 percent less energy than standard incandescent bulbs and last up to 10 times longer. As energy prices increase, CFLs have become increasingly popular as a means for businesses and homes to reduce lighting energy bills.

OSRAM SYLVANIA
100 Endicott Street
Danvers, MA 01923
☎ (978) 777-1900

www.sylvania.com

For many years, NYSERDA has promoted the use of CFLs and in 2007 alone spent over \$7 million to offset the cost of these lamps for consumers so they would be more affordable at retail.

Mercury and CFLs

CFLs, like all fluorescent lamps, contain a small amount of mercury. Fluorescent technology will not work efficiently without mercury. All the lighting manufacturers have had their R&D departments work on finding alternatives, but to date no other element produces the same efficiencies as mercury.

What manufacturers have done is undertake substantial source reduction. While the previous generations of CFLs may have contained 10-15 mg or more of mercury, today's CFLs have significantly less. Members of the National Electrical Manufacturers Association (NEMA) have voluntarily established a ceiling of 5 -6 milligrams of mercury per bulb (depending on the wattage), but actual amounts attained by NEMA companies fall well below this level. In fact, the most recent ENERGY STAR specifications for CFLs include these maximum levels of mercury as a requirement. This is one of the most substantial contributions manufacturers can and have made towards reducing mercury emissions to the environment.

In fact, CFLs contribute far less mercury to the environment overall. Because they consume $\frac{1}{4}$ of the electricity that an equivalent incandescent bulb does, the power plant emissions from using CFLs are reduced by 75%. Appendix 1 shows what we like to call, "Use a little. Save a lot" meaning that by using a small amount of mercury to operate a CFL, the overall mercury emissions from power plants is greatly reduced.

Manufacturers also label the packaging for every fluorescent lamp sold in the U.S. with a web site address and a manufacturer-specific toll-free information number, and a notice that the user should follow applicable disposal laws.

CFL Recycling

The lighting manufacturers share the committee's concern about the proper management of lamps at end-of-life. The industry works in tandem with the lamp recycling industry on outreach and education efforts. NEMA also funds and operates www.lamprecycle.org, which is a one-stop industry source for recycling information nationwide. The site receives approximately 60,000 hits per month.

The infrastructure for recycling in the commercial sector has been well established and is working well under the state landfill ban legislation. The lamp recycling industry is a free-market approach that has capacity to provide recycling services to businesses and institutions anywhere in the country and has been servicing New York City for many years.

The problem lies with recycling options for households. The infrastructure is not as well established, but great strides have been made in just the past year without the involvement of local governments. Home Depot and Ikea are just two of the large, well-known retailers that now accept CFLs from customers for at no charge recycling. As you know, there is a Home

Depot on West 23rd Street, and one on 59th street and 3rd Avenue that will accept CFLs from customers.

Manufacturer take-back of CFLs as required under Int. 922 is an ineffective approach that will not achieve the goals of recycling CFLs. In fact, we have seen many states considering legislation similar to Int. 922, and each of them has decided not to pursue this issue this legislative session, including Washington State. Vermont is also considering not pursuing. And keep in mind that Vermont has a landfill ban that includes households and Washington State has local landfill bans that affect 50% of their population.

Utility rebates

With the phase-out of incandescent bulbs set to begin in 2012, many utilities are planning to decrease or even stop their programs to subsidize the cost of CFLs. This change in subsidy policy alone will increase the costs of CFLs without adding the additional, internalized recycling costs and added fees.

The following points outline our concerns with respect to the CFL collection proposal in Int. 922:

- 1) **This approach will increase the cost of energy-efficient lighting.** Light bulbs are price-sensitive and recycling costs could add as much as 150 percent to the price of a single bulb. Manufacturers would need to add recycling costs, collection costs and administrative fees to retailers, education costs and administrative overhead into the purchase price of a CFL. Higher prices discourage the use of energy efficient CFLs, which is contrary to the energy policy objectives of the City.

Lighting is a commodity product, and price elasticity is very sensitive. In February, 2009, Minnesota's Center for Energy and Environment released the results of a survey of homeowners regarding recycling of CFLs. The survey showed that at an added cost of \$.50 per CFL, homeowners would likely continue to buy as many CFLs as they currently do. However, at an increase of \$1.00 or \$1.50, purchasing would drop 58%.

While a \$.50 per-bulb charge may be the true cost to recycle a CFL through a voluntary collection system, Int. 922's proposal doubles or triples that cost with cost internalization, added administrative costs, education costs, and additional retail reimbursements.

- 2) **Concern about enforcement of non-US companies.** There are over 100 manufacturers of ENERGY STAR qualified CFLs listed on the ENERGY STAR website, with many of them overseas manufacturers shipping directly into the US to retail or via internet sales. We are very concerned that these manufacturers would not participate in a take-back program, and US-based companies would fund the collection of their CFLs through increased prices, while the overseas manufacturers do not raise their costs.

- 3) **The requirement that every store will “(4) ensure that each mercury-containing bulb accepted is returned to the manufacturer of the bulb in accordance with the end-of-life management plan of that manufacturer” is burdensome and unfeasible.** Should each manufacturer set up its own plan, retailers would be required to sort CFLs upon collection and send back CFLs to each manufacturer or through each manufacturers’ recycling contract. There are over 100 manufacturers of ENERGY STAR qualified CFLs listed on the ENERGY STAR website. Retailers do not have the physical space to separate bulbs from each of these manufacturers.

Businesses today can recycle all of their lamps with one pick-up, regardless of the manufacturer. Under a manufacturer take-back system, in addition to having to pay a high up-front fee at the time of lamp purchase, facilities will incur increased costs for segregating and storing lamps of different brands for each unique recycling system. In the Int. 922 proposal, manufacturers would be required to reimburse retailers for these costs, further increasing the price of CFLs.

- 4) **Reporting requirements are unrealistic.** Int. 922 requires manufacturers to report to the department on the effectiveness of the plans, including ... “the amount of mercury recovered for recycling.” This is an impossible task, as the CFLs recovered will have been sold anywhere from 1-10 or even 15 years prior. Estimating the amount of mercury that is collected would not be possible.

Lastly, while we support lamp recycling, such a prescriptive approach as outlined in Int. 922 will not necessarily lead to a high recycling rate. For example, consider that New York City requires residents to recycle paper, cardboard, beverage cartons, bottles and cans. Residents do not have to leave their apartments to recycle – it is essentially available at curbside and serviced by the Department of Sanitation, and the current recycling rate is 20% City-wide.

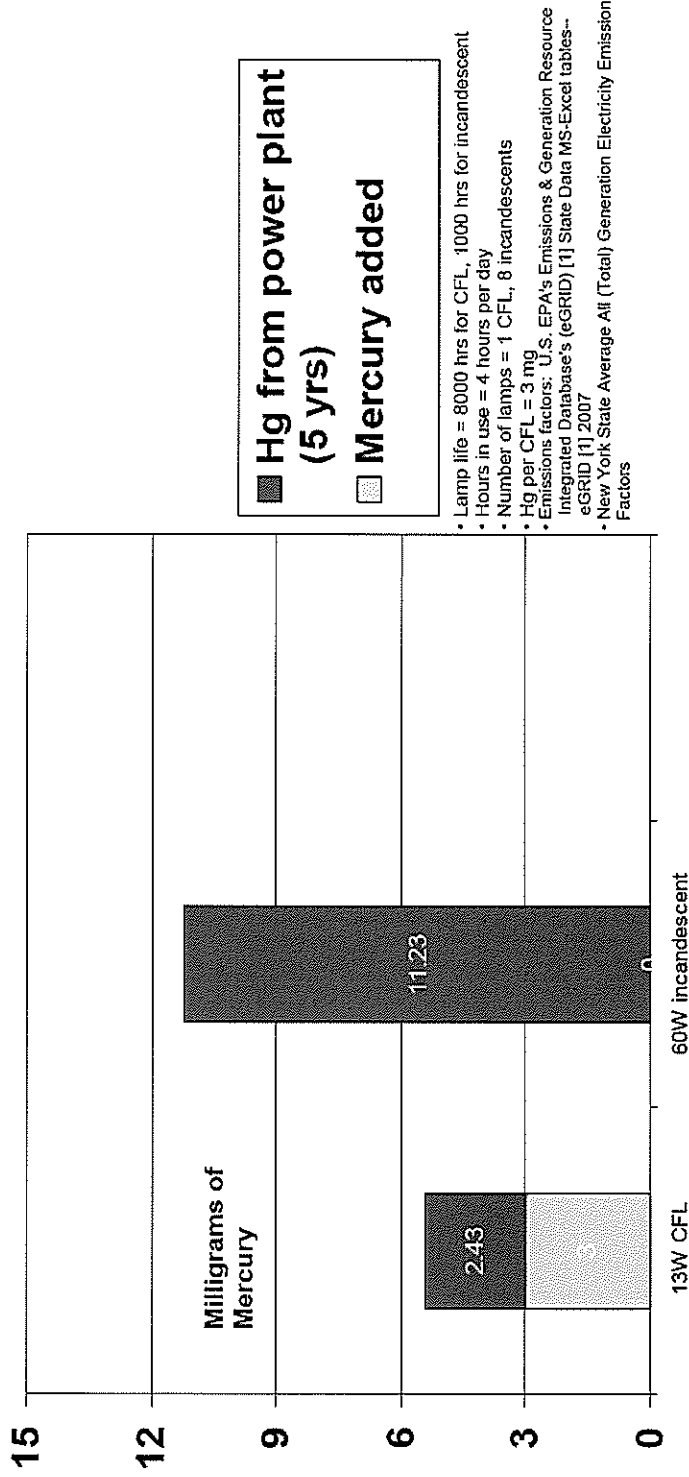
In Minnesota, where utilities are required to provide and fund recycling, recent data collected by the MN advisory group suggests that the CFL recycling rate there is in the range of 40%. Utilities are also offering significant rebates to consumers to keep the initial purchase price of CFLs low.

Imagine if the cost of CFLs were to increase 150% and utility rebates were to disappear. We would see a drop in the usage of CFLs, an increase in energy consumption, an increase in CO₂ emissions, and no guarantee that residents would, in fact, return used CFLs to retail locations.

SUMMARY – Manufacturers work continually with stakeholder groups to seek the best, least-cost solutions to lamp recycling while simultaneously lowering mercury levels and developing alternatives. We view Int. 22 as an inefficient, unnecessary response to a problem that stakeholders are working to resolve. We are happy to provide more information and discuss our views with members of the committee.



Mercury Total Over 5 Years Compact Fluorescent Lamp vs. Incandescent



- Lamp life = 8000 hrs for CFL, 1000 hrs for incandescent
- Hours in use = 4 hours per day
- Number of lamps = 1 CFL, 8 incandescent
- Hg per CFL = 3 mg
- Emissions factors: U.S. EPA's Emissions & Generation Resource Integrated Database's (eGRID) [1] State Data MS-Excel tables-- eGRID [1] 2007
- New York State Average All (Total) Generation Electricity Emission Factors

Appendix 2

Survey of Minnesota Homeowners regarding Recycling of Compact Fluorescent Lamps

Preliminary Report

Center for Energy and Environment
212 3rd Ave N, Suite 560
Minneapolis, MN 55401

February 18, 2009

The majority (55%) said they would prefer to pay the cost of recycling through an increase in the price of CFLs (Figure 7). Another 30% would prefer to pay the cost through fees collected when they recycle them. If recycling increased the cost of a bulb by \$0.50, 80% of households would buy as many CFLs as they buy now. At \$1.00 or \$1.50 per bulb, this figure drops to 58% or 52% of households.

Figure 7 (Q8). There is a cost to recycle CFLs. Assuming that the total cost to recycle CFLs in Minnesota is the same no matter how the money is collected, would you rather pay this cost:

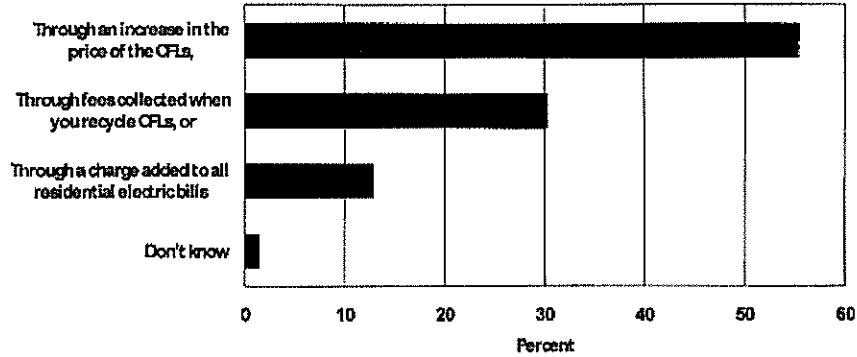
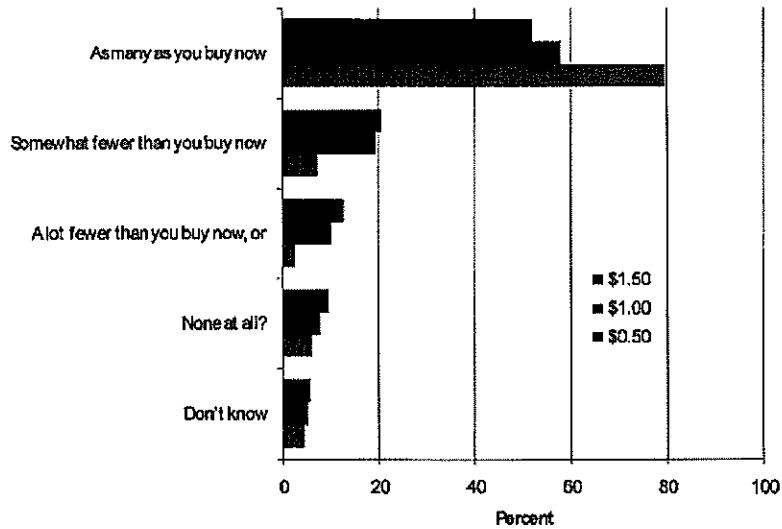


Figure 8 (Q9a, b, c). If the purchase price of CFLs increased by _____ per bulb to cover recycling costs, would you buy:



Association of Lighting and Mercury Recyclers

A non-profit organization representing members of the recycling industry

4139 Rhine Court, Napa, CA 94558

Ph- 707-927-3844, fax- 707-927-3936, www.almr.org e-mail- mail@almr.org

May 4, 2009

Members of the Council of the City of New York Committee on Sanitation and Solid Waste Management

RE: Int. No. 922 - A Local Law to amend the administrative code of the city of New York, in relation to the collection for safe handling of fluorescent light bulbs. - Oppose

The Association of Lighting and Mercury Recyclers (ALMR) is a national non-profit organization representing members of the mercury recycling industry. ALMR represents the majority of the mercury recycling firms and the majority of lamp recycling in the U.S., operating from 58 locations in 25 states, with service everywhere. These companies process and treat mercury containing wastes specifically to remove the mercury and prevent it from entering the environment or impacting human health. They have been serving thousands of New York City customers for 20 years. The ALMR also serves as an educational and information resource to government, business and the public for proper mercury reclamation. An important part of our mission is to promote programs, policies, and practices that divert mercury-bearing wastes from the solid waste stream and the environment. We have always supported policies, such as § 16-472 of the bill, that encourage the collection and safe handling of fluorescent light bulbs.

However, as introduced, Int. No. 922 will be disruptive to lamp recycling and will undermine all that we have achieved to develop recycling programs for lamp generators for the last 20 years. Neither the costs of administration of these proposals or the amount of new bureaucracy are known at this time. We think there are unintended negative impacts on the recycling industry and that these provisions should not be included in proposed legislation.

§16-471 Requirements for manufacturers. The bill forces manufacturers of lighting to set up infrastructure that includes retail stores they do not control, and for end-of-life management, a regulated hazardous waste activity that should not be forced on them. It also forces manufacturers to pay for all this, and take financial control the market for recycling. Producer control will 1) interfere with existing state and federal RCRA Hazardous Waste laws and regulations, 2) usurp liability under CERCLA laws, which cannot be subrogated, 3) be impossible for enforcement programs to regulate, and 4) interfere with contracts between generators and authorized recyclers. There is also the potential to create anti-trust and interstate commerce problems.

Moreover, the measure requires that both manufacturers and retailers engage in commerce with regulated generators, such as commercial buildings, and with exempt generators, such as households. Is it intended that any generator of any size can return up to ten lamps per day to a retail store for free? Would all major commercial and industrial generators get free recycling for unlimited bulbs by simply metering them to a retail location or their choice?

Cost-effective Program- The most cost-effective collection, shipping and recycling program for mercury lamps is free market based, with competition, where cost efficiencies are volume driven

May 4, 2009

Int. No. 922- Comments of the Association of Lighting and Mercury Recyclers

Page 2

and use of existing infrastructure is maximized. The recycling industry already has the infrastructure for end-of-life management. The commerce of recycling can incorporate any new collection locations (they become new customers). Help for consumers can come from those involved in the distribution and retail sales of lighting. This stimulates commerce, and it also offers consumers local and easy access to recycling. Convenient community drop off locations can be developed without new bureaucracy or new appropriations for money if the existing infrastructure is fully used.

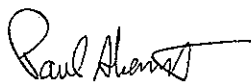
There are several examples of successful programs to help consumers where funding is supplied and commerce is not disrupted. For example, IKEA, Home Depot, the City of San Francisco, McClellan's, and Barbell's in the Pacific Northwest, Ace/True Value in the Northeast all have programs that do not require additional funding for administration or more bureaucracy. Mail-back programs are another sustainable example throughout the country.

Mercury lamp management is not like other products. The value of the original product is low, and the value of materials after recycling/recovery is zero or negative. Recycling costs relative to lamp life cycle costs are insignificant, but recycling costs relative to new product costs are large enough to impact lamp usage. At the same time, mercury lamps are regulated as hazardous waste and there are significant compliance costs for the management of this material. Lamp recyclers operate in a highly regulated environment with oversight. Lamps are fragile and easily break if not properly handled.

Reporting on lamp recycling – There has never been a way to collect good data on lamp recycling. Generators do not have reporting requirements, lamps are shipped to recyclers out of state that have no reporting obligations, shippers and intermediates do not have mandatory tracking requirements. There is basically no accountability for what people do with used lamps and there has been very little regulatory enforcement throughout the country. This is why we have estimated the overall recycling rate may be as low as 25%, with the consumer sector as low as 2%. These are our best industry estimates and manufacturers do not have the ability to develop more accurate data or create city-by-city reports. It is certainly not possible to measure performance against arbitrary performance goals.

To summarize, the ALMR supports policies that encourage the use of existing infrastructure, that increase local collection locations to help consumers without adversely impacting anyone. We also support policies that require the recycling of all mercury lamps. Uniform policies that treat all lamps equally are the easiest to administer and enforce. We urge you to oppose this costly and disruptive measure.

Sincerely,



Paul Abernathy
Executive Director, ALMR



NATURAL RESOURCES DEFENSE COUNCIL

**STATEMENT OF THE NATURAL RESOURCES DEFENSE
COUNCIL BEFORE THE NEW YORK CITY COUNCIL
COMMITTEE ON SANITATION AND SOLID WASTE
MANAGEMENT REGARDING INTRO 922 PROVIDING FOR
MERCURY-CONTAINING BULB COLLECTION AND RECYCLING
MAY 4, 2009**

Good morning, Chairman Felder and members of the Committee. My name is Eric A. Goldstein, and I am an attorney with the Natural Resources Defense Council, Inc. ("NRDC"). NRDC is a national, non-profit legal and scientific organization that has worked for more than 30 years on solid waste and other New York regional environmental and public health priorities. Before I begin, Mr. Chairman, all of us at NRDC congratulate you on assuming the Chairmanship of this important committee; we very much look forward to working with you and your committee members to the benefit of all New Yorkers.

I am pleased to be here today to provide testimony regarding Intro 922, which would establish an extended producer responsibility-based collection and recycling program for mercury-containing light bulbs generated in the City. NRDC is broadly supportive of the producer responsibility principles embodied in Intro 922. Nevertheless, we are concerned that this legislation could have the unintended adverse effect of disadvantaging energy efficient compact fluorescent light bulbs in the market as compared to inefficient incandescent bulbs. My colleague Kate Sinding was the primary author of this statement but was unable to be here today.

NRDC supports the philosophy and objectives of Intro 922. Extended producer responsibility, or product stewardship, is an innovative approach to solid waste management that shifts the burden and costs of managing waste at end-of-life from municipalities and their taxpayers and onto the products' manufacturers. Not only does this ease the financial burden on strapped local governments, but by making manufacturers internalize the costs of handling their discarded products, it encourages the design of products that are less toxic and easier to recycle. NRDC generally supports product stewardship programs and has supported product stewardship legislation in New York City and elsewhere in other contexts, particularly e-waste. NRDC also shares the concerns of this committee concerning the toxic element mercury and the goals of this draft legislation to reduce the escape of this element into the environment. We also favor measures that encourage better product design in the first instance. We believe that a mercury-containing lighting recycling program could, if properly managed, address many of these concerns. For these reasons, the draft legislation is well-intended and has goals that NRDC fully supports.

However, because mercury containing lighting (i.e., compact fluorescents) is among the most energy efficient lighting products currently available, and because of the obvious benefit of reduced electricity consumption and generation, NRDC is unable to support for this bill in its current form because of its potential to favor less efficient, non-mercury containing incandescent lighting over compact fluorescents.

Compact fluorescent bulbs are the environmentally preferred lighting product because they use less electricity than the incandescent bulbs on the market. Along with the other environmental impacts of electricity generation, all lighting products are responsible for mercury emissions from the use of electricity (released by coal burning power plants). Depending on the electric generation mix, the mercury contribution of inefficient incandescent lighting products is often greater than mercury-containing efficient compact fluorescents. The serious environmental consequences of electricity demand growth necessitate support for the highest efficiency appliances, lighting products and other electricity consuming technologies. NRDC is concerned that the added cost of an extended producer responsibility-based recycling program for compact fluorescents, if applied only to those bulbs, could lead to increased environmental mercury if it drives purchasers toward incandescent bulbs.

The retail price impacts of this proposed legislation on compact fluorescents are admittedly not well understood, nor are the impacts of such price shifts on the lighting market. NRDC estimates the current cost of recycling a compact fluorescent as between \$.60 and \$1.00 per bulb. Although the retail cost impact on a per bulb basis could be smaller assuming manufacturers spread their recycling costs across their product lines and geographic markets, lack of clear information on potential price impacts remains a primary concern for NRDC.

Federal lighting standards¹ will, if fully implemented, require that all lighting products reach compact fluorescent-level efficiency levels by 2020, at which point the increased cost of a compact fluorescent recycling program would have no perverse effect as discussed above. Intro 922 provides an effective date of 2010, two years before the national lighting efficiency standards are set to begin. Moreover, the federal standards will not reach full effect until 2020. Until then, less efficient lighting will presumably be available and could be perversely favored over compact fluorescents by the proposed legislation.

Because of the uncertainties associated with the potential pricing and market share impacts of Intro 922, and its laudable product stewardship objective, NRDC would lend its support to Intro 922 if it is amended as follows: the bill should require the Department of Sanitation to monitor the retail effects of the program on compact fluorescents and report annually on those impacts to the City Council. Retailers and/or manufacturers could be required to report relevant price and market share data to the Department to assist in this mandate. The legislation should also specify that if the cost of CFLs is determined to have increased more than a set percentage (e.g., 15 percent) after a defined period of time (e.g., one year) as a result of the program, implementation of the program would be delayed until the full implementation of phase two of the federal lighting efficiency standards as discussed above.

Thank you for the opportunity to testify before the Committee today concerning Intro 922's innovative approach to mercury-containing lighting recycling. NRDC looks forward to working with you to amend the bill to address the concerns identified above, and to lending its support to such an amended version of this important legislation.

¹ The Energy Independence and Security Act of 2007, Public Law No: 110-140.

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 922 Res. No. _____

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: BOB ORLIN, DEPUTY COMMISSIONER

Address: _____

I represent: NYC DEPARTMENT OF

Address: SANITATION

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 922 Res. No. _____

in favor in opposition

Date: 5/4/09

(PLEASE PRINT)

Name: RAY GRACZYK

Address: 1250 MAIN ST. EAST WINDSOR

I represent: ALMR CT. 06088

Address: 4139 RHINE COURT NAPA CA

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 922 Res. No. _____

in favor in opposition

Date: May 4, 2009

(PLEASE PRINT)

Name: Jennifer Dolin

Address: 24 Leicester Rd. Marblehead, MA

I represent: OBAMA SYLVANIA

Address: 100 Endicott St. Danvers, MA

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: _____

Name: ERIC GOLDSTEIN (PLEASE PRINT)

Address: _____

I represent: NATURAL RESOURCES

Address: DEFENSE COUNCIL
40 W. 20 ST

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 922 Res. No. _____

in favor in opposition

Date: May 17, 2009

Name: Lawrence A. Mandelker (PLEASE PRINT)

Address: 51 East 42nd Street NY NY 10017

I represent: New York Metropolitan Retail Assoc

Address: 160 West 34 NY NY 10001

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 922 Res. No. _____

in favor in opposition

Date: 5/4/09

Name: Rohit Aggarwala (PLEASE PRINT)

Address: _____

I represent: Mayor's Office of LTPS

Address: 253 Broadway

Please complete this card and return to the Sergeant-at-Arms